Calendar 2004-2005

Fall Semester 2004
Day and evening classes begin Mon., Aug. 30
*Labor Day (day and evening) Mon., Sept. 6
Spring 2005 graduation applications due Wed., Sept. 15
Veterans Day (classes held; staff holiday) Thurs., Nov. 11
**Thanksgiving Break Thu.-Sun., Nov. 25-28
Classes resume Mon., Nov. 29
Final instructional day Sun., Dec. 12
Final examination period Mon.-Sun., Dec. 13-19
Commencement Sat., Dec. 18
Winter Intersession Mon.-Sat., Dec. 20–Jan. 15

Spring Semester 2005
Day and evening classes begin Tue., Jan. 18
*Martin Luther King Day Mon., Jan. 17
Summer 2005 graduation applications due Tues., Feb. 15
*Presidents' Day Tue., Feb. 22
Spring Break Mon.-Sun., Mar. 28-Apr. 3
Classes resume Mon., Apr. 4
Final instructional day Sun., May 8
Final examination period Mon.-Sun., May 9-15
Commencements Sat.-Sun., May 14-15

Summer Sessions I, II and III 2005
First 5- and 10-week Sessions begin Mon., May 16
Fall 2005 graduation applications due Mon., May 16
Commencement for School of Law Sun., May 22
*Memorial Day Mon., May 30
First 5-week Session ends Sat., Jun. 18
Second 5- & 10-week Sessions begin Mon., Jun. 20
*Independence Day Mon., Jul. 4
First 10- and second 5-week Sessions end Sat., Jul. 23
Third 5-week Session begins Mon., Jul. 25
Second 10- and third 5-week Sessions end Sat., Aug. 27
Summer Commencement Sat., Aug. 27

*Classes cancelled (day and evening)
**Classes cancelled from Wednesday at 5 p.m. through Monday at 6:45 a.m.


Inquiries
Address inquiries concerning:
Graduate study to the Graduate School, The University of Akron, Akron, OH 44325-2101. 330-972-7663.
Athletics to the Athletic Director, The University of Akron, Akron, OH 44325-5201. 330-972-7080.
Registration, scheduling, residency requirements, and veteran's affairs to the Office of the Registrar, The University of Akron, Akron, OH 44325-6208. 330-972-8300.
Undergraduate admissions information, campus tours, housing, and transfer of credits to the Office of Admissions, The University of Akron, Akron, OH 44325-2001. 330-972-7077 or toll-free inside Ohio, 1-800-655-4884.
The University switchboard number is 330-972-7111.

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. Jessica N. Fritz ................................. 972-7665
Examiner Associate
Ms. Nancy J. Blewitt .................................. 972-7663
Coordinator, Graduate Student Financial Aid
Mrs. Karen L. Caldwell .............................. 972-6310
Assistant Director, McNair Scholars Program
Billi F. Copeland ................................. 972-2135
Student Services Counselor
Ms. Jessica N. Fritz ................................. 972-5169
Student Services Counselor
Miss Brenda J. Henry ................................ 972-7665
Coordinator, Graduate Admissions
Ms. Theresa M. McCune .............................. 972-6405

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
Community and Technical College ................... 972-7220
College of Business Administration .................. 972-7040
College of Education .................................. 972-6970
College of Engineering ................................ 972-7816
College of Fine and Applied Arts ..................... 972-7564
College of Nursing ...................................... 972-7551
College of Polymer Science and Polymer Engineering .... 972-7500
The University of Akron–Wayne College ............. 1-800-221-8308
NEOUCOM (Northeast Ohio Univ. College of Medicine) 325-2511
University College ..................................... 972-7066

Other Offices
Accessibility, Office of ................................ 972-7928
TTY/TDD .................................................. 972-5764
Buchtelite, The (student newspaper) ................. 972-7919
Careers Program, Arts and Sciences ................. 972-5714
Center for Child Development ........................ 972-8210

Cooperative Education Programs ..................... 972-7747
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
Work Study ............................................. 972-8074
Health Services, Student ............................... 972-7808
Information Centers
Student Union .......................................... 972-INFO (4636)
Polsky’s High Street Info Center ....................... 972-3531
Polsky’s Main Street Info Center ...................... 972-3532
International Programs ................................ 972-6349
Academic Advising ..................................... 972-6194
Immigration .............................................. 972-6740
International Admissions .............................. 972-6934
Libraries, University
Bierce Library ........................................... 972-7236 or 972-7497
Law Library .............................................. 972-7330
Photocopying, Bierce Library ......................... 972-6278
Science and Technology Library ....................... 972-7195
University Archives .................................... 972-7670
Multicultural Development, Office of ................ 972-7658
Academic Support Services/Access and Retention .... 972-6769
Pan-African Culture and Research Center ............. 972-7030
Parking Services ......................................... 972-7213
Peer Counseling Program .............................. 972-8288
Photocopying
Bierce Library ........................................... 972-6278
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 ........................ 972-7907
Special Services for Students .......................... 972-6048
Student Conduct ......................................... 972-7021
Student Union
Director’s Office ........................................ 972-7866
Information Center ...................................... 972-INFO (4636)
Study Abroad ............................................. 972-7460
Ticketmaster .............................................. 972-6684
Tours (of the University) ............................... 972-7077
University Program Board ............................. 972-7014
Veterans Affairs Coordinator and Counselor ........... 972-7838
WZIP-FM Radio Station ................................. 972-7105

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 assistance 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 repeatedly 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 University of Akron received its principal support from city tax funds and swelled from an enrollment of 186 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 200,000. Akron became a boom town 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 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 (1923), Law (1929), the Community and Technical 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 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 researchers each year for their work on new technologies. Products of 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-age students and adult 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 minority students.

The University’s first doctoral degree was, appropriately enough, awarded in polymer chemistry in 1959, but master’s degrees were granted as early as 1982. The University of Akron now offers 18 doctoral degree programs and four law degree programs as well as more than 100 master’s degree programs and options.

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, more than 24,000 students from 40 states and 83 foreign countries are enrolled in its 10 degree-granting units. The University of Akron is only Ohio institution, public or private, with a science and engineering program ranked in the top five nationally. Its College of Polymer Science and Polymer Engineering also is the nation’s largest academic polymer program. The University excels in many other areas, including global business, biomedical engineering, organizational psychology, educational technology, marketing, dance, intellectual property law, and nursing. Alumni of the University number more than 130,000 and include scientists, engineers, artists, lawyers, educators, nurses, writers, business people, and other professionals at work in every state and 84 foreign countries.

The 180-acre Akron campus, with 81 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 the campus include Zaum and Sandefur theaters, Guzzetta 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, Tuesday Musical, UA Steel Drum Band, and the like—without other performances at the university on campus. The University joined the Mid-American Conference in 1991 and participates on the NCAA Division I level in 18 sports.

The University of Akron campus, already one of the most modern in Ohio, has embarked on an ambitious venture to create “a new landscape for learning.” With a $300 million investment, nine new buildings and major expansions or renovations of 14 other structures will be completed in Fall 2004. Among the new buildings will be a Student Recreation and Wellness Center and a Student Union. The project will add 30 additional acres of green space as well.

For more than 130 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, a source of enrichment, education, and vitality for northeast Ohio. Our history is a long and proud one—but 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 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 Northeast 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 determine 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 these principles, for without them we cannot be 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 will respect the needs of students, faculty, contract professionals, staff, administrators, maintenance and service personnel, and everyone else whose work and dedication enables us to pursue our individual and collective academic goals.

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

Expectations and Responsibilities

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

Inside the Classroom

Inside the classroom, faculty are expected to respect the sanctity of the teaching-learning process by honoring their commitment to students in terms of time, fairness, and enthusiasm. It is the responsibility of faculty to set and enforce the classroom rules of conduct. Faculty members are expected to treat, with care and respect, men and women, persons of all colors and ethnicities, and persons with varying abilities, spiritual preference, or sexual orientation with equitable respect and consideration. Faculty should value and pursue excellence in teaching as well as research. Faculty shall not engage in sexual or other forms of harassment or engage in inappropriate dual relationships with students. Faculty must not tolerate academic dishonesty or discrimination or harassment from students to other students.

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

On the Campus

In an environment that is safe, free of disruptions, and respectful of differing views and voices, students can achieve a clear sense of our campus culture and, accordingly, a sense of mutual pride. Students can expect that all representatives of all departmental and administrative offices will treat them with respect, a sense of cooperation and with concern for their welfare. Students can also expect appropriate coordination of services among departments.

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

Additional Behavioral Expectations

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

ACCREDITATION

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

There are two types of accreditation of educational institutions: institutional accreditation and specialized accreditation. Institutional accreditation evaluates the entire institution and accredits it as a whole. The University of Akron has been approved by the Higher Learning Commission of The North Central Association of Colleges and Schools (30 North La Salle Street, Suite 2400 Chicago, IL, 60602-1498) since 1914 and has been reaccredited at the highest level as a comprehensive doctoral degree-granting institution.

Institutional accreditation is separate from the accreditation given by professional associations or organizations. Specialized accreditation evaluates particular units, schools or programs within an institution and is often associated with national professional associations or with specific disciplines. Accreditation provides the security of knowing that the University will honor most credits earned at a similarly accredited college or university. Degrees earned at the University are respected and sought after by prospective employers.

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

Specialized Accreditations:

- AACSB-The Association to Advance Collegiate Schools of Business
- Accreditation Board for Engineering and Technology
- American Association for Family and Consumer Science
- American Association of Marriage and Family Therapy (provisional)
- American Association of Nurse Anesthetists—Council on Accreditation
- American Dietetic Association
- American Psychological Association
- American Speech-Language-Hearing Association
- Association of Collegiate Business Schools and Programs
- Commission on Collegiate Nursing Education
- Committee on Allied Health Education and Accreditation of American Medical Association
- Council for the Accreditation of Counseling and Related Educational Programs (provisional)
- Council on Social Work Education
- Foundation for Interior Design Education Research
- International Fire Service Accreditation Congress
- National Academy of Early Childhood Programs
- National Association of Education for Young Children
- 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 (NASPA)
- National Athletic Training Association
- National Certification Board of Pediatric Nurse Practitioners and Nurses
- National Council for Accreditation of Teacher Education
- National League of Nursing Accrediting Commission
- North Central Association for Teacher Education
- Ohio Department of Education
- Professional Society for Sales & Marketing Training (SMIT)

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

- America 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 for Teacher Education
- American Association of College Trustees
- 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
- 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 Continuing Higher Education Association
- United States Association of evening Students
- University Council on Education for Public Responsibility
- University Continuing Education Association
- University Sales Center Alliance (USCA)

The American Association of University Women grants membership to women graduates with approved baccalaureate degrees from The University of Akron.
The University of Akron 2004-2005

The Campus

Currently, the Akron campus covers 218 acres and encompasses 81 buildings. Recent and continued growth with new academic, administrative, and recreational spaces, in addition to major renovations to existing buildings, are attributable to the current Master Plan, "A New Landscape for Learning.”

LOCATION

The University is situated in a large metropolitan area. The campus, although central to the city of Akron, features park-like pedestrian areas. Students have easy access to retail outlets, transportation, and churches. The University is located between East Market Street and East Exchange Street on the eastside of the downtown area. Akron is easily reached by automobile from major national east-west routes (Interstates 80, 90, 77, 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 Street is an instructional facility and laboratory facility for Polymer 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.

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 and has just opened a new $3.6 million, 26,500 square foot addition to the existing Science Technology Library. The center also houses the College of Engineering Dean's office, the Engineering Co-op Office; Mechanical, Electrical, Chemical, and Civil Engineering; as well as the Department of Biology and Biotechnology 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 department of Physics and interm meeting space for the Student Union.

Ballroom Center. This center, located at 354 East Market Street, houses dance studios, a choreography laboratory, faculty offices, and offices for the School of Dance, the Ohio Ballet, and the Dance Institute.

Bierce Library. Named for General Lucius V. Bierce, an Akron mayor, lawyer, historian, state senator, philosopher, philanthropist, and soldier, the building opened in the spring of 1973. In addition to the book and periodicals collections, the facility houses audiovisual materials, maps, and microforms. University Libraries, including science and technology materials located in the Auburn Science and Engineering Center, have holdings of more than 2.8 million items.

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

Buchtel Conservatory. Opened in 1973. Designed to accommodate concerts, opera, ballet, and theater productions, this facility is a masterpiece in architecture, acoustics, and creative mechanisms. It stands at the corner of University Avenue and Hill Street.

Firestone Conservatory. On the first floor of Guzzetta Hall, this facility provides classrooms, practice rooms, and offices for music.

Folk Hall. This building, at 150 East Exchange Street, provides modern, well-equipped facilities for the Mary Shiller 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 is named for distinguished alumna Mary E. Gladwin (1887), who rendered unparalleled service to the nation during World War I. The $10 million complex opened in 1979 and includes the administrative offices of the College of Nursing, faculty offices, the Center for Nursing, a Learning Resources Center that includes patient simulation areas, an audio-visual center, and a state-of-the-art computer learning center.

Goodyear Polymer Center. Construction of the $17 million Polymer Science Building was completed in 1991. This two-story structure of steel, concrete, and glass, located at 170 University Avenue, houses offices for the Vice President for Research and Dean of the Graduate School and the dean of the College of Polymer Science and Polymer Engineering. The facility features a 200-seat lecture hall, offices, classrooms, and research laboratories for the Institute and Department of Polymer Science.

Guzzetta Hall. 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, Theatre, and Arts Administration, Firestone Conservatory, and the School of Music in addition to student practice rooms, an experimental theatre, and 300-seat recital hall.

James A. Rhodes Health and Physical Education Building (JAR). This structure on Buchtel Common is connected to Memorial Hall by a pedestrian bridge over South Union Street and contains an intercollege basketball facility seating 7,000, an indoor jogging track, physical education laboratories, classrooms, the athletic director's office, the sports information office, athletic offices, and a ticket office.

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

Knight Chemical Laboratory. This $20 million complex is named in honor of Dr. Charles M. Knight, who taught the first courses in rubber chemistry at Buchtel College as early as 1908. 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 at a cost of $73 million. Additions to and remodeled space within the building have provided space for faculty and staff offices, TV studio areas, WZIR-FM radio station, computer labs and classrooms. The building also houses the Paul A. Daum Theatre.

Leigh Hall. Located at 308 Buchtel Common, Leigh Hall is named in honor of Warren W. Leigh, first dean of the College of Business Administration. This newly renovated building is occupied by the Distance Education Center, Institute for Technology and Learning, Center for Collaboration and Inquiry in addition to The John S. Knight Auditorium.

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 lunch from 11:30 a.m. to 9:00 p.m. and dinner from 5:00 p.m. to 9:00 p.m. Banquets, receptions, and parties can be scheduled during the hours of 7:30 a.m. to noon. 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 at a cost of $2.5 million, it provides space for the law library, classrooms, moot courtroom, appellate-review office, seminar rooms, and faculty offices. A $2.8 million addition provides library and support space, and a $1.5 million second expansion has linked McDowell Law Center to West Hall, providing additional administration office space. The law complex stands at the corner of University Avenue and Wolf Ledges Parkway.

Memorial Hall. Dedicated to the memory of Summit County men and women who died in World War II, this is the companion building to the JAR. It contains offices of the Department of Sport Science and Wellness Education, a main gymnasium, a gymnastics area, a combatives area, a motor learning lab, a human performance lab, an athletic training lab for sports medicine, a weight training and fitness center, an athletics batting cage, the intramurals sports office, and classrooms.

Ocasek Natatorium. The $6.6 million natatorium, completed in 1988, is a 70,000-square-foot structure that houses an Olympic-size swimming pool with adjacent spectator seating area, and locker rooms and showers. The center also houses eight racquetball courts as well as eight pool 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, English, Modern Languages, Classical Studies, Anthropology, and Archaeology.
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.
digitizers, wide carriage network plotter, flat bed and slide scanner, core laboratory, research microscopes, a well-equipped darkroom, rock saws, automated thin-sec-
tion equipment, portable rock corer, Giddings soil probe, a four-wheel-drive vehi-
cle, and two 15-passenger vans. The Department of History occupies one wing on the second floor of the new College of Arts and Sciences Building. The History department is appropriately 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 website at www3.uakron.edu/history.

The Department of Modern Languages has a Language Resource Center in Olin Hall. The Center contains a library and facilities for students to listen to audiotapec and view videotapes as a class or individually. Fourteen networked multimedia computers have software for additional language practice and foreign lan-
guage 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.physics.uakron.edu.

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 website at www3.uakron.edu/philosophy.

The Department of Physics is located on the first three floors of Ayer Hall. Facili-
ties include research laboratories used for faculty and student research projects, laboratories for experiments associated with coursework and several microcom-
puter labs for undergraduate and graduate student use. Most of the department’s computers are networked and the department has a full-motion video system and a web page (www.physics.uakron.edu) for use by the faculty and physics students. Many instructors use this system to distribute course materials and entertain questions and feedback from students. 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 a diverse learn-
ing experience to the student in an attractive and hospitable environment.

The Department of Political Science maintains an instructional computer labo-
rary consisting of 16 computers and a scanner. This laboratory is used by Politic-
al Science students assigned research tasks requiring improved computer and Internet skills.

The Department of Psychology is located on the third floor of the new College of Arts and Sciences Building. The department maintains three computer labs that are available for graduate students in Psychology. All labs have access to the Internet. Supported throughout the labs are statistical packages which include SAS, SPSS and LISREL. WordPerfect and MS Word are available throughout the depart-
ment for word processing and word editing. All-time research goals encourage lan-
guage 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 www3.uakron.edu/psychology.

The Department of Public Administration and Urban Studies is appropriately located on Main Street in downtown Akron in the Polsky Building. The office suite includes a computer laboratory that is available exclusively for graduate students. The lab has twenty computers and computer projection equipment to facilitate web-based learning. All labs are equipped with state-of-the-art audio-visual and computer software support for the department and writers custom software for computerized research. In addition to the computer labs, a counseling clinic is main-
tained by the department and has videotaping capabilities for the study of counsel-
ing processes and outcomes. Also, the department’s Center for Organization Research engages in outreach to the greater Akron community and provides applied research experience to students. Additional facilities of the Psychology Department include: research areas for individual computer research and for small group behav-
ior research; and a Test Room where current psychological testing materials are kept. Additional information about the department, its faculty, and its programs, is available on the Internet at http://www.uakron.edu/psychology.

The Department of Sociology facilities include research laboratories used for funded research projects. The Newman Library, providing many current professional journals, is open for student use. The Department is also affiliated with the Insti-
tute for Health and Social Policy.

The Department of Statistics maintains two instructional computer labs. One of these labs is used for class laboratory sessions for the general education mathe-
ematics requirement course, Basic Statistics, and is located in the College of Arts and Sciences Building, Room 108. The other lab, located in the College of Arts and Sciences, Room 100, is used for various undergraduate and graduate sta-
tistics courses. The Center for Statistical Consulting, housed in the department and maintained by the Buchtel College of Arts and Sciences, provides opportunities for students to gain valuable experience in the practical applications of statistics while interacting with faculty and clients.

The Department of Theoretical and Applied Mathematics is located on the sec-
ond floor of the new College of Arts and Sciences Building. It provides students in mathematics and applied mathematics with new opportunities for computing facilities, operating environments, programming languages, and software. The computers are being constantly upgraded to maintain currency in a rapidly changing field. Most computers in the department also provide Internet access to encourage students and faculty to keep current on subjects of interest. Access to the facilities at the Ohio Supercomputer Center in Columbus, Ohio and vBNS Internet II network are also available for students involved in research. The department homepage at www.math.uakron.edu provides updated information about the department, its faculty, courses, and programs. The proximity of the faculty offices to the computer labs encourages regular interaction between faculty and students. Staff members are always available to help students. A friendly, informal, helpful atmos-
phere makes the department an enjoyable place to learn and gain practical expe-
rince.
childhood program prepares teachers to teach age three to grade three. The middle childhood program prepares teachers to teach grades four through nine with specialization in each of two areas selected from reading/language arts, mathematics, science and social studies. The secondary program prepares grades in seven to twelve to teach language arts, mathematics, science, social studies, family and consumer science (grades 4-12), or vocational business (grades 4-12). The P-12 program prepares teachers of foreign language, music, dance, drama, or visual arts. Endorsements are available in computer/technology, reading, and teaching English as a second language. The special education options prepare graduates to work as teachers and supervisors of special education programs.

The University Center for Child Development, a collaborative unit with the College of Fine and Applied Arts, provides care for children while serving as an experimental learning site for teacher education students.

The Department of Counseling offers graduate programs leading to the Ph.D. as well as training for the Master's Degree. The Ph.D. is offered in Guidance and Counseling (with specialties in Counselor Education and Marriage and Family Counseling/Theory), 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/Theory, School Counseling, and Classroom Guidance for Teachers. The department also operates a multidisciplinary clinic, the Clinic for Child Study and Family Therapy.

College of Engineering
The offices, undergraduate laboratories, classrooms, research facilities, machine shops, computer laboratories, and other facilities of the College of Engineering are located in the Auburn Science and Engineering Center, Schrank Hall North, Whitby Hall, and the Olson Research Building. The current active research centers include the Computational Mechanics Research Center, the Institute for Biomedical Engineering Research, and the Microscale Physiochemical Engineering Center.

The Department of Biomedical Engineering is located in the Olson Research Center and has classrooms, instructional laboratories and research laboratories. There are nine major research laboratories located in the Biomedical Engineering Department.

The Musculoskeletal Biomechanics Laboratory is equipped with materials testing equipment and finite element analysis capabilities. The Human Interface Laboratory conducts research in virtual reality, telemanipulation, biofeedback therapy and minimally invasive surgery. The Rehabilitation Engineering Laboratory is equipped to conduct collaborative research on problems related to stroke, head injury and arthritis. The Biomedical Instrumentation Laboratory has continuous wave and Doppler ultrasonic equipment, temperature sensing devices, and blood pressure and flow monitoring equipment.

The Vascular Dynamics Laboratory provides facilities to analyze blood flow using laser Doppler anemometer and 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 MA-100EM sys- tem, 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 Department of Chemical Engineering is located in Whitby Hall with research laboratories in the North Tower of the Auburn Science and Engineering Center.

The Applied Colloid and Surface Science Laboratory has a state-of-the-art laser light scattering facility including a Lelux argon-ion laser, a vibration isolated optical bench, a Brookhaven correlation and probability analyzer, FTR-Raman, TGA, and an IBM PC-based data acquisition system. The Biochemical and Environmental Bioengineering Laboratory is a satellite center of the Ohio Bioprocessing Research Consortium, housing a state-of-the-art HPLC/UV with additional luminescence, UV/VIS, and RI detectors. The lab is well equipped with several bioanalyer assemblies, Sorval RC-5C refrigerated super-centrifuge, Perkin-Elmer UV/VIS spectrophotometer and LS-50B luminescence spectrophotometer, and on-line NAD(P)H fluorometers. The Biomaterials Laboratory is available for polymer synthesis and storage include the Computational Mechanics Research Center, the Institute for Biomedical Engineering Research, and the Microscale Physiochemical Engineering Center.

The Department of Electrical and Computer Engineering is located in the South Tower of the Auburn Science and Engineering Center. Included are laboratories for the study of circuits, analog and digital electronics, control, computers, energy conversion, microprocessor interfacing, power electronics, and electromagnetic microwaves.

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

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

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

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

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

The microprocessor interfacing laboratory includes personal computers, single-board microcomputers and industrial controllers in addition to measuring equipment and components. The microprocessor interfacing laboratory is dedicated to interfacing the computer to the outside world.

Digital controllers and all digital measuring equipment account for a very modern power electronics laboratory.

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

The Department of Mechanical Engineering is located in the Auburn Science and Engineering Center. There are three major research centers: Mechanical Engineering, The Thermal and Fluid Science Laboratory has internal combustion engines, a super sonic 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 universal uniaxial testing machine for performing quasistatic and cyclic and dynamic testing on a spectrum of engineering materials and several types of hardness testing equipment. The Parker Hannifin Motion and Control Laboratory has hydraulic and pneumatic servo systems as well as serval 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 comprehensive range of strain gauge 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-
eering Computer Network Facility (ECNF). The System Dynamics and Controls Lab-
oratory is comprised of several microprocessors, analog computers, and digital con-
trollers, as well as equipment for process control and robotics. The Smart Mate-
rials and Structure Laboratory has piezoelectric and shape memory based actuators, transducers, and the relevant control systems.

The Vibration and Acoustics Laboratory has electromechanical shockers, sound pres-
sure level instrumentation, and frequency spectrum analyzers for modal analysis. The Metallurgy and Failure Analysis Laboratory has a complete set of metallographic instrumen-
tation for microstructural analysis of both conventional and advanced engi-
neering materials, and electron microscopes for analysis of failure.

The facilities in the Department of Polymer Science contain extensive laboratories for polymer synthetic chemistry and for the characterization of macromolecules and polymer morphology. A nuclear magnetic resonance laboratory is maintained with several high resolution spectrometers. The Applied Polymer Science/Macromole-
cule Institute of Polymer Science operates a variety of analytical and compound-
ing/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 and the Extru-
sion Laboratory, the Electromagnetic Radiation and Electron Optics Laboratory, the Thermal and Dielectric Laboratory, the Rheological Laboratory, and the Mechani-
cal Laboratory.

College of Fine and Applied Arts

The School of Communication features a television classroom/studio and a wide complement of supporting audio and video equipment, including graphics gener-
ators and linear and non-linear editors. Portable audio and video equipment is avail-
able for location use. There is an audio recording facility with multitrack capability. The School also houses radio station WZUP, an on-air 7500 watt FM radio station serving Northeast Ohio. WZUP-FM is operated by UA students under the supervi-
sion 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 com-
puter laboratory with complete desktop publishing layout, graphics, and print capa-
bilities.

The School of Dance, Theatre, and Arts Administration is located in the Ballet Center and Guzzetta Hall. The Theatre Program offers graduate programs in The-
atre and Arts Administration. It utilizes three different performing spaces to pre-
sent 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 sup-
port facilities. This conventional proscenium theatre is the home of theatre pro-
ductions as is E.J. Thomas Performing Arts Hall. Student productions are performed in Studio 28, Sandefur Theatre, and Daum Theatre.

The School of Family and Consumer Sciences is housed in Schrank Hall South. Nine laboratories, including a computer center, 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 provides a variety of information services to persons in the region who have speech, language, and/or hearing impairments.

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 prepro-
fessional and professional training to students who wish to become speech-lan-
guage pathologists and/or audiologists. The School houses the Audiology and Speech Clinic, which trains graduate students in service agency for persons in the region who have speech, language, and/or hearing impairments.

College of Nursing

The College of Nursing, located in Mary Gladwin Hall, provides professional nursing edu-
cation at the master’s and doctoral levels. The college is approved by the Ohio Board of Nursing and the master’s program has preliminary approval from the Commission on Col-
lege Nursing Education and is fully accredited by the National League for Nursing Accreditation Commission. The College has a Student Affairs Office which provides aca-
demic advising services to prospective students. The College contains a state-of-the-art Learning Resource Center, including a computer laboratory exclusively for nursing stu-
dents. The Center for Nursing within the College is closely linked to the Akron commu-
nity and is used by faculty and students for community service, practice, education and research. The College of Nursing also has a Center for Gerontological Health Nursing and Advocacy whose primary goal is to improve the health care and quality of life for elders.

College of Polymer Science and Polymer Engineering

The facilities of the Department of Polymer Science and the Maurice Morton Insti-
tute of Polymer Science support fundamental and applied research in polymer chem-
istry, physics, and many aspects of polymer behavior. There are extensive laboratories for polymer synthetic chemistry and for the characterization of macromolecules and polymer morphology. The macromolecular modeling center provides state-of-the-art computer modeling capabilities. A nuclear magnetic resonance laboratory is maintained with several high-resolution instruments. The applied research section of The Maurice Morton Institute of Polymer Science represents a variety of analytical and compound-
ing/processing laboratories to serve the needs of industry and government agencies for a reliable source of problem solving and data. The total value of major instrumen-
tation and equipment housed in the polymer science laboratories exceeds $12 million.

The Department of Polymer Engineering and Institute of Polymer Engineering maintain a broad-based range of processing, structural, and rheological/mechani-

cation facilities. Processing facilities include unique blending/compounding facili-
ties with five twin-screw extruders, a microscale compounder, and seven internal mixers including flow visualization capability, eight single-screw extrusion lines for plastics and rubber, with ultrasonic and sound waves and rotational mandrel dies, and with single/multiple bubble tubular film and cast film extrusion capability as well as a biaxial film stretcher. Molding facilities include screw injection molding capability for five machines, blow molding, plug assist thermoforming and compression molding with composites capability. The Institute of Polymer Engineering is the home of the EPIC-M.A. Hanna Compounding and Blending Center and the Molding Technology Center. Characteriza-
tion capability includes scanning and transmission electron microscopy, X-ray diffrac-
tion, Fourier transform infrared, rotating anode X-ray generator, Fourier transform infrared, small angle light scattering, optical microscopy and retardation, radiography, differential scanning calorimetry, thermorheometric analysis, dielectric thermal analysis, and surface profil-
ing, rheological and mechanical testing, including elongational flow, rotational and cap-
illary shear rheometry, dynamic mechanical, tensile and impact testing.

The Akron Polymer Training Center, which serves as a laboratory for the processing and testing of rubber and plastic materials, was opened in June 1994. The Center was developed at the urging of the Akron Regional Development Board and EPIC, an indus-
trial-government-university consortium, to train machine operators and technicians for the polymer industry. The Center provides classrooms and laboratories for graduate stu-
dents in Mechanical and Polymer Engineering.

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, user education, bibli-
graphic instruction, and computer-based information searching. 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 2.8 million items; books, peri-
odicals, government documents, curricular materials, microforms, maps, audio-visual materials, and archival documents. The library receives nearly 11,000 magazines, jour-
nals, newspapers, and other serial publications. Through the library’s memberships in the Center for Research Libraries, the Ohio Library and Information Network, the
Online Computer Library Center (OCLC), and the Ohio Network of American History Research Centers, access to vast resources is greatly increased for University students, faculty, and staff.

University identification cards function as library cards. Group study rooms, photocopy services, and equipment for use in making paper copies from microforms are available in Bierce Library and in the Science Library. In Bierce Library, students can use one of the 180 circulating laptop computers. Audiovisual Services, located in Bierce Library, Room 63B, maintains an extensive centralized collection of media hardware and audio-visual resources for student and faculty use. It also has a collection of instructional materials in various media formats (filmstrips, slides, etc.) to supplement classroom instruction. Audio Visual Services designs, installs, and maintains technology-enhanced general purpose classrooms, offering permanent in-room projection, sound reinforcement and a sophisticated media retrieval system.

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, professors, students, administrators, and staff use the same technology and products. Personal productivity, tools, network connectivity, and services provide a common infrastructure for the dissemination of information and communications.

Distributed Technology Services provides technology and support services for the campus community. Technology and support services are provided through the following areas:

- **Computer Labs:** 210 IBM wireless laptops are available for two-four hour loans in Bierce Library 361, the Science & Technology Library, Circulation Desk, and the Student Union. The wireless laptops can be used anywhere within the University and Student Union to access the internet, to get email, or do class assignments. Two general-purpose computer labs for students are also located in: Polsky, room 267 and the College of Arts & Sciences Building, Room 103A. Each is equipped with 20 state-of-the-art Windows desktop PCs, HP printers, and sound reinforcement. All wireless and general-purpose labs have the same productivity tools such as Microsoft Office, Adobe e-books, SPSS, and SAS. All computers have internet and e-mail capabilities.

- **Computer Acquisition:** Computer Solutions (www.uakron.edu/its/comppurch) is the central point for campus technology acquisitions. It is an education reseller for computer hardware, software, and many peripheral devices. State-of-the-art laptop wireless computers can be purchased at Computer Solutions, located in the Student Union. The wireless laptops can be used in any on-campus building or outdoor green space. Computer Solutions is located in Student Union, 307 and have the following hours of operation:
  - Monday - Thursday: 8:00 a.m.-6:00 p.m.
  - Friday: 8:00 a.m.-5:00 p.m.

- **Internet Kiosks:** 23 strategically placed internet kiosks provide instant access to e-mail and Web registration on campus

- **Student Computer Support Services:** SCSS, located in the Lincoln Building, Room 103, (330) 972-7626, provides University of Akron students with knowledgeable assistance in the setup and operation of their personal computer equipment. SCSS will install University approved software and assist in installing hardware peripherals. SCSS will also provide hardware diagnostics, software diagnostics (within reason) and basic troubleshooting. SCSS 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, so that you can seek assistance from your hardware provider or service center. SCSS 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. All Microsoft software must be purchased by the student prior to installation. Microsoft software products are available to students at significantly reduced prices.

- **Student Computer Support Services hours of operation:**
  - Monday - Friday: 7:30 a.m.-4:00 p.m.

- **The Technology Learning Support Center (TLSC)** is located in Bierce Library, Room 69, and provide walk-in support for all students, faculty and staff.

- **The Technology Learning Support Services hours of operation:**
  - Monday - Thursday: 7:30 a.m.-12 midnight
  - Friday: 7:30 a.m.-9:00 p.m.
  - Saturday: 9:00 a.m.-8:00 p.m.
  - Sunday: Noon - Midnight

Technology Learning Support Services (TLSS) provides the campus community with support services for computing hardware and peripherals, consultation in planning, development, and implementation of departmental computing labs, second level technical support for departmental computer labs, as well as hardware and software support for faculty, staff, and student personal computing equipment.

- **Software Training Services** develops training materials and delivers software related training to the campus community. Training is provided in the following areas: PeopleSoft Student Records and Financials, PeopleSoft Query and Crystal; Virtual Learning Microsoft Office and Outlook; and Calendar; and training for Microsoft desktop applications (Word, Excel, Access, and PowerPoint).

- **Computer Based Assessment & Evaluation** provides support to students who are required to take surveys, assessments, and tests online. The testing lab is located in Carroll Hall 325 and reservations for test appointments can be made at http://cbct.uakron.edu.

- **Design and Development** supports faculty and students who participate in distributed learning courses and programs. Support is provided through the following activities: design, develop and support selected curriculum-based distributed learning programs and courses, and design and develop customized computer-based multimedia programs. For further information contact Design & Development Services at (330) 972-2431. For web course support, e-mail webhelp@lists.uakron.edu.

Network and Communication Services provides network connectivity and remote access for faculty, staff, and students. Remote access is provided by the use of modern dial-in lines and VPN access. We also offer high speed cable modem service from the local area cable provider at a reduced rate. The network provides access to ZipLINK, UAs library catalog; OhioLINK, the library catalogs of all State of Ohio universities and colleges; PeopleSoft Student Records; and the Internet; UAnet’s webpages; Wireless 802.11B coverage of the entire campus.

- **Student information** is available using the web, the following services are provided: registration for classes, personal financial aid information, course grades, and fee payment by credit card.

Other services provided to the campus by the Network and Communication Services section include: cable television (ZIP-TV), telephone and voice mail services, alarm systems, cable plant management, cable television and network connections to residence hall rooms.

**Research Centers and Institutes**

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

**Akron Global Polymer Academy**

R. Byron Pipes, Ph.D., Director

As a world leader in polymer research and education, The University of Akron’s College of Polymer Science and Polymer Engineering use the Akron Global Polymer Academy for synchronous and asynchronous distance learning to support K-12 science instruction, global research collaboration, internet instrument sharing, virtual laboratories, graduate education, and workforce development.

**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 arm 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 Applied Polymer Research
Robert H. Seiple, M.S., Manager
Operating under the Institute of Polymer Science, 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 (DSC, DMTA), electron microscopy (STEM, TEM, SEM, AFM), chromatography and spectroscopy.

Center for Collaboration and Inquiry
David A. McConnell, Ph.D., Director
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, wtylons@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., Co-Director
David H. Hoover, Ph.D., Co-Director
The agreement between The University of Akron and the Ohio Emergency Management Agency creates a model academic-public agency partnership for emergency management research in the United States. The intent and primary charge of the Center for Emergency Management and Homeland Security Policy Research (CEMHSPR) is the improvement of the practice of emergency management. The agenda for research pertaining to policy research projects and after action or response/recovery studies is agreed upon between OEMA and members of the CEMHSPR. Due to the nature of emergency management, projects must remain fluid to accommodate changes as they arise.

The Center for Emergency Management and Homeland Security Policy Research 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 receive the 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 Business
Susan C. Hanlon, D.B.A., Director
The Center for Family Business provides resources to help business owners address problems unique to family enterprises. The Center seeks to increase the survival rate of family-owned businesses by focusing on the special challenges inherent in multigenerational family enterprises. For information, call 330-972-7685.

Center for Family Studies
Helen K. Clemenshaw, 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 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: Case Management for Children and Families; 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 Gerontological Health Nursing and Advocacy
Victoria M. Schirm, Ph.D., R.N., C.S., Director
The mission of the Center for Gerontological Health Nursing and Advocacy is to advance knowledge about appropriate and effective health promotion/interventions for elders. The Gerontology Center has a tripartite focus of education, research, and service to improve the health care and quality of life for elders. Activities of the Center include interdisciplinary research within the university and health care communities, best practices development for care of older adults in institutional and community settings, and education initiatives to prepare health care professionals in the delivery of elder care. The Gerontology Center is part of the University of Akron's College of Nursing.

Center for Literacy
Evangeline Newton, Ph.D., Director
The Center for Literacy, established in 2001, is an interdisciplinary research and service unit housed in the College of Education. Broadly defined, literacy refers to basic communication and calculation skills required for existing in a modern society. Literacy requires integration of a complex set of skills, abilities, and knowledge. The Center supports literacy development of children and adults through courses and workshops, teacher professional development, research and scholarship, and service projects that assist in this integrative process.
Center for Organizational Development
Sebastian Vaduva, M.B.A., Interim Director
The Center for Organizational Development is a business research and consulting center managed by the Industrial/Organizational Psychology Department at the University of Akron. 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. It is a division of the Institute for Health and Social Policy (IHSP), a multipurpose research, professional service and the resolution of social, economic and public management problems. The Center for Organizational Research provides top quality consultation and research-based interventions to the business community. The COR also serves the purpose of providing education and practice 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.

Center for Nursing
Elizabeth Kinion, Ed.D., R.N., C.N.P., Director
The Center for Nursing 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.

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

Center for Policy Studies
Jesse F. Marquette, Ph.D., Director
The Center for Policy Studies is an associated center of the Institute for Health and Social Policy.

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 at 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 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. The Center for Public Service Research and Training also plans to offer workshops and professional training on a regular basis.

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. The office, located in the College of Arts and Sciences Building, Room 118A, is open for consultation by appointment. Call (330) 972-6886.

Center for Urban and Higher Education
Sharon D. Kruse, 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, evaluation, and training.

Center for Workforce Development and Training
Daniel L. Hickey, Interim 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.

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, provides non-credit academic English as a Second Language (ESL) instruction to international students and non-native 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 English program also serves students 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 the TOEFL test of English language proficiency, which is required for admission to the University. In addition, students receive a wide variety of support services designed to facilitate their transition to life and study in the United States.

The ELI serves as a resource on issues relating to language proficiency not only for University faculty, staff and students but also for members of the local community. ELI faculty can provide workshops and specialized courses to help U.S. departments and external institutions meet the needs of their non-native English speakers. The ELI can also provide information on the Test of Spoken English (TSE), required for graduate teaching assistants. For more information, visit the ELI web site at www.uaakron.edu/eli or call 330-972-7544.

Fisher Institute for Professional Selling
Jon M. Hawes, Ph.D., Director
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 Ruta Fitzgerald Institute for Entrepreneurial Studies
Todd A. Finkle, Ph.D., Fellow
In 1995, a generous gift from William and Ruta 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 330, 330-972-7038.

Institute for Global Business
James W. Barnett, B.B.A., 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 programming in international business. The Institute offers an international executive MBA and also develops short courses and seminars to assist in improving international competitiveness of area business.

Institute for Health and Social Policy
Richard C. Stephens, Ph.D., 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 nonprofit 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 for Teaching and Learning
Paulette Popovich, Ph.D., Interim Co-Director
David McConnell, Ph.D., Interim Co-Director
The Institute for Teaching and Learning promotes, coordinates, and supports faculty efforts to improve, assess, and document teaching effectiveness and student learning quality by consulting with colleges, departments, and individual faculty on teaching, learning, evaluation, and assessment issues.

The Institute focuses on developing and providing targeted professional development activities through information gathering and sharing. The Institute also documents, publishes, and celebrates teaching and learning innovation and excellence.

For more information visit the ITL website at www.uakron.edu/itl or contact The Institute at 330-972-2524.

Intellectual Property Law and Technology Center
Jeffrey M. Samuels, J.D., Director
The Intellectual Property Law and Technology Center in the School of Law is one of approximately 14 such centers in the nation. The center exposes the community to critical thinking in the intellectual property law field, coordinates and implements the Law School intellectual property law curriculum, and hosts an annual Conference on Intellectual Property Law and Policy. The Center works with other schools within the University in the design and implementation of interdisciplinary courses relating to intellectual property law. Commencing the fall of 2004, the Center will implement a new Master of Laws in Intellectual Property Law Program.

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. In addition, the undergraduate certificate is included in the Ohio Board of Examiners of Nursing Home Administrators approved course of study in Nursing Home Administration which combines a Bachelor of Science degree in management (Human Resource Management Concentration) with a Certificate in Gerontology.

The Institute of Life-Span Development and Gerontology has grown into a campus-wide program involving more than 65 faculty in 23 different departments, representing 6 colleges. Students in the certificate programs carry out field placements at numerous community service settings. There are over 40 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 also serves 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 Elderhostel program, offered each summer for older adults who participate in a week-long residential learning experience.

The institute is a member of the Northeastern Ohio Consortium on Geriatric Medicine and Gerontology, joining together with the Office of Geriatric Medicine and Gerontology, Northeastern Ohio Universities College of Medicine; Gerontology Center, Kent State University; and Gerontology Committee, Youngstown State University.

Institute of Polymer Engineering
Lloyd A. Goettler, Ph.D., Director
The Institute of Polymer Engineering carries out fundamental and applied research in polymer processing, engineering performance and associated characterization. The Institute, founded in 1983, is a major intellectual and research resource in northeast Ohio. The Institute maintains up-to-date and futuristic processing and characterization laboratories, with continued interest in development investigation of new process technology and new materials. Its activities also include organization of scientific symposia and various seminars related to polymer processing and engineering.

The Maurice Morton Institute of Polymer Science
Frank W. Harris, Ph.D., Director
The institute is concerned with basic and applied research in polymers. It was established in 1956 as the Institute of Rubber Research and in 1964 became the Interdisciplinary Institute of Polymer Science. The University’s first Ph.D. program in polymer chemistry was started in 1956 and was administered by the institute until a separate Department of Polymer Science was established in 1967. The Institute maintains extensive laboratory facilities and the Applied Polymer Research Laboratory. It is the principal organization responsible for external funding of research projects and graduate fellowships in polymer science.

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.
Training Center for Law Enforcement and Criminal Justice

Don V. Laconi, 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

David H. Hoover, Ph.D., Director

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 tests. The University of Akron’s 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 umbrellas, industries, and communities.

The programs are supported by the faculty of the Fire Protection Technology degree program in association with other state and nationally recognized professionals.

Student Affairs

Counseling, Testing, and Career Center

The Counseling, Testing, and Career Center provides a wide range of psychological counseling, therapy, testing, career planning, and outreach and consulting services to the University community. The Center is staffed by psychologists and psychology trainees. All of our psychological services are confidential and free to enrolled students. The Center is located in Simmons Hall. Phone numbers are: Counseling Services 330-972-7082, and Testing Service 330-972-7084. Visit our website at http://www.uakron.edu/counseling

Counseling Service

The Center’s counseling service offers assistance in the following areas:

- Short-term personal counseling and therapy designed to address a variety of areas of concern. This may include but are not limited to feelings of loneliness, inadequacy, guilt, anxiety, and depression; alcohol and drug use; recovery from acquaintance or stranger rape; interpersonal relationships, especially with the immediate family, intimate relationships, and roommates; personality development, issues of oppression, identity, and self-esteem.
- Educational counseling relates to educational goals, motivation, attitudes, abilities, and the development of effective study habits and skills.
- Group educational programs, through the College Survival Kit, cover a wide range of topics which typically deal with improving grades, reducing test anxiety, planning careers, increasing wellness, and addressing personal issues; as well as providing support groups for minority students and others with a variety of concerns. Brochures are available.
- Career counseling involves helping students make decisions on majors and career direction. It consists of discovering one’s own interests, needs, values, aptitudes, abilities and goals; relating these to the world of work; exploring appropriate major subject and career fields. Interest, aptitude, personality and values testing is available through individual and group counseling. Occupational information is available through reference books and computerized career guidance and information systems.

Testing Service

- A wide range of testing programs including college entrance examinations, career assessments, personality assessments, academic placement testing and some learning disability assessments are available to students.

Outreach and Consulting Service

- The Center’s outreach and consulting service offers programs and workshops. The Center regularly provides speakers for classrooms, residence halls, student organizations, and administrative offices. Topics include, among others, academic performance, wellness, sexuality, and appreciating cultural diversity.

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 graduating students include opportunities to participate in on-campus interviews with representatives from business, industry, education, and branches of the government.

In addition, career strategy seminars are offered on resume writing, interviewing skills, and job search strategies through the academic year. Career consultations are available for current students and alumni and may be scheduled by contacting the Center for Career Management. The Center also boasts a career resource library that contains computers, employer literature, videotapes, job search information, current job openings, and career related books and periodicals. The Center also supports career expos in collaboration with academic colleges, giving students the opportunity to network with hundreds of potential employers.

Student Health Services

The goal of Health Services is to assist students to achieve their educational and personal goals by addressing their health care concerns while they are enrolled at The University of Akron. Health Services provides primary care, minor urgent care and health promotion educational services. Health Services is located in Robertson Dining Hall, immediately adjacent to the North Quad residence halls and is open from 8:00 a.m. to 5:00 p.m., Monday through Friday.

The student who becomes seriously ill or suffers a serious injury on campus should be taken to an emergency ward of 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 required of all residence hall students and all international students except those who present proof of similar coverage. Other students may purchase this insurance at the annual individual rate. The student insurance provides coverage for such items as hospitalization, surgical benefits, and in-hospital medical benefits.

Completed health forms and other health-related records are treated as confidential and are kept in the Student Health Services offices. For more information, contact Health Services at 330-972-7808 or visit the office website at http://www.uakron.edu/health.

Office of Accessibility

The University welcomes students with disabilities. The mission of the Office of Accessibility is to provide equal access opportunities to students with disabilities and coordinate academic accommodations, auxiliary aids, and programs to enable students with disabilities to maximize their educational potential. The office encourages students to contact them to find out more about the programs and services. For more information, call 330-972-7928 (voice) or 330-972-5764 (TTY) or visit the Student Administrative Services Building, Room 125.

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 flexible 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 for 10 weeks from 7:30 a.m. until 6:00 p.m. For more information call the Center for Child Development, 330-374-8210.

The Student Union

The Student Union, located in the center of campus, serves the students, faculty, and staff, and is one of the University’s major assets in meeting the University-wide goal of public service. This busy facility houses various food service facilities, meeting rooms, a movie theater, Computer Solutions—The University of Akron’s computer copy store, the DocuZip Copy Center, a bank, Ticketmaster Film/Fax Center, the Information Center and a bookstore. Visit our website at www.uakron.edu/studentunion.

- Food Areas: in the Student Union offer a variety of food items. On the first level is Zee’s convenience store, which has a variety of items, including freshly brewed coffee and a selection of sundries items, for the busy student. On the second level are Subway, Sizzlin’Zone, Union Market, and Starbucks.
- The DocuZip Copy Center, located on the second level, offers the following services: copying, including color, oversize and reduced copies; binding of materials; mailing facilities for campus and U.S. mail; literature distribution; and class support files.
- The Student Union Theatre, located on the second floor, screens first- and second-run movies as well as occasional sneak previews. The theater is open to the public.
- The Ticketmaster Center, located on the second floor of the Student Union 330-972-6684, sells tickets to most events in northern Ohio, including Blossom Music Center, Public Hall, and the Gund Arena. Over-the-counter sales include tickets to campus functions, including sporting events, and to local shows.
• The Information Center, located on the second floor of the Student Union, is operated seven days a week during the normal building operating hours. The Information Center staff can answer questions regarding departments and student organizations, on-campus and off-campus events, and the Metro buses and University Bus Loop. The Information Center staff can also print student class schedules. Please call 972-4636 if you need a question answered.

• The Bookstore at The University of Akron, located on the first level, is operated as a service of Barnes & Noble Bookstores, Inc. of New York City. Barnes & Noble operates 300 other college stores. The primary purpose of the Bookstore is to make available books and supplies required for course work. In addition, the store also carries a wide range of classroom supplies, paperbacks, engineering and art supplies, greeting cards, University memorabilia, and clothing.

• 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 (UA Net 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 a video arcade. The bowling lanes feature Extreme glow-in-the-dark bowling. Bowling and Billiards physical education classes are conducted in the Game Room.

Campus Safety and Security Information

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

The Campus
The University employs many people to keep the campus safe and secure. The Division of Public Safety provides for student and employee safety and security through the departments of University Police and Environmental and Occupational Health and Safety. The Division of Student 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 security of others.

University Police
Campus law enforcement is primarily the responsibility of The University of Akron Department of Police. University police provide 24-hour-a-day patrol protection to the campus, parking lots, residence halls, and on-campus fraternity and sorority houses. The police station is located in the Physical Facilities Operation Center at the corner of Hill and South Forge streets and is staffed 24 hours a day.

The University’s 32 police officers are commissioned by the State of Ohio with full police powers. 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 Conduct. The Student Code of Conduct Manual explains the University’s disciplinary process and is available through the Office of Student Conduct.

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 a 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 7123. To schedule an appointment for an educational program, call extension 7123.

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 or with a group at night. Valuables should be marked with a personal identification number in case of loss or theft. Bicycles should be properly secured when not in use. Automobiles should be locked at all times. Valuables and purses should never be lying in view in a car but locked in the car trunk for safekeeping. Protect your identity and personal information.

Crime Statistics

The University of Akron Police Department complies with reporting standards set by the United States Department of Education guidelines. Our crime statistics can be found at our police department website, http://www3.uakron.edu/police/crim-prev.htm. A hard copy of crime statistics can be obtained at The University of Akron’s Police Department located at 146 Hill St., Akron, OH 44325-0402.

EMERGENCY PHONE NUMBERS

Call extension 911 on campus to reach UA police immediately.

- Police .......................................................... 7123
- Campus Patrol ............................................. 7263
- (Police Nonemergency) ............................... 8123
- Environmental and Occupational Health and Safety ......... 6866
- Fire ............................................................ 911
- EMS/Medical ................................................ 911
- Electrical/Plumbing ..................................... 7415
- Hazardous Materials .................................... 8123
- Closing Information ....................................... 7669

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

Graduate School

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

OBJECTIVES

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

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

Nature of Graduate Education

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

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

History of the Graduate School

Graduate study began a few years after Buchtel College opened its doors, and the first earned master’s degree was conferred in 1882. The College of Education awarded its first master’s degree in 1924, the Colleges of Engineering and 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. Brintnall was appointed an associate dean of Graduate Studies and Research in 1967 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 associate 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 1995 until his retirement in July 2000. Dr. George R. Newkome was appointed Vice President for Research and Dean of the Graduate School in January 2001.

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

Graduate Programs

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

The Graduate School offers programs of advanced study leading to the degree of Doctor of Philosophy in chemistry, counseling psychology, elementary education, engineering (biomedical, chemical, civil electrical, engineering applied mathematics, mechanical, and polymer), guidance and counseling, history, nursing, polymer science, psychology, secondary education, sociology, and urban and public affairs. The Doctor of Education degree is offered in educational administration.

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 programs in urban studies and public affairs is a joint program with Cleveland State University. Further, the school also offers programs of study...
leading to master’s degrees with majors in diverse areas as delineated in the following pages.

Several departments offer a limited amount of work which may be taken on the graduate level. Such courses may supplement the major program of study for students who do not wish to devote their entire attention to one field.

Graduate Faculty and the Graduate Council*

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

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

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

Graduate Council is elected by the graduate faculty. Membership in the council presently includes two members from the College of Engineering, two members from the College of Business Administration, two members from the College of Education, four members from the Buchtel College of Arts and Sciences, two members from the College of Fine and Applied Arts, 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 (SGS). 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 bimonthly 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 been attained 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 admissibility to enter a graduate program or eligibility to continue in one is the prerogative of the departments offering graduate programs. The department has the right to select the examination and mini-
Classification

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

- **Full Admission** may be given to any applicant who desires to pursue a graduate degree and has a baccalaureate degree from an accredited college or university with an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent); or holds an advanced degree from an accredited college or university 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 proof of competence in English. Full admission may also be granted to applicants to the College of Business Administration who meet the college's admission requirements.

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

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

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

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

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

- **Transitent 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 college dean. A transient student is subject to the same rules and regulations as a regularly enrolled student of the University.

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

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

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

- **Academic Dismissal status** refers to any student who fails to make satisfactory progress toward declared goals or who accumulates six semester credits of “C+” or below. The accumulation of six semester credits of “F” will result in mandatory dismissal. A student who is dismissed from the Graduate School may not be readmitted for one calendar year and then only if evidence for satisfying 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 academic 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 who will review such requests with the appropriate college dean and department chair.

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

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

To qualify for the Sixty-Plus Program, the prospective student must be 60 years of age or older and have resided in the State of Ohio for at least one year.

Sixty-Plus students are exempt from payment of tuition and general service fees but are expected to pay for any books, special fees, laboratory or instructional fees and parking, if needed. Auditing allows students to attend classes, but college credit is not awarded.

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

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

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

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

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

**Course Load**

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

**Registration**

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

**Cross Registration**

Under specific circumstances a graduate student may take one or more graduate courses at Cleveland State University, Kent State University, The University of Akron, or Youngstown State University without registering as a transient student. The course for which a student wishes to register should contribute to the student's program of study and be subject to the approval of the instructor, department chair and college dean. A guest is welcome to register for any course or seminar provided space is available. Normally, space and facilities for research cannot be provided for a postdoctoral guest but special requests will be considered. Requests should be submitted, in writing, to the dean of the Graduate School who will review such requests with the appropriate college dean and department chair.
by the home department and will be permitted only upon receipt of an approved Cross Registration form. Cross Registration forms can be obtained online at http://www.uakron.edu/gradsch/forms.php.

Financial Assistance
The University awards a number of graduate assistantships to qualified students. These assistantships provide stipends of $6,000 to $18,000 per year plus remission of tuition and 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 in some departments.

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/handbook/.

International Students
The University of Akron welcomes international students and seeks to make their educational experience pleasant and meaningful. The University awards a number of graduate assistantships to qualified students. These assistantships provide stipends of $6,000 to $18,000 plus remission of tuition and 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 in some departments.

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:

- Obtain a graduate student application from the Graduate School, The University of Akron, Polsky Building, Room 489, Akron OH 44325-2101, phone 330-972-7669, fax 330-972-6475 (Internet address: http://www.uakron.edu/gradsch; electronic mail address: gradschool@uakron.edu). Return the completed application and the one-time nonrefundable application fee of $40 with the following documentation:
  - 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 489, Akron, OH 44325-3101, the Declaration and Certification of Finances (DCF) and an original statement from the bank showing availability of sufficient funds to cover the cost of the first year of study. The Office of International Programs will prepare the Certificate of Eligibility (I-20A/B or DS-2019) upon receipt of adequate financial support and admission to the University.

- International applicants, U.S. citizens, and Permanent Residents whose native language is not English must provide 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 coursework 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). Applicants to graduate programs can demonstrate their English proficiency in one of these ways:
  - A minimum score of 24 on the Test of Spoken English (TOEFL). This score must be achieved prior to functioning as a teaching assistant. Those for whom English is the native language and who expect to become a teaching assistant must demonstrate proficiency in English through departmental certification. Neither the TSE nor departmental certification is required for research or administrative assistants.
  - 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 a one-semester (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 an about applying to the ELI, see http://www.uakron.edu/eli.

International students must submit original transcripts of their course work. A student admitted to graduate study under any status at the University is expected to maintain a minimum grade-point average of 3.00 in full-time, continuous studies. Applicants must submit original transcripts of their course work.

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 also 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 2004-2005 academic year will be approximately $20,000. 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 about one to two weeks before classes begin and costs $60. The orientation dates will be mailed to students with their orientation letter and immigration documents.

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) or a minimum score of “Pass” on the UADEPT. This exam must be taken prior to functioning as a teaching assistant. Those for whom English is the native language and who expect to become a teaching assistant must demonstrate proficiency in English through departmental certification. Neither the TSE nor departmental certification is required for research 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-” grades may be counted toward a 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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<thead>
<tr>
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<td>A</td>
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<td>A-</td>
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<td>D</td>
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<td>D</td>
<td>0.0</td>
<td>Credit</td>
</tr>
<tr>
<td>D-</td>
<td>0.0</td>
<td>No credit</td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>Audit</td>
</tr>
</tbody>
</table>
The following grades may also appear on the term grade reports or on the official academic record. There are no grade points associated with these grades.

I – Incomplete: Indicates that the student has done passing work in the course but that some 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-earned 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 must have successfully petitioned for cumulative graduate grade point average recalculation under this policy automatically forfeits the right to use any of the excluded course work toward the current degree requirements.

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

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

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

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

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

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

Workshop (credit/noncredit grading)–A course that normally operates over a shorter period than a semester or a summer session. Workshops focus on a particular aspect or aspects of a field of study, require a combination of assignments, tests and class participation, and may or may not be permitted to satisfy degree requirements.

Probation and Dismissal
Any student whose cumulative 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 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 to graduate in advance of completing degree requirements. Applications are filed with the Graduation Office which observes the following deadlines:

Fall graduation: May 15.
Spring graduation: September 15.
Summer graduation: February 15.

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/student affairs, in Carroll Hall 306, or by calling Student Judicial Affairs at 330-972-7021.

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.
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 Revised 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 3333.8 of the Revised Code.

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

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

3. An “institution of higher education” as used in this rule shall mean any university, community college, technical institute or college, general and technical college, medical college or private medical or dental college which receives a direct subsidy from the state of Ohio.

4. For the purpose of determining residency for tuition surcharge purposes at Ohio’s state-assisted colleges and universities, “domicile” is a person’s permanent place of abode; there must exist a demonstrated intent to live permanently in Ohio, and a legal ability under federal and state law to reside permanently in the state. For the purpose of this policy, only one (1) domicile may be maintained at a given time.

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

C. Residency for subsidy and tuition surcharge purposes
The following persons shall be classified as residents of the state of Ohio for subsidy and tuition surcharge purposes:
1. A dependent student, at least one of whose parents or legal guardian has been a resident of the state of Ohio for all other legal purposes for 12 consecutive months or more, residing in the state with the parent or legal guardian.

2. A person who has been a resident of Ohio for the purpose of this rule for at least 12 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 12 consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.

3. A dependent child of a parent or legal guardian or the spouse of a person who, as of the first day of a term 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:
4. A sworn statement from the employer or the employer’s representative on the letterhead of the employer or the employer’s representative certifying that parent or spouse of the student is employed full-time in Ohio.
5. A copy of the lease under which the parent 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 or spouse is the owner and occupant; or if parent 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 or spouse resides at that residence.

D. Additional criteria which may be considered in determining residency for the purpose may include but are not limited to the following:
1. Criteria evidencing residency:
   a. if a person is subject to tax liability under Section 5747.02 of the Revised Code;
   b. if a person qualifies to vote in Ohio;
   c. if a person is eligible to receive state welfare benefits;
   d. if a person has an Ohio driver’s license and/or motor vehicle registration.

2. Criteria evidencing lack of residency:
   a. if a person is a resident or intends to be a resident of another state or nation for the purpose of tax liability, voting, receipt of welfare benefits, or student loan benefits (if the loan program is only available to residents of that state or nation);
   b. if a person is a resident or intends to be a resident of another state or nation for any purpose other than tax liability, voting or receipt of welfare benefits.

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 basis in Ohio and who is pursuing a part-time program of instruction at an institution of higher education.

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 or her dependents shall be considered a resident for these purposes provided such person has worked in Ohio at least four months during each of the three years preceding the proposed enrollment.

F. Procedures
1. A dependent person classified as a resident of Ohio for these purposes (under the provisions of Section 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 12 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 immediately if the employed person upon whom resident student status was based accepts employment and establishes domicile outside Ohio less than 12 months after accepting employment and establishing domicile in Ohio.

4. Any person once classified as a nonresident, upon the completion of 12 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 12 consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident. Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student’s actual financial support.
5. Any reclassification of a person who was once classified as a nonresident for these purposes shall have prospective application only from the date of such reclassification.

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

Fees

All fees reflect changes in 2004-2005 and are subject to change without notice. Application Fee (this fee is not refundable under any circumstances)

| Domestic | $30.00 |
| International | $40.00 |
| Domestic Student Reapplication Fee | $25.00 |
| International Student Reapplication Fee | $25.00 |
| Reassessment Continuous Enrollment Requirement Fee | $400.00/HR per semester (assessed to doctoral students who are not in compliance with the University’s continuous enrollment policy requiring a minimum enrollment of at least one credit hour for each fall and spring semester) |

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

Tuition Fees

| Resident student per credit | $304.80 |
| CBA student per credit | $336.44 |
| Nonresident student per credit | $522.88 |
| Nonresident CBA student per credit | $554.52 |

(same fees apply when auditing classes)

Maximum of $139.56 per semester

Administrative Fee* |

Graduate, transient students $12.00 per term

Facilities Fee

Per credit hour |

$11.15

Maximum of $133.80 per semester

Technology Fee

Per credit hour |

$16.25

Library Fee

Per credit hour |

$3.00

Engineering Infrastructure Fee

Per credit hour (all Engineering courses) |

$12.75

International Executive MBA Program

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

Tuition Deposit (Due July 19) $5,000.00

First Semester $15,000.00

Second Semester $10,000.00

Third Semester $10,000.00

Application Fee $120.00

Waiver Exam Fee $100.00 per exam

Master of Public Health Program

Tuition $403.00 per credit hour*

Parking $110.00 per semester

* Plus Administrative, Library, Technology, and Facilities Fees

Joint Ph.D. in Nursing Program (UA and KSU)

Tuition $354.00 per credit hour

Non-resident surcharge $260.00 per credit hour

Dissertation Fee:

Dissertation I (1-15 credits per semester; maximum 30 cr.) $142.00 per credit hour

Dissertation II (flat rate) $15.00

Doctor of Audiology (Au.D.) (UA and KSU)

Tuition $365.00 per credit hour

Non-resident surcharge $220.00 per credit hour

Parking Permit Fee

Per semester, Fall and Spring (enrolled for any number of credits) $110.00

Summer Session (one permit good for all sessions) $75.00

Workshop participants $4.00 per day

Other Fees

Course materials fees – assessed for selected courses to cover the cost of instructional materials. Consult the Registrar’s Office or the appropriate college, department or school regarding specific course material fees for classes.

Thesis, dissertation, and binding fees

(payable at time of application for degree)

binding per volume $9.50

microfilming (Ph.D.Ed.D. only) Up to $70.00

Copyright fee Up to $45.00

Graduate Foreign Language Reading Proficiency Exam $50.00

Miller Analogies Test (Counseling, Testing, and Career Center) $55.00

Late graduation application fee $100.00

Late registration fee: (charged to students who have not registered for classes by the first day of the semester)

$50.00

Late registration fee: (charged to students who have not registered for classes by the first day of the Summer Session)

$100.00

Re-enrollment fee: (charged if a student is dropped for non-payment of fees and student re-enrolls)

$100.00

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.

When applying for financial aid at The University of Akron, the Office of Student Financial Aid determines a budget that best suits the needs of the student. The budget includes direct costs that must be paid to the University (i.e., instructional and general fees and room and board in the residence halls) and variable expenses such as transportation and personal expenses.

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 the Federal Processor. 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. For technical assistance, call 1-800-621-3847.

Installment Payment Plan

The Installment Payment Plan is an option offered by The University of Akron to help students spread their tuition, University housing and meal plan charges into payments over the course of the academic term.

To begin the plan, students must send in the minimum required down payment and the $26 application fee, along with a signed Installment Payment Plan application. The information must be received by the Office of Accounts Receivable on or before the due date. The Installment Payment Plan only covers one term, thus students must send in all required materials before the due date for each term that they wish to use the Installment Payment Plan.

The Installment Payment Plan requires a minimum down payment based upon the number of credit hours for which a student is enrolled. A $500 down payment is required for full time students (12 credit hours or more). A $200 down payment is required for all students registered for less than 12 credit hours. Financial aid can be used to pay for a portion or all of the required down payment. Every student that applies for the Installment Payment Plan is required to pay the $26 application fee.

More information on the Installment Payment Plan is available online at http://www.uakron.edu/administration/StudentAffairs/financialAid/ipp.php

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 separate application is required. For further information, contact the Graduate School, Polycloud Building, room 469, 330-972-7663.

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 fall-
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.
- Facilities 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:
    - During the second week of the semester: 70%
    - During the third week of the semester: 50%
    - During the fourth week of the semester: 30%
    - During the third week of the semester: 20%
    - Thereafter: 0%

- Refunds for course sections which have not been scheduled consistent with either the standard 15-week fall/spring semester or the five-week summer term scheduling pattern will be handled on a pro rata basis according to the number of days of the section (class, institute, or workshop) which have passed compared to the number of days said section has been scheduled to meet.

- Refunds will be determined as of the date of formal withdrawal unless proof is submitted that circumstances beyond control of the student, e.g., hospital confinement, prevented the filing of the 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.
Optional Department Requirements

Each department may set special requirements with regard to entrance examinations, qualifying examinations, foreign language, required courses and thesis. Details are available from the chair of the major department.

Advancement to Candidacy

A student should apply for advancement to candidacy after completion of one-half of the credits required for the degree in his or her program. 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; been advanced to candidacy; filed an application for graduation with the registrar; paid all applicable fees; and met any other department and University requirements applicable.

If a thesis is required, two copies, properly prepared, are due in the Graduate School at least three weeks prior to commencement (see posted deadlines). These copies must be signed by the advisor, faculty reader, department chair/school director, and college dean prior to submission to the dean of the Graduate School. A manual entitled Guidelines for Preparing a Thesis or Dissertation can be obtained online at http://www.uakron.edu/gradsch/gdlnThesDiss.php and all copies of the thesis must conform to these instructions.

DOCTORAL DEGREE REQUIREMENTS*

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

Admission

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

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

Residence Requirements

A doctoral student may meet the degree requirements of the Graduate School and department by full-time study or a combination of full- and part-time study. The minimum residence requirement for a doctoral candidate in all programs is at least two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 9-15 semester credits, except for graduate teaching and research assistants for whom full-time study is specified by the assistantship agreements. The summer sessions may count as one semester, provided 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 inversions 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.

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

No graduate credit may be received for courses taken by examination or for 400-numbered courses previously taken at the 400-number course level as an undergraduate student at any accredited university.

Transfer Credits

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

A student seeking to transfer credit must have full admission and be in good standing at The University of Akron and at the school at which the credits were earned. Transfer credit shall not be recorded until a student has completed 12 semester credits at The University of Akron with a grade-point average of 2.00 or better. Transfer credits 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 consid- ered as one of the approved foreign languages for a student whose first language is not English; and demonstrated competence in research technique (e.g., sta- tistics and/or computers) may be substituted for one of the two foreign languages. Under the last option, each department should define competence and publicize.

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

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

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

Advancement to Candidacy
A student should apply for advancement to candidacy after completion of one-half of the credits required for the degree in his or her program. 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. Two copies of the dissertation are due in the Graduate School prior to the final deadline. These copies must be signed by the advisor, department chair and college dean prior to submission to the dean of the Graduate School. A manual entitled Guidelines for Preparing a Thesis or Dissertation can be obtained online at http://www.uakron.edu/gradsch/guidThesDiss.php and all copies of 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 an approved dissertation and passed an oral examination; filed an application for graduation with the registrar; paid all applicable fees; and met any other department and University requirements.

SECTION 4. Graduate Studies
Buchtel College of Arts and Sciences

ROGER B. CREEL, PH.D., DEAN
WILLIAM A. FRANCIS, PH.D., ASSOCIATE DEAN
DEVINDER M. MALHOTRA, PH.D., ASSOCIATE DEAN
CHARLES B. MONROE, PH.D., ASSOCIATE DEAN

Mission Statement
The Buchtel College of Arts and Sciences serves the objectives of the University, which state that learning may be procured, preserved and enlarged. More particularly, the college seeks to foster:

- the commitment to human dignity—those actions whereby virtue, the advancement of society, and wise and humane government are encouraged;
- the advancement of learning—that substantive knowledge discovered and cultivated by critical curiosity, tested by experimentation, propagated by instruction and capable of affecting lives so that all may in a free society exercise responsible liberty. The most enduring contribution which the college can make is to help individuals acquire the skill, motivation and breadth of knowledge to continue their intellectual development throughout their lives.
- the college recommends each student for the appropriate bachelor’s, master’s or doctoral degrees in accordance with the level of accomplishment.

Buchtel College is one of 10 degree-granting college at The University. Its name truthfully implies that its traditions date back farther than those of the undergraduate colleges, since the University itself is an outgrowth of Buchtel College, a liberal arts institution founded in 1870.

When Buchtel College became the Municipal University of Akron, the original name was retained in the College of Liberal Arts which was subsequently renamed the Buchtel College of Arts and Sciences. Then, and now, the liberal arts goal has been to offer broad training to the college student so that the student can prosper in life and sustain a creative appreciation of the arts and sciences.

The college is composed of the following three administrative divisions: Humanities (English, modern languages), Natural Sciences (biology, chemistry, computer science, geology, theoretical and applied mathematics, statistics, and physics), and Social Sciences (economics, geography and planning, history, political science, public administration and urban studies, psychology, sociology).

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, 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 as above. Successful applicants must fulfill both Departmental and Graduate School admission requirements.

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 all general requirements for the Doctor of Philosophy degree.
- Complete all general requirements for the Doctor of Philosophy degree.

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

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

Admission to the Collaborative Program in Counseling Psychology is handled through the department associated with the student’s chosen entry point. Students must fulfill both Departmental and Graduate School admission requirements.

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

Requirements

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

<table>
<thead>
<tr>
<th>Credits</th>
<th>Psychology core courses (610, 620, 630, 640, 650) 10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Counseling psychology core courses</td>
</tr>
<tr>
<td></td>
<td>(701, 708, 710, 711, 712, 713, 714, 715, 717) 33</td>
</tr>
<tr>
<td></td>
<td>Practicum sequence (672 [2+2+2+2], 673 [2+2+2+2], 795 [4+4], 796 [4+4]) 32</td>
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<tr>
<td></td>
<td>History, measurement, and developmental coursework. (718, 727, 750) 8</td>
</tr>
<tr>
<td></td>
<td>Electives (minimum) 6</td>
</tr>
<tr>
<td></td>
<td>Statistics (601, 602) 8</td>
</tr>
<tr>
<td></td>
<td>A statistics sequence that may be substituted for the doctoral language requirement 8</td>
</tr>
<tr>
<td></td>
<td>Thesis credits (minimum) 1</td>
</tr>
<tr>
<td></td>
<td>Dissertation credits (minimum) 12</td>
</tr>
<tr>
<td></td>
<td>A thesis or thesis waiver completed as specified in the Graduate Student Manual of the Department of Psychology.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Dissertation – at least one faculty member from each department is required on the student’s dissertation committee.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Students must maintain a 3.50 GPA in their content courses each year in the Department of Psychology.</td>
</tr>
</tbody>
</table>

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.

The Graduate Committee of the History Department will consider an applicant for admission if a person has a Master’s degree or the equivalent and a grade-point average of 3.5 or better at the M.A. level from an accredited institution. Those holding a Master’s degree from The University of Akron or other accredited institution should not assume that they will automatically be admitted to doctoral studies. In addition to the application made to the Graduate School of The University of Akron, the student must submit to the History Department the following materials:

• a personal statement of reasons for wishing to undertake doctoral study and the fields of study the student wishes to pursue;
• three letters of recommendation from former professors;
• a writing sample, preferably a seminar paper or other comparable scholarly work;
• scores on the Graduate Record Examination, General Aptitude Test;
• evidence of a reading knowledge of one foreign language or knowledge of an acceptable cognate field. Those whose native language is not English must demonstrate proficiency in English.

The History Department does not encourage applications for the doctoral program from students who have received both B.A. and M.A. degrees from The University of Akron. Special circumstances may warrant consideration, however, and the Graduate Committee reserves the right to judge applications on their own merit.

• Complete studies selected by the student in consultation with an advisory committee, including:

  completion of 80 credits beyond master’s degree requirements, including dissertation credit. Courses at the 500-level in the student’s major and dissertation fields will not be counted toward the degree, and only 9 hours of 500-level courses in the student’s secondary fields will be counted;
  demonstration of competency in four fields of study selected from the following areas in which the student will be expected to pass written and oral comprehensive exams: ancient, medieval, early modern Europe to 1789, modern Europe since 1789, Latin America, United States since 1777, Latin America, Far East, Africa, Middle East, South Asia, and History of Science. These four fields must include at least one each in American, European, and non-western history. The student’s dissertation will fall within one of the four chosen fields;
  satisfactory performance in written and oral comprehensive examinations;
  defense of the dissertation in an oral examination.

• A reading knowledge of two languages will be required. With the approval of the student’s doctoral committee and the Graduate Committee, the student may substitute a cognate field for one of the two required languages when it seems appropriate for the student’s general program.

• Complete all general requirements for the Doctor of Philosophy degree.
Doctor of Philosophy in Psychology

The Department of Psychology offers a doctoral degree in psychology with specialization in either industrial/organizational psychology or applied cognitive aging psychology.

The doctoral program in Applied Cognitive Aging is not currently accepting applications for new graduate students.

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 90 minimum credit requirement;
  - completion of Ph.D. core courses in the student’s specialty area: industrial/organizational or applied cognitive 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 applied cognitive aging committees.
- Written comprehensive examinations:
  - satisfactory performance on written and oral comprehensive examinations in the student’s major area of industrial/organizational psychology or applied cognitive aging (refer to the department’s graduate student manual).
- Dissertation research:
  - completion of 3750:899 Doctoral Dissertation; (minimum 12 credits);
  - satisfactory performance on final examination and defense of dissertation research;
- Other requirements:
  - refer to the department’s graduate student manual for other requirements or guidelines;
  - complete and fulfill general doctoral degree requirements of the Graduate School. Doctoral language requirements or appropriate alternative research skills and techniques may be prescribed by the student’s graduate student committee, depending upon the master’s degree after the academic and/or scientific requirements of the dissertation.

Doctor of Philosophy in Sociology

Akron-Kent Joint Ph.D. Program

The University of Akron and Kent State University departments of sociology offer a joint 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 is limited to students whose records clearly indicate both scholarly and research potential.

Degree Requirements (for a student admitted with the master’s degree or equivalent)

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

- Take the following course:
  3850:700 College Teaching of Sociology
- Take one doctoral-level course in theory. This course to be selected from the predetermined group of courses (see Department of Sociology graduate student handbook).
- Complete a doctoral-level course in statistics from the predetermined group of courses. (see the department’s graduate student handbook).
- Complete a specialty of 9 to 12 credits, depending on the specialty chosen.
- Complete a minimum total of 30 credits in coursework.
- Comprehensive Examination in theory, methods and statistics, and a specialty area (medical sociology, sociology of family, social psychology, or social inequalities).
- 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.

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:

- Completion of the M.A. core coursework.
- 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.

Doctor of Philosophy in Urban Studies and Public Affairs

The Department of Public Administration and Urban Studies of The University of Akron and the Levin College of Urban Affairs at Cleveland State University. Students are encouraged to schedule course work at both institutions and are required to select members from both faculties on all dissertation committees to take advantage of the diversity of faculty and their academic specialties.

The program offers specialties in policy analysis and evaluation, public administration, urban and regional planning, and urban policy. The program is designed to prepare students for academic appointments, as well as for a variety of positions within the public and non-profit sector. The program consists of advanced study in a multi-disciplinary core, as well as a focus in a major field of specialization.

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.
- Preference for a 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 at the discretion of the Ph.D. Coordinator.
- Three letters of recommendation from persons familiar with the applicant’s recent performance and abilities.
- A sample of the student’s written academic work. This should be a thesis or final project paper from the master’s degree program. Students who do not have such a requirement in their master’s program should submit several writing samples such as research papers, professional reports, or published articles.
- A personal statement from the applicant detailing the intended area of specialization and career aspirations (form in application packet). 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).

An applicant may be required to take a separate examination before the Doctoral Committee. Before a decision is made on admission to the program. The Doctoral Committee also may require an applicant to take an admissions examination, either written or oral, or both.

To be properly prepared to begin doctoral classes applicants will be expected to have mastered core concepts central to the degree. Therefore, admission to the doctoral program may be conditioned upon successful completion of the “bridge-up” coursework designed to address deficiencies in previous coursework. Bridge-up coursework will not count toward doctoral degree course requirements.
Applicants will be informed of the bridge-up courses they will be required to take during their first year in the program in their admission letter. Any or all of the following master’s-level courses, or their equivalent from another program or university, may be required as part of admission:

- 3980:600 Basic Quantitative Research
- 3980:601 Advanced Research Methods I
- 3980:611 Introduction to the Profession of Public Administration
- 3350:630 Planning Theory
- 3980:640 Fiscal Analysis
- 3980:643 Introduction to Public Policy
- 3980:673 Computer Applications

**Degree Requirements**

A minimum of 63 credits beyond the master’s degree is required, 51 hours of coursework, and 12 hours of dissertation. Coursework consists of a minimum of 30 credit hours of required core, 18 credit hours in a specialization, and a 3 credit hour Pro-Seminar. The Pro-Seminar cannot be taken until all coursework and examination requirements have been met and the student has achieved “Advancement to Candidacy” status.

- Core Courses:
  - 3980:700 Advanced Research Methods I
  - 3980:701 Advanced Research Methods II
  - 3980:702 Urban Theory I
  - 3980:703 Urban Theory II
  - 3980:705 Economics of Urban Policy
  - 3980:708 Urban Policy: The Historical Perspective
  - 3980:710 Qualitative Research Methods
  - 3980:711 Seminar in Public Administration
  - 3980:714 Seminar in Policy Analysis and Evaluation
  - 3980:715 Seminar in Urban and Regional Planning
  - 3980:780 Ph.D. Colloquium

- Specializations:
  The department offers specializations in the following areas:
  - Public Administration
  - Urban Policy
  - Policy Analysis and Evaluation
  - Planning

Students are required to develop a field of specialization consisting of a minimum of 18 credit hours after consultation with their Program of Study Committee and the Ph.D. Coordinator. The courses recommended for inclusion in the above-designated specializations are available through the department office and the Ph.D. Coordinator.

Upon written approval of a doctoral student’s Program of Study Committee, courses other than those listed in specializations may be used to create a specialization that is better suited to the research and academic interests of that student.

- Examinations:
  To be eligible for Advancement to Candidacy and the preparation of a dissertation, a student must pass qualifying and specialization written, comprehensive examinations and successfully defend a dissertation prospectus. To aid in the development of that prospectus a student must register for 3980:795, Pro-Seminar, in the first semester after having achieved Advancement to Candidacy status.

- Other Requirements:
  Complete all general doctoral degree requirements of the Graduate School.

All students must register for, and are expected to attend, 3980:780, the Ph.D. Colloquium in their first year in the program. This course is graded as a credit/no-credit course. Students register for this course in fall semester each year. The course convenes every other week for both the fall and spring semesters.

Where required courses, or their equivalent, have been taken in a previous doctoral degree program, appropriate substitutions can be made with the approval of the student’s Program of Study Committee and the Ph.D. Program Coordinator. Students must also successfully defend their dissertations.

Please refer to the Departmental Graduate Student Handbook and the Ph.D. Coordinator for other requirements and guidelines.

**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 sciences), 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.

**Admission Requirements**

- Possess the equivalent of a biology undergraduate major with a GPA of 3.00 or higher in biology courses.
- Must have at least one semester of organic chemistry.
- Submit three letters of recommendation for graduate assistantship.
- Submit scores for Graduate Record Examination (25 percentile required on Advanced Biology Test).
- Submit a letter of proposed area of specialization within biology.
- Non-native speakers of English must submit a TSE score of 220 or above (minimum score of 50 on TSE, revised 1995) to be considered for a graduate assistantship.

**Master of Science**

**Thesis Option I**

The 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.
- The student’s advisory committee may require the demonstration of reading proficiency in a foreign language appropriate to the field of study.

A minor may be taken in approved graduate courses including education. Summer study at a biological station is available.

**Thesis Option II**

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

- Course work in addition to the master’s research and seminars (must be approved by the graduate office) – 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.

**Nonthesis Option**

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

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

For additional details concerning admission standards, degree requirements and selection of options, refer to the Department of Biology Graduate Student Guide.

**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.
- Demonstration of reading proficiency in a foreign language appropriate to the field of study prior to the last semester of enrollment.

**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 conditional 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 nonthesis option requires 33. With prior consent, up to 3 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):
  3460:535 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:


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 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 (33 credits of graduate work)
30 credits in approved coursework, at least 18 credits of which must be taken at the 600 level. In addition, 3 credits in 3460:688. The student shall complete an independent project supervised by a faculty advisor and approved by a committee consisting of the advisor and a faculty reader. The student must also pass a written comprehensive examination, taking the form suggested by the department.

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
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. The individual must also specialize in an area.

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 Economists*</td>
<td>3</td>
</tr>
</tbody>
</table>

*These courses may be waived for the student who can demonstrate, in a qualifying exam, an adequate preparation in mathematics and statistics.

Exceptional departures from these requirements may be approved with the permission of the graduate faculty and department chair. 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.

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

Required Courses for Both Options:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:506</td>
<td>Chaucer</td>
<td>3</td>
</tr>
<tr>
<td>3300:570</td>
<td>History of the English Language†</td>
<td></td>
</tr>
<tr>
<td>3300:670</td>
<td>Modern Linguistics†</td>
<td></td>
</tr>
<tr>
<td>3300:615</td>
<td>Shakespearean Drama†</td>
<td></td>
</tr>
<tr>
<td>3300:666</td>
<td>Literary Criticism†</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td></td>
<td>Up to 1960</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up to 1865</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1865-present</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1900-present</td>
<td></td>
</tr>
</tbody>
</table>

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.

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:
3300:673 Theories of Composition
3300:674 Research Methodologies in Composition
3300:676 Theory and Teaching of Basic Composition
3300:689 New Rhetorics

Students must also choose one of the following two courses:
3300:589 Grammatical Structures of Modern English
3300:670 Modern Linguistics

And one of the following three courses:
3300:625 Autobiographical Writing
3300:689 Management Reports
3300:679 Scholarly Writing

Optional courses:
3300:689 Contemporary Reading Theory
3300:689 Composition and Rhetoric
3300:689 Cultural Studies in Composition Theory
3300:689 Literature and Composition

Graduate Studies
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Geography and Planning

Master of Arts in Geography

Thesis Option
- A minimum of 45 graduate credits, to include no more than 3 credits of independent study (3350:698).
- Core Requirements (21 credit hours)
  3350:505 Geographic Information Systems
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:607 History of Geographic Thought
  3350:600, 601, 602 Seminar (6 credits)
- Thesis
  At least 9 credits and no more than 15 credits of 3350:699.
- Electives
  Courses to total at least 45 credits.

Any course taken outside the department must be approved in advance by the student’s Graduate Advisor or the Department Chair.

Nonthesis Option
- A minimum of 45 graduate credits.
- Core Requirements (18 credits)
  3350:505 Geographic Information Systems
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:607 History of Geographic Thought
  3350:600, 601, 602 Seminar (6 credits)
- Electives (21 credit hours)
- Additional Electives (3 credit hours)

Seven courses with at least 4 from either the Environmental concentration or the Urban/Economic concentration.

GIS/Remote Sensing
3350:507 Advanced Geographic Information Systems
3350:540 Principles of Cartography
3350:542 Thematic Cartography
3350:544 Applications in Cartography and GIS
3350:547 Remote Sensing
3350:548 Advanced Cartography Lab
3350:549 Advanced Remote Sensing Lab
3350:680 Advanced Spatial Analysis

Environmental
3350:515 Environmental Planning
3350:532 Land Use Planning Law
3350:533 Practical Approaches to Planning
3350:571 Medical Geography and Health Planning
3350:596 Soil and Water Field Studies

Urban/Economic
3350:520 Urban Geography
3350:522 Transportation Systems Planning

3350:528 Industrial and Commercial Site Location
3350:536 Urban Land Use Analysis
3350:539 History of Urban Design and Planning
3350:550 Development Planning
3350:633 Comparative Planning

Any course taken outside the department must be approved in advance by the student’s Graduate Advisor or the Department Chair.

Master of Science in Geography

Thesis Option
- A minimum of 45 graduate credits, to include no more than 3 credits of independent study (3350:698).
- Core Requirements (15 credits)
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:607 History of Geographic Thought
  3350:600, 601, 602 Seminar (3 credits)
- Techniques Requirements (9 credits)
  3350:505 Geographic Information Systems
  3350:540 Principles of Cartography
  3350:547 Remote Sensing
- Techniques Electives (at least 6 credits)
  3350:507 Advanced Geographic Information Systems
  3350:542 Thematic Cartography
  3350:544 Applications in Cartography and GIS
  3350:548 Advanced Cartography
  3350:549 Advanced Remote Sensing
  3350:680 Advanced Spatial Analysis
- Thesis
  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 the Department Chair.

Nonthesis Option
- A minimum of 45 graduate credits.
- Core Requirements (18 credits)
  3350:505 Geographic Information Systems
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:607 History of Geographic Thought
  3350:600, 601, 602 Seminar (6 credits)
- Techniques Requirements (9 credits)
  3350:505 Geographic Information Systems
  3350:540 Principles of Cartography
  3350:547 Remote Sensing
- Techniques Electives (at least 9 credits)
  3350:507 Advanced Geographic Information Systems
  3350:542 Thematic Cartography
  3350:544 Applications in Cartography and GIS
  3350:548 Advanced Cartography
  3350:549 Advanced Remote Sensing
  3350:680 Advanced Spatial Analysis
- Environmental/Urban/Economic Electives (at least 9 credits)
  3350:515 Environmental Planning
  3350:520 Urban Geography
  3350:522 Transportation Systems Planning
  3350:525 Industrial and Commercial Site Location
  3350:532 Land Use Planning Law
  3350:533 Practical Approaches to Planning
  3350:536 Urban Land Use Analysis
  3350:539 History of Urban Design and Planning
  3350:550 Development Planning
  3350:571 Medical Geography and Health Planning
  3350:585 Soil and Water Field Studies
  3350:633 Comparative Planning

Any course taken outside the department must be approved in advance by the student’s Graduate Advisor or the Department Chair.

Master of Arts (Geography/Urban Planning)

Thesis Option
- A minimum of 45 graduate credits plus internship (3350:685), to include no more than 3 credits of independent study (3350:698).
- Core Requirements (30 credits)
  3350:505 Geographic Information Systems
  3350:532 Land Use Planning Law
  3350:515 Environmental Planning
  3350:532 Land Use Planning Law
3350:337 Planning Analysis and Projection Methods
3350:338 Land Use Planning Methods
3350:339 History of Urban Design and Planning
3350:381 Research Methods in Geography and Planning
3350:383 Spatial Analysis
3350:380 Planning Theory
3350:381 Facilities Planning
3350:600, 601, 602 Seminar (3 credits)

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

- Electives
  Courses to total at least 45 credits.

Any course taken outside the department must be approved in advance by the student's Graduate Advisor or the Department Chair.

Nonthesis Option
- A minimum of 45 graduate credits plus internship (3350:685).

Core Requirements (30 credits)
3350:505 Geographic Information Systems
3350:532 Land Use Planning Law
3350:337 Planning Analysis and Projection Methods
3350:338 Land Use Planning Methods
3350:389 History of Urban Design and Planning
3350:381 Research Methods in Geography and Planning
3350:383 Spatial Analysis
3350:380 Planning Theory
3350:381 Facilities Planning
3350:600, 601, 602 Seminar (3 credits)

Electives – (15 credits)
Five courses, with at least three in one area.

GIS/Remote Sensing
3350:507 Advanced Geographic Information Systems
3350:540 Principles of Cartography
3350:542 Thematic Cartography
3350:544 Applications in Cartography and GIS
3350:547 Remote Sensing
3350:548 Advanced Cartography
3350:549 Advanced Remote Sensing
3350:680 Advanced Spatial Analysis

Environmental
3350:515 Environmental Planning
3350:532 Practical Approaches to Planning
3350:571 Medical Geography and Health Planning
3350:595 Soil and Water Field Studies

Urban/Economic
3350:520 Urban Geography
3350:522 Transportation Systems Planning
3350:528 Industrial and Commercial Site Location
3350:536 Urban Land Use Analysis
3350:550 Development Planning
3350:633 Comparative Planning

Any course taken outside the department must be approved in advance by the student's Graduate Advisor or the Department Chair.

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 (2)
  3370:699 Master’s Thesis (6)

- Oral presentation and defense of thesis.

Degree Specialization
The program of each individual will be adapted to his/her career objectives.

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 5500:780 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
3370:210 Geomorphology
3370:350 Structural Geology
3350:221,2,3 Analytical Geometry Calculus I, II, III
4300:201 Statics
4300:202 Introduction to Mechanics of Solids
4300:313 Soil Mechanics
4300:314 Geotechnical Engineering

- 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 & 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 intends to study;
  - scores on the Graduate Record Examination, General Aptitude Test;
  - a writing sample, preferably a research paper from a history class;
  - three letters of recommendation, preferably from faculty who know the applicant well.

  Applicants whose native language is not English must also score at least 580 on the Test of English as a Spoken Language (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 America to 1877
    - Medieval United States Since 1877
    - Europe, Renaissance to 1750 Latin America
    - Europe, 1750 to the Present East Asia
    - South Asia History of Science
    - Middle East Africa

  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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3650:551</td>
<td>Advanced Laboratory I</td>
<td>3</td>
</tr>
<tr>
<td>3650:615</td>
<td>Electromagnetic Theory I</td>
<td>3</td>
</tr>
<tr>
<td>3650:626</td>
<td>Quantum Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>3650:641</td>
<td>Lagrangian Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>3650:661</td>
<td>Statistical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>3650:686</td>
<td>Solid-State Physics I</td>
<td>3</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3650:581.2</td>
<td>Methods of Mathematical Physics I, II</td>
<td>6</td>
</tr>
<tr>
<td>3650:616</td>
<td>Electromagnetic Theory II</td>
<td>3</td>
</tr>
<tr>
<td>3650:626</td>
<td>Quantum Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>3650:592</td>
<td>Advanced Laboratory II</td>
<td>3</td>
</tr>
</tbody>
</table>

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

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

**Option B:** A master's thesis.

- Graduate research participation is strongly encouraged. Up to five credits may be earned in 3650:697 Graduate Research upon the completion of a graduate research project. One additional credit may, upon approval by the department, be permitted in 3650:699 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 26 of this Graduate Bulletin. The Chemical Physics option is described in detail on page 27.

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

**Political Science**

**Master of Arts**

**Admission**
Admission is open to students who have completed a four-year undergraduate degree and who fulfill the admission requirements of the Graduate School. Two 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 six concentrations: American Government Institutions, American Linkage Institutions, The Politics of Criminal Justice, International Politics, Comparative Politics, or Political Theory. Students may also work toward certificates in Applied Politics and Public Policy 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, Comparative Politics, or Political Theory.
- 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 work, 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 with the chair of their three-member Faculty Advisory Committee. 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 - 27 credits:
    - 3700.570 Campaign Management I 3
    - 3700.571 Campaign Management II 3
    - 3700.572 Campaign Finance 3
    - 3700.540 Survey Research Methods 3
    - 3700.600 Scope and Theory of Political Science 3
    - 3700.601 Research Methods in Political Science 3
    - 3700.695 Internship in Government and Politics * 3
    - 3700.672 Seminar: Political Influence and Organizations 3
    - 7600.691 Advanced Communication Studies: Communication in Political Campaigns 3

* Three credits required: additional credits will be counted toward elective credit.
• Elective courses - 12 credits (6 credits must be at the 600-level) selected from the following courses:
  3700:502 Politics and the Media 3
  3700:574 Political Behavior and Electoral Politics 3
  3700:573 Voter Contact and Elections 3
  3700:576 American Interest Groups 3
  3700:575 American Political Parties 3
  3700:620 Seminar in Comparative Politics 3
  3700:630 Seminar in Political Science 3
  3700:668 Seminar: Policy Agendas and Decisions 3
  3700:690 Special Topics in Political Science (applied focus) 3
  3700:697 Independent Research and Readings (applied focus) 3
  3980:614 Ethics and Public Service 3
  7800:685 Theories of Argument and Persuasion 3

• Prepare an applied politics portfolio containing:
  - At least two major papers prepared for required courses.
  - An applied politics capstone project assigned by the student’s advisor.

• Pass an oral defense of the applied politics portfolio.

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 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 of credits of graduate work for each program as follows: Applied Cognitive 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

Admission

Admission is open to students who have completed an undergraduate (bachelor’s) degree and whose application is approved by the MA Coordinator. No specific field or undergraduate major is required for admission. The GPA requirements for consideration of full admission is an overall, four-year GPA of 2.8 or greater, or 3.05 for the last 60 credit hours (two years of course work). Provisional admission may be granted for those with an overall GPA between 2.5 and 2.79, or between 2.75 and 3.05 for the final 60 credit hours (two years) of course work. Additionally, applicants must submit the following:

• For students who have an overall, four-year, GPA below 3.0 a standardized test score from the GRE, GMAT, LSAT, or MAT, as appropriate for the area of undergraduate degree.

• A copy of their current resume (especially important for in-service students to ascertain their professional experience).

• A personal essay stating why they are seeking admission in the MA program. Admission will be based on the GPA and competitive evaluation of the standardized test results, essay and resume. If an applicant is deficient in one or two of the areas, he/she may be admitted on a provisional basis depending on GPA. Those admitted provisionally must take 15 credit hours of course work as specified in the department’s Master’s Handbook and based upon the recommendation of that student’s advisor. Full admission to the program will be based upon performance in those courses.

In order to ensure competitive admissions, applicants are encouraged to adhere to the following deadlines for receipt in the department of applications. Consideration for admission will be made following those dates depending upon available space in the program.

- Fall admissions: April 15
- Spring admissions: October 15
- Summer admissions: February 15

Basic Program

The degree consists of 33 credit hours of course work divided between an 18 credit hour core and 15 credit hours in an approved specialization. The core is as follows:

  3980:650 Basic Quantitative Research 3
  3980:651 Advanced Research and Statistical Methods 3
  3980:662 History of Urban Development 3
  3980:612 National Urban Policy 3
  3980:618 Citizen Participation 3
  3980:641 Urban Economic Growth and Development 3
  3980:650 Comparative Urban Systems 3

Specializations: Specializations represent career and/or academic fields of interest. Those may be shaped to fit the needs and interests of the student. The specializations listed represent those which involve courses from our curricula and/or from fields and disciplines that students have pursued in the past. Several of the specializations are noted because they represent existing certificate programs on campus. Students who have other interests should work with their advisor to craft a specialization from across the campus that suits their needs. Students should contact the department office to get a list of the courses recommended for inclusion in a specialization.

Public Sector Management
  - Social and Human Services
  - Urban Planning
  - Non-Profit Administration
  - Applied Politics
  - Lifespan and Gerontology
  - Education Technology

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

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

Master of Public Administration (MPA)

The program in Public Administration is specifically designed to prepare students for a public service career in public management and administration, as well as the management and administration of non-profit organizations.

The Master of Public Administration (MPA) program has been accredited by the National Association of Schools of Public Affairs and Administration (NASPAA) through the 2009-2010 academic year.

Admission

Admission is open to students who have completed an undergraduate (bachelor’s) degree and whose application is approved by the MPA Coordinator. No specific field or undergraduate major is required for admission. The GPA requirements for consideration of full admission is an overall, four-year GPA of 2.8 or greater or 3.05 for the last 60 credit hours (two years of course work). Provisional admission may be granted for those with an overall GPA between 2.5 and 2.79, or between 2.75 and 3.05 for the final 60 credit hours (two years) of course work. Additionally, applicants must submit the following:

• For students who have an overall, four-year, GPA below 3.0 a standardized test score from the GRE, GMAT, LSAT, or MAT, as appropriate for the area of undergraduate degree.

• A copy of their current resume (especially important for in-service students to ascertain their professional experience).

• A personal essay stating why they are seeking admission in the MPA program. Admission will be based on the GPA and competitive evaluation of the standardized test results, essay and resume. If an applicant is deficient in one or two of the areas, he/she may be admitted on a provisional basis depending on GPA. Those admitted provisionally must take 15 credit hours of course work as specified in the department’s Master’s Handbook and based upon the recommendation of that student’s advisor. Full admission to the program will be based upon performance in those courses.

In order to ensure competitive admissions, applicants are encouraged to adhere to the following deadlines for receipt in the department of applications. Consideration for admission will be made following those dates depending upon available space in the program.
• Fall admissions April 15
• Spring admissions October 15
• Summer admissions February 15

Degree Requirements
The number of credit hours required to complete the MPA are 45 or 48, depending upon the background and work experience of the student. Students with little or no work experience in their chosen field of specialization are required to complete an internship. Those students who are exempted from the internship will be required to complete 45 credit hours for the degree. Those who are required to take the internship will be required to complete 48 credit hours.

• Core requirements (30 credit hours):
  3890:600 Basic Quantitative Research 3
  3890:601 Advanced Research and Statistical Methods 3
  3890:610 Legal Foundations of Public Administration 3
  3890:611 Introduction to the Profession of Public Administration 3
  3890:614 Ethics and Public Service (capstone class) 3
  3890:615 Public Organization Theory 3
  3890:616 Personnel Management in the Public Sector 3
  3890:640 Fiscal Analysis 3
  3890:642 Public Budgeting 3
  3890:643 Introduction to Public Policy 3

Specializations: Specializations represent career and/or academic fields of interest. Those may be shaped to fit the needs and interests of the student. The specializations listed represent those which involve courses from our curricula and/or from fields and disciplines that students have pursued in the past. Several of the specializations are noted because they represent existing certificate programs on campus. Students who have other interests should work with their advisor to craft a specialization from across the campus that suits their needs. Students should contact the department office to get a list of the courses recommended for inclusion in a specialization.

Policy Analysis and Evaluation
  Public Services Administration
  Urban Affairs
Community Development
  Non-Profit Administration
Public Health Administration
  Applied Politics
Lifespan and Gerontology
  Urban Planning

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

Other: Any required course except 3890:699, Master’s Thesis, may be waived on the basis of proficiency in the area covered by the course. The criteria for waiver are as follows:

• Completion of a comparable course in another department in the University.
• Transfer of course credit in a comparable course from another university.
• Proficiency in the area demonstrated by a group of courses or other work done in the area covered by the course.

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

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

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

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

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, 3850:697, 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 (6) hours.

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

Spanish

Master of Arts

• Thirty-two semester credits of graduate work which may include a thesis amounting to four credits.
• Requirement: proficiency level in listening comprehension, speaking, reading, and writing Spanish.
• Final comprehensive examinations: the candidate will be required to submit an essay, and pass an oral exam on the essay.

Statistics

Master of Science – Statistics

• Entrance into the program will require the initial completion of the following prerequisites:
  3450:223 Analytic Geometry-Calculus III, four credits; or equivalent.
  3450:312 Linear Algebra, three credits; or equivalent.
  3470:461/561 Applied Statistics I, four credits; or equivalent.

• Core curriculum:
  3470:651 Probability and Statistics 4
  3470:652 Advanced Mathematical Statistics 3
  3470:655 Linear Models 3
  3470:663 Experimental Design 3
  3470:665 Regression 3
  Total 16

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

• Other required courses:
  3460:501 Fundamentals of Data Structures 3
  3460:506 Introduction to C and UNIX 3
  3460:575 Data Base Management 3
  3470:580 Statistical Data Management 3
  Total 12

Thesis requirements (30 credits of graduate work)
In addition to the core curriculum, 2-4 credits in 3470:699 Master’s Thesis and 10-12 other approved elective graduate credit hours must be completed.

Successful completion of the comprehensive examinations in the core curriculum.

Nonthesis requirements (33 credits of graduate work)
In addition to the core curriculum, 2-4 credits in 3470:692 Statistics Masters Paper and 13-15 other approved elective graduate credit hours must be completed. The Statistical Computer Science option requirements may be applied toward the elective courses.

Successful completion of the comprehensive examinations in the core curriculum.
Theoretical and Applied Mathematics

Master of Science – Mathematics

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

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

- Core requirements:
  - 3450:510 Advanced Linear Algebra 3
  - or
  - 3450:513 Theory of Numbers 3
  - 3450:512 Abstract Algebra II 3
  - 3450:522 Advanced Calculus II 3
  - 3450:621 Real Analysis 3
  - or
  - 3450:625 Analytic Function Theory 3
  - 3450:636 Advanced Combinatorics and Graph Theory 3
  - 3450:692 Seminar in Mathematics* 2
  - A statistics course selected from:
    - 3470:550 Probability 3
    - 3470:551 Theoretical Statistics I 3
    - 3470:561 Applied Statistics I 4
    - 3470:651 Probability and Statistics 4
- Electives: 9-13 credits

Thesis Option

A minimum of 30 credits is required. All elective courses must be approved by the graduate advisor. An acceptable master’s thesis must be completed for 2-4 credits in 3450:699 Master's Thesis. Before registering for Master’s Thesis, the student will meet with an advisory committee for evaluation of the thesis topic and will present a formal plan of development.

Nonthesis Option

A minimum of 33 credits is required. All elective courses must be approved by the graduate advisor. In addition, the student will generate a project or paper to complete the degree.

* 3450:692 Seminar in Mathematics may be repeated once, for a total of 4 credits.

Master of Science – Applied Mathematics

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

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

- Core Requirements:
  - 3450:621 Real Analysis 3
  - 3450:627 Advanced Numerical Analysis I 3
  - 3450:633 Methods of Applied Mathematics I 3
  - 3450:692 Seminar in Mathematics 1-3
- Group 1 - At least one course from this list must be taken:
  - 3450:625 Analytic Function Theory 3
  - 3450:628 Advanced Numerical Analysis II 3
  - 3450:632 Advanced Partial Differential Equations 3
- Group 2 - At least two courses from this list must be taken:
  - 3450:634 Methods of Applied Mathematics II 3
  - 3450:635 Optimization 3
  - 3450:730 Advanced Numerical Solution of Partial Differential Equations 3
- Electives: 6 - 13 credits

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 2-4 credits in 3450:699 Master’s Thesis must be completed.

Nonthesis Option (minimum of 33 credits)

In addition to the placement review and core requirements, at least 13 credits of electives approved by the graduate advisor must be completed. Additionally, the student must successfully complete a Comprehensive Examination in the courses 3450: 621, 627, 633, one course from Group 1 and one course from Group 2.

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

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

**Transfer Credits**

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

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

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

**Degree Requirements**

The University's Academic Requirements (See Academic Requirements in this Graduate Bulletin for the Doctoral Degree and the following College of Engineering's academic requirements for the Doctoral Degree must be satisfied.

- An entering doctoral student will have the chair of the Interdisciplinary Doctoral Committee (IDC) in his/her home department/program.
- Student's plan of study should include 96 credit hours and be in accordance with the guidelines established by the student's admitting department/program.
- A Plan of Study will be established by the IDC satisfying guidelines established by the home department/program.
- Identify an interdisciplinary field of study, a dissertation director, and an Interdisciplinary Doctoral Committee before completion of 18 credits of coursework.
- Pass a departmental Qualifying Examination. The purpose of the qualifying examination is to determine admissibility to the doctoral program and any technical weakness.
- Satisfy the language requirement specified by the Interdisciplinary Doctoral Committee.
- Pass a Candidacy Examination. The purpose of the candidacy examination is to test the student's ability to conduct independent research.
- Present an acceptable Dissertation Proposal that describes the proposed research to the Interdisciplinary Doctoral Committee.
- Present and successfully (no "fail" votes) defend the dissertation to the Interdisciplinary Doctoral Committee.

A copy of the Ph.D. in Engineering Program Procedures may be obtained from the office of the Dean of the College of Engineering.

**Doctoral Student’s Responsibilities**

Doctoral students are completely responsible for all aspects of their graduate education. Specifically, these responsibilities include:

- Understanding, adhering to, and implementing the procedures of the Graduate School, as described in The University of Akron Graduate Bulletin, and the Interdisciplinary Doctoral Procedures of the College of Engineering.
- Selecting an interdisciplinary program, Dissertation Director, and Interdisciplinary Doctoral Committee.
- Arranging, through the Dissertation Director, all Interdisciplinary Doctoral Committee meetings.
- Initiating, through the Dissertation Director, the forms that monitor their progress toward the doctoral degree.
- Proposing and executing an accepted Plan of Study.
- Proposing a Research Proposal and executing the proposed research.
- Preparing a scientifically acceptable and comprehensive dissertation whose format meets all the accepted standards of the Interdisciplinary Doctoral Committee, the College of Engineering, and the Graduate School.

**Interdisciplinary Fields of Study**

The proposal to establish a doctoral program in the College of Engineering, which was approved by the Board of Trustees of The University of Akron and the Ohio Board of Regents in 1967-68, defines the four undergraduate departments (as of 1999, a Biomedical Engineering undergraduate program was approved by the Ohio Board of Regents), Chemical, Civil, Electrical, and Mechanical, as the basic disciplines for the interdisciplinary programs in Environmental Engineering, Materials Engineering, Mechanics, Systems Engineering, and Transport Processes. The
objectives of the proposal were to allow doctoral students access to the 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 pro-
grams to ten interdisciplinary programs. These interdisciplinary programs are
broadly defined as follows.

Environmental Engineering includes the study of water and air pollution, envi-
ronmental 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, mechan-
ics of solids, fluids, solid, and composite materials.

Systems Engineering include the scientific prediction, control, and evaluation of
the performance of integral 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 engi-
neering standpoints. Its purpose is to develop a better understanding of the com-
position, 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, homo-
genous 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 stu-
dents access to the resources of the entire college while providing an econom-
ically 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 grad-
uate 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 Pro-
gram are those given in the Graduate Bulletin under the Section Doctor of Phil-
osophy 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, present-
ing an acceptable Dissertation Proposal, writing a dissertation, and publicly and suc-
cessfully (no “fail” votes) defending the dissertation before the Interdisciplinary
Doctoral Committee.

Students in the Engineering Applied Mathematics Program must pass a depart-
mental Qualifying Examination composed and administered by the participating fac-
culty from the applied mathematics division of the Department of Theoretical
and Applied Mathematics and the participating faculty from one of the five departments
in the College of Engineering.

The Interdisciplinary Doctoral Committee shall consist of at least six members. It
shall have an equal number of faculty with primary appointments in the College of
Engineering and participating program faculty from the applied mathematics divi-
sion of the Department of Theoretical and Applied Mathematics. The participating
faculty from the Department of Theoretical and Applied Mathematics must hold
joint appointments in the College of Engineering.

Graduate students who elect the Engineering Applied Mathematics Program may
proceed directly from their baccalaureate degree to the doctoral degree.

Students participating in the Engineering Applied Mathematics Program must have
at least 50 percent of minimum coursework from the College of Engineering and
at least 50 percent of minimum coursework from the Department of Theoretical
and Applied Mathematics.

Coordinated program for the Doctor of
Philosophy in Engineering degree
between The University of Akron and
Youngstown State University.

The University of Akron and Youngstown State University are engaged in a coor-
dinated program with the objective of facilitating graduate study by students
residing in proximity to Youngstown State University. This provides the opportu-
ity and convenience of completing some of the requirements for the Doctor
of Philosophy in Engineering at The University of Akron through joint counsel-
ing 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 Uni-
versity. 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 eval-
uate the academic credentials and make a recommendation on the academic
acceptability of the applicant. If the recommendation is favorable, the student shall
be advised to apply to the Graduate School at The University of Akron for formal
admission to the Doctoral Program in the College of Engineering at The University
of Akron. The dean of Graduate Studies and Research at Youngstown State Uni-
versity shall be kept informed of the progress of the admission procedure. The appli-
cant 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 Univer-
sity of Akron subject to the following modifications.

One of the members of the Interdisciplinary Doctoral Committee for the joint doc-
toral program candidate shall be an engineering faculty member from Youngstown
State University and normally would be the student’s dissertation director, although
this is not necessary. The faculty member from Youngstown State University shall
have adjunct status at The University of Akron and qualify for Category II graduate
faculty membership.

One-half of the coursework and one-half of the research credits may be taken at
Youngstown State University. The parity of courses is decided by the faculty on
the Interdisciplinary Doctoral Committee when the student submits a proposed
Plan of Study. At the Advancement to Candidacy, the Committee recommends offi-
cial transfer of credits from Youngstown State University to The University of Akron.

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

The College of Engineering and NEOUCOM provide a coordinated program for
those desiring both the M.D. and Ph.D. in Engineering degrees. This program inte-
grates 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 NEOUCOM.

Admission Requirements
Applicants with a bachelor’s or master’s degree in a discipline other than engineer-
ing 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 com-
pleted the following courses and to have taken the MCAT prior to admission into the
coordinated M.D. and Doctor of Philosophy in Engineering program:
M.D. Principles of Chemistry I and II
M.D. Organic Chemistry I and II
M.D. Principles of Biology I and II
M.D., Ph.D. Classical Physics I and II
Ph.D. Statics
Ph.D. Dynamics
Ph.D. Strength of Materials (or Material Science)
Ph.D. Basic Electrical Engineering (for Circuits I & II)
Ph.D. Calculus I, II, III, and Differential Equations

Degree Requirements
To obtain an M.D. degree from NEOUCOM and a Doctor of Philosophy Degree in Engineering, the student must satisfy NEOUCOM'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
Applicants for any of these master of science programs must hold a bachelor's degree from a program that is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology at the time of graduation, or provide evidence of an equivalent academic background to the Dean of the College of Engineering and the appropriate department chair.

- Applicants must submit an official undergraduate transcript, undergraduate grade point average, at least two letters of recommendation, and official results of the verbal, quantitative, and analytical portions of the GRE.
- Applicants with a bachelor's degree must have an overall grade-point average of 2.75 or better to continue in graduate studies.
- 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 must submit their score on the Test of Written English (TWE).
- 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 at least 24 credit hours of coursework of which no more than 6 credits are special topics courses. The formal Plan of Study may be revised upon approval of the Advisory Committee.
- Successfully (no "fail" votes) defend the thesis before the Advisory Committee, or have the Engineering Report approved by the Advisory Committee, or successfully complete the appropriate department's nonthesis option requirements.

Master of Science in Chemical Engineering
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 Balances</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>Total 14</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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:600</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4200:610</td>
<td>Classical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>4200:697</td>
<td>Chemical Engineering Report</td>
<td>3</td>
</tr>
<tr>
<td>4200:697</td>
<td>Chemical Engineering Electives*</td>
<td>6</td>
</tr>
<tr>
<td>4200:697</td>
<td>Approved Electives**</td>
<td>6</td>
</tr>
<tr>
<td>4200:697</td>
<td>Approved Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>4200:697</td>
<td>Master's Thesis</td>
<td>6</td>
</tr>
<tr>
<td>4200:697</td>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

Nonthesis Option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:600</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4200:610</td>
<td>Classical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>4200:697</td>
<td>Chemical Engineering Report</td>
<td>3</td>
</tr>
<tr>
<td>4200:697</td>
<td>Chemical Engineering Electives*</td>
<td>6</td>
</tr>
<tr>
<td>4200:697</td>
<td>Approved Electives**</td>
<td>6</td>
</tr>
<tr>
<td>4200:697</td>
<td>Approved Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>4200:697</td>
<td>Master's Thesis</td>
<td>6</td>
</tr>
<tr>
<td>4200:697</td>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

*Chemical Engineering students in both degree options are expected to attend and to participate in the department’s seminars.

**Students without BS in Chemical Engineering are required to take 4200:535, 4200:541.

Five Year BS/MS Chemical Engineering Program
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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300:306</td>
<td>Theory of Structures</td>
<td>3</td>
</tr>
<tr>
<td>4300:313</td>
<td>Soil Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>4600:310</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>4300:323</td>
<td>Water Supply and Wastewater Disposal</td>
<td>4</td>
</tr>
<tr>
<td>4300:341</td>
<td>Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>4300:361</td>
<td>Transportation Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4300:401</td>
<td>Steel Design</td>
<td>3</td>
</tr>
<tr>
<td>4300:403</td>
<td>Reinforced Concrete Design</td>
<td>3</td>
</tr>
<tr>
<td>4300:472</td>
<td>Control Systems II</td>
<td>Total 26</td>
</tr>
</tbody>
</table>

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

Thesis Option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400:360</td>
<td>Physical Electronics</td>
<td>3</td>
</tr>
<tr>
<td>4400:361</td>
<td>Electronic Design</td>
<td>4</td>
</tr>
<tr>
<td>4400:363</td>
<td>Switching and Logic</td>
<td>4</td>
</tr>
<tr>
<td>4400:384</td>
<td>Energy Conversion I</td>
<td>3</td>
</tr>
<tr>
<td>4400:385</td>
<td>Energy Conversion Lab</td>
<td>2</td>
</tr>
<tr>
<td>4400:445</td>
<td>Analog Communications</td>
<td>3</td>
</tr>
<tr>
<td>4400:453</td>
<td>Antenna Theory</td>
<td>3</td>
</tr>
<tr>
<td>4400:472</td>
<td>Control Systems II</td>
<td>Total 26</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400:360</td>
<td>Physical Electronics</td>
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</tr>
<tr>
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<td>4400:453</td>
<td>Antenna Theory</td>
<td>3</td>
</tr>
<tr>
<td>4400:472</td>
<td>Control Systems II</td>
<td>Total 26</td>
</tr>
</tbody>
</table>

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

Thesis Option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400:360</td>
<td>Physical Electronics</td>
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<tr>
<td>4400:361</td>
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<td>3</td>
</tr>
<tr>
<td>4400:472</td>
<td>Control Systems II</td>
<td>Total 26</td>
</tr>
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</table>

Nonthesis Option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400:360</td>
<td>Physical Electronics</td>
<td>3</td>
</tr>
<tr>
<td>4400:361</td>
<td>Electronic Design</td>
<td>4</td>
</tr>
<tr>
<td>4400:363</td>
<td>Switching and Logic</td>
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</tr>
<tr>
<td>4400:384</td>
<td>Energy Conversion I</td>
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</tr>
<tr>
<td>4400:385</td>
<td>Energy Conversion Lab</td>
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<td>4400:453</td>
<td>Antenna Theory</td>
<td>3</td>
</tr>
<tr>
<td>4400:472</td>
<td>Control Systems II</td>
<td>Total 26</td>
</tr>
</tbody>
</table>

*Chemical Engineering students in both degree options are expected to attend and to participate in the department’s seminars.

**Students without BS in Chemical Engineering are required to take 4200:535, 4200:541.
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.

**The specific courses for the Polymer Engineering Core Courses, Polymer Engineering electives, and required courses for students majoring in Polymer Engineering may vary depending on the student's specific program of study.

### 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 the four departmental disciplines. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has full admission or provisional admission, and is enrolled for at least 9 graduate credits.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4800:300 Thermodynamics I</td>
<td>4</td>
</tr>
<tr>
<td>4800:301 Thermodynamics II</td>
<td>3</td>
</tr>
<tr>
<td>4800:310 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>4800:315 Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>4800:336 Analysis of Mechanical Components</td>
<td>3</td>
</tr>
<tr>
<td>4800:340 Systems Dynamics and Response</td>
<td>3</td>
</tr>
<tr>
<td>4800:380 Mechanical Metallurgy</td>
<td>2</td>
</tr>
<tr>
<td>4800:444 Fundamentals of Mechanical Vibrations</td>
<td>3</td>
</tr>
<tr>
<td>4800:441 Control System Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Main areas of graduate study in mechanical engineering include systems and controls, engineering mechanics, 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 at least two faculty members who are selected from at least two different departments.

### Thesis Option

- Engineering Courses 12
- Approved Mathematics or Science 3
- Approved Electives 9
- Master’s Thesis 6
- Total 30

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

### Nonthesis Option

- Engineering Courses 18
- Approved Mathematics or Science 3
- Approved Electives 9
- Engineering Report 2
- Total 32

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

### Biomedical Engineering Specialization

- 4800:601 Biomedical Instrumentation 4
- 4800:611 Biometry 3
- 3100:695 Physiology for Engineers and Lab 5
- Approved Electives 15

Master’s Thesis 6

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.

### 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.

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

- 4100:697 Engineering Management Report
- 6200:601 Financial Accounting
- 6400:602 Managerial Finance
- 6500:600 Management and Organizational Behavior
- 6600:600 Marketing Concepts

#### Elective

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

1. Engineering courses can be taken from any engineering department with approval of engineering advisor.
2. The Engineering Management Report must be approved by the advisor and Advisory Committee. One member of the committee shall be from the College of Business Administration.
3. More advanced graduate business courses shall be required of students who have completed similar undergraduate courses. This determination shall be made by the Assistant Dean and Director of Graduate Programs, College of Business Administration.
4. 6200:601 is a prerequisite for 6400:602.
College of Education

Mission Statement

The University of Akron’s College of Education is a community of professionals whose purpose is to provide leadership for community well-being through standard-setting programs that enhance teaching, learning, and human development; research and inquiry; and outreach. We develop ourselves and others through continuous improvement and through a commitment to these core components of professional practice and scholarship: knowledge, technology, diversity, and ethics.

The aim of the College of Education is to meet the comprehensive charge of our mission through initial and advanced teacher education programs as well as programs in administration, counseling, technical education, higher education, sport and exercise science, athletic training for sports medicine, community health, and several teacher education programs housed outside the College. Programs include a balanced offering of a foundation in general education, intensive study in the content area, and those professional courses and other learning experiences which attempt to combine theory and practice.

The education program and courses presented in the bulletin reflect the most current courses and program offerings. For further information about specific programs and requirements, contact the College of Education Office of Student Affairs Ad-\n
DOCTOR OF PHILOSOPHY DEGREE

The program leading to the Doctor of Philosophy degree in the Department of Curricular and Instructional Studies is offered through the College of Education. Two degrees are offered, the Ph.D. in Elementary Education, and the Ph.D. in Secondary Education. The degree will be awarded to the student who, in addition to filling the general requirements of the Graduate School, has met the following specific requirements:

- Successful completion of all Departmental Admission Requirements.
- Completion of the Miller Analogies Test or the Graduate Record Examination (GRE).
- A minimum of 92 graduate credits including the doctoral dissertation. A student considered deficient in any area may be required to take additional courses.
- Completion of a foundations studies program designed to prepare the student before specialization.
- Successful completion of a test in a language judged not to be the student’s native tongue and excluding English: -- a student in the Department of Curricular and Instructional Studies may elect to develop appropriate research skills prescribed by the advisor, subject to review by the department chair, in lieu of the foreign language requirement. (See section on Additional Research Competency.)
- Completion of a least six credits in cognate area.
- Completion of a comprehensive written and oral examination.
- Completion of a dissertation comprising not more than 20 credits. Credits beyond the 20 hours may not be applied to the degree. The oral examining committee must be constituted of at least five full-time graduate faculty members, one of whom must be from outside the College.
- Pass the general requirements for the Doctor Philosophy degree.

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.

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

A 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 Spring Semester. 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 45 or higher, or a 550 on the verbal portion of the GRE, and a prescribed and evaluated writing sample.

The following statements govern use of the Miller Analogies Test/GRE and a controlled writing sample as part of the Admissions criteria:

a. Applicants who score less than 45 on the MAT (or 550 on the verbal portion of the GRE) and receive three or more failing evaluations on the controlled writing assignment shall be denied admission to the program.

b. Applicants who score less than 45 on the MAT (or 550 on the verbal portion of the GRE) but receive passing evaluations on the writing sample will have their application deferred pending a faculty interview and reevaluation. The MAT may be repeated subject to The Psychological Corporation’s rules for repeated testing.

c. Applicants who score 45 or higher on the MAT (or 550 on the verbal portion of the GRE) and receive three or more failing evaluations on the controlled writing sample shall have their application deferred pending a faculty interview and reevaluation.

d. All doctoral applicants must take the MAT or the GRE. A MAT or GRE taken within the last five years will be accepted.

4. Intended area of specialization is compatible with departmental resources and goals.

5. Obtain faculty sponsorship through completion of the “Agreement to Advise” form that is included with this information.

All doctoral applicants must do the following:

1. Complete all the admission materials, as specified in Requirements and Pro-
Dissertation: 20 credit hours
Cognate Area Outside of Education: 6 credit hours
Studies with advisor approval.

5500:600 Concepts of Curriculum & Instruction 3
5500:880 Seminar in Curricular and Instructional Studies 3
5500:800 Professional Doctoral Seminar in Curricular and Instructional Studies 3
5100:801 Seminar I: Exploratory/Qualitative 3
5100:723 Teaching Behavior and Instruction (or 721 or 710) 3
5100:701 History of Education in American Society (or 703) 3
5100:705 Seminar in Social/Philosophical Foundations of Education 3
5100:722 History of Education in American Society 3
5500:200 Methods of Research I 3
5100:275 Advanced Educational Psychology 3
5600:710 Theories of Counseling and Psychotherapy 4
5600:711 Vocational Behavior 4
5600:712 Principles of Intelligence and Testing 4
5600:714 Educational Statistics 3
5600:715 Social-Cognitive Psychology 3
5500:721 Professional Doctoral Seminar in Curricular and Instructional Studies 3
5100:701 History of Education in American Society (or 703) 3
5500:600 Concepts of Curriculum & Instruction 3
5500:605 Seminar in Trends and Issues in Curriculum & Instruction 3
5500:675/676 Practicum in Counseling I/II 8
5600:702 Advanced Counseling Practicum I 4
5600:703 Advanced Counseling Practicum II 4
5600:707 Supervision in Counseling Psychology 4
5600:709 Introduction to Counseling Psychology 2
5600:710 Theories of Counseling and Psychotherapy 4
5600:711 Vocational Behavior 4
5600:712 Principles of Intelligence Testing 4
5600:713 Professional, Ethical and Legal Issues in Counseling Psychology 4
5600:714 Objective Personality Evaluation 4

Curricular and Instructional Studies Ph.D.

Course Requirements

Social-Philosophical Foundations [15]
5100:600 Philosophies of Education (or 602 or 604) 3
5100:620 Psychology of Instruction for Teaching and Learning (or 624 or 5400:500) 3
5100:701 History of Education in American Society (or 703) 3
5100:704 Seminar in Social/Philosophical Foundations of Education 3
5100:723 Teaching Behavior and Instruction (or 721 or 710) 3

Research Foundations [18]
5100:640 Techniques of Research 3
5100:370 Research Design 3
5100:371 Data Collection Methods 3
5100:372 Statistics in Education 3
5100:801 Seminar I: Exploratory/Qualitative 3
5100:805 Seminar: Empirical or Seminar II: Ethnographic/Historical or Case Study Research or Legal Research and Writing or another advisor-approved course

Curricular and Instructional Studies Core [15]
5500:800 Professional Doctoral Seminar in Curricular and Instructional Studies 3
5500:801 Seminar in Curricular and Instructional Studies 3
5500:802 Seminar in Curriculum & Instruction 3
3 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 with dissertations. Students of both departments are expected to attain a level of broad scientific competence in the core areas of psychology: the biological, social, cognitive-affective, and individual bases of human behavior. Practicum and internship experiences are required of all students and range from skill building in basic psychological assessment and counseling to a year-long, full-time internship in an applied setting. The Collaborative Program in Counseling Psychology is accredited by the American Psychological Association.

The Department of Counseling offers a four-year, full-time Counseling Psychology program leading to a doctoral degree. Program emphasis is strongly placed on a scientist-practitioner model of training. Beyond the basic core areas of psychology students are expected to establish specific competencies in theory, research, and practice of Counseling Psychology. Academic preparation incorporates the study of theoretical approaches to counseling and psychotherapy, theory and practice of assessment, diversity issues in counseling psychology, supervision, vocational psychology, professional issues and ethics, statistics, and research design. Research and publication are strongly encouraged. Graduates 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 complete 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 Department of Psychology, Buchtel College of Arts and Sciences.
• 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 program.
• Applicants must submit a minimum of three letters of reference attesting to success in the field and probable academic success at the doctoral level.
• Finalists are required to interview with program faculty, either in person or via telephone.

Departures from the program may be made only with the approval of the counseling psychology program faculty. Students may be considered for admission to counseling psychology only if they have earned a master’s degree in counseling, guidance and counseling psychology, school psychology, or a related field.

Required Courses

5100:648 Individual and Family Life-Span Development 3
5100:742 Advanced Educational Statistics 3
5600:651 Techniques of Counseling 3
5600:676/678 Practicum in Counseling I/II 8
3750:610 Core I: Social Psychology 3
3750:620 Core II: Cognitive Psychology 2
3750:630 Core III: Individual Differences 2
3750:640 Core IV: Biopsychology 2
3750:650 Core V: Social-Cognitive Psychology 2
3750:750 Advanced Psychological Test and Measures 2
5600:702 Advanced Counseling Practicum I 4
5600:703 Advanced Counseling Practicum II 4
5600:707 Supervision in Counseling Psychology 4
5600:709 Introduction to Counseling Psychology 2
5600:710 Theories of Counseling and Psychotherapy 4
5600:711 Vocational Behavior 4
5600:712 Principles and Practice of Intelligence Testing 4
5600:713 Professional, Ethical and Legal Issues in Counseling Psychology 4
5600:714 Objective Personality Evaluation 4
Ph.D. in Guidance and Counseling

The doctoral program in Guidance and Counseling 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 Therapy. Students in each track are expected to attain advanced level competencies in the core areas of their track, research, and supervision. Practica and internship experiences are required. In addition, 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 this program can meet the requirements for licensure in Ohio as a Professional Clinical Counselor. Clinical member of AAMFT, or supervisor in training for AAMFT.

The Graduate Record Examination (General Test) is used as the qualifying examination. The Ph.D. Program in Guidance and Counseling 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 (COA). In addition, Marriage and Family Counseling/Therapy has Candidacy Status from the Commission of Marriage and Family Therapy Education (COAMFT) of the American Association of Marriage and Family Therapy (AAMFT).

Ph.D. in Guidance and Counseling 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>5100:342</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:343</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>5600:707</td>
<td>Supervision in Counseling Psychology I</td>
<td>4</td>
</tr>
<tr>
<td>5600:708</td>
<td>Supervision in Counseling Psychology II</td>
<td>4</td>
</tr>
<tr>
<td>5600:710</td>
<td>Theories of Counseling and Psychotherapy</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>5600:665</td>
<td>System Theory in Family Therapy</td>
<td>3</td>
</tr>
<tr>
<td>5600:726</td>
<td>Professional and Legal Issues 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></td>
<td>XXXX 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>Internship Counselor Education</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 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>

Master’s Degree Coursework: Students must have completed entry-level course work in all the following areas before beginning doctoral program course work:

- Counseling Theory (Individual or Marriage and Family) Assessment
- Career Counseling

Techniques of Counseling
- Group Counseling
- Techniques of Research
- Multicultural Counseling
- Individual and Family Development
- DSM-IV
- Foundation Course in Community, School, or Marriage and Family Counseling
- Counseling Practicum (Community, School, or Marriage and Family Counseling)
- Counseling Internship (a minimum total 600 hours/240 client contact hours)
- Counselor Education Program only - Counseling Children
- Marriage and Family Program only - Students must have completed standard curriculum approved by AAMFT

A minimum of 60 semester hours of the total 120 hours must be taken after the student is admitted into the doctoral program in Guidance and Counseling. For further program details and specific admission requirements, contact the Department of Counseling.

Doctorate in Educational Administration

The Department of Educational Foundations and Leadership bears a special responsibility for preparing school 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. The professional skills of administration are developed as they relate to larger issues of educational policy and educational purpose. At all degree levels there is emphasis upon research and clinical inquiry as a means of enhancing administrative performance.

The curriculum in this Doctor of Education program is delivered in a sequenced, cohort model. The program is designed around four categories of standards found in the National Council for the Accreditation of Teacher Education (NCATE) Curriculum Guidelines for Advanced Programs in Educational Leadership approved by NCATE in October 1995, namely, (1) strategic leadership, (2) instructional leadership, (3) organizational leadership, and (4) political and community leadership. The courses are built upon the 21 domains outlined by the National Policy Board for Educational Administration (NPBEA).

Behavioral, Historical, and Social-Philosophical Studies (12)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:701</td>
<td>History of Education in American Society</td>
<td>3</td>
</tr>
<tr>
<td>5100:705</td>
<td>Seminar: Social-Philosophical Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:710</td>
<td>Adult Learning, Development and Motivation</td>
<td>3</td>
</tr>
<tr>
<td>5100:721</td>
<td>Learning Processes</td>
<td>3</td>
</tr>
</tbody>
</table>

Research (22)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5170:899</td>
<td>Doctoral Dissertation (student must take at least 10 semester dissertation hours but may count up to 20 toward the degree)</td>
<td>10</td>
</tr>
</tbody>
</table>

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.

- 5100:340 Research Design                      | 3       |
- 5100:341 Data Collection Methods              | 3       |
- 5100:342 Statistics in Education              | 3       |
- 5100:343 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 (29)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5170:704</td>
<td>Advanced Study of Educational Leadership</td>
<td>3</td>
</tr>
<tr>
<td>5170:705</td>
<td>Decision Making in Educational Leadership</td>
<td>3</td>
</tr>
<tr>
<td>5170:706</td>
<td>Economics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5170:716</td>
<td>Advanced Evaluation of Educational Organizations</td>
<td>3</td>
</tr>
<tr>
<td>5170:730</td>
<td>Residency Seminar</td>
<td>3</td>
</tr>
<tr>
<td>5170:732</td>
<td>Public and Media Relations in Educational Organizations</td>
<td>3</td>
</tr>
<tr>
<td>5170:345</td>
<td>Seminar: Urban Issues</td>
<td>3</td>
</tr>
<tr>
<td>5170:266</td>
<td>Politics of Education</td>
<td>3</td>
</tr>
<tr>
<td>5170:710</td>
<td>Advanced School Law</td>
<td>3</td>
</tr>
<tr>
<td>5170:795</td>
<td>Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Curriculum and Supervision (6)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5170:460</td>
<td>Theories of Educational Supervision</td>
<td>3</td>
</tr>
<tr>
<td>5170:709</td>
<td>Advanced Principles of Curriculum</td>
<td>3</td>
</tr>
</tbody>
</table>

Cognate (12)

(Must be graduate level coursework outside the field of education.)

General Electives (9)

Total Program: 90
M A S T E R ’ S D E G R E E

Programs leading to the degree of M.A. in education, M.S. in education, and M.S. in postsecondary technical education are offered. 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 certificate. 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.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:600</td>
<td>Philosophies of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:602</td>
<td>Comparative and International Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:604</td>
<td>Topical Seminar in the Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:620</td>
<td>Psychology of Instruction for Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:624</td>
<td>Seminar: Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5100:640</td>
<td>Techniques of Research</td>
<td>3</td>
</tr>
</tbody>
</table>

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

Outreach Master’s in Education Programs

The University of Akron’s College of Education believes that improvement in teacher education and continuing professional development is the direct result of collaboration at many different levels and sites with local school personnel. This collaboration evolves through a wide variety of cooperative activities, including master’s in education cohort programs currently offered at Akron Public Schools, Medina County Schools, Summit County Educational Service Center, and other district locations.

The goal of the outreach master’s program is to offer graduate-level courses leading to a master’s degree for teachers on-site or via distance learning, specifically in the areas of elementary education, literacy, secondary education, educational administration, and instructional technology. For more information, please send email to <outreach@uakron.edu>.

Programs

Counseling

Selected program offerings in the Department of Counseling are available to a person with or without a teaching certificate. Interdisciplinary programs offered lead to licensure by the Ohio State Department of Education and/or a master’s degree. The person who meets program prerequisites and who has earned a master’s degree may matriculate as a non-degree graduate student and pursue a program that leads, in selected areas, to licensure.

The Graduate Record Examination (General Test) will be used as the qualifying examination in all Counseling master’s programs. 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:620</td>
<td>Psychology of Instruction for Teaching and Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

Required Counseling Department Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:643</td>
<td>Counseling Theory &amp; Philosophy*</td>
<td>3</td>
</tr>
<tr>
<td>5600:647</td>
<td>Career Development and Counseling Across the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>5600:653</td>
<td>Group Counseling (prerequisites 5600:651 and 5600:643)</td>
<td>4</td>
</tr>
<tr>
<td>5600:675</td>
<td>Practicum in Counseling** (prerequisite 5600:651)</td>
<td>5</td>
</tr>
</tbody>
</table>

Required Departmental Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:663</td>
<td>Developmental Guidance and Emotional Education</td>
<td>3</td>
</tr>
<tr>
<td>5610:540</td>
<td>Developmental Characteristics of Exceptional Individuals</td>
<td>3</td>
</tr>
<tr>
<td>5610:604</td>
<td>Education and Management Strategies for Parents of Exceptional Individuals</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum Department Hours Required 20

Area of Concentration

An area of concentration with a minimum of six (6) hours may be selected from one of the following areas (the student may, with advisor approval, propose an area of concentration not listed):

- 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

COMMUNITY COUNSELING

The course of study leads to eventual employment in community mental health centers and a wide variety of other community agencies. Note that a counselor license is usually required by most agencies. (Check counselor licensure elsewhere in this handbook.) Any changes in the agreed upon program must be approved by the student’s advisor.

- Foundations (Select one course from each area)
  - Behavioral Foundations
    5600:648 Individual and Family Development | 3
  - Humanistic Foundations
    5600:646 Multicultural Counseling | 3
  - Research
    5100:640 Techniques of Research | 3

Minimum Foundation Hours Required 9

- Professional Orientation
  5600:600 Seminar in Counseling | 1
  5600:635 Community Counseling | 3

- Counseling Theory
  5600:643 Counseling Theory | 3
  5600:647 Career Development and Counseling Across the Lifespan | 3

- Appraisal
  5600:645 Tests and Appraisal in Counseling (prerequisite: 5100:640) | 4

- Counseling Process
  5600:651 Techniques of Counseling* | 3
  5600:653 Group Counseling (prerequisites 5600:651 and 5600:643) | 4
  5600:675 Practicum in Counseling** | 5

- Internship
  5600:685 Internship in CounselingI (prerequisite 5600:675) | 6

Minimum Department Hours Required 35

*Techniques of Counseling

**Practicum in Counseling

Carpenter's advisor.

program. Any changes in the agreed-upon program must be approved by the stu-
Required Counseling Department Courses

There are ten credit hours of co-requisite coursework for students without a teaching license and two years teaching experience:

- Departmental supplemental application
- Three letters of reference
- Computer literacy test
- Speech and hearing test
- BCI check
- 2.75 undergraduate grade point average
- GRE
- Three letters of reference

For those with a teaching license and two years teaching experience:

- Departmental supplemental application
- Three letters of reference

School Counseling

This course of study leads to eventual licensure as a school counselor in the State of Ohio. Any changes in the agreed upon program must be approved by the student’s advisor.

Admission Requirements:

For those with a teaching license and two years teaching experience:

- GRE
- 2.75 undergraduate grade point average
- Statement of good moral character
- Three letters of reference

For those without a teaching license:

- GRE
- 2.75 undergraduate grade point average
- BCI check
- Speech and hearing test
- Computer literacy test
- Three letters of reference

There are ten credit hours of co-requisite coursework for students without a teaching license and two years teaching experience:

- Seminar in School Counseling 3
- Field Experience: Master’s 1
- One of the following: 5600:660, 5600:640, or 5600:622 (3 credit hours)
- One of the following: 5610:567 or 5620:559 (3 credit hours)

Foundations (select one course from each area)

- Behavioral Foundations 5600:646 Individual and Family Development Across the Life Span 3
- Humanistic Foundations 5600:646 Multicultural Counseling 3
- Research 5100:640 Techniques of Research 3
- Minimum Foundation Hours Required 9

Required Counseling Department Courses

Professional Orientation (select one course from each area)

- Seminar in Counseling 3
- Elementary/Secondary School Counseling 3
- Administration & Guidance Services 3
- Subtotal 7

Counseling Theory

- Counseling Theory & Philosophy 3
- Career Development and Counseling Across the Lifespan 3
- Subtotal 6

Appraisal

- Tests and Appraisal in Counseling 4
- Subtotal 4

Counseling Process

- Techniques of Counseling 3
- Practicum in Counseling (prerequisite 5600:653) 5
- Subtotal 8

Internship

- Internship in Counseling 6
- Minimum Department Hours Required 38

Specialized Studies

- Family Studies 5600:720 Topical Seminar: Guidance and Counseling - DSM IV 3
- 5600:720 Topical Seminar: Guidance and Counseling - Personality & Abnormal Behavior 3
- 5600:715 Assessment and Treatment Issues in Marriage and Family Therapy 3
- 7400:602 Family Life-Span Perspective 3
- 7400:605 Developmental Parent-Child Interactions 3
- Issues in Sexuality for Counselors 3
- Human Sexuality 3
- Human Development and Individual Differences (choose one) 3
- Abnormal Psychology 4
- Psychological Disorders of Children 4
- Minimum Specialized Studies Required 13-16
- Minimum Hours for Marriage and Family Therapy 6-23

Marriage and Family Counseling/Therapy

This course of study leads to eventual employment in family-based mental health settings. Note that in order to practice counseling in Ohio you must possess a counselor license. Any changes in the agreed upon program must be approved by the student’s advisor.

Foundations (select one course from each area)

- Behavioral Foundations 5600:648 Individual and Family Development 3
- Humanistic Foundations 5600:646 Multicultural Counseling 3
- Research 5600:667 Marriage Therapy (prerequisite 5600:665) 3
- Systems Therapy in Family Therapy (prerequisite 5600:665) 3
- Counseling Theory and Philosophy 3
- Career Development and Counseling Across the Life Span 3
- Subtotal 12

Appraisal

- Tests and Appraisal in Counseling 4
- Subtotal 4

Counseling Process

- Group Counseling (prerequisites 5600:651 and 5600:643) 4
- Practicum in Counseling (prerequisite 5600:653) 5
- Subtotal 9

Internship

- Internship in Counseling (2 terms, prerequisite 5600:675) 6
- Subtotal 6

Minimum Department Hours Required 35

Specialized Studies (both required)

- Developmental Characteristics of Exceptional Individuals 3
- Counseling Youth At Risk 3
- Subtotal 6

Total Semester Hours Required for Graduation 50

*Must sign up with Secretary one year in advance.

**A minimum of 500 client contact hours must be completed by the end of internship.
***Must be taken no later than the second term of the program.
† Independent Study, Practicum, and Internship require closed class permission. You must get one from the Department office prior to registering.
### School Psychologist*

*(admissions temporarily suspended)*

- **College requirements:**
  - 5100:640 Techniques of Research 3
  - 5620:694 Research Project 2
  - or 5620:698 Master's Problem 2-4
  - or 5620:699 Master's Thesis 4-6

- **Departmental requirements:**
  - 5660:643 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
  - 5620:643 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
  - 5620:694 Research Project in Special Area 2-3
  - or 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 experience:

- 3750:500 Personology 4**
- 5610:543 Developmental Characteristics of Learning Disabled Individuals 3
- or 5500:626 Reading Diagnosis for School Psychologists and Support Personnel 3
- or 5610:540 Developmental Characteristics of Exceptional Individuals 3**
- or 3750:520 Abnormal Psychology 3**
- 5620:603 Consultation Strategies for School Psychology 3
- or 5620:611 Practicum in School Psychology (this course is repeated once for a total of eight credits) 4

The nine-month, full-time internship, and the associated seminars entail the following registration:

- 5620:630 Internship: School Psychology 3
- 5620:631 Internship: School Psychology 3
- 5620:640 Field Seminar I: Professional Topics/Issues in School Psychology 3
- 5620:641 Field Seminar II: Low Incidence/Related Inquiries 3

The student who does not hold a valid Ohio teaching certificate must additionally complete the following course pattern:

- 5200:630 Elementary School Curriculum and Instruction 2
- 5200:696/596 Field Experience: Master's 3
- 5700:631 Elementary School Administration 3
- or 5170:601 Principles of Educational Administration 3

The student completing the above listed program will be recommended for Ohio certification if his/her credit pattern numbers 60 graduate semester credit hours, counting no more than 15 semester hours at the 500 level, and including the 10 hours credit for the internship and the associated intern seminars.

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### 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. As a culminating activity, students apply theory to practice in their area of concentration through creative critical thinking.

- **Foundation studies – nine credits:**
  - 5500:600 Concepts of Curriculum and Instruction 3
  - or basic curriculum and instruction course in one’s concentration area in curriculum and instruction.
  - 5500:605 Seminar in Trends and Issues in Curriculum and Instruction 3
  - or seminar in trends and issues in one’s concentration area in curriculum and instruction or a course that cuts across curriculum and instruction (e.g., 5500:570 Multicultural Education in the United States, 5500:575 Instructional Technology Applications, or 5100:614 Planning for Technology).
- **Area of concentration within curriculum and instruction approved by the advisor – 9 credits.**
  - 5500:696 Master’s Project 3-6
  - or 5500:699 Master’s Thesis 6
- **30-36 total hours are required.**
- **A comprehensive exam is required.**

The reading endorsement (or additional endorsements) may be pursued as part of this degree, but coursework beyond the required 36 hours may be necessary in order to be eligible for the endorsement(s).

#### 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 such as reading, multicultural, middle, or elementary education. As a culminating activity, students apply theory to practice in their area of concentration through creative critical thinking.

- **Foundation studies – 9 credits:**
  - 5100:600 Philosophies of Education 3
  - or 5100:602 Comparative and International Education 3
  - or 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - or 5100:620 Psychology of Instruction for Teaching and Learning 3
  - or 5100:624 Seminar: Educational Psychology 3
  - or 5100:640 Techniques of Research 3
- **Curricular and Instructional Studies – 6 credits:**
  - 5500:600 Concepts of Curriculum and Instruction 3
  - or Basic curriculum and instruction course in one's concentration area in curriculum and instruction.
  - 5500:625 Contemporary Issues in Literacy Instruction 3
- **Area of Concentration/Reading – 15 credits**:  
  - 5500:622 Children's Literature in the Curriculum 3
  - or 5500:627 Special Topics in Literacy Education: Teaching Young Adult Literature 3
  - or 5500:522 Content Area Literacy 3
  - or 5500:720 Assessment of Reading Difficulties 3
  - or 5500:524 Teaching Reading to Culturally Diverse Learners 3
  - or 5500:627 Special Topics in Literacy Education 3
- **Final Research Requirement:**
  - 5500:696 Master's Project 6
  - or 5500:699 Master’s Thesis 6
- **Minimum credit hours required:** 36-42

**Students completing the Master of Arts degree are required to complete the Master's Comprehensive Examination.**

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*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 additionally complete the program prescribed under "Certification."*

**Required as part of Special Education master's.
Foundation Studies – 10 credits:
- 5100:600 Philosophies of Education 3
- 5100:604 Topical Seminar in the Cultural Foundations of Education 3
- 5100:620 Psychology of Instruction for Teaching and Learning 3
- 5100:642 Topical Seminar in Measurement and Evaluation 3
- 5100:695 Field Experience: Master’s (Section 001) 1

Curricular and Instructional Studies – 11 credits:
- 5500:617 Elementary and Secondary Licensure Seminar 3
- 5500:660 Field Experience (Section 011) 1
- 5500:575 Instructional Technology Applications 3
- 5500:616 Advanced Instructional Techniques 3
- 5500:696 Field Experience (Section 021) 1

Field Experience (Student Teaching) – 11 credits:
- 5500:695 Field Experience: Master’s (Section 005) 5
- 5500:696 Field Experience: Master’s (Section 006) 5
- 5500:698 Field Experience: Master’s (Section 031) 1
Total Program: 32 credits

A minimum of 29 additional undergraduate credits will be required for licensure. A comprehensive examination 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. As a culminating activity, students apply theory to practice in their area of concentration through creative critical thinking.

- Foundation studies – nine credits.
- 6500:600 Concepts of Curriculum and Instruction 3
or basic curriculum and instruction course in one’s concentration area in curriculum and instruction.
- 6500:605 Seminar in Trends and Issues in Curriculum and Instruction 3
or seminar in trends and issues in one’s concentration area in curriculum and instruction or a course that cuts across curriculum and instruction (e.g., 5500:570 Multicultural Education in the United States, 5500:575 Instructional Technology Applications, or 5100:614 Planning for Technology).

- Area of concentration within curriculum and instruction approved by the advisor – 9 credits.
- 5500:696 Master’s Project 3-6
or 5500:699 Master’s Thesis 6
- 30-36 total hours are required.
- A comprehensive exam is required.

Secondary Education with Licensure (M.S.)
This program, which leads to the Master’s of Science degree as well as licensure in a chosen teaching field, is open to highly qualified students who hold the B.A. or the B.S. degree. It is designed to prepare highly qualified high school teachers (Grades 7-12) and mult-i-age teachers (pre-K through grade 12). The University of Akron offers adolescent/young adult licensure (Grades 7-12) in the following teaching fields: Integrated Social Studies, Integrated Language Arts, Life Science and Chemistry, Chemistry and Physics, Earth Science and Chemistry, and Integrated Mathematics. Specializations for P-12 licensure include Foreign Languages, Visual Arts, Family and Consumer Science/Home Economics, Drama/Theatre, and Music, and Intervention Specialist (Early Childhood, Mild/Moderate and Moderate Intensive). All requirements for licensure must be met including the 600 hours of field and clinical/diagnostic experience.

For more complete information about the teacher education program, please consult the Undergraduate Bulletin or the Office of Student Affairs at (330) 972-6970.

Admission Requirements
Students must have a 2.75 grade-point average overall to be fully admitted. Provisional admission may be granted to those students who have a 2.5-2.74 grade point average. All students must meet the following College of Education requirements:
- Completed application
- GPA of 2.5 or better in prerequisite courses in chosen teaching field
- Evidence of competency in reading comprehension, writing, and mathematics
- Speech and hearing test
- Evidence of basic computer literacy
- Two personal recommendations
- BCI (Bureau of Criminal Investigation) clearance

See the Office of Student Affairs, Zook Hall 228, call (330) 972-6970, or visit http://www3.uakron.edu/education/about/admiss.html for more information.

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. Consequently, the most important skill a future teacher can have is good decision making: knowing “when to do what.” Decision-making is stressed in the standards-based programs that prepare teachers and other school personnel for professional practice. At the initial preparation level, programs are aligned with the Praxis Pathwise domains, Specialized Program Associations (SPA Standards), and principles developed by the Interstate New Teacher Assessment and Support Consortium (INTASC).

Program
- Foundation Courses (10 credits):
  - 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 1

- Curricular and Instructional Studies (19):
  - 5500:575 Instructional Technology Applications 3
  - 5500:617 Elementary and Secondary Licensure Seminar (a) 3
  - 5500:618 Advanced Instructional Techniques 3
  - 5500:619 Instructional and Management Practices (b) 3
  - 5500:629 Reading Programs in Secondary Schools 3
  - 5500:780 Sem: Curricular/Instr Studies (Reading in K-12 Programs [multi-age]) 3
  - 5500:693 Field Experience: Master’s with Licensure 1
  - 5500:695 Field Experience: Master’s with Licensure 1
  - 5500:xxx Elective in curriculum or teaching practices approved by advisor 2

- Area of Concentration (9):
  - Select 9 credits at 500-level or above.

- Field Experience (Student Teaching) (7 credits):
  - 5500:694 Field Experience: Classroom Instruction (c) 6
  - 5500:692 Field Experience: Colloquium 1

- A comprehensive examination is required.

Total Program: 45

(a) Prerequisite: Admission to the Master’s with Licensure program and teacher education program
(b) Prerequisite: Admission to the Master’s with Licensure program and teacher education program and 5500:617
(c) Prerequisite: Approval of Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio

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. 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 2002 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. A grade of credit is mandatory. 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 students, including those in the master’s with licensure programs, are required to participate satisfactorily in clinical and field-based experiences for a minimum of 600 hours prior to recommendation for licensure for teaching in Ohio. These 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 in at least one-half of the clinical and field-based clock hours. Field-based experiences are planned in culturally, racially, and socio-economically diverse settings. Clinical experiences are those planned activities in which teacher education students with opportunities to apply theory and skills related to their areas of licensure in at least one-half of the clinical and field-based clock hours. Field-based experiences are planned in culturally, racially, and socio-economically diverse settings. Clinical experiences are those planned activities in which teacher education students apply the principles of the field of teaching to individual cases or problems.

Student teaching is an all-day, full-time experience in an approved public or private school for either 11 (adolescent to young adults) or 16 (multi-age license) weeks. 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 and also evidence of a passing score or scores on the appropriate Praxis II subject test, and evidence approval of his/her portfolio.

Licensure
After graduation, students may apply for licensure through the Office of Student Affairs. The State of Ohio requires all applicants for licensure to submit a current BCI (Bureau of Criminal Investigation) clearance and to pass appropriate examination.
tion(s) for intended area(s) of licensure. Information about specific licenses can be obtained from the Office of Student Affairs, College of Education, Zook Hall 228, (330) 972-6970.

**Special Education**

The 30-33 hour graduate program in special education is designed for those individuals who currently hold an undergraduate degree in special education. Students seeking to earn initial licensure at the master’s level should pursue the Secondary Education with Licensure (M.S.- Intervention Specialist). It is designed to provide school personnel with an in-depth knowledge base and advanced skills needed to work effectively in inclusive schools and/or other educational settings providing instructional services for individuals with special needs and their families. An inclusive approach is used with emphasis on collaboration/consultation, curriculum design, evaluation/research applications, supervision, legal and ethical issues in special education, and other clinical experiences.

**Prerequisites for professionals who do not hold an undergraduate degree in special education**

Professionals who do not hold an undergraduate degree in special education must take 20 prerequisite hours in special education courses in order to be admitted into the master’s program. Individuals already possessing specific coursework will not need to retake them. A review of the individual’s previous transcript and course work will determine the precise prerequisite courses and corresponding hours. The 20 prerequisite hours include the following courses:

- 5610:540 Developmental Characteristics of Exceptional Individuals 3
- 5610:547 Developmental Characteristics of Individuals with Mild/Moderate Educational Needs 3
- 5610:640 Developmental Characteristics of Individuals with Moderate/Intensive Educational Needs 3
- 5610:590 Special Education Programming: Early Childhood 3
- 5610:592 Special Education Programming: Secondary/Vocational 3
- 5610:635 Assessment in Special Education 3

Students lacking the above prerequisite coursework should apply for Special Non-Degree admission (SND). Upon successful completion of 12 credits of the prescribed prerequisite coursework, students may reapply for admittance into the master’s program. The prerequisite special education courses may be taken at the same time as the 5100 foundation core but prior to the required 27 hours of departmental coursework.

A signed program plan specifying the student’s program, the sequence of course offerings, and timeline for completion must be completed with the student’s advisor upon completion of 9 hours of graduate credit. As part of the program degree requirements, the student must pass a written comprehensive examination. All degree requirements must be completed within 6 years after beginning graduate level coursework at The University of Akron or elsewhere. Completion of the master’s program at The University of Akron does not lead to licensure in special education. Additional hours are necessary for teacher licensure in special education as an intervention specialist for mild/moderate educational needs or moderate/intensive educational needs. Upon request from the student, the advisor can assist in program planning for licensure.

**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 Psychology of Instruction for Teaching and Learning 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:636 Topical Seminar in Educational Technology 3
  - 5100:640 Techniques of Research 3
- **Educational Administration – 15:**
  - 5170:601 Principles of Educational Administration 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:613 Administration of Pupil Services 3
- **Curriculum and Supervision – 6:**
  - 5170:609 Principles of Curriculum Development 3
  - 5170:610 Principles of Educational Supervision 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 Principalship is a program option in educational administration built on two components: the general administration master’s and those post-master’s courses 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 for Teaching and Learning 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:636 Topical Seminar in Educational Technology 3
  - 5100:640 Techniques of Research 3
- **Educational Administration – 15:**
  - 5170:601 Principles of Educational Administration 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:613 Administration of Pupil Services 3
- **Curriculum and Supervision – 6:**
  - 5170:609 Principles of Curriculum Development 3
  - 5170:610 Principles of Educational Supervision 3

Total: 33 credits

**Post-Master’s Requirements – 16 credits:**

- 5170:602 Management of Physical Resources 3
- 5170:603 Management of Human Resources 3
- 5170:608 School Finances and Economics 3
- 5170:620 The Principalship 3
- 5170:795/6 Internship (fall and spring)* 4

*Students admitted to Educational Administration Internship coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

**Administrative 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.

**Graduate K-12 Technology Endorsement**

This endorsement is only available to teachers or teacher candidates who have obtained a Master’s degree and a program of special education work (General Curriculum MA or Special Education MA) at the University of Akron, or have an equivalent degree from another university. The endorsement is applicable to their needs and requirements.

For further information on this endorsement contact the Department of Curricular and Instructional Studies.
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 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3
  5100:642 Topical Seminar in Measurement and Evaluation 3
  5100:741 Statistics in Education 3

- Educational Administration – 15 credits:
  
  5170:601 Principles of Educational Administration 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 Principles of Educational Administration 3
  5170:707 The Superintendency 3
  5170:743 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 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3

- Educational Administration – 21 credits:
  
  5170:601 Principles of Educational Administration 3
  5170:603 Management of Human Resources 3
  5170:604 School-Community Relations 3
  5170:606 Evaluation in Educational Organizations 3
  5170:607 School Law 3
  5170:608 School Finance and Economics 3
  5170:610 Principles of Educational Supervision 3

- Post-Master’s Requirements – 14 credits:
  
  5170:704 Advanced Principles of Educational Administration 3
  5170:705 Decision Making in Educational Administration 3
  5170:707 The Superintendency 3
  5170:795/6 Internship* 4
  6500:694 Industrial Relations 3

*Students admitted to Educational Administration Internship coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

Administrative Specialist: 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 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3

- Educational Administration – 21 credits:
  
  5170:601 Principles of Educational Administration 3
  5170:603 Management of Human Resources 3
  5170:604 School-Community Relations 3
  5170:606 Evaluation in Educational Organizations 3
  5170:607 School Law 3
  5170:608 School Finance and Economics 3
  5170:707 The Superintendency 3

*Students admitted to Educational Administration Internship coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

Administrative Specialist: Pupil Personnel Administration
(Admissions to Pupil Personnel Administration currently suspended)

- Foundation Studies – 12 credits:
  
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3

- Educational Administration – 21 credits:
  
  5170:601 Principles of Educational Administration 3
  5170:603 Management of Human Resources 3
  5170:606 Evaluation in Educational Organizations 3
  5170:607 School Law 3
  5170:608 School Finance and Economics 3
  5170:613 Administration of Pupil Services 3
  5170:707 The Superintendency 3

- Post-Master’s Requirements – 16 credits:
  
  5600:631 Elementary/Secondary School Counseling 3
  5600:653 Group Counseling 3
  5600:659 Organization and Administration of Guidance Services 3
  5170:704 Advanced Principles of Educational Administration 3
  5170:795/6 Internship* 4

*Students admitted to Educational Administration Internship coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

Administrative Specialist: School and Community Relations
(Admissions to School and Community Relations currently suspended)

- Foundation Studies – 12 credits:
  
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3

- Educational Administration – 21 credits:
  
  5170:601 Principles of Educational Administration 3
  5170:603 Management of Human Resources 3
  5170:606 Evaluation in Educational Organizations 3
  5170:607 School Law 3
  5170:608 School Finance and Economics 3
  5170:620 The Principalship 3
  5170:707 The Superintendency 3

- Post-Master’s Requirements – 16 credits:
  
  5170:604 School-Community Relations 3
  5170:704 Advanced Principles of Educational Administration 3
  7600:625 Theories of Mass Communication 3
  7600:628 Contemporary Public Relations Theory 3
  5170:795/6 Internship* 4

*Students admitted to Educational Administration Internship coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

Superintendent Program
Both teaching and administrative experience is required for the superintendent licen-
sure.

- Foundation Studies – 12 credits:
  
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3
• Educational Administration – 15 credits:
  5170:601 Principles of Educational Administration 3
  5170:604 School-Community Relations 3
  5170:606 Evaluation in Educational Organizations 3
  5170:607 School Law 3
  5170:613 Administration of Pupil Services 3

• Curriculum and Supervision – 6 credits:
  5170:609 Principles of Curriculum Development 3
  5170:610 Principles of Educational Supervision 3

• Post-Master’s Requirements – 22 credits:
  5170:602 Management of Physical Resources 3
  5170:603 Management of Human Resources 3
  5170:608 School Finance and Economics 3
  5170:620 The Principalship 3
  5170:704 Advanced Principles of Educational Administration 3
  5170:707 The Superintendentcy 3
  5170:795 Internship* 4

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

• Electives (5 credits), to bring the program to a total of 60 graduate semester hours.

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. 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.

• Foundation studies – nine credits.

• Required courses (25 credits):
  5190:500 Introduction to the Study of Higher Education 3
  5190:515 Administration in Higher Education 3
  5190:521 Law and Higher Education 3
  5190:526 Finance and Higher Education 3
  5190:526 Student Services and Higher Education 3
  5190:527 The American College Student 3
  5190:525 Topical Seminar: Higher Education 3
  5190:530 Higher Education Curriculum and Program Planning 3
  5190:620 Advanced Administrative Colloquium in Higher Education 3
  5190:601 Internship in Higher Education 1-3
  5190:602 Internship in Higher Education Seminar 1

Total Hours Required: 34.

• Electives:
  5190:626 Organizational and Policy Development in Higher Education 3
  5190:635 Instructional Strategies and Techniques for the College Instructor 3
  5190:645 Independent Study in Higher Education 1-3
  5190:590 Workshop

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
• Social/Philosophical Foundations of Education
• Research Methodology and Evaluation

This Master’s degree program area is designed for either the student interested in improving present educational skills or the student interested in educational or instructional positions in business, industry, and social services. The student’s program of study will be determined jointly by the student and advisor. The program consists of:

• College Core Foundation Studies (nine hours)
• Program Requirements for the specialization selected above (minimum of 15 hours)
• Outside Department (minimum of six hours except for Instructional Technology option)
• Master’s Comprehensive Examination (electronic portfolio for Instructional Technology)

• Election of master’s thesis (5100:698), or master’s problem (5100:698), or an additional six semester hours 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 (30-36 hours)

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 hours)
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:637 Philosophy 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 (12 hours)
  5100:614 Planning for Technology 3
  5100:630 Topical Seminar: Advanced Multimedia (may be repeated for up to 9 credits) 3
  5100:631 Instructional Design 3
  5100:695 Field Experience: Master’s 3

• Electives (choose 9-15 hours from the following)
  5100:512 Design and Production of Instructional Materials 3
  5100:520 Introduction to Instructional Computing 3
  5100:590 Workshop: Instructional Technology (may be repeated for up to 6 credits) 3
  5100:632 Web-Based Learning Systems 3
  5100:633 Hypermedia 3
  5100:634 Visual Literacy 3
  5100:635 Emerging Technologies 3
  5100:638 Integrating and Implementing Technology 3
  5100:639 Strategies for Online Teaching 3
  5100:696 Master’s Technology Project 3
  5100:697 Independent Study: Master’s 3
  5100:698 Master’s Problem 3
  5100:699 Master’s Thesis 4-6
  5100:742 Statistics in Education 3
  5170:609 Principles of Curriculum Development 3

Educational Psychology Option (30-36 hours)

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
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

• Electives (15-21 hours)
  5100:624 Seminar: Educational Psychology 3
  5100:637 Philosophy of Educational Technology 3
  5100:640 Topical Seminar in the Cultural Foundations of Education 3
  5100:638 Integrating and Implementing Technology 3
  5100:639 Strategies for Online Teaching 3
  5100:696 Master’s Technology Project 3
  5100:697 Independent Study: Master’s 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
  5500:780 Seminar in Curricular and Instructional Studies (Cooperative Learning) 3
Social/Philosophical Foundations of Education Option (30-36 hours)

This interdisciplinary graduate program is designed to facilitate professional educators’ developing critical, interpretative, and normative perspectives of the interrelations between educational institutions and society. This program includes the academic disciplines of anthropology of education, comparative/international education, cultural education in education, history of education, philosophy of education, and sociology of education. Graduates are more employable in positions that require in-depth understanding of the broader social contexts of educational policy.

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

- **Electives (15-21 hours)**
  - 5100:602 Comparative and International Education 3
  - 5100:604 Seminar in the Cultural Foundations of Education (may be repeated for up to 9 credits) 3
  - 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 (may be repeated for up to 9 credits) 3
  - 5100:697 Independent Study: Master’s 3
  - 5100:686 Master’s Project 3
  - 5100:699 Master’s Thesis 4-6

Research Methodology and Evaluation Option (30 hours)

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
  - 5100:604 Seminar in the Cultural Foundations of Education 3
  - 5100:620 Psychology of Instruction for Teaching and Learning 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:640 Techniques of Research 3

- **Electives (15 hours)**
  - 5100:642 Seminar in Measurement and Evaluation: Introduction to Psychometric Techniques 3
  - 5100:642 Topical Seminar in Measurement and Evaluation 3
  - 5100:699 Master’s Thesis 4-6
  - 5100:740 Research Design 3
  - 5100:742 Statistics in Education 3
  - 5100:743 Advanced Educational Statistics 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 Research 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
  - 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 insti-

- **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 Program Committee to plan the necessary 9 credits of course work 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**

- **Foundation Studies – 12 credits:**
  - 5100:520 Introduction to Instructional Computing 3
  - 5100:602 Comparative and International Education 3

- **Professional Technical Education Courses – 16 credits:**
  - 5400:501 Learning Technology (prerequisite for all courses) 1
  - 5400:505 Workforce Education for Youth and Adults 3
  - 5400:530 Systematic Curriculum Design for Postsecondary Instruction 3
  - 5400:535 Systematic Instructional Design in Postsecondary Education 3
  - 5400:605 Advanced System Design: Needs Assessment and Evaluation 3
  - 5400:690 Internship in Postsecondary Education 3

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

- **Research Methodology and Evaluation Option (30 hours)**

- **Teaching Option (9 credits)**
  - An approved schedule of career-related graduate courses will be determined by the student’s academic and professional background with advisor approval.
  - 5400:600 Survey of Postsecondary Institutions 3
  - Electives (with advisor’s approval) 6

- **Training Option (9 credits)**
  - An approved schedule of career-related graduate courses will be determined by the student’s academic and professional background with advisor approval.
  - 5400:615 Training in Business and Industry 3
  - 5400:620 Postsecondary Teacher Leadership 3
  - Electives (with advisor’s approval) 3

- **Instructional Technology Option (9 credits)**
  - An approved schedule of career-related graduate courses will be determined by the student’s academic and professional background with advisor approval.
  - 5100:630 Topical Seminar in Computer-Based Education 3
  - 5100:636 Topical Seminar in Educational Technology 3
  - 5100:614 Planning for Technology 3
  - 5400:660 Postsecondary Distance Learning 3

- **Guidance Option (9 credits)**
  - An approved schedule of career-related graduate courses selected from the Graduate School offerings. Course selection will be determined by the student’s academic and professional background with advisor approval.
  - 5600:635 Community Counseling 3
  - 5600:647 Career Development and Counseling 3
  - Electives (with advisor’s approval) 3

**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. In addition, the criteria includes completion of the MAT or GRE prior to acceptance into the Department of Sport Science and Wellness Education.

**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 5100:6xx or 5100:6xx course offerings or 5550:606 *Statistics: Qualitative and Quantitative Methods.*

**Required Courses:**
- 5560:550 Application of Outdoor Education to the School Curriculum 4
- 5560:552 Resources and Resource Management for the Teaching of Outdoor Education 4
- 5560:556 Outdoor Pursuits 4
- 5560:605 Outdoor Education: Special Topics 2-4
- 5560:606 Outdoor Education: Rural Influences 3
- 5560:696 Field Experience 2-6
  - (at least 2 credits if only option selected)
- 5560:698 Master’s Problem 2-4
- 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**
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 can I 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
  - 5550:605 Tactics and Strategies in the Science of Teaching and Coaching 3
  - 5550:606 Physiology of Muscular Activity and Exercise 3
  - 5550:606 Statistics: Qualitative and Quantitative Methods 3
  - 5550:609 Motivational Aspects of Physical Activity 3
  - 5570:521 Comprehensive School Health 4
  - 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 the 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:**
  - 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:**
  - 5550:500 Musculoskeletal Anatomy I 3
  - 5550:600 Biomechanics Applied to Sports and Physical Activity 4
  - 3100:569 Respiratory Physiology 3
  - 5550:501 Musculoskeletal Anatomy II 3
  - 3100:565 Advanced Cardiovascular Physiology 3
  - 5550:605 Physiology of Muscular Activity and Exercise 3
  - 5550:606 Statistics: Qualitative and Quantitative Methods 3
  - 5550:680 Special Topics in Health and Physical Education: Laboratory Instrumentation 3
  - 7400:587 Sports Nutrition 3

- **At least two (2) credits from among the following:**
  - 5550:695 Field Experience: Master’s 3
  - 5550:698 Master’s Problem 3
  - 5550:699 Master’s Thesis 2 (minimum)

- **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

**Option: Sport Science/Coaching**
This sport science/coaching graduate program option has been designed to meet the needs of teachers and practicing/prospective coaches. Because this program meets published NASPE National Standards, licensed educators may be able to use this sport science program to meet the master/90 hour requirement for the second renewal of their professional license; however, these individuals must seek renewal from their local professional development committee.

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

- **Required Courses:**
  - 5550:540 Injury Management for Teachers and Coaches 2
  - 5550:541 Advanced Athletic Injury Management: Upper Extremity 4
  - 5550:553 Principles of Coaching 3
  - 5550:562 Legal /Ethical Issues in Physical and Leisure Activity 2
  - 5550:601 Sports Administration and Supervision 3
  - 5550:602 Motor Behavior Applied to Sports 3
  - 5550:603 Tactics and Strategies in the Science of Teaching and Coaching 3
  - 5550:605 Physiology of Muscular Activity and Exercise 3
  - 5550:609 Motivational Aspects of Physical Activity 3
  - 7400:587 Sports Nutrition 3
  - Subtotal 24-27

- **At least two (2) credits from among the following:**
  - 5550:695 Field Experience: Master’s 3
  - 5550:698 Master’s Problem 3
  - 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

**School Nurse License Program**
(Admissions to School Nurse License Program currently suspended)

**Admission Requirements – Sequence 2**
- P.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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5570:520</td>
<td>Community Health</td>
</tr>
<tr>
<td>5570:521</td>
<td>Comprehensive School Health</td>
</tr>
<tr>
<td>5570:523</td>
<td>Methods and Materials of Teaching Health Education</td>
</tr>
<tr>
<td>5100:312</td>
<td>Statistics in Education</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
</tr>
</tbody>
</table>

Applicant must also complete 11-16 graduate credits of College of Nursing courses listed below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:650</td>
<td>Advanced Pediatric/Adolescent Assessment</td>
</tr>
<tr>
<td>8200:613</td>
<td>Nursing Inquiry I</td>
</tr>
<tr>
<td>8200:553</td>
<td>School Nurse Practicum I</td>
</tr>
<tr>
<td>(can be waived based upon experience and submission of a portfolio)</td>
<td></td>
</tr>
<tr>
<td>8200:554</td>
<td>School Nurse Practicum II (required of all school nursing students)</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
</tr>
</tbody>
</table>

Optional if continuing on to a master’s degree in the College of Nursing:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:608</td>
<td>Pathophysiologica Concepts</td>
</tr>
<tr>
<td>8200:656</td>
<td>Pharmacology for Child and Adolescent Health Nursing</td>
</tr>
<tr>
<td></td>
<td><strong>Total graduate credits for licensure</strong></td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
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</tr>
<tr>
<td>5570:523</td>
<td>Methods and Materials of Teaching Health Education</td>
</tr>
<tr>
<td>8200:553</td>
<td>Elective within College of Education</td>
</tr>
<tr>
<td></td>
<td>(upon approval of College of Education school nurse licensing advisor)</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

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.
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 1,000 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 1,050 or more points based on the junior-senior (i.e., last 64 semester or 96 quarter credits) GPA (A=4.0) times 200 plus the GMAT score.
• Hold a degree from outside the United States and have an academic standing of first or high second class, satisfactory evidence of competence in English (i.e., TOEFL score of 550 or above) and a score of at least 450 on the GMAT.

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. The committee will consider the following in making decisions: the difficulty of the applicant’s undergraduate program; the length of time and activities since graduation; and the percentile ranking on the GMAT. For example, students admitted into the graduate business programs since January 1, 2004, had an average GMAT of 570 and an average point index of 1200.

In rare instances, the applicant who has taken the GMAT but does not meet requirements may be considered for admission. Also, those who have previously been denied admission may, upon presentation of new information, be reconsidered. In either case, 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 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, so evaluation for admission will not be delayed. GMAT registration bulletin can be obtained from the Graduate Programs in Business Office or the Educational Testing Service, Box 959-R, Princeton, N.J. 08540. Those who have taken the GMAT more than five years ago are normally required to retake it. All applications and accompanying documentation are evaluated simultaneously by the Graduate Admissions Committee (GAC). The GAC meets monthly and the applicant will be informed in writing of the GAC’s decision within one week of the meeting.

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 credits 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
  6500:602 Computer Techniques for Management 3
  6600:600 Marketing Concepts 3

• Functional Core (16 credits):
  6200:610 Process Analysis and Cost Management 3
  6400:674 Strategic Financial Decision Making 3
  6500:670 Management of Operations 3
  6600:620 Strategic Marketing Management 3
  6700:696 Special Topics in Professional Development: Leadership 1
  6800:605 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).

• 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 58

If the Foundation Core Courses are all waived, the program is 34 credits in length.

Concentration in Accounting
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:
  6500:620 E-Business Foundations 3
  6500:622 E-Business Technologies 3

• Choose 6 credits from the following:
  6200:658 Enterprise Risk Assessment and Assurances 3
  6400:685 E-Business Legal Issues 3
  6400:686 E-Business Financial Strategy and Planning 3
  6600:635 E-Business Marketing Strategies and Tactics 3

• Recommended free elective (3 credits): select additional course from the list above
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 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:**
  - 6400:638 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 Global Sales Management

- **Required (complete all 6 credits):**
  - 6600:575 Business Negotiations 3
  - 6600:580 Sales Management 3

- **Electives (choose 6 credits from the following):**
  - 3250:671 International Trade 3
  - 6500:656 Management of International Operations 3
  - 6800:685 Multinational Corporations 3
  - 7600:645 Intercultural Communication Theory 3

Concentration in Health Care Management

- **Required:**
  - 6500:683 Health Services Systems Management 3
  - 6500:683 Data Analysis for Managers 3

- **Choose 6 credits from the following:**
  - 6500:582 Health Services Operations Management 3
  - 6600:385 Special Topics in Health Services Administration 3
  - 6500:686 Health Services Research Project 3
  - 6500:688 Independent Study in Health Services Administration 3
  - 3060:680 Interdisciplinary Seminar in Life-Span Development and Gerontology 3
  - 3250:540 Special Topics: Economics (Medical) 3
  - 3850:615 Epidemiologic Methods in Health Research 3
  - 3850:666 Sociology of Health Care 3
  - 3980:622 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.

Concentration in International Business

- **Required (choose one of the following courses):**
  - 6200:664 Research and Quantitative Methods in Accounting 3
  - 6400:650 Techniques of Financial Modeling 3
  - 6500:663 Applied Operations Research 3
  - 6500:663 Data Analysis for Managers 3
  - 6600:640 Business Research Methods 3

- **Plus any 9 credits in International Business:**
  - 6800:630 International Marketing Policies 3
  - 6800:685 Multinational Corporations 3
  - 6800:690 Seminar in International Business 3
  - 6800:697 Independent Study in International Business 3
  - 3250:671 International Trade 3
  - 3250:670 International Monetary Economics 3
  - 3250:671 Comparative Economic Systems 3
  - 3250:590 Economics of Developing Countries 3
  - 3250:670 International Monetary Economics 3

International Business students must ALSO select one of the following options:

1. **Foreign Language Option:** demonstrate reading and conversational proficiency in a language other than English.
2. **Cross-Cultural Option:** select one course (3 credits) from the following courses:
   - 3250:550 Comparative Economic Systems 3
   - 3250:590 Economics of Developing Countries 3
   - 3250:670 International Monetary Economics 3
   - 3250:671 International Trade 3
   - 3350:550 Development Planning 3
   - 3350:633 Comparative Planning 3
   - 3400:516 Modern India 3
   - 3400:573 Latin America: The Twentieth Century 3
   - 3400:575 Mexico 3
   - 3700:505 Politics in the Middle East 3
   - 3700:512 Global Environment Politics 3

*Cross-cultural courses may be used for free elective credits.

Concentration in International Business for International Executives

- **Required (choose one of the following courses):**
  - 6200:664 Research and Quantitative Methods in Accounting 3
  - 6400:650 Techniques of Financial Modeling 3
  - 6500:663 Applied Operations Research 3
  - 6500:663 Data Analysis for Managers 3
  - 6600:640 Business Research Methods 3

- **Plus any 9 credits in International Business:**
  - 6800:630 International Marketing Policies 3
  - 6800:685 Multinational Corporations 3
  - 6800:690 Seminar in International Business 3
  - 6800:697 Independent Study in International Business 3
  - 3250:671 International Trade 3
  - 3250:670 International Monetary Economics 3
  - 3250:590 Economics of Developing Countries 3
  - 3250:670 International Monetary Economics 3
  - 3250:671 Comparative Economic Systems 3

International Business students must ALSO select one of the following options:

1. **Foreign Language Option:** demonstrate reading and conversational proficiency in a language other than English.
2. **Cross-Cultural Option:** select one course (3 credits) from the following courses:
   - 3250:550 Comparative Economic Systems 3
   - 3250:590 Economics of Developing Countries 3
   - 3250:670 International Monetary Economics 3
   - 3250:671 International Trade 3
   - 3350:550 Development Planning 3
   - 3350:633 Comparative Planning 3
   - 3400:516 Modern India 3
   - 3400:573 Latin America: The Twentieth Century 3
   - 3400:575 Mexico 3
   - 3700:505 Politics in the Middle East 3
   - 3700:512 Global Environment Politics 3

*Cross-cultural courses may be used for free elective credits.

Concentration in International 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 3
  - 6400:691 International Accounting 3
  - 6400:698 Independent Study: Business Law 3

- **Choose three credits from the following:**
  - 6400:631 Financial Markets and Institutions 3
  - 6400:645 Investment Analysis 3
  - 6400:650 Techniques of Financial Modeling 3
  - 6400:678 Capital Budgeting 3
  - 6400:697 Independent Study in Finance 3
  - 3350:538 World Metropolitan Areas 3
  - 3350:550 Development Planning 3
  - 3350:633 Comparative Planning 3
  - 3400:516 Modern India 3
  - 3400:573 Latin America: The Twentieth Century 3
  - 3400:575 Mexico 3
  - 3700:505 Politics in the Middle East 3
  - 3700:512 Global Environment Politics 3

Concentration in Management

- **Required:**
  - 6500:662 Applied Operations Research 3
  - 6500:663 Data Analysis for Managers 3

- **Choose three credits from the following:**
  - 6500:631 Financial Markets and Institutions 3
  - 6400:645 Investment Analysis 3
  - 6400:650 Techniques of Financial Modeling 3
  - 6400:678 Capital Budgeting 3
  - 6400:697 Independent Study in Finance 3
  - 3350:538 World Metropolitan Areas 3
  - 3350:550 Development Planning 3
  - 3350:633 Comparative Planning 3
  - 3400:516 Modern India 3
  - 3400:573 Latin America: The Twentieth Century 3
  - 3400:575 Mexico 3
  - 3700:505 Politics in the Middle East 3
  - 3700:512 Global Environment Politics 3

International Business students must ALSO select one of the following options:

1. **Foreign Language Option:** demonstrate reading and conversational proficiency in a language other than English.
2. **Cross-Cultural Option:** select one course (3 credits) from the following courses:
   - 3250:550 Comparative Economic Systems 3
   - 3250:590 Economics of Developing Countries 3
   - 3250:670 International Monetary Economics 3
   - 3250:671 International Trade 3
   - 3350:550 Development Planning 3
   - 3350:633 Comparative Planning 3
   - 3400:516 Modern India 3
   - 3400:573 Latin America: The Twentieth Century 3
   - 3400:575 Mexico 3
   - 3700:505 Politics in the Middle East 3
   - 3700:512 Global Environment Politics 3

*Cross-cultural courses may be used for free elective credits.

Concentration in Management 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:**
  - 6500:662 Applied Operations Research 3
  - 6500:663 Data Analysis for Managers 3

- **Choose 9 graduate credits from 6500. No more than 6 credits at the 500 level.**
Required of MSA (PA) students without undergraduate degrees in Accounting:

Professional Accounting (PA) Option

MSA Students will select either the Professional Accounting option or the Accounting Information Systems option.

Students who elect the AIS option must choose 6200:660.

Concentration in Strategic Marketing

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

• Choose three credits from the following:
  6600:540 Product and Brand Management
  6600:630 Marketing of Services
  6600:635 E-Business: Electronic Marketing
  6600:655 Marketing Communications

Concentration in Supply Chain Management

• Required:
  6500:675 Supply Chain Management
  6500:662 Applied Operations Research

• Choose 6 credits from the following:
  6500:676 Management of Production and Operations
  6500:678 Project Management
  6500:673 Quality and Productivity Techniques
  6500:651 Management of Organization Change
  6500:642 Systems Simulation
  6500:641 Business Database Systems

or three graduate credits approved by the Director.

The Master of Science in Accountancy (MSA) program allows students to concentrate their study in one of two areas: Professional Accounting or Accounting Information Systems. The Professional Accounting option is designed to provide students with the background that will enable them to sit for the Uniform CPA Examination under the Ohio 150-hour Legislation. The Professional Accounting option allows students without an undergraduate degree in accounting to combine their undergraduate interests with professional accounting credentials. The Accounting Information Systems option is designed to provide students, who have an undergraduate background in accounting or equivalent, with substantive knowledge and skills in the area of information systems risk assessment, control, and assurance services. Given the rapid diffusion and ease of use of computer technologies, knowledgeable and well-educated accountants and information systems auditors are needed to ensure that effective controls are in place to maintain integrity and minimize risks in information systems.

• Foundation Courses*:
  6600:600 Marketing Concepts
  6400:602 Managerial Finance
  6500:600 Management of Organizational Behavior
  6200:601 Financial Accounting
  6200:603 Business Systems with Processing Applications
  6500:602 Computer Techniques for Management
  6500:601 Quantitative Decision Making
  6400:623 Legal Aspects of Business Transactions
  3200:600 Foundations of Economic Analysis

*Foundation courses will be waived for students with recent study in the subject areas.

• Required of all MSA Students:
  6200:655 Advanced Information Systems
  3300:675 Writing for MBAs
  6200:660 Information Systems Audit and Control Project**

**Students who elect the AIS option must choose 6200:660.

MSA Students will select either the Professional Accounting option or the Accounting Information Systems option.

Professional Accounting (PA) Option

• Required of MSA (PA) students without undergraduate degrees in Accounting:
  6200:621 Corporate Accounting and Financial Reporting I

The advanced program for students with non-accounting undergraduate degrees consists of 33 hours, of which 27 are required and 6 are elective. For a student entering with no business background the total program, including foundation course work, is 57 hours.

• Required of MSA (PA) students with undergraduate degrees in Accounting:
  6200:637 Advanced Accounting Theory
  6200:531 Taxation II
  6200:640 Advanced Auditing

• Recommended free elective (3 credits):
  Electives: two 600-level non-accounting courses

Accounting Information Systems (AIS) Option

An undergraduate degree in accounting or equivalent from an accredited college or university is required to pursue this option. Students who are admitted into this option will have completed prior course work in the following areas in their undergraduate accounting or equivalent programs:

— Accounting Information Systems (at least 3 credits)
— Intermediate Accounting
— Auditing (at least 3 credits)
— Cost and Management Accounting (at least 3 credits beyond principles)

• Required of MSA (AIS) students:
  6200:606 Applications Development for Financial Systems
  6200:607 Financial Data Communications and Enterprise Integration
  6200:615 Enterprise Resource Planning and Financial Systems
  6200:658 Enterprise Risk Assessment and Assurances
  6200:659 Assurance Services with Data Warehousing and Data Mining
  6500:643 Analysis and Design of Business Systems
  6500:648 Management of Telecommunications
  6500:605 Business Applications Development

Including the 6 credits of required courses for all MSA students, students with an undergraduate degree in accounting or equivalent will complete the AIS option in 30 credits.

The Master of Taxation Program is a professional degree designed to provide intensive training for individuals planning to enter the field and for experienced accountants and attorneys.

The program provides a framework of conceptual, technical and professional knowledge that will assist students in developing expertise needed to examine and understand many aspects of the tax structure. Through an integrated curriculum with emphasis on tax concepts, substantive knowledge of federal and state taxation, tax research, communication skills, and tax planning, students develop an ability to identify and solve tax problems.

The Master of Taxation curriculum consists of a set of foundation courses and a set of required taxation courses. A minimum of 30 semester credits is required for the degree. Foundation courses may be waived for those who have had recent study in the subject areas.

• Foundation Courses:
  6200:601 Financial Accounting
  6200:621 Corporate Accounting and Financial Reporting I
  6200:622 Corporate Accounting and Financial Reporting II
  6200:623 Legal Aspects of Business Transactions
  6200:630 Taxation I
  6200:631 Taxation II

• Required Master of Taxation Courses:
  6200:628 Basic Tax Research
  6200:631 Corporate Taxation I
  6200:632 Taxation of Transactions in Property
  6200:633 Estate and Gift Taxation

• Electives: 9 credits of graduate taxation courses, selected from the list below:
  6200:641 Taxation of Partnerships
  6200:642 Corporate Taxation II
  6200:643 Tax Accounting

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ISM Restricted Electives (6 credits)

Information Systems Management (ISM)

Choose a concentration from the following:

Options:

Free Elective (3 credits):

remaining 33 credits of coursework consists of 12 credits of general management. Because of the complex nature of these specializations, they are not normally offered as options in traditional MBA programs. They are designed for individuals who know what they want to do or to help them apply what they already know more effectively. For example, computer science majors may choose to concentrate in information systems while psychology majors would benefit from the human resource management option. The introductory coursework for this program is termed a foundation core and consists of 24 credits which may be waived if the student has completed prior study in the area. The remaining 33 credits of coursework consists of 12 credits of general management coursework, 18 credits of specialization courses and one 3-credit free elective. If all foundation courses are waived, the program is 33 credits in length.

• Foundation Core:
  All are required unless waived at time of admission:
  
  3250:600 Foundations 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
  6500:602 Computer Techniques for Management 3
  6500:603 Marketing Concepts 3

• Management Core Courses (12 credits):
  6500:640 Management Information Systems 3
  6500:663 Data Analysis for Managers 3
  6500:652 Organizational Behavior 3
  or
  6500:653 Organizational Theory 3
  6500:662 Applied Operations Research 3
  or
  6500:670 Operations Management 3

• 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.

Options:

Choose a concentration from the following:

Information Systems Management (ISM)

• ISM Required Concentration Courses (12 credits)

  6500:641 Business Database Systems 3
  6500:643 Analysis and Design of Business Systems 3
  6500:644 Qualified Pension and Profit-Sharing Plans 3
  6500:648 Tax Practice and Procedure 2
  6500:649 State and Local Taxation 3
  6500:650 Estate Planning 2
  6500:651 United States Taxation and Transnational Operations 2
  6500:652 Tax Exempt Organizations 2
  6500:653 Business Planning 2
  6500:654 Independent Study in Taxation 1
  6500:656 Nonqualified Executive Compensation 2
  6500:661 Advanced Tax Research and Policy 3
  6500:660 Seminar in Taxation 3
  6500:693 Selected Topics in Taxation: Limited Liability Companies 2
  6500:685 S Corporations 3
  6500:690 Mergers and Acquisitions 2
  6500:679 Advanced Partnership Tax Planning 2

Total Required Taxation Courses 30-48

In exceptional situations, subject to the approval of the Chair of the G.W. Dave- rio School of Accountancy, up to six credits of approved graduate College of Business Administration courses may be allowed as electives.

6500:644 Knowledge Management and Business Intelligence 3
6500:646 Process Redesign with Enterprise Resource Planning 3
6500:651 Management of Organizational Transformation 3
6500:665 Management of Technology 3
6500:678 Project Management 3

Human Resource Option (HRM)

• HRM Required Concentration Courses (12 credits)

  6500:650 Human Resource Systems for Managers 3
  6500:658 Strategic and Global Human Resource Management 3
  6500:660 Staffing and Employment Regulation 3
  6500:662 Organizational Behavior 3
  or
  6500:663 Organizational Theory 3

• HRM Restricted Electives (select 6 credits)

  6500:651 Management of Organization Change 3
  6500:654 Management of Employee and Labor Relations 3
  6500:655 Compensation and Performance Management 3
  6500:659 International Human Resource Management 3
  6500:661 Comparative Systems of Employee and Labor Relations 3
  or 3 credits approved by the Director 3

Total concentration 18
Total program 33**

**Has to be taken if business application development proficiency requirement has not been satisfied.
If proficiency is satisfied, a different elective must be taken for credit.

**57 total credits if foundation courses are required; see Graduate Director.

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.HRM). 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 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 26 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 20-24 credits of advanced courses in the CBA plus 10 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 97 credits are required (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, 10 credits of School of Law courses may be applied toward the Masters of Taxation degree. No more than six credits from the School of Law may be in non-tax courses. The other four credits taken in the School of Law must be in tax courses which substitute for equivalent tax courses in the CBA.

J.D./M.B.A. students may transfer nine credits of School of Law courses into the M.B.A. program. Six credits must 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 nine credits of School of Law courses into the M.S.M. program. Six credits must 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.

Graduate Studies 57
Law Courses to be used as MBA Concentration Courses

Accounting (choose 6 credits)
9200:639 Estate and Gift Taxation
9200:640 Individual Taxation
9200:641 Corporate Taxation
9200:665 Taxation of Partnerships
9200:680 Qualified Pensions and Profit Sharing
9200:685/686 Wills, Trusts and Estates I, II

Finance (choose 6 credits)
9200:629 Commercial Law II
9200:635 Bankruptcy Law
9200:639 Estate and Gift Taxation
9200:652 Land Use Planning
9200:671 Securities Regulation
9200:676 Special Problems in Estate Planning
9200:680 Qualified Pensions and Profit Sharing
9200:685/686 Wills, Trusts and Estates I, II
9200:691 International Investments

International Business (choose 6 credits)
9200:649 International Law
9200:676 International Trade
9200:691 International Investments and Commercial Transactions

Management (choose 6 credits)
9200:637 Equal Opportunity Law
9200:650 Labor Law and Collective Bargaining
9200:651 Employment Law
9200:659 Lawyer as Negotiator
9200:660 Workers’ Compensation
9200:672 Seminar in Business Planning
9200:679 Labor Law

Marketing (choose 6 credits)
9200:627 Commercial Law I
9200:659 Lawyer as Negotiator
9200:662 Media Law
9200:667 Patent Law
9200:672 Seminar in Business Planning
9200:683 Seminar in Product Liability
9200:684 Sports and Entertainment Law

Law Courses to be used as MSM-HR Concentration Courses

9200:637 Equal Opportunity Law
9200:650 Labor Law and Collective Bargaining
9200:651 Employment Law
9200:659 Lawyer as Negotiator
9200:660 Seminar in Workers’ Compensation
9200:679 Seminar in Labor Law

College of Fine and Applied Arts

Mark S. Auburn, Ph.D., Dean
James M. Lynn, Ph.D., Associate Dean
Julia A. Spiker, Ph.D., Associate Dean

Mission Statement

The College of Fine and Applied Arts is dedicated to enhancing the quality of life of the individual, the University, and the community. Through instruction, research, creative activity, and outreach programs, the College fosters artistic and social inquiry and direct application of knowledge to self, family, and society. Students are supported in their quest for knowledge of their chosen fields and encouraged to shape their artistic and social environments.

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 134 semester credits
- Accrue 2000 clock hours of clinical experience
- Meet the requirements for provisional 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 4
  - 7700:704 Critical Analysis of Research in Audiology 2
  - 7700:705 Directed Observation in Audiology I 1
  - 7700:706 Auditory Disorders 2
  - 7700:707 Anatomy and Physiology Underlying Neuro-Otology 4
  - 7700:708 Psychoacoustics 3
  - 7700:709 Critical Analysis of Research in Audiology II 2
  - 7700:710 Directed Observation in Audiology II 1
  - 7700:711 Audiologic Assessment 3
  - 7700:710 Industrial and Community Noise 3
  - 7700:733 Clerkship I 1
  - 7700:711 Speech-Language Pathology for the Audiologist 4
  - 7700:712 Diagnosis of Auditory Disorders 3
  - 7700:713 Hearing Aid Technology 4
  - 7700:714 Gerontological Issues in Audiology 3
  - 7700:734 Clerkship II 1
  - 7700:715 Central Auditory Processing: Evaluation and Management 3
**Master’s Degree**

### Family and Consumer Sciences

A program of study is offered leading to the Master of Arts in Family and Consumer Sciences degree offers options in child and family development; child life; clothing, textiles and interiors; and food science. Students must meet the following admission requirements for acceptance in the program:

- 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.
- Submission of a letter of personal career goals, sent to the director of graduate studies in the School of Family and Consumer Sciences.

Two letters of recommendation may be submitted, if desired.

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

Accepted students will be expected to comply with the following requirements:

- Complete the course of study in one of the four options, with a minimum of 40 credits.
  - 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 24 credits of graduate work.
    - Complete a master’s thesis or a master’s project. The thesis 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:**

- 7400:662 Family in Lifespan Perspective 3
- 7400:665 Developmental Parent-Child Interactions (online) 3
- 7400:667 Development in Infancy and Early Childhood 3

**Option Electives:**

Select 9 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 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 3
- 7400:548 Before and After School Child Care 2
- 7400:560 Organization and Supervision of Child-Care Centers 3
- 2600:556 Parent Education 3
- 7400:603 Family Relationships in the Middle and Later Years 3
- 7400:688 Practicum in Family and Consumer Sciences 3

**Cognate Electives:**

Select 3 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 3
- 7400:500 Nutrition Communication and Education 4
- or
- 5600:651 Techniques of Counseling 3
- 7200:551 Child in the Hospital 4
- 7400:555 Practicum Experience in a Child Life Program 3
- 7200:584 Hospital Settings, Children, and Families 3
- 7400:585 Children, Illness, and Loss 3
- 7200:595 Child Life Internship 5

**Cognate:**

- 5600:622 Introduction to Play Therapy 3

Select three credits with approval of advisor within the School of Family and Consumer Sciences OR from a cognate area outside of the School.

**Thesis or Project (select one):**

- 7400:694 Master’s Project 5
- 7400:699 Master’s Thesis 5
- Nonthesis (two courses must be 600 level): 9
- 7400:501 American Families in Poverty 3
- 7400:504 Middle Childhood and Adolescence 3
- 7400:540 Family Crisis 3
- 7400:585 Seminar: FCS (Child Life Topic) 3
- 7200:595 Parent Education 3
- 7400:605 Developmental Parent-Child Interactions (online) 3
- 7400:610 Child Development Theories 3
- 7400:665 Development in Infancy and Early Childhood 3
- 7400:695 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:**

- 7400:634 Material Culture Studies 3
- 7400:639 Theories of Fashion 3

**Options Electives:**

- 7400:518 History of Interior Design I 4
- 7400:519 History of Interior Design II 4
- 7400:523 Professional Image Analysis 3
- 7400:525 Advanced Textiles 3
- 7400:527 Global Issues in Textiles and Apparel 3
- 7400:535 Principles and Practices Interior Design 3
- 7400:536 Textile Conservation 3
- 7400:537 Historic Costume 3
- 7400:538 History of Fashion 3
- 7400:631 Problems in Design 16
- 7400:688 Practicum in Family and Consumer Sciences 3
- 7400:689 Individual Investigation in Family and Consumer Sciences 16
The Graduate Faculty of the School of Family and Consumer Sciences may require an interview with any applicant.

The student should consult with the coordinator of Graduate Studies in Music for additional information regarding the individualized nature of each option.

The M.S. in Nutrition and Dietetics is not a route to becoming a Registered Dietitian (R.D.). Students interested in becoming R.D.s should contact the School for proper course selection, some of which can be done at the graduate level.

Music

The degree Master of Music is offered by the School of Music with options in music education, performance, composition, theory, music history and literature, and accompanying. Entrance requirements for each program are as follows:

- Complete a thesis or a project. The thesis option involves the design and evaluation of original research in an appropriately related area commensurate with the student’s background and area of pursuit. The project option involves the design, development, implementation and evaluation of original and creative programs and/or resource materials. A written proposal for the thesis or project option cannot be submitted until the successful completion of a comprehensive examination.

- Pass an oral examination covering the thesis or project.

Foundation Courses

- Required by all program options:
  - 7400:604 Orientation to Graduate Studies in Family and Consumer Sciences 1
  - 7400:680 Historical and Conceptual Bases of Family and Consumer Sciences 3
  - 7400:685 Research Methods in Family and Consumer Sciences 3

Core Courses:

- 7400:624 Advanced Human Nutrition I 3
- 7400:625 Advanced Human Nutrition II 3

Electives (9 to 12 credits required)

Select with approval of advisor from among the following. At least 2 courses must be selected from the following:

- 7400:565 Cardiac Physiology 3
- 7400:584 Pharmacology 3
- 7400:670 Medical Physiology, Pathophysiology, and Pharmacology 3
- 7400:696 Research in the Biology of Aging 3
- 7400:501 Biochemistry Lecture 1 3
- 7400:502 Biochemistry Lecture II 3
- 7400:500 Nutrition Communication and Education Skills 4
- 7400:520 Experimental Foods 3
- 7400:524 Nutrition in the Life Cycle 3
- 7400:574 Cultural Dimensions of Foods 3
- 7400:576 Developments in Food Science 3
- 7400:580 Community Nutrition I - Lecture 3
- 7400:582 Community Nutrition II - Lecture 3
- 7400:587 Sports Nutrition 3
- 7400:588 Practicum in Dietetics 1-3
- 7400:640 Nutrition in Diminished Health 3
- 8200:561 Advanced Physiological Concepts in Health Care I 3
- 8200:562 Advanced Physiological Concepts in Health Care II 3

Cognate Electives (8 to 11 credits required)

Select with approval of advisor from among the following or courses that strengthen the student’s goals.

- 3470:664 Statistics for the Health Sciences 4
- 3850:678 Social Gerontology 3
- 5600:651 Techniques of Counseling 3
- 6500:600 Management and Organizational Behavior 3
- 6500:602 Computer Techniques for Management 3

Note: The M.S. in Nutrition and Dietetics is not a route to becoming a Registered Dietitian (R.D.). Students interested in becoming R.D.s should contact the School for proper course selection, one of which can be done at the graduate level.

Music

The degree Master of Music is offered by the School of Music with options in music education, performance, composition, theory, music history and literature, and accompanying. Entrance requirements for each program are as follows:

- The standard requirements for an undergraduate major in the area of proposed graduate specialty or performance which the school director approves as equivalent to an undergraduate major.
- The Graduate School’s requirements for admission.
- The performance and accompanying options require an audition on the student’s major instrument/voice. Please contact the coordinator of Graduate Studies for an audition time.
- For the composition option, compositions representing the applicant’s techniques are required.
- The options in music education, music theory, and music history and literature require an interview with faculty in the appropriate area.
- The student should consult with the coordinator of Graduate Studies in Music for additional information regarding the individualized nature of each option.

For the performance option in voice, a proficiency equal to two semesters each of Italian, German and French are required for completion of the Master of Music Degree in Voice Performance.

After completion of all course work, the student must pass an examination covering the graduate program. This examination is individualized for each candidate’s unique program.

Nutrition and Dietetics

(admissions temporarily on hold—please contact School for more information)

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.
- Offer two letters of recommendation if desired.

The 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 24 credits of graduate work.
- Apply for advancement to candidacy upon successful completion of 25 credits of graduate study, the written comprehensive examination, and an approved prospectus for a thesis or project.

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.

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: EconomicsWorld Food Problems 4
- 4000:574 Cultural Dimensions of Food 3
- 7400:586 Seminar in Family and Consumer Sciences (Food Science topic) 2-3
- 7400:570 The Food Industry: Analysis and Field Study 3
- 7400:502 Advanced Food Preparation 3
- 7400:524 Nutrition in the Life Cycle 3
- 7400:652 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
- 7400:698 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.
Composition Option
- Music core courses – eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:619 Theory and Pedagogy 2

- Major required courses – 21-23 credits:
  7500:601 Choral Literature 2
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:624 History of Western Music Survey: Since 1500 3
  7500:647 Master’s Chamber Recital 1
  7500:699 Master’s Thesis/Project 4-6
  7510-6— Ensemble (participation in two ensembles required) 2
  7520:642 Applied Composition 8

- Additional music courses – zero to two credits.

Graduate-level (music) courses, workshops, applied lessons (other than in composition) and/or advanced problems to be selected by the student and advisor.

- Electives – three credits.

To be selected by student and advisor. Areas include graduate-level courses in other disciplines, such as theatre arts, in which the student obtains permission of instructor, or 7520:642 Applied Composition.

Degree total: 34-36 credits.

Music Education Option
**Thesis Option – 32 credits**
- Required Music Education Core Courses – 13-15 credits
  7500:611 Foundations of Music Education (summer) 3
  7500:612 Practices and Trends in Music Education (fall) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3
  7500:699 Master’s Thesis/Project 4-6
  7510-6— Ensemble (participation in two ensembles required) 2
  7520:642 Applied Composition 8

- 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
  7500:699 Master’s Thesis/Project 4-6
  7510-6— Ensemble 2
  7520-6— Other music courses 8
  7520-5—6— Educational Foundations and Leadership 4
  7510-5—6— General Administration 4
  755—5—6— Curricular and Instructional Studies 4
  7500:780 Seminar in Curricular and Instructional Studies 1-3

**Non-Thesis Option – 34 credits**
- Required Music Education Core Courses – 9 credits
  7500:611 Foundations of Music Education (summer) 3
  7500:612 Practices and Trends in Music Education (fall) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3
  7500:699 Master’s Thesis/Project 4-6

- 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
  7500:699 Master’s Thesis/Project 4-6
  7510-6— Ensemble 2
  7520-6— Other music courses 8
  7520-5—6— Educational Foundations and Leadership 4
  7510-5—6— General Administration 4
  755—5—6— Curricular and Instructional Studies 4
  7500:780 Seminar in Curricular and Instructional Studies 1-3

* Topics related to general music.

**Music Education Option: General Music Emphasis**
**Thesis Option – 32 credits**
- Required Music Education Core Courses – 13-15 credits
  7500:611 Foundations of Music Education (summer) 3
  7500:612 Practices and Trends in Music Education (fall) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3
  7500:699 Master’s Thesis/Project 4-6

- Additional music/education courses – select 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
  7520-6— Educational Foundations and Leadership 4
  755—5—6— Curricular and Instructional Studies 4
  7500:780 Seminar in Curricular and Instructional Studies 1-3

* Topics related to general music.

**Non-Thesis Option – 34 credits**
- Required Music Education Core Courses – 9 credits
  7500:611 Foundations of Music Education (summer) 3
  7500:612 Practices and Trends in Music Education (fall) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3

- Additional music/education courses – select 25 credits with approval 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
  7500:699 Master’s Thesis/Project 4-6
  7510-6— Ensemble 2
  7520-6— Other music courses 8
  7520-5—6— Educational Foundations and Leadership 4
  755—5—6— Curricular and Instructional Studies 4
  7500:780 Seminar in Curricular and Instructional Studies 1-3

* Topics related to general music.

**Music Education Option: Instrumental Emphasis**
**Thesis Option – 32 credits**
- Required Music Education Core Courses – 13-15 credits
  7500:611 Foundations of Music Education (summer) 3
  7500:612 Practices and Trends in Music Education (fall) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3
  7500:699 Master’s Thesis/Project 4-6

- Additional music/education courses – select 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
  7520-6— Educational Foundations and Leadership 4
  755—5—6— Curricular and Instructional Studies 4
  7500:780 Seminar in Curricular and Instructional Studies 1-3

* Topics related to general music.

**Music Education Option: Choral Emphasis**
**Thesis Option – 32 credits**
- Required Music Education Core Courses – 13-15 credits
  7500:611 Foundations of Music Education (summer) 3
  7500:612 Practices and Trends in Music Education (fall) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3
  7500:699 Master’s Thesis/Project 4-6

- Additional music/education courses – select 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
  7520-6— Educational Foundations and Leadership 4
  755—5—6— Other music courses 8
  7500:780 Seminar in Curricular and Instructional Studies 1-3

* Topics related to general music.

5100-5—6— Educational Foundations and Leadership 4
5170-5—6— General Administration 4
55—5—6— Curricular and Instructional Studies 4
5500:780 Seminar in Curricular and Instructional Studies 1-3

* Topics related to general music.

5100-5—6— Educational Foundations and Leadership 4
5170-5—6— General Administration 4
55—5—6— Curricular and Instructional Studies 4
5500:780 Seminar in Curricular and Instructional Studies 1-3

* Topics related to general music.
### Non-Thesis Option – 34 credits

- **Required Music Education Core Courses – 9 credits**
  - 7500:611 Foundations of Music Education (summer) 3
  - 7500:612 Practices and Trends in Music Education 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
  - 7500:557 Studies in Choral Literature (20th Century) 2
  - 7500:558 Integrative Conducting Workshop 2
  - 7500:676 Workshop in Choral Music Education 2
  - 7510:620/621 Choral Ensemble 3
  - 7500:624 Applied Voice 4

- **Electives (6 credits)**
  - 7500:570 Studies in Choral Literature I (Med/Ren) 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

*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 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 capturing 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 3
  - 7500:618 Musical Styles and Analysis IV (20th century) 2
  - 7600:627 Computer Studio Design 2
  - 7500:653 Electronic Music 3
  - 7500:699 Master’s Thesis/Project 4-6
  - 7510:6-: Ensemble participation in two ensembles (two performance media) 2
  - 7520:542 Composition (electronic music) 4
  - 7600:697 Graduate Research in Communication 3

- **Electives – 2 credits.** To be selected by the student and advisor. Degree Total: 33 credits.

### Performance Option in Accompanying

- **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
  - 7500:686 Advanced Sang Literature 3
  - 7500:698 Graduate Research (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 Piano (piano, organ and/or harpsichord) 8

- **Additional music courses – two to three credits.**

Graduate-level (music) courses, advanced programs, workshops and/or applied lessons, to be selected by the student and advisor.

Degree total: 33-36 credits.

### 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
  - 7500:618 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
  - 7500:640 Advanced Accompanying I 1
  - 7500:641 Advanced Accompanying II 1
  - 7500:642 Advanced Accompanying III 1
  - 7500:643 Advanced Accompanying IV 1
  - 7500:686 Advanced Sang Literature 3
  - 7500:698 Graduate Research (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 Piano (piano, organ and/or harpsichord) 8

- **Elective – 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.

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**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 is required.

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.**

- **Electives – two credits.**
Electives – four credits.

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 16 credits of 7520 courses may be applied to the degree.

Performance Option in Voice

- Music core courses: eight credits (to be selected):
  - 7500:555 Advanced Conducting Instrumental
  - 7500:556 Advanced Conducting Choral
  - 7500:615 Musical Styles and Analysis I (Chant through Palestrina)
  - 7500:616 Musical Styles and Analysis II (Baroque through early Beethoven)
  - 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss)
  - 7500:621 Music History Survey: Middle Ages and Renaissance
  - 7500:622 Music History Survey: Baroque
  - 7500:623 Music History Survey: Classic and Romantic
  - 7500:624 Music History Survey: Music Since 1900

- Major required courses – 20-22 credits:
  - 7500:556 Advanced Conducting Instrumental
  - 7500:665 Vocal Pedagogy
  - 7500:666 Advanced Song Literature
  - 7500:698 Graduate Recital
  - 7510:6— Ensemble (participation in two ensembles required)**

- 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.

Performance Option in Keyboard

- Music core courses: eight credits (to be selected):
  - 7500:555 Advanced Conducting Instrumental
  - 7500:556 Advanced Conducting Choral
  - 7500:615 Musical Styles and Analysis I (Chant through Palestrina)
  - 7500:616 Musical Styles and Analysis II (Baroque through early Beethoven)
  - 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss)
  - 7500:621 Music History Survey: Middle Ages and Renaissance
  - 7500:622 Music History Survey: Baroque
  - 7500:623 Music History Survey: Classic and Romantic
  - 7500:624 Music History Survey: Music Since 1900

- Major required courses – 18-21 credits:
  - 7500:618 Musical Styles and Analysis IV (20th Century)–
  - 7500:623 Music History Survey: Classic and Romantic
  - 7500:624 Music History Survey: Music Since 1900

- 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.

Performance Option: Choral Conducting

- Major Required Courses (22 credits):
  - 7500:556 Advanced Choral Conducting
  - 7500:570 Studies in Choral Literature (Med/Ren)
  - 7500:571 Studies in Choral Literature (Baroque)
  - 7500:572 Studies in Choral Literature (Class/Rom)
  - 7500:573 Studies in Choral Literature (20th Century)
  - 7500:574 Integrative Conducting Workshop
  - 7500:616 Workshop in Choral Music Education
  - 7510:620/621 Choral Ensemble
  - 7500:624 Applied Voice

- Electives (6 credits):
  - 7500:570 Foundations of Music Education
  - 7500:571 Practices and Trends in Music Education
  - 7500:572 Measurement and Evaluation in Music Education
  - 7500:615 Master’s Thesis/Performance*
  - 7500:616 Music Styles and Analysis II
  - 7500:617 Music Styles and Analysis III
  - 7500:697 Advanced Problems in Music

- Electives (3 credits):
  - Graduate Recital (2 credits)

Total credits 36

Theory Option

- Music core courses – six credits (to be selected):
  - 7500:555 Advanced Conducting Instrumental
  - 7500:556 Advanced Conducting Choral
  - 7500:570 Studies in Choral Literature (Med/Ren)
  - 7500:571 Studies in Choral Literature (Baroque)
  - 7500:572 Studies in Choral Literature (Class/Rom)
  - 7500:573 Studies in Choral Literature (20th Century)
  - 7500:574 Integrative Conducting Workshop
  - 7500:616 Workshop in Choral Music Education
  - 7500:698 Graduate Recital

- Electives – zero to two credits. Graduate-level (music) workshops, applied music (other than composition), advanced problems, and/or courses to be selected by student and advisor.

Degree total: 34-36 credits.

Additional music courses – two credits.

Graduate-level (music) workshops, applied music (other than composition), advanced problems, and/or courses to be selected by student and advisor.

Electives – zero to two credits. To be selected by student and advisor. Areas include graduate-level courses in other disciplines in which the student obtains permission of instructor or 7520:642 Applied Composition.

Degree total: 34-36 credits.

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

- *It is recommended that each student's graduate committee recommend the appropriate elective credit.
Communication

The School of Communication offers the master of arts degree in a coordinated program of communication arts.

Entrance requirements:
- Meet the general requirements for admission to the Graduate School.
- Possess an undergraduate major in communication, journalism or a related field; or, complete at least 15 semester credits of undergraduate communication coursework approved by the department.

Program requirements:
- Complete 36 credits, distributed as follows:
  - School core courses – 12 credits:
    - 7600:600 Introduction to Graduate Study in Communication 3
    - 7600:603 Research in Communication 3
    - 7600:624 Survey of Communication Theory 3
    - 7600:625 Theories of Mass Communication 3
    - 7600:670 Communication Criticism 3
  - School coursework – 12 credits.
  - Graduate electives – 6 credits.

Thesis (699) or Project/Production (698) – 6 credits.

Total – 36 credits.

- Comprehensive examination required for students not pursuing a thesis, project, or production after 24 credits of coursework, including all core courses.
- Advancement to candidacy. Registration for six (6) credits of Thesis (699) or Project/Production (698).
- Presentation and defense of a thesis/project/production:
  - The thesis, project, or production requirement is designed to be the culmination of the student’s academic program and involves the conceptualization, design and execution of an academic, practical, or aesthetic problem in a manner which requires a high level of substantive, methodological, technical, and written skills. These skills may be demonstrated in any of the three types of activities, depending on the student’s background and career orientation.

Theatre Arts

The School of Dance, Theatre, and Arts Administration offers a master of arts degree. The following will qualify the student in the field of theatre or arts administration.

- Complete the general requirements for admission to the Graduate School.
- Complete an undergraduate major in communication, journalism or a related field, or, complete at least 15 semester credits of undergraduate communication coursework approved by the department.
- Complete an oral defense of the thesis or thesis project.

Arts Administration Option

- Complete a minimum of 45 credits.
- Required theatre arts courses (30-33) credits:
  - 7800:600 Research and Writing Techniques 3
  - 7800:605 Colloquium in the Arts 3
  - 7800:665 Audience Development 3
  - 7800:666 Principles of Arts Management 3
  - 7800:682 Fund Raising and Grantmanship in the Arts 3
  - 7800:691 Arts Administration Practices and Policies 3
  - 7800:692 Legal Aspects of Arts Administration 3
  - 7800:698 Internship 3
  - 7800:699 Master’s Thesis 6
- Required business courses (9 credits):
  - 6200:590 Special Topics in Accounting 3
  - 6500:600 Management and Organizational Behavior 3
  - 6600:600 Marketing Concepts 3
  - 6600:630 Marketing of Services 3
- Electives in related fields (3-6 credits):
  - Options here include course work in business, computer science, urban studies, art, music, law, theatre and dance.
- Complete an oral defense of the thesis.
- General electives 0-3

Theatre Option

Complete a minimum of 36 credits distributed as follows:
- School core courses - 24 credits:
  - 7800:600 Research and Writing Techniques 3

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 before the application can be considered
- 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
- Submit to School of Speech-Language Pathology:
  - Three letters of recommendation
  - Graduate Record Examination scores
- Application for Graduate Assistantship (if applying)
- Applications for admission in Fall or Spring are accepted and considered only once per year.
- Applications for admission for the following academic year should be received by February 10.

Degree Requirements

- The master’s thesis is optional for students in speech-language pathology. All students will successfully complete a course of study with a minimum of 56 credits, two of which may be thesis credits for students electing the thesis option. Academic requirements within the school for speech-language pathology majors:
  - 7700:540 Augmentive Communication 3
  - 7700:560 Speech-Language Hearing Disorders in the Public Schools 2
  - 7700:590 Workshop 1-3
  - 7700:595 Developmental Disabilities 3
  - 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 Slurring: Theories and Therapies 2
  - 7700:628 Topics in Differential Diagnosis of Speech and Language Disorders 2
  - 7700:630 Clinical Issues in Child Language 4
  - 7700:631 Acquired Brain Injury 3
  - 7700:632 Dysphagia 3
  - 7700:633 Professional Issues 2
  - 7700:639 Advanced Clinical Testing 4
  - 7700:650 Advanced Clinical Practicum: Speech-Language Pathology 9
  - 7700:696 Externship: Speech Pathology and Audiology (two registrations) 6 each
  - 7700:696 Externship Seminar 1 each
- Completion of 5610:693 Student Teaching in Speech Pathology and 5610:691 Student Teaching Seminar may be substituted for one 7700:695 registration and one 7700:696 SLF Seminar registration.
- Students must be registered for clinical practicum, externship, or student teaching during any academic period in which they are involved in in-house practicum, externship, or student teaching.

Social Work

The Master of Social Work Program is a joint degree program administered by The University of Akron and Cleveland State University. The Joint MSW Program began in 1995. Distance learning technology, utilizing interactive video and audio systems, links faculty and students at the two institutions. The degree program is accredited by the Council on Social Work Education.

The curriculum of the Joint MSW Program is designed to prepare students for advanced level professional practice in social work. The program provides a rigorous intellectual base, an opportunity for effective skill development, and an edu-
cational perspective that views human diversity as desirable and enriching to soci-
ety. The Joint MSW Program offers:

- Preparation for the advanced practice of social work
- A degree program accredited by the Council on Social Work Education
- Part-time study
- Evening/Weekend courses
- Regional field placements
- Advanced standing program for qualifying students with a BSW

**Admission Requirements:**

The Joint MSW Program is committed to diversity in the student body. An appli-
cant 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 applica-
tion materials have been received. Applications for full-time, part-time, and advanced standing close on February 28. All application materials must be received by this date. Full-time and part-time admissions are available only for the fall semes-
ter.

The applicant must submit the following to the Graduate School:

- Graduate application form accompanied by an application fee for first-time appli-
cants
- An official transcript from each college or university attended (must include con-
tent in human biology as well as liberal arts coursework)

The following must be submitted to the School of Social Work:

- 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 pro-
fessional objectives;
  c) his/her views regarding diversity in society;
  d) a situation in which he/she was the recipient/provider of help, emotionally,
  socially, or economically, and if/how this situation impacted the desire to
  pursue an advanced degree in social work.
- A recent resume which highlights social work or human service experience.
- Three letters of reference/recommendation forms (including one from immedi-
ate supervisor, if employed).
- A completed Application Checklist.

In addition, applicants to the Joint MSW Program must have:

- Undergraduate degree in social work or a related field.
- Minimum GPA of 3.00 in social and behavioral science courses taken prior to appli-
cation for admission.
- Well-balanced liberal arts curriculum.
- Interview with a member of the faculty may also be required.

Admission to the master’s degree program is on a selective basis and is determined
by the academic preparation and personal qualifications of the applicant. Intellec-
tual maturity, emotional stability, motivation, and the capacity to work with people
are essential qualifications.

Openings for admission are limited, and competition is considerable. Individuals
who have the strongest qualifications in terms of the MSW Program’s admission
criteria are selected for admission. Students admitted to the MSW Program must register for courses the same calendar year they are accepted. Admission cannot be deferred until the next year. Students must indicate their intention to enroll by
the deadline indicated in the letter of acceptance.

Applicants should be aware that having a prior felony conviction or prior sanctions
for unprofessional conduct may impact future potential for obtaining licensure as
well as field placements and social work employment.

Students are expected to adhere to the program format under which they were
admitted. Any changes in this initial admission status will be based on the program’s
ability to accommodate the change. Changes must be requested in writing at the
beginning of the previous academic year. The Admissions Committee may require
an in-person interview at its discretion.

Scheduling of courses depends on the availability of rooms equipped with distance
education technology as well as other factors. The days and times courses are
offered may vary from year to year. Students enrolled in either full-time, part-time,
or advanced standing programs must be prepared to be flexible when the sched-
ule of classes changes.

**Transfer Students**

An applicant who wishes to transfer from another MSW program must follow the
same admission process and meet the same admission requirements as other
degree candidates. A formal written request for transfer must be made at the time
of application for admission. A maximum of 20 graduate credit hours may be trans-
ferred from another program accredited by the Council of Social Work. The cred-
its must fall within the six-year time limit for degree completion. A grade of “B” or
better is required for transfer credit. The Admissions Committee will determine
acceptance of transfer credit. Credit will not be given for work or life experience.
Transfer students must submit field work evaluations at the time of application for
admission.

**Program Requirements:**

- Complete a minimum of 60 graduate credits of approved courses in social work
  with an average grade of “B” or better on all classroom courses and satisfactory
  grades in all field courses. Students must register only for 600-level courses.
- Complete an approved program of courses which include the following required
courses:

**Full Time Program**

**First Year Professional Foundation:**

- **Fall Semester**
  - 7750:601 Foundation Field Practicum 3
  - 7750:609 Social Work Practice with Small Systems 3
  - 7750:622 Fundamentals of Research I 3
  - 7750:631 Human Behavior and Social Environment: Small Social Systems 3
  - 7750:646 Social Welfare Policy I 3
- **Spring Semester**
  - 7750:602 Foundation Field Practicum 3
  - 7750:605 Social Work Practice with Large Systems 3
  - 7750:647 Social Welfare Policy II 3
  - 7750:623 Fundamentals of Research II 3
  - 7750:632 Human Behavior and Social Environment: Large Systems 3

**Second Year Concentrations (Direct Practice):**

- **Fall Semester**
  - 7750:603 Advanced Field Practicum 3
  - 7750:607 Advanced Practice with Small Systems I 3
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:663 Psychopathology and Social Work 3
  - One elective 3
- **Spring Semester**
  - 7750:604 Advanced Field Practicum 3
  - 7750:608 Advanced Practice with Small Systems II 3
  - 7750:664 Direct Practice Research 3
  - Two electives 6

**Second Year Concentrations (Macro Practice):**

- **Fall Semester**
  - 7750:603 Advanced Field Practicum 3
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:673 Community Organization and Planning 3
  - One elective 3
- **Spring Semester**
  - 7750:604 Advanced Field Practicum 3
  - 7750:671 Social Work Administration 3
  - 7750:672 Strategies of Community Organization 3
  - 7750:675 Program Evaluation 3
  - One elective 3

**Part-Time Program**

**Professional Foundation:**

- **Fall Semester (First Year)**
  - 7750:631 HBSE: Small Systems 3
  - 7750:646 Social Welfare Policy I 3
- **Spring Semester (First Year)**
  - 7750:632 HBSE: Large Systems 3
  - 7750:647 Social Welfare Policy II 3
- **Fall Semester (Second Year)**
  - 7750:622 Fundamentals of Research I 3
  - 7750:609 Social Work Practice with Small Systems 3
  - 7750:601 Foundation Field Practicum 3
- **Spring Semester (Second Year)**
  - 7750:623 Fundamentals of Research II 3
  - 7750:605 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
## College of Nursing

Cynthia F. Capers, R.N., Ph.D., Dean
Kathleen Ross-Alaolmolki, R.N., Ph.D., Director, Academic Nursing Programs
Christine A. Wynd, R.N., Ph.D., Director, Joint Ph.D. in Nursing Program
N. Margaret Wineman, R.N., Ph.D., Senior Director

### 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 ethnically 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.

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 for certification.

### Goals
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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 for certification.

### 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.
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humane, 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 doctoral student body. Students may choose which university will grant their degree. The diploma will be issued from the student’s university of record and will recognize the Joint Doctor of Philosophy program. JPDN courses will be cross listed and scheduled at each university.

**Program Purpose and Description: Preparation of Scholars in Nursing**

The JPDN program is characterized by excellence through scholarship, integrity, and caring. The primary purpose of the JPDN is to produce nurse scholars. This purpose will be realized through: the development and testing of theories and models of nursing science and nursing practice, the consideration of the social, political, legal, ethical, 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 who 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 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 theoretical formulations and research findings in advanced practice.

**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:
  - Three required methods/design courses (9 credits)
    - 8200:825 Quantitative Research Methods 3
    - 8200:830 Qualitative Research Methods 3
    - 8200:845 Advanced Methods for Research 3
  - One advanced nursing research methods course selected with the approval of the student’s academic advisor.

- 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 (9 credits)
    - Cognates 9
    - Three courses are selected with the approval of the student’s academic advisor from a discipline outside of nursing to support the student’s research interest.

- 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

- Doctoral dissertation
  - 30 credit hours required
    - 8200:899 Doctoral Dissertation 30
    - 8200:800 Doctoral Dissertation II 1

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Qualifying for Candidacy for the Doctoral Dissertation

- All students in the JPDN Program are required to successfully complete a qualifying examination before proceeding to conduct dissertation research. To be eligible for candidacy for the dissertation, students must have completed 42 hours of required courses, have maintained a minimum GPA of 3.0 on a 4.0 scale in the doctoral program, have successfully completed the qualifying examination, and have been approved by the appropriate administrative bodies of the program.
- Dissertation Prospectus. The dissertation prospectus is a written document that includes an outline of the parameters of the proposed dissertation topic with a rationale and statement of the problem to be researched, the methodology and design of the study, a preliminary review of the literature substantiating the need for the study, and the principle sources of information for the dissertation. Approval of the prospectus permits the student to proceed with the dissertation.
- Dissertation. The dissertation is based upon original investigation and demonstration of mature scholarship and critical judgment in the theoretical and methodological approaches to development of nursing knowledge. The dissertation is expected to be the first step in the development of a program of research and scholarly activity. A minimum of 30 dissertation credit hours are required.
- Oral defense. When the dissertation is completed a meeting will be scheduled for the student’s defense of the dissertation. The candidate is expected to respond to substantive and methodological questions related to the dissertation.
- Dissertation committee. A four person doctoral dissertation committee will guide and approve the acceptability of the dissertation. The Chair must be a member of the JPDN faculty, as must be two committee members. The remaining member must be selected from outside the program. Other qualifications of members will be consistent with the student’s area of research and with the requirements for doctoral committees as stated in the policies and general catalogs of both universities.

Innovative Curriculum Pathways to the Joint Ph.D. in Nursing Program for BSN Graduates and for Students Enrolled in MSN Option

The Innovative Pathways into the Joint Ph.D. in Nursing Program (JPDPN) is an accelerated program that allows individuals with a BSN and students enrolled in the RN-MSN program direct admission into the JPDPN 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 MSN 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 of all required courses of the 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.

Students enrolled in The University of Akron RN-Option receive a maximum of six (6) by-passed credits after successfully completing six credit hours of doctoral level courses. By-passed credit is given for Nursing Inquiry I (8200:613) and Nursing Inquiry II (8200:619) after the student successfully completes Quantitative Research Methods (8200:625) and Qualitative Research Methods (8200:630) 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.

MASTER OF SCIENCE IN NURSING

Accreditation

The master’s degree programs are fully accredited by the National League for Nursing Accreditation Commission (NLNAC) and has preliminary approval from the Commission on Collegiate Nursing Education (CCNE). NLNAC is a resource of information regarding tuition, fees, and length of program and can be contacted at: 350 Hudson Street, New York, New York 10014, 1-888-669-9656 extension 153. CCNE can be contacted at One Dupont Circle, N.W., Suite 530, Washington, D.C., 20036

Characteristics of the Graduate

Upon completion of the program graduates will be able to:
- Incorporate theories and advanced knowledge into nursing practice.
- Demonstrate competence in selected role(s).
- Identify researchable nursing problems and participate in research studies in advanced nursing practice.
- Use leadership, management, and teaching knowledge and competencies to influence nursing practice.
- Assume responsibility for contributing to improvement in the delivery of health care and influencing health policy.
- Assume responsibility for contributing to the advancement of the nursing profession.

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.
Admission Procedures

The student secures application for Graduate School from the Office of the Dean of the Graduate School, The University of Akron, or the Office of Student Affairs, College of Nursing. Criteria specific for admission to the Graduate Nursing Program may be secured from the Coordinator of the Graduate Program in Nursing or the Office of Student Affairs.

A graduate admissions committee of the College of Nursing will review all applications and make recommendations to the Coordinator of the Graduate Program regarding the applicant’s status. The Coordinator will send a recommendation to the dean of the Graduate School, who will notify the student of admission status.

Applications received in the graduate office of the College of Nursing will be reviewed when the file is complete to facilitate the admission process.

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, Behavioral 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.

The Master of Science in Nursing with a focus on Nurse Anesthesia prepares the graduates to sit for the national certification examination that upon successful completion allows the individual to use the title of Certified Registered Nurse Anesthetist (CRNA).

Nursing Core

The curriculum consists of a core of 17 credit hours. These courses encompass advanced theory, research, computers in nursing, health policy, and pathophysiological concepts.

Nursing Research

All students enroll in a research core for a total of 7 credits; 8200:619 Research Core I and 8200:618 Research Core 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 in nursing. Students must complete 8849 hours of prerequisite undergraduate coursework prior to acceptance into the sequence. The RN program consists of 32 credit hours of upperdivision baccalaureate coursework. Students wishing to begin work on the Master’s degree RN/MSN option may do so while meeting the baccalaureate requirements. 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:

8200:608 Pathophysiological Concepts of Nursing Care 3
8200:603 Theoretical Basis for Nursing 3
8200:606 Information Management in Advanced Nursing Practice 3
8200:607 Policy Issues in Nursing 2
8200:613 Nursing Inquiry 3
8200:618 Nursing Inquiry II 3
8200:699 Master’s Thesis 16

Functional role courses selected by students based upon area of specialty.

• Nurse Anesthesia

The Anesthesia Track (60 credit hours) is accredited by the Council on Accreditation of Nurse Anesthesia Programs.

8200:561 Advanced Physiological Concepts in Health Care I 3
8200:562 Advanced Physiological Concepts in Health Care II 3
8200:637 Nurse Anesthesia Residency I 4
8200:640 Scientific Components of Nurse Anesthesia 3
8200:641 Pharmacology for Nurse Anesthesia I 3
8200:642 Introduction to Nurse Anesthesia 2
8200:643 Principles of Anesthesia I 4
8200:644 Pharmacology for Nurse Anesthesia II 3
8200:645 Principles of Anesthesia II 4
8200:646 Nurse Anesthesia Residency II 4
8200:647 Professional Role Seminar 2
8200:648 Nurse Anesthesia Residency III 4
8200:649 Nurse Anesthesia Residency IV 4

• CRNA-MSN Anesthesia Option

8200:640 Scientific Components of Nurse Anesthesia 3
8200:641 Pharmacology for Nurse Anesthesia I 3
8200:642 Introduction to Nurse Anesthesia 2
8200:643 Principles of Anesthesia I 4
8200:644 Pharmacology for Nurse Anesthesia II 3
8200:645 Principles of Anesthesia II 4
8200:647 Professional Role Seminar 2

• CPNP-MSN Child and Adolescent Health Nurse Practitioner

The Child and Adolescent Health Nurse Practitioner track (45 credits) meets certification requirements through ANCC or PCNPBNCP.

4200:585 Nutrition for Pediatric Nurse Practitioners 2
4200:650 Pediatric/Adolescent Assessment 3
4200:651 Child and Adolescent Health Nursing I 3
4200:652 Child and Adolescent Health Nursing I Practicum 2
4200:653 Child and Adolescent Health Nursing II Practicum 2
4200:654 Child and Adolescent Health Nursing II Practicum 2
4200:655 Child and Adolescent Health Nursing III Practicum 2
4200:656 Child and Adolescent Health Nursing III 3
4200:657 Pharmacology for Child and Adolescent Health Nursing 3
4200:658 Child and Adolescent Health Nursing Practicum (selective only) 1-4
4200:659 Practicum: Child and Adolescent Health Nursing 5

• Behavioral Health Nursing

Behavioral Health Nursing Track (49 credit hours) meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) as psychiatric clinical nurse specialist or psychiatric nurse practitioner.

5600:720 Topical Seminar: Guidance and Counseling (DSM IV) 3
5200:610 Advanced Adult/Gerontological Assessment 3
5200:612 Advanced Clinical Pharmacology 3
5200:660 Behavioral Health Nursing I Practicum 2
5200:661 Behavioral Health Nursing I 3
5200:662 Clinical Psychopharmacology 3
5200:663 Behavioral Health Nursing Internship (elective only) 1-4
5200:664 Behavioral Health Nursing II Practicum 2
5200:665 Behavioral Health Nursing II 3
5200:667 Behavioral Health Nursing III 3
5200:668 Behavioral Health Nursing III Practicum 2
5200:669 Practicum: Behavioral Health Nursing 5

• 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 area.

5200:610 Advanced Adult/Gerontological Assessment 3
5200:612 Advanced Clinical Pharmacology 3
5200:671 Adult/Gerontological Health Nursing CNS I 2
5200:674 Adult/Gerontological Health Nursing CNS I Practicum 2
5200:675 Adult/Gerontological Health Nursing CNS II 2
5200:676 Adult/Gerontological Health Nursing CNS II Practicum 2
5200:677 Adult/Gerontological Health Nursing CNS III 2
5200:678 Adult/Gerontological Health Nursing CNS III Practicum 2
5200:679 Practicum: Adult/Gerontological Health Nursing CNS 4
• 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).

8200:610 Advanced Adult/Gerontological Assessment 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 Practicum 3
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
• Administration (36 credits)

8200:630 Resource Management in Nursing Settings 3
8200:632 Fiscal Management in Nursing Administration 3
8200:633 Nursing Leadership in Organizations 3
8200:634 Nursing Leadership in 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

†Cognate 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 course work that integrates their current clinical expertise within the framework of advanced practice nursing at the master’s level. This program allows CRNAs to advance their current status to be congruent with the master’s level education mandated for all current nurse anesthesia educational programs.

Admission Requirements:
• Evidence of successful completion of an accredited program of nurse anesthesia
• Evidence of successful completion of an accredited BSN program
• Current certification/recertification as a CRNA
• Current employment as a CRNA
• Three professional recommendations
• Satisfactory completion of a graduate-level statistics course

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

MASTER OF PUBLIC HEALTH

The Northeastern Ohio Universities Master of Public Health (NEOU MPH) program is a multidisciplinary, interdepartmental, and interinstitutional organization that provides opportunities for graduate study in public health. As a consortium-based program, the Master in Public Health degree is awarded by The University of Akron and utilizes faculty at The University of Akron, Cleveland State University, Kent State University, Northeast Ohio Universities College of Medicine, and Youngstown State University. This program focuses on enabling public health and health care practitioners to better serve the community.

Students take core courses as a cohort at distance learning sites on participating campuses using interactive videoconferencing. Core courses are scheduled on Saturdays from 9:00 a.m. to 4:00 p.m. (including an hour for lunch). Electives are taken on the campus where they are being offered and may be taken at any time during the program.

Mission Statement

The mission of the Northeastern Ohio Universities Master of Public Health program is to preserve and enhance the health and well-being of the community by providing an educational program that fosters collaboration among the participating academic institutions, students, public health practitioners, and the public health system, and that prepares graduates in the knowledge, skills, and analytic capabilities required to improve the health of diverse populations at the local, state, and national levels via community practice, research, and service.

Goals

• Provide an MPH program that fosters diversity through collaboration among academics, researchers, public health practitioners, and students from each member institution and the Northeast Ohio community.
• Provide graduates with a foundation of public health skills and knowledge, including community assessment methods, research strategies, program implementation, evaluation, and policy development.
• Provide students with opportunities to apply public health concepts and skills to assess and improve the health status of residents of Ohio.
• Foster ongoing professional development of faculty and students, and the advancement of public health practice in the community through the development and implementation of continuing education programs.
• Conduct at least an annual evaluation of program activity to assure that it continues to meet the needs of both students and the Ohio community, and is based on the most current concepts and skills in public health research and practice.

Admission

Applications are sent to Northeastern Ohio Universities Master of Public Health, Division of Community Health Sciences, Northeastern Ohio Universities College of Medicine, 4209 State Route, P.O. Box 95, Rootstown, Ohio 44272. Students must meet the following admission requirements:

• Submit completed application by the required date
• Possess a bachelor’s degree from an accredited college or university
• Provide official transcripts from each institution of higher education attended
• A minimum undergraduate GPA of 2.75
• Three letters of recommendation from individuals familiar with applicant’s academic or professional background, submitted to: NEOU MPH Admissions Committee, Division of Community Health Sciences, NEOUCOM, 4209 State Route, P.O. Box 95, Rootstown, Ohio 44272. Letters should include assessments of the applicant’s work quality and estimation of her/his ability to succeed in the program.
• Successful completion of a college-level mathematics or statistic course and a college-level social or natural science course
• Acceptable GRE taken within the last five years (may be waived if applicant has a professional degree [master’s or doctoral] in a relevant area)
• International candidates for whom English was not the language of instruction must achieve a minimum score of 550 on the TOEFL
• Two years work experience in a relevant field is highly recommended
• Cover letter (maximum two pages) explaining candidate’s educational and professional history, area of interest in public health, interest and motivation for seeking the MPH, and professional or academic career plans upon completion of the program
• $35 non-refundable application fee

Admitted students are assigned to an “enrollment university” based on preference. Questions may be directed in writing to the above address or applicants may contact the Program Director by telephone (330) 325-6179, fax (330) 325-5907, or e-mail at pubhlth@neo.ucom.edu. The Program Co-Director on The University of Akron campus may be reached at (330) 972-8099.

Curriculum

The MPH program contains five core areas basic to public health: biostatistics, epidemiology, environmental health sciences, health services administration, and social and behavioral sciences.
A “grant” project, capstone project, portfolio, and exit presentation is required of each student.

Core courses:
- Prerequisite for all core courses is admission to the MPH Program.
- 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:
- 8300:697 Capstone Project 3-6
- Electives 15-18
- Total 39

The College of Polymer Science and Polymer Engineering
Frank N. Kelley, Ph.D., Dean
Ernst D. von Meerwall, Ph.D., Associate Dean

HISTORY

The University of Akron has been a focus for education and research in polymer science since 1910 when Professor Charles M. Knight began offering courses in rubber chemistry. Master’s theses treating rubber chemistry on the University library shelves date to 1920. The University began developing major laboratories in 1942 under the leadership of Professor G.S. Whitby, and the UA program played a significant role in the synthetic rubber industry of the U.S. government during World War II. An Institute of Rubber Research under the direction of Professor Maurice Morton was created in 1956, which became an Institute of Polymer Science in 1964. A Ph.D. program in Polymer Chemistry was introduced in 1956. In 1967, a Department of Polymer Science in the College of Arts and Sciences was formed which awarded M.S. and Ph.D. degrees in Polymer Science.

A Center for Polymer Engineering was created in 1983 and a Department of Polymer Engineering in the College of Engineering in January 1984 with Professor James L. White as director and department chair to give thrust to polymer processing and engineering applications. In 1988 the College of Polymer Science and Polymer Engineering was established to consolidate the administration of the two academic departments, the Institute of Polymer Science and the renamed Institute of Polymer Engineering.

MISSION STATEMENT

The mission of the College of Polymer Science and Polymer Engineering is to serve its students through a high quality educational experience, incorporating both classroom and laboratory learning, as well as a stimulating research environment. Its graduates and former research associates provide a well-trained workforce for employers throughout the world, but especially for the State of Ohio. With the generation of new knowledge from research and the application of that knowledge, the College serves society with benefits to both the economy and the environment.

- The primary purpose of the College is to educate its students in the science and engineering of polymers. Since 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 new knowledge concerning polymeric materials and processes, and to disseminate that knowledge to the broader community of researchers, technologists, and manufacturers who employ that knowledge to their own aims.
- The College provides a variety of services through its institutes and centers to aid the economic and cultural development of our society. Individual faculty members provide services as consultants to industry, government, and civic institutions, concerning the developments in knowledge and applications of polymers.
- An additional function of the College is to provide training for those individuals who wish to improve their skills and knowledge concerning various types of polymers, their properties, processes and uses. Undergraduate students from other colleges within the University participate in specialized courses taught by the polymer college faculty as they pursue their traditional degree programs. Also, a variety of non-credit offerings are presented as continuing education, intensive short courses, and seminars.

DESCRIPTION

The College of Polymer Science and Polymer Engineering carries out a program of research and education, primarily at the graduate level, and serves as a major intellectual resource for the scientific and technological development of polymers and related materials and processes. The college consists of the Department of Polymer Science, the Department of Polymer Engineering, the Maurice Morton Institute of Polymer Science and the Institute of Polymer Engineering.

The Department of Polymer Science and The Institute of Polymer Science, emphasize polymer synthesis, the physical chemistry, physics and mechanical behavior and technology of polymers, and many of their applications. The Department of Polymer Engineering and the Institute of Polymer Engineering, emphasize polymer processing (including reactive processing), solid state structure/morphology and properties of polymers as related to process history as well as engineering analysis and design. Collaborative research among the faculty in the two departments...
is common and provides a unique environment and capability for solving modern-day problems. This provides a fertile environment for students to obtain multidisciplinary training.

ADMISSION REQUIREMENTS
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 Chemical Engineering, Mechanical Engineering 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 core 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.

A student with a M.S. in Mechanical or Chemical Engineering 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.

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:

1. 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 results of any special examinations it might impose. This course will consist of a minimum of, but usually more than, 36 credits in graduate courses, or their equivalent, plus sufficient Ph.D. research credits to make a total of 84 credits exclusive of Master of Science thesis credit. Credits for participation in either Polymer Science or 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.

2. 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
   9871:704 Condensation Polymerization
   9871:705 Free Radical Reactions in Polymer Science
   9871:706 Ionic and Monomer Insertion Reactions

3 credits of polymer science laboratory:
9871:613 Polymer Science Laboratory

4 credits of polymer physical chemistry courses:
9871:634 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

4 credits of polymer engineering and technology courses:
9871:701 Polymer Technology I
9871:702 Polymer Technology II
9871:703 Polymer Technology III

3 credits of polymer science laboratory:
9871:613 Polymer Science Laboratory

4 credits of polymer physical chemistry courses:
9871:634 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

4 credits of polymer engineering and technology courses:
9871:701 Polymer Technology I
9871:702 Polymer Technology II
9871:703 Polymer Technology III

3 credits of polymer science laboratory:
9871:613 Polymer Science Laboratory

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:

1. Take a Basic Engineering exam after the first Fall semester of study. The exam will cover heat transfer, fluid mechanics and solid mechanics, as determined by the department. If a student fails the examination or a portion of the examination he/she may be asked to take remedial undergraduate courses or graduate level courses at his/her own expense within one year from the date of the exam.

2. 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 results of any special examinations it might impose. This course will consist of a minimum of, but usually more than, 36 credits in graduate courses, or their equivalent, plus sufficient Ph.D. research credits to make a total of 84 credits exclusive of Master of Science thesis credit. Credits for participation in either Polymer Science or 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.

3. Complete courses as developed in the plan of study. 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 must be dissertation research.

4. 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.

5. 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.

6. All doctoral students must complete the Polymer Engineering core requirements for the Master of Science degree.

7. Each candidate must pass a candidacy exam and must present his/her research proposal for approval by the advisory committee and taken after 90% of the course work specified in the plan of study has been completed. The candidacy exam may be based on the research proposal.
• 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.
• Fulfill a second language requirement.

Polymer engineering core (12 credits):

9841:611 Structural Characterization of Polymers with Electromagnetic Radiation 2
9841:621 Rheology of Polymeric Fluids 3
9841:622 Analysis and Design of Polymer Processing Operations I 3
9841:631 Engineering Properties of Solid Polymers 2
9841:641 Polymeric Materials Engineering Science 2

Polymer Engineering (600-level) electives:

9841:601 Polymer Engineering Seminar 1
9841:623 Analysis and Design of Polymer Processing Operations II 3
9841:642 Engineering Aspects of Polymer Colloids 2
9841:650 Introduction to Polymer Engineering 3
9841:651 Polymer Engineering Laboratory 3
9841:661 Polymerization Reactor Engineering 3
9841:670 Polymer Nanocomposites 3
9841:675 Carbon-Polymer Nanotechnology 3
9841:680 Polymer Coatings 3

Polymer Engineering (700-level) electives:

9841:7xx Electives 10

A minimum of 36 credits of coursework is required for the Ph.D. in Polymer Engineering.

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 (i.e., computer skill/statistics) is required for the Ph.D. degree in Polymer Engineering, using either Plan A, B, or C (see section under "Language Requirements" as described in this publication).

MASTER’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 theses credits must be completed at the University.

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.

requirements:

• Complete 30 credits: 12 credits of core courses, 6 credits of 600-level polymer engineering electives, 3 credits of approved math, 3 credits of technical electives, and 6 credits of Master’s Thesis.

• Polymer engineering core:

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 elective:

9841:601 Polymer Engineering Seminar 1
9841:623 Analysis and Design of Polymer Processing Operations II 3
9841:661 Polymerization Reactor Engineering 3
9841:670 Polymer Nanocomposites 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.

Mathematics elective:

3450: Approved Mathematics 3

Technical electives:

3400.xxx Approved Mathematics 3
4300:681 Advanced Engineering Materials 3
4600:622 Continuum Mechanics 3
9871:613 Polymer Science Laboratory 3
9871:674 Polymer Structure and Characterization 2
9871:675 Polymer Thermodynamics 2
9841:xxx 3

Thesis:

9841:699 Master’s Thesis 6

Requirements:

Polymer Engineering Core 12
600-level Polymer Engineering Electives 6
Approved Mathematics 3
Technical Electives 3
Thesis 6
Total 30

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 or graduate level courses at his/her own expense 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, Introduction to Polymer Engineering, 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.

Attendance at and participation in department seminars as directed by the advisory committee is required.
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 indicates 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 RESOURCES

ADDICTION COUNSELING
Robert C. Schwartz, Ph.D., Coordinator
(Admissions temporarily suspended.)
The Addiction Counseling certificate program prepares master’s-level practitioners to assess, diagnose, and treat persons with addictive disorders using various counseling strategies. Trainees will complete coursework related to theory, assessment, treatment planning, and treatment of addicted clientele. Trainees will then gain supervised clinical experience specifically related to counseling clients with addictive disorders. Licenses mental health practitioners may list addiction counseling under their identified scope of practice after completion of this certificate program.

Admission
Persons are eligible for admission to the Graduate Certificate Program in Addiction Counseling if they are currently enrolled in a master’s degree program in counseling or a closely related field or currently hold a master’s degree in counseling or a closely related field. To participate in the program the student should:

- Be formally admitted to The University of Akron as a degree seeking or a special non-degree graduate student.
- Make written application to the program to the Counselor Education Admissions Committee in the Department of Counseling and Special Education.
- Receive written notification for admission from the Counselor Education Admissions Committee.
- Consult with the Counselor Education Internship Coordinator to plan for an internship in an appropriate addictions counseling setting.

Requirements
5600:732 Addiction Counseling I: Theory and Assessment 3
5600:733 Addiction Counseling II: Treatment Planning and Intervention Strategies 3
5600:685 Internship in Counseling 6
Total credit hours 12

ADULT/GERONTOLOGICAL NURSE PRACTITIONER – POST-MSN
The Post-MSN certificate program is designed to prepare Adult/Gerontological Clinical Nurse Specialists to complete additional course work required to sit for Nurse Practitioner certification. The Post-MSN Adult/Gerontological Nurse Practitioner Certification Program prepares graduates to assume advanced practice positions as providers of primary health care to adults and older adults.

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
8200:677 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 3
8200:629 Adult/Gerontological Health Practicum NP 3
8200:692 Clinical Management I 3
8200:692 Clinical Management II 3
8200:694 Clinical Management III 3
Total 18

ADVENTURE 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
7400:588-008 Seminar: General Mediation Training 3
7400:588-007 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
9200:628 Family Law 3
9200:686** 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 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
  - 3850:595 Family Violence 3
- Skill Development Core Courses
  - 3700:585-008 Seminar: General Mediation Training 3
  - 3700:585-007 Seminar: Divorce Mediation Training 3
- Elective Courses: (choose three)*:
  - 3850:521 Race and Ethnic Relations 3
  - 3700:512 Global Environmental Politics 3
  - 3700:610 Seminar in International Politics 3
  - 3700:690 Special Topics (global conflict related) 1-3
- Total credit hours 19

*To complete the certificate, students must submit a seminar paper from one of their courses selected from the electives list to the Director of the Center for approval as a scholarly investigation of the issues surrounding global conflict.

ADVANCED ROLE SPECIALIZATIONS IN NURSING MANAGEMENT AND BUSINESS

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.

Requirements:
- Students should successfully complete all four courses listed below.
  - 8200:630 Resource Management in Nursing Settings 3
  - 8200:632 Fiscal Management in Nursing Administration 3
  - 8200:634 Nursing Leadership in Organizations II 3
  - 8200:635 Organizational Behavior in Nursing Settings 3
- Total credit hours 12

APPLIED POLITICS

John C. Green, Ph.D., Director

The Ray C. Bliss Institute and the Department of Political Science have combined to offer a Certificate Program in Applied Politics for graduate students. The Certificate Program in Applied Politics offers course work in the history, organization and management of campaigns intended to influence the outcome of political decisions. Working from a set of core courses, students are allowed to concentrate in the area of applied politics of greatest interest—campaigns, communications, lobbying, political parties, etc. Believing that democracy is best served by having active and informed citizens, the certificate is designed for all students, no matter what their degree program as long as they have a deep interest in practical politics.

Requirements
 Persons are eligible for admission to the Certificate Program in Applied Politics if they have been admitted to study as full-time students, special, or non-degree in any department of the University. Students who are pursuing a graduate degree in other departments at the University may be admitted to the Master’s level certificate program upon the recommendation of the chair/director of the department/school in which they are enrolled. Students shall seek admission to this program by filing an application with the Bliss Institute. The student shall schedule courses with the assistance of an advisor at the earliest possible time.

Core Courses (required–12 credits):
- 3700:570 Campaign Management I 3
- 3700:571 Campaign Management II 3
- 3700:672 Seminar: Political Influence and Organizations 3
- 3700:695 Internship in Government and Politics 3

Electives:
 Six credits selected from the following (at least 3 credits must be from 3700:502, 540, 572, 573, 574, 575, 576, or 630):
Electives:
Students must successfully complete six credits of coursework selected from the various departmental courses listed below.

- Family and Consumer Sciences
  3400:501 American Families in Poverty 3
  3400:504 Middle Childhood and Adolescence 3
  3400:540 Family Crisis 3
  3400:546 Culture, Ethnicity and the Family 3
  3400:562 Family in Life-Span Perspective 3
  3400:610 Child Development Theories 3
  3400:651 Family and Consumer Law 3
  3400:666 Development in Infancy and Early Childhood 3

- Home-Based Intervention
  1820:503 Home-Based Intervention Theory 3
  1820:504 Home-Based Intervention Techniques and Practice 3

CHILD AND ADOLESCENT HEALTH NURSE PRACTITIONER - POST-MSN

Requirements
The Post-MSN Child and Adolescent Health Nurse Practitioner certificate program is designed for those nurses who hold the Master of Science in Nursing degree and are seeking preparation for the role of the pediatric nurse practitioner. Upon completion of the 17 credit hour program, the students are eligible to sit for the pediatric nurse practitioner certification examination.

Admission
Admission criteria include the following:
- Hold an MSN degree from a professionally accredited nursing program.
- Minimum of a 3.0 GPA on a 4.0 scale for the master's degree program.
- A minimum of one year of clinical experience in a pediatric setting.
- Complete an interview with the program coordinator.

Completion of the following prerequisite courses: Pathophysiological Concepts, Advanced Pediatric/Adolescent Assessment, Nutrition.

Program
The program consists of four courses for a total of 17 credits. 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 credits) 1-4

Total 17

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:
- 3300:676 Theory and Teaching of Basic Composition 3
- 3300:673 Theories of Composition 3
- 3300:674 Research Methodologies in Composition 3

Optional Courses:
- 3300:570 History of English Language 3
- 3300:571 U.S. Dialects: Black and White 3
- 3300:589 Seminar in English: Grammatical Structures of Modern English 3
- 3300:576 Theory of Rhetoric 3
- 3300:589 Seminar in English: Sociolinguistics 3
- 3300:670 Modern Linguistics 3
- 3300:689 Seminar in English: Stylistics 3
- 3300:689 Seminar in English: Contextual Linguistics 3

DIVORCE MEDIATION
Helen Cleminshaw, Ph.D., Coordinator

Requirements
This graduate certificate program in divorce mediation requires a minimum of 15 graduate credits dependent upon previous educational background. The program has been designed to serve the practicing or prospective divorce mediator.

All applicants to the program should have previously earned a law degree or a master's degree (at minimum in the behavioral sciences, such as psychology, social work, counseling, and marriage and family therapy, or child and family development). Applicants planning to pursue the certificate must apply to the Center for Family Studies and the Graduate School for admission as non-degree students. Persons currently working toward a doctorate or Juris Doctor at the University may participate in the certificate program as a cognate or minor. In this case, students must receive permission from their academic department as well as admission from the Center for Family Studies. Since the educational preparation prior to entry to this program will be quite diverse, the selection of courses within the certificate will vary among the participants. However, all students are expected to complete the core courses in addition to 10 credit hours selected from among several disciplines related to divorce mediation.

Core:
- 1800:601 Divorce Mediation 3
- 1800:602 Divorce Mediation Practicum 2

Select at least one from each area:
- Law
  - 9200:638 Family Law 3
  - 7400:651 Family Consumer 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 Mental 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:
- 5600:647 Career Counseling 3
- 5600:669 Systems Theory in Family Therapy 3
- 7400:640 Family Crisis 3
- 7400:590 Family and Divorce 2
- 7400:602 Family in Life-Span Perspective 3
- 9200:684 Alternate Dispute Resolution 3

E-BUSINESS
B. S. Vijayaraman, Ph.D., Director

A new model for business (e-Business) is taking shape that is built on the world's largest communications network, the Internet. The Internet has opened up new possibilities for organizing and running a business and is changing the way businesses transact goods and services. The Internet creates a global platform for buying and selling goods and is used for redesigning business processes within organizations. As businesses invest in the commercialization of the Internet (WWW), there is an enormous need from a variety of fronts to understand the implications for strategic initiatives, marketing and advertising, financial markets, information systems strategy, human resource management, supply chain management and legal issues. A certificate program in e-Business is designed for students to learn how organizations can use Internet technology to create new business opportunities and how they can transform an existing business into an e-Business.

Persons are eligible for admission to the graduate certificate program in e-Business if they have been admitted to Graduate School at The University of Akron. Students admitted to the E-Business Certificate Program may enroll only in those courses required for the completion of the certificate.

Required Courses:
- 6600:620 E-Business Foundations 3
- 6600:622 E-Business Technologies 3
- 6400:685 E-Business: Legal Issues 3
- 6200:658 E-Business Risks, Controls, and Assurance Services 3
**E-LEARNING**

Sajit Zachariah, Ed.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 substantial contribution in the field of distance learning. The graduate curriculum provides 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>5100:629</td>
<td>e-Learning Fundamentals</td>
<td>3</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>5100:689</td>
<td>Technology Project</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**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 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>4300:623</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.

**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>3010:501</td>
<td>Seminar in Environmental Studies</td>
<td>2</td>
</tr>
</tbody>
</table>

**Electives (minimum of 14 credits):**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3350:547</td>
<td>Advanced Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>3350:596</td>
<td>Soil and Water Field Studies</td>
<td>3</td>
</tr>
<tr>
<td>3370:570</td>
<td>Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>3370:574</td>
<td>Groundwater Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>3370:661</td>
<td>Geologic Record of Past Global Change</td>
<td>3</td>
</tr>
<tr>
<td>3370:674</td>
<td>Advanced Groundwater Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>3370:678</td>
<td>Urban Geology</td>
<td>3</td>
</tr>
<tr>
<td>3400:571</td>
<td>American Environmental History</td>
<td>3</td>
</tr>
<tr>
<td>3470:561</td>
<td>Applied Statistics I</td>
<td>4</td>
</tr>
<tr>
<td>3700:512</td>
<td>Global Environmental Politics</td>
<td>3</td>
</tr>
<tr>
<td>3850:686</td>
<td>Population</td>
<td>3</td>
</tr>
<tr>
<td>4200:563</td>
<td>Pollution Control</td>
<td>3</td>
</tr>
<tr>
<td>4200:750</td>
<td>Advanced Pollution Control</td>
<td>3</td>
</tr>
<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>4300:528</td>
<td>Hazardous and Solid Wastes</td>
<td>3</td>
</tr>
<tr>
<td>4300:620</td>
<td>Sanitary Engineering Problems</td>
<td>2</td>
</tr>
<tr>
<td>4300:621</td>
<td>Environmental Engineering Principles</td>
<td>4</td>
</tr>
<tr>
<td>4300:631</td>
<td>Soil Remediation</td>
<td>3</td>
</tr>
<tr>
<td>4300:731</td>
<td>Bioremediation</td>
<td>3</td>
</tr>
<tr>
<td>9200:661</td>
<td>Environmental Law</td>
<td>3</td>
</tr>
</tbody>
</table>

**GEOGRAPHIC INFORMATION SCIENCES**

Program

The geographic information sciences (GISci) encompass a variety of powerful new tools that greatly improve our ability to collect, store, manage, analyze, and utilize information regarding the features of the Earth’s surface and to combine these with other types of economic, social, and environmental information. Included among these are geographic information systems (GIS), cartography, and satellite-based remote sensing. Professionals with proficiency in these concepts and methods are increasingly in demand in both the public and private sectors.

For further program information contact Graduate Advisor, Department of Geography and Planning, (330) 972-7620.

**Requirements**

This program of professional and scientific education is intended to enhance abilities in data handling, analysis, and graphic communication of simple and complex geographic data and information. The program is not limited to geography majors. It is designed to introduce GISci concepts and methods to students from a wide spectrum of disciplines. These courses provide for specialized study in the rapidly changing and significant area of GISci and cartography.

Eighteen (18) credits are required to complete this course. These include the four core courses:

- 3350:505 Geographic Information Systems
- 3350:507 Advanced Geographic Information Systems
- 3350:540 Principles of Cartography
- 3350:547 Advanced Remote Sensing

The remaining 6 credits shall come from the list of electives:

- 3350:542 Thematic Cartography
- 3350:544 Applications in Cartography and Geographic Information Systems
- 3350:548 Advanced Cartography
- 3350:549 Advanced Remote Sensing

**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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300:612</td>
<td>Advanced Soil Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>4300:614</td>
<td>Foundation Engineering I</td>
<td>3</td>
</tr>
<tr>
<td>4300:615</td>
<td>Foundation Engineering II</td>
<td>3</td>
</tr>
<tr>
<td>4300:617</td>
<td>Numerical Methods in Geotechnical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4300:717</td>
<td>Soil Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

Four of the following workshop courses may be taken and substituted for two (2) of the courses above:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Load and Resistance Factor Design of Foundations and Geotechnical Features</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Ground Improvement Methods</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Mechanically Stabilized Earth Walls and Reinforced Soil</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Slopes</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Deep Foundations</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Students interested in these workshop courses should contact the Department of Civil Engineering.

### GERONTOLOGY

Harvey 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. The graduate certificate is to be received with either a master’s or doctoral degree. Individuals who already hold a graduate degree may also pursue the certificate. The program represents a concentration involving current knowledge and research in gerontology. It adds another dimension to the knowledge and skills a student is able to offer in the many professions that are becoming specialized in research and service to adults and older adults. This course of study coordinates multidisciplinary training of personnel in adult development and aging and helps to meet the critical shortage of trained individuals in the field of gerontology.

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

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 Life-Span Development and Gerontology.
- Consult with the director or a designated faculty member to formulate a program of study.
- Receive written notification for admission from the director of the Institute for Life-Span Development and Gerontology.

#### Program

Minimum: 18 credits

<table>
<thead>
<tr>
<th>Core:</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Methods Course</td>
<td>3*</td>
</tr>
<tr>
<td>3006:680 Interdisciplinary Seminar in Life-Span Development and Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>3006:695 Practicum in Life-Span Development and Gerontology</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives:**</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3006:686 Retirement Specialist</td>
<td>2</td>
</tr>
<tr>
<td>3006:690 Workshop – Women: Middle and Later Years</td>
<td>2</td>
</tr>
<tr>
<td>3006:690 Workshop – Aging: Process and Intervention</td>
<td>2</td>
</tr>
<tr>
<td>3700:580 Policy Problems: Aging (Offered every other year)</td>
<td>3</td>
</tr>
<tr>
<td>3750:620 Psychology Core II: Developmental, Perceptual, Cognitive</td>
<td>2</td>
</tr>
<tr>
<td>3750:727 Psychology of Childhood and Aging</td>
<td>4</td>
</tr>
<tr>
<td>3850:681 Cross Cultural Perspectives in Aging</td>
<td>3</td>
</tr>
<tr>
<td>3850:678 Social Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>5400:541 Educational Gerontology Seminar</td>
<td>3</td>
</tr>
<tr>
<td>5400:661 Current Issues in Higher Education: Life-Span and Community Education</td>
<td>3</td>
</tr>
<tr>
<td>6500:688 Health Services Systems Management (with permission)</td>
<td>3</td>
</tr>
<tr>
<td>7000:601 Family Relationships in Middle and Later Years</td>
<td>3</td>
</tr>
<tr>
<td>7700:624 Neuromotor Speech and Language Disorders</td>
<td>3</td>
</tr>
<tr>
<td>7750:550 Social Needs and Services for Later Adulthood and Aging</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 18 credits

**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.

### 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 studies toward a master’s degree and the higher education certificate may be allowed for persons currently employed in higher education. Students interested in admission should first meet with the program coordinator. Persons wishing to pursue a master’s degree in Educational Administration-Higher Education Option must, however, also apply to the Graduate School for admission to the program. Applicants wishing to pursue only the certificate program must apply to the Graduate School for admission as a special non-degree student.

#### Program

Courses and internships in higher education are directed toward the study of administrative and academic operations of colleges and universities. Specific program options include: administration, student services, curriculum, and instruction 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:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>S100:703</td>
<td>Seminar: History and Philosophy of Higher Education</td>
<td>3</td>
</tr>
<tr>
<td>S190:500</td>
<td>Introduction to the Study of Higher Education</td>
<td>3</td>
</tr>
<tr>
<td>S190:600</td>
<td>Advanced Administrative Colloquium in Higher Education</td>
<td>3</td>
</tr>
<tr>
<td>S190:601</td>
<td>Internship in Higher Education</td>
<td>2</td>
</tr>
<tr>
<td>S190:602</td>
<td>Internship in Higher Education Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Total 10 credits

#### Options:

A student may select all three courses listed as “A” and omit “B” or may select an area of concentration and take one course from “A” under I, II, or III and the supporting course from “B” from the same heading:

- **Organization and Administration in Higher Education (I)**
  - S190:515 Administration in Higher Education (A) | 3 |
  - S190:525 Topical Seminar: Higher Education | 3 |
  - S190:626 Organization and Policy Development in Higher Education (B) | 3 |

- **Student Services in Higher Education (II)**
  - S190:525 Topical Seminar in Higher Education | 3 |
  - S190:526 Student Services in Higher Education (A) | 3 |
  - S190:527 The American College Student (B) | 3 |

- **Program Planning, Curriculum and Instruction in Higher Education (III)**
  - S190:530 Higher Education Curriculum and Program Planning (A) | 3 |
  - S190:635 Instructional Strategies and Techniques for the College Instructor (B) | 3 |

Total hours required: 18.

*The awarding of this certificate is not contingent upon completion of a degree program. Undergraduate certificate programs require a 2.00 grade point average; graduate certificate programs require a 3.00 grade point average.

### HOME-BASED INTERVENTION THERAPY

Helen Cleminhaw, 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 a 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 3-5

Eligibility Courses:

Students must have completed at least 9 credits of coursework in theoretical frameworks from their discipline or related areas.

Theoretical Frameworks:

- Systems Theory
  3850:620  General Systems Theory 3
  5600:643  Theories and Philosophy of Counseling 3
  5600:655  Marriage and Family Therapy: Theory and Techniques 3

- Developmental Theory
  3850:512  Socialization: Child to Adult 3
  7400:602  Family in Life-Span Perspective 3
  7400:605  Developmental Parent-Child Interactions (online) 3
  7400:610  Child Development Theories 3

- Therapeutic Theory
  5600:651  Techniques in Counseling 3
  5600:687  Marital Therapy 3
  5600:699  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
  3850:750  Family and Health (Special Topics) 1-3

- Counseling
  5600:590  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
  5610:600  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 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 3
  7400:590  Workshop in Family and Consumer Sciences: Family and Divorce 2
  7400:596  Parent Education 3

- Social Work
  7750:510  Minority Issues in Social Work Practice 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.

Admission

To participate in the program, the student must be formally admitted to The University of Akron as a graduate or non-degree student and must complete 15 credits. Students should visit the Director of Graduate Studies in Business Administration to request that notification of the certificate be included on the student’s transcript as soon as the course of study is completed. Students admitted to the Human Resource Management Certificate Program may enroll only in those courses required for completion of the certificate.

Requirements (complete all 15 credits)

- 6500:600  Management and Organizational Behavior* 3
- 6500:650  Human Resource Systems for Managers 3
- 6500:655  Compensation and Performance Management 3
- 6500:658  Strategic and Global Human Resource Management 3
- 6500:660  Staffing and Employment Regulation 3

*Students who waive 6500:600 will be required to substitute either 6500:651 Organization Transformation or 6500:654 Management of Employee and Labor Relations per approval of Department of Management Chair.

LITERATURE

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; three must be at the 600-level, and one must be American literature.

Core Courses:

- 3300:506  Chaucer* 3
- 3300:615  Shakespearean Drama 3

*Unless the student has passed a comparable course at the undergraduate level with a grade of B or better.

MANAGEMENT OF TECHNOLOGY AND INNOVATION

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

In an increasingly global economy integrated with technology, the innovative enterprise with effective and efficient management of technology and innovation will gain competitive advantage over their rivals. To respond to these needs of our potential employers, this certificate program in Management of Technology and Innovation was developed by the College of Business Administration with the cooperation of the College of Polymer Science and Polymer Engineering and the guidance of the members of the Advancement Councils of the two colleges. This graduate certificate program offers courses in Management of Technology and other innovation-related business disciplines, including marketing, finance, accounting, entrepreneurship, and more. This certificate program will prepare the learners to innovate, manage and lead technology-driven enterprises.

To participate in the program the student should:

- Be formally admitted to The University of Akron as a graduate or non-degree graduate student.

Students admitted to the Management of Technology and Innovation Certificate Program may enroll only in those courses required for completion of the certificate.

Required Courses:

- 6500:666  Management of Technology 3
- 6500:669  Polymer Management Decisions 3
- 6600:600  Marketing Concepts 3
- 6200:601  Financial Accounting 3

Recommended Electives:

From these courses, select any six credits for which you have the proper prerequisites.

- 6200:610  Process Analysis and Cost Management 3
- 6400:602  Managerial Finance 3
- 6500:608  Entrepreneurship 3
- 6500:660  Management and Organizational Behavior 3

- 7750:552  Social Work and Mental Health 3
- 7750:554  Social Work in Juvenile Justice 3

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
4600:444/544 Robot, Design, Control and Application
4600:670 Integrated Flexible Manufacturing Systems *

* Undergraduate students must obtain permission to take this course.

NEW MEDIA TECHNOLOGIES

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
5100:636 Topical Seminar: Advanced Multimedia (may be repeated for 6 hours) 3
5200:575 Instructional Technology Applications 3
7100:630 Workshop in Art* 3
7500:553 Music Software Survey and Use 3
7500:590 Workshops in Music Technology* 3
8200:516 New Media Writing 3
8200:517 New Media Production 3
8200:568 Nonlinear Editing 3
8200:580 Workshops in Communication* 3

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

NURSE ANESTHESIA - POST MSN

Requirements

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.

Program Requirements (Phase II):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:637</td>
<td>Residency I (Pediatrics and Obstetrics)</td>
<td>4</td>
</tr>
<tr>
<td>8200:646</td>
<td>Residency II (Cardiac, Thoracic, Cardiovascular, and Neurology)</td>
<td>4</td>
</tr>
<tr>
<td>8200:648</td>
<td>Residency III (Hepatic, Renal, Endocrine, Head &amp; Neck, Trauma, and Burns/Pain Management)</td>
<td>4</td>
</tr>
<tr>
<td>8200:647</td>
<td>Professional Role Seminar</td>
<td>2</td>
</tr>
<tr>
<td>8200:649</td>
<td>Residency IV (Senior Seminar)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 18

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:681</td>
<td>Instructional Methods in Nursing Education</td>
<td>3</td>
</tr>
<tr>
<td>8200:682</td>
<td>Nursing Curriculum Development</td>
<td>3</td>
</tr>
<tr>
<td>8200:683</td>
<td>Evaluation in Nursing Education</td>
<td>3</td>
</tr>
<tr>
<td>8200:684</td>
<td>Practicum: The Academic Role of the Nurse Educator</td>
<td>3</td>
</tr>
</tbody>
</table>

PARENT AND FAMILY EDUCATION

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 director of the Center for Family Studies. 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:596</td>
<td>Parent Education</td>
<td>3</td>
</tr>
<tr>
<td>7400:605</td>
<td>Developmental Parent-Child Interactions (online)</td>
<td>3</td>
</tr>
<tr>
<td>7400:594</td>
<td>Practicum in Parent and Family Education</td>
<td>3</td>
</tr>
</tbody>
</table>

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 3
- 7400:504 Middle Childhood and Adolescence 3
- 7400:540 Family Crisis 3
- 7400:546 Culture, Ethnicity and the Family 3
- 7400:602 Family in Life-Span Perspective 3
**POSTSECONDARY TEACHING**

Sandy Coyner, Ph.D., Coordinator (e-mail: scoyner@uakron.edu)

**Program**

This certificate program in Postsecondary Teaching is a special course of study within the College of Education undergraduate and graduate programs to serve the practicing or prospective postsecondary faculty.

Persons are eligible for admission to the Certificate in Postsecondary Teaching if they have been admitted to study as special, non-degree or full-time students in any department of the University. Individuals who already hold undergraduate or graduate degrees may also pursue this certificate. Students who already hold a graduate degree or do not wish to pursue a graduate degree may be admitted to the program as a non-degree graduate student. Students pursuing graduate degrees will receive their graduate certificate upon completion of the requirements for their graduate degree.

Those formally admitted to The University of Akron and meeting the certificate entrance requirements may pursue the Certificate in Postsecondary Teaching. Students shall seek admission to this program by filing an application with the Program Coordinator. The student will schedule courses with the assistance of the Program Coordinator.

Those who have completed either a B.S. or M.S. in Technical Education at The University of Akron prior to the Fall of 1994 must seek advisor approval before pursuing the certificate. Only six hours of prior technical education coursework can be accepted toward the certificate and all accepted coursework must be no older than six years at the time of completion of the certificate. Only graduate credit may be used for a graduate certificate and only undergraduate credit may be used for an undergraduate or post baccalaureate certificate. Course substitutions must be made with the advisor’s prior written approval. Students must maintain at least a 3.0 average in certificate coursework to receive this certificate. Enrollment will be limited to space available. All those applying for the undergraduate certificate must have completed at least 60 semester hours with a 2.75 GPA. For those applying for the graduate certificate, students must have a 2.75 GPA in their completed undergraduate degree. All coursework must be completed within six years.

**Admission**

To participate in the program the student should:
- Be formally admitted to The University of Akron as a graduate student.
- Make written application to the Program Coordinator.
- Receive written notification from the Program Coordinator.
- Consult with a Program Coordinator to formulate a program of study.

**Interdisciplinary and Certificate Programs**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5400:500</td>
<td>Postsecondary Learner</td>
<td>3</td>
</tr>
<tr>
<td>5400:501</td>
<td>Learning with Technology</td>
<td>1</td>
</tr>
<tr>
<td>5400:520</td>
<td>Postsecondary Instructional Technology</td>
<td>3</td>
</tr>
<tr>
<td>5400:530</td>
<td>Systematic Curriculum Design for Postsecondary Instruction</td>
<td>3</td>
</tr>
<tr>
<td>5400:535</td>
<td>Systematic Instructional Design in Postsecondary Education</td>
<td>3</td>
</tr>
<tr>
<td>5400:600</td>
<td>Survey of Postsecondary Institutions</td>
<td>3</td>
</tr>
<tr>
<td>5400:690</td>
<td>Internship in Postsecondary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

The Internship is the last course taken. This course cannot be taken until all other certificate courses have been completed with a 3.0 GPA or better.

**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 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. Students who 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3980:611</td>
<td>Introduction to the Profession of Public Administration (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:615</td>
<td>Public Organization Theory (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:616</td>
<td>Public Personnel</td>
<td>3</td>
</tr>
<tr>
<td>3980:617</td>
<td>Leadership and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>3980:618</td>
<td>Citizenship Participation</td>
<td>3</td>
</tr>
<tr>
<td>3980:626</td>
<td>Grantsmanship</td>
<td>3</td>
</tr>
<tr>
<td>3980:660</td>
<td>Strategic Management in Public and Non-profit Sectors (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:662</td>
<td>Fund Raising and Resource Management (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:663</td>
<td>Nonprofit Management (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:680</td>
<td>Special Topics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Non-profit Management**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3980:617</td>
<td>Leadership and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>3980:619</td>
<td>Community Organizing</td>
<td>3</td>
</tr>
<tr>
<td>3980:626</td>
<td>Grantsmanship</td>
<td>3</td>
</tr>
<tr>
<td>3980:660</td>
<td>Strategic Management in Public and Non-profit Sectors (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:662</td>
<td>Fund Raising and Resource Management (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:663</td>
<td>Nonprofit Management (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:680</td>
<td>Special Topics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Local and Regional Development**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3980:600</td>
<td>History of Urban Development</td>
<td>3</td>
</tr>
<tr>
<td>3980:612</td>
<td>National Urban Policy</td>
<td>3</td>
</tr>
<tr>
<td>3980:619</td>
<td>Community Organizing</td>
<td>3</td>
</tr>
<tr>
<td>3980:641</td>
<td>Urban Economic Growth and Development (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:650</td>
<td>Comparative Urban Systems</td>
<td>3</td>
</tr>
<tr>
<td>3980:661</td>
<td>Public Project Design and Management (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:681</td>
<td>Special Topics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Policy Analysis**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3980:600</td>
<td>Basic Quantitative Research (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:601</td>
<td>Advanced Quantitative Research (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:640</td>
<td>Fiscal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3980:643</td>
<td>Introduction to Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>3980:673</td>
<td>Computer Applications in Public Organizations</td>
<td>3</td>
</tr>
<tr>
<td>3980:674</td>
<td>Analytical Techniques for Public Administration (required)</td>
<td>3</td>
</tr>
<tr>
<td>3980:680</td>
<td>Special Topics</td>
<td>3</td>
</tr>
</tbody>
</table>
**Research and Readings**

The student must maintain at least a “B” (3.00) average in coursework for the credential requirements for a graduate degree at The University of Akron. Required for the Graduate Certificate in Public Policy, may also apply toward meeting requirements. No more than three courses in which the student enrolls, of the seven required for this certificate, must be in 600- or 700-level courses. No more than one course in which the student enrolls, of the seven required for this certificate, must be in 500-level courses. At least two-thirds of the credits earned for this certificate must be in 600- or 700-level courses. No more than three courses in which the student earns, of the seven required for the Graduate Certificate in Public Policy, may also apply toward meeting requirements for a graduate degree at The University of Akron. The student must maintain at least a “B” (3.00) average in coursework for the certificate.

**Urban Affairs**

- **3850:602** History of Urban Development (required) 3
- **3850:612** National Urban Policy (required) 3
- **3850:618** Citizen Participation 3
- **3850:619** Community Organizing 3
- **3850:621** Urban Society and Service Systems 3
- **3850:650** Comparative Urban Systems 3
- **3850:680** Special Topics 3

**PUBLIC POLICY**

Stephen C. Brooks, Ph.D., Chairman, Coordinating Committee

**Program**

This program will assist the person in understanding, formulating and implementing decisions in the public realm. A person who is interested in government service, administration of publicly supported institutions and the teaching of government at the college level should find such an interdisciplinary program to be of great value.

**Admission**

Persons are eligible for admission to the Graduate Certificate in Public Policy Program if they have been admitted to graduate study as non-degree students in the departments of economics, political science or sociology, or are pursuing a master’s or doctoral degree in one of those three departments. Students who are pursuing a graduate degree in other departments at the University may be enrolled upon the recommendation of the chair of the department in which they are enrolled.

**Requirements**

Core:

- Each student enrolled in the program shall complete three of the following courses:
  - one from the Department of Economics, one from the Department of Political Science and one from the Department of Sociology.
- **Economics (choose one)**
  - 3250:530 Human Resource Policy 3
  - 3250:606 Public Finance 3
  - 3250:665 Seminar on Economic Planning 3
- **Political Science (choose one)**
  - 3700:541 The Policy Process 3
  - 3700:542 Methods of Policy Analysis 3
  - 3700:668 Seminar in Public Policy Agenda and Decisions 3
  - 3700:670 Seminar in the Administrative Process 3
- **Sociology (choose one)**
  - 3850:613 Sociology of Program Evaluation and Program Improvement 3
  - 3850:679 Political Sociology 3

In addition to the courses listed above, each student, after receiving the approval of his or her advisor, shall complete two courses related to public policy.

Each student shall complete a scholarly paper dealing with public policy under the direction of a graduate faculty member in the departments of economics, political science or sociology. The student shall enroll for three credits in one of the following courses: 3250:530/606 Reading in Advanced Economics, 3700:697 Independent Research and Readings or 3850:697 Readings in Contemporary Sociological Literature. The student’s paper shall be evaluated by an interdisciplinary committee consisting of graduate faculty from at least two of the previously mentioned departments.

All persons enrolled in the Graduate Certificate Program in Public Policy must successfully complete 3700:695 Internship in Political Science, a course which will permit a student to gain experience working with public officials, government agencies, political parties or interest groups. A student will normally enroll in this course after having completed at least 12 semester credits of work relating to public policy. A person with extensive administrative or governmental experience may be permitted, with the approval of the student’s advisor, to substitute another course dealing with public policy in place of the Internship in Political Science.

At least two-thirds of the credits earned for this certificate must be in 600- or 700-level courses. No more than three courses in which the student earns, of the seven required for the Graduate Certificate in Public Policy, may also apply toward meeting requirements for a graduate degree at The University of Akron. The student must maintain at least a “B” (3.00) average in coursework for the certificate.

**Administration of the Program**

The departments of economics, political science and sociology shall each annually select a representative for a coordinating committee from among those members of the graduate faculty who have special knowledge or expertise in the area of public policy. The committee shall each year elect one of its members as chairperson. The chairperson shall be responsible for disseminating information about the certificate, certifying that a student has met requirements for the completion of the program and convening members of the coordinating committee whenever appropriate.

**STRUCTURAL ENGINEERING**

This certificate program provides professionals an opportunity to expand their knowledge base in the design and behavior of structural systems. It is designed for people who cannot make the full time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

**Admission Criteria**

This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

**Program of Study**

Civil Engineering graduates may earn a Structural Engineering Certificate by completing the following five courses:

- **4300:551** Computer Methods of Structural Analysis 3
- **4300:554** Advanced Mechanics of Materials 3
- **4300:605** Structural Stability 3
- **4300:684** Advanced Reinforced Concrete Design 3
- **4300:685** Advanced Steel Design 3

Total: 15

**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 for Teaching ESL in the Bilingual Classroom 4

**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 undergraduate and graduate programs 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 admitted to study as special, non-degree or full-time students in any department of the University. Undergraduates students will earn the certificate upon graduation from their degree program. Individuals who already hold undergraduate or graduate degrees may also pursue this certificate. Students with an undergraduate degree who do not seek a graduate degree may pursue the certificate at the postbaccalaureate program. Students who already hold a graduate degree or do not wish to pursue a graduate degree may be admitted to the program as a non-degree graduate student. Students pursuing graduate degrees will receive their graduate certificate upon completion of the requirements for their graduate degree. 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.
Those formally admitted to The University of Akron and meeting the Certificate entrance requirements may pursue the Certificate in Technical and Skills Training. Students shall seek admission to this program by filing an application with the program coordinator. The student will schedule courses with the assistance of an advisor in the Postsecondary Technical Education Program.

Those who have completed either a BS or MS in Technical Education at The University of Akron prior to the Fall of 1994 must seek advisor approval before pursuing the certificate. Only six hours of prior postsecondary technical education coursework can be accepted toward the certificate and all accepted coursework must be no older than six years at the time of completion of the certificate. Only graduate credit may be used for a graduate certificate and only undergraduate credit may be used for an undergraduate or postbaccalaureate certificate. Any course substitutions must be made with the advisor’s prior written approval. Students must maintain at least a 3.0 average in certificate coursework to receive this certificate. Enrollment will be limited to space available. All those applying for the undergraduate certificate must have completed at least 60 semester hours with a 2.75 GPA. For those applying for the graduate certificate, students must have a 3.75 GPA in their completed undergraduate degree. All coursework must be completed within six years.

**Admission**

To participate in the program the student should:

- Be formally admitted to The University of Akron as an undergraduate, postbaccalaureate or graduate student.
- Make written application to the program coordinator.
- Receive written notification from the program coordinator.
- Consult with a Postsecondary Technical Education Program Advisor to formulate a program of study.

**Requirements**

Minimum: 19 Credits

- 5400:500 Postsecondary Learner 3
- 5400:501 Learning with Technology 1
- 5400:515 Training in Business and Industry 3
- 5400:530 Systematic Curriculum Design for Postsecondary Instruction 3
- 5400:535 Systematic Instructional Design in Postsecondary Education 3
- 5400:690 Internship in Postsecondary Education 3
- 5100:520 Introduction to Instructional Computing 3

The Internship is the last course taken. This course can not be taken until all other certificate courses have been completed with a 3.0 GPA or better.

**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
- 4300:566 Pavement Engineering 3
- 4300:663 Advanced Transportation Engineering I 3
- 4300:664 Advanced Transportation Engineering II 3
- 4300:665 Traffic Detection and Data Analysis 3

Total 15

**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: Worlds of Women 3
- 3200:550 Selected Topics in Ancient Culture: Women and Gender in Classical Antiquity 3
- 1840:589 Internship in Women's Studies 3
- 3300:599 Seminar in English: Twentieth Century Women Writers 3
- 3300:599 Seminar in English: Women and Film 3
- 3400:500 Women in Revolutionary China 3
- 3750:574 Psychology of Women 4
- 3850:523 Sociology of Women 3
- 7100:501 Special Topics in History of Art: Women in Art 3
- 7750:508 Women, Minorities and News 3
- 7750:511 Women's Issues in Social Work Practice 3

or other classes as approved by Women's Studies graduate coordinator for certificate.

**Admission**

- Hold a Bachelor's Degree with a minimum 2.75 grade point average.

**Requirements (required 5-7)**

- 1840:580 Feminist Theory 3
- 1840:590 Workshop: Women’s Studies Lecture Series 3
- 1840:593 Individual Studies on Women 1-3

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.
SECTION 5. Graduate Courses

Course Numbering Index*

Interdisciplinary Programs

<table>
<thead>
<tr>
<th>Course Numbering Index*</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>Divorce Mediation 3000 Cooperative Education</td>
</tr>
<tr>
<td>1820</td>
<td>Home-Based Intervention Therapy 3006 Institute for Lifespan Development and Gerontology</td>
</tr>
<tr>
<td>1840</td>
<td>Women's Studies 3010 Environmental Studies</td>
</tr>
</tbody>
</table>

Buchtel College of Arts and Sciences

<table>
<thead>
<tr>
<th>Course Numbering Index*</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100</td>
<td>Biology 3490 Engineering Applied Mathematics</td>
</tr>
<tr>
<td>3110</td>
<td>Biology/NEOUCOM 3500 Modern Languages</td>
</tr>
<tr>
<td>3150</td>
<td>Chemistry 3550 German</td>
</tr>
<tr>
<td>3200</td>
<td>Classics 3550 Italian</td>
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<td>Anthropology 3580 Spanish</td>
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<td>Archaeology 3600 Philosophy</td>
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<td>Economics 3650 Physics</td>
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<td>English 3700 Political Science</td>
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<td>Geography and Planning 3750 Psychology</td>
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<td>History 3980 Public Administration Urban Studies</td>
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<td>Computer Science 4100 Health Administration</td>
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<td>Statistics 4110 Health Science</td>
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College of Engineering

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<td>Chemical Engineering 4450 Computer Engineering</td>
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<td>Civil Engineering 4600 Mechanical Engineering</td>
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<td>Mechanical Engineering 4800 Biomedical Engineering</td>
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College of Education

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<td>5170</td>
<td>General Administration 5560 Outdoor Education</td>
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<td>5190</td>
<td>Higher Education Administration 5570 Health Education</td>
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<td>Postsecondary Technical Education 5600 Educational Guidance Counseling</td>
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<td>Curricular and Instructional Studies 5610 Special Education</td>
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College of Business Administration

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<td>Entrepreneurship 6600 Marketing</td>
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<td>International Business 6800 International Business</td>
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College of Fine and Applied Arts

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<td>Art 7700 Speech-Language Pathology Audiology</td>
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<td>7400</td>
<td>Family and Consumer Sciences 7750 Social Work</td>
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<td>7500</td>
<td>Music 7800 Theatre</td>
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<td>Musical Organizations 7810 Theatre Organizations</td>
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<td>Applied Music 7900 Dance</td>
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<td>7600</td>
<td>Communication 7910 Dance Organizations</td>
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<td>8200</td>
<td>Nursing 7920 Dance Performance</td>
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College of Nursing

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College of Polymer Science and Polymer Engineering

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<td>9841</td>
<td>Polymer Engineering 9871 Polymer Science</td>
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* Each course at the University has two numbers. One designates the college and department of which it is a part; one specifies the subject matter of the particular course. For instance:

3300:507 Middle English Literature

In the above example, the first four digits of the number (3300) indicate the college and department. In the case, 3000 represents the Buchtel College of Arts and Sciences; 300 refers to the Department of English. The second set of digits (507) following the colon, indicates exactly which course in the Department of English is being specified. The course number also indicates the level at which the course is being taught and the point at which the student is ready to take the course. A student must apply for and be admitted to the Graduate School before registering for graduate credit.

An explanation of that numbering system follows:

500-699 Master’s-level courses (also, 600-799 J.D.-level courses)
700-899 Doctoral-level courses

Interdisciplinary Programs

DIVORCE MEDICATION 1800:

601 DIVORCE MEDICATION 3 credits
Prerequisite: Admission to the Graduate Certificate Program on Divorce Mediation. Overview of divorce mediation process includes guidelines for negotiating separation and divorce agreements, division of personal and real property, support, custody, and future plans.

602 DIVORCE MEDICATION PRACTICUM 2 credits
Prerequisite: 601. Practical application of divorce mediation procedures. Review of strategies and ethical considerations.

HOME-BASED INTERVENTION THERAPY 1820:

503 HOME-BASED INTERVENTION THERAPY 3 credits
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.

504 HOME-BASED INTERVENTION TECHNIQUES AND PRACTICE 3 credits
Prerequisite: 503. Provides intervention techniques and skill areas required for home-based intervention and learning opportunities for matching techniques with specific family problems.

505 HOME-BASED INTERVENTION INTERNSHIP 3-5 credits
Prerequisite: 504. Gives students the opportunity to apply knowledge of home-based intervention in actual delivery process working with families in their homes under the direct supervision of trained, experienced home-based intervention therapists.

WOMEN’S STUDIES 1840:

580 FEMINIST THEORY 3 credits
Prerequisite: 1840/300. A summary of feminist theory to familiarize students with the main currents in contemporary feminist theory and the origins and evolution of that thought.

585 SPECIAL TOPICS IN WOMEN’S STUDIES 1-3 credits
May (be repeated). Specialized topics and current issues in Women’s Studies. Covers content and issues not currently addressed in other academic courses. Emphasizes on original source materials, critical analyses and the synthesis of empirical and theoretical aspects.

589 INTERNSHIP IN WOMEN’S STUDIES 1-3 credits
May (be repeated for a maximum of 4 credits.) Prerequisite: permission of Department of Women’s Studies. This class provides supervised experience and on-the-job training in an organization, agency, corporation or group dealing with women’s issues.

590 WORKSHOP 1-3 credits
May (be repeated.) Group experiential study of special issues in Women’s Studies.

COORDINATED EDUCATION 3000:

501 COOPERATIVE EDUCATION 0 credits
Prerequisite: must complete 12 graduate credit hours with at least a 3.0 overall grade point average. (May be repeated.) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required. Graded credit/no credit.

INSTITUTE FOR LIFE-SPAN DEVELOPMENT & GERONTOLOGY 3006:

680 INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY 3 credits
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.

685 SPECIAL TOPICS 1-3 credits
Prerequisite: permission of instructor. Specialized topics and current issues in life-span development and gerontology. Emphasis is on original source materials, critical analyses and the synthesis of empirical, theoretical, and applied aspects.

690 RETIREMENT SPECIALIST 2 credits
May (be repeated) Group studies of special topics in life-span development and gerontology. May be used as elective credit but not as part of certificate required courses.

695 PRACTICUM IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY 3 credits
Prerequisite: permission. Supervised experience in research or community agency work.

ENVIRONMENTAL STUDIES 3010:

501 SEMINAR IN ENVIRONMENTAL STUDIES 2 credits
Prerequisite: graduate standing. Specific environmental topic or topics from interdisciplinary viewpoint each semester. The director of Environmental Studies coordinates course; resource persons are drawn from the University and surrounding community.

590 WORKSHOP IN ENVIRONMENTAL STUDIES 1-4 credits
Prerequisite: varies with topic. Credit in graduate program must have prior approval of advisor. Skills, attitudes and fundamental concepts dealing with timely environmental problems and issues covered. Instruction under direction of University faculty.

595 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 where they collect, analyze, and interpret real world data. May be repeated for a maximum of 6 credit hours.
4 credits each

561.2 HUMAN PHYSIOLOGY
Prerequisite: senior or graduate standing. Detailed study of function of the human body with special emphasis on neuromuscular, cardiovascular, respiratory, renal and endocrine physiology. Laboratory.

565 ADVANCED CARDIOVASCULAR PHYSIOLOGY
Prerequisite: 202 or 363 or 473/573. 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.

566 VERTEBRATE EMBRYOLOGY
Lecture emphasis on development of model vertebrate organisms and cellular and molecular mechanisms underlying animal development. Laboratory focuses on frog and chick development.

567 COMPARATIVE VERTEBRATE MORPHOLOGY
Prerequisite: 11 or permission of instructor. An introduction to the comparative morphology of major vertebrates. The laboratory consists of dissections of representative vertebrates.

568 BIOLOGICAL MECHANISMS OF REPRODUCTION
Prerequisites: 202 or 363 or 473/573. Study of the physiological mechanisms of reproduction throughout the animal kingdom with special emphasis upon mammalian endocrinology and control. Controversial issues in the field will be examined and current research presented.

569 RESPIRATORY PHYSIOLOGY
Prerequisites: 202 or 363 or 473/573 Study of mechanisms determining gas exchange including mechanics, ventilation, blood flow, diffusion, and control systems. Emphasis is given to normal human lung function. (Clinical aspects are not considered in detail.)

570 LAB ANIMAL REGULATIONS
1 credit
Required of anyone working with animals, and covers government regulations, care of animals and a lab to teach basic animal handling and measurement techniques.

571 PHYSIOLOGICAL GENETICS
Prerequisites: 211 or equivalent. 362 or 473/573. The integrative study of how genetics and physiology influence complex systems from molecular to behavioral in plants and animals.

572 BIOLOGICAL MECHANISMS OF STRESS
3 credits
Prerequisites: 202 or 363 or 473/573. Study of mechanisms from molecular to behavioral of how stress influences body systems and signals. The latest research and experimental issues are discussed.

573 COMPARATIVE ANIMAL PHYSIOLOGY
Prerequisite: 11 or permission of instructor. Study of respiration, circulation, digestion, metabolism, osmoregulation, and excretion in a variety of invertebrate and vertebrate animals. Adaptation to the environment is emphasized.

574 COMPARATIVE ANIMAL PHYSIOLOGY LABORATORY
1 credit
Prerequisite: 11 or Corequisite: 473/573. Laboratory experiments in animal physiology (respiration, circulation, metabolism, osmoregulation). Presentation of results in scientific format and as oral reports.

580 MOLECULAR BIOLOGY
Prerequisites: 211, 316. Fundamentals of molecular biology, including recombinant DNA technology, applications in biotechnology, medicine, and genetic engineering. Mechanisms of gene regulation.

581 ADVANCED GENETICS
3 credits
Prerequisites: 211, 11 or permission of instructor. Nature of the gene; genetic codes; hereditary determinants; mutagenesis and genes in population. Lecture and seminar.

582 NEUROBIOLOGY
3 credits
Prerequisites: 111, 112. History of neuroscience; organization, function and development of the central nervous system; electrophysiological properties of nerve cells; learning and memory; molecular basis for mental diseases.

585 CELL PHYSIOLOGY
4 credits
Prerequisite: 311. Explores molecular and biochemical aspects of energy metabolism, inter and intracellular signaling, growth and death of cells. Emphasizes up-to-date scientific literature and techniques. Laboratory.

594 WORKSHOP IN BIOLOGY
1-3 credits
May be repeated. Prerequisite: permission of instructor. Group studies of special topics in biology. May be used to meet undergraduate or graduate major requirements in biology. May be used for elective credit only.

601 BIOLOGICAL PROBLEMS
1-2 credits each
May be repeated. Honors-level work, usually consisting of laboratory investigations. A maximum of 4 credits may apply toward the major degree requirements.

601 EVOLUTIONARY ECOLOGY
3 credits
Prerequisites: 211, 316, or permission. Advanced studies of topics in ecology and evolution, including population genetics, coevolution, metapopulations, and conservation genetics. Lecture and discussion format.

604 TOPICS IN INTEGRATIVE BIOLOGY
2 credits
Reading, critical analysis, presentation, discussion and debate of cutting edge biological research with an emphasis on understanding the integrative approach to biological investigation.

625 BASIC DNA TECHNIQUES
3 credits
Basic DNA techniques including extraction of DNA, cleavage of DNA and cloning. Presentation of results in scientific format and as oral reports.

660 ENVIRONMENTAL PHYSIOLOGY
3 credits
Prerequisites: 561, 562. Study of physiological reactions of healthy mammals to natural changes or extremes of physical environment.

670 MEDICAL PHYSIOLOGY, PATHOPHYSIOLOGY, AND PHARMACOLOGY
3 credits
Prerequisites: admission to M.S.N. program, or 561, 562, or consent of instructor. Selected principles of human physiology, pathophysiology, and pharmacology are examined in depth, integrated, and related to the care of patients in the clinical setting.

681 CYTOLOGY
3 credits
Prerequisite: 311. Structure and functional organization of cells at ultrastuctural level. Three lecture hours.

688 PRINCIPLES OF TRANSMISSION ELECTRON MICROSCOPY
2 credits
Prerequisites: 311 or 681 or equivalent. Modern cytological methods used in transmission electron microscope. Students are required to demonstrate proficiency in fixation techniques, use of ultramicrotome, light and electron microscopes, and darkroom techniques.

689 PRINCIPLES OF SCANNING ELECTRON MICROSCOPY
3 credits
Prerequisites: 311, 681 or equivalent. An introduction to modern cytological methods using the scanning electron microscope. A portfolio is required to demonstrate proficiency in fixation techniques, the use of supplemental equipment such as the critical point drying apparatus and the efficient use of the scanning electron microscope.

695 SPECIAL TOPICS: BIOLOGY
1-2 credits
May be repeated. Prerequisite: permission. Special courses offered once or only occasional- ly in areas where no formal course exists.

693 BIOLOGY COLLOQUIUM
1 credit each
May be repeated. Prerequisite: permission. Attendance at all departmental seminars and pre- sentation of seminar based on original research. Required of all thesis option students who shall present their thesis research.
683 MECHANISTIC AND SYNTHETIC ORGANIC CHEMISTRY I 3 credits
Prerequisites: 263, 264 or permission of instructor. Introduction to the structural and mechanistic aspects of organic reactions: HMO calculations, acids and bases, equilibrium, kinetics, linear free energy relationships, reactive intermediates, reaction mechanisms.

684 MECHANISTIC AND SYNTHETIC ORGANIC CHEMISTRY II 3 credits
Prerequisites: 683 or permission of instructor. Synthetic organic chemistry from a mechanistic perspective: nucleophilic and electrophilic substitution and addition reactions, carbon-hydrogen bond formation, catalytic asymmetric synthesis, functional group manipulations, oxidations, reductions, cycladdition reactions.

699 MASTER’S THESIS 1-6 credits
May be repeated. A minimum of six credits is required for thesis option student.

710 SPECIAL TOPICS: ANALYTICAL CHEMISTRY 1-3 credits
May be repeated. Prerequisite: permission. Topics in advanced analytical chemistry. Electroanalysis, analysis of synthesis, atomic absorption spectrometry, mass spectrometry, liquid-liquid and gas chromatography, capillary electrophoresis, thermocatalytic methodologies, separations, standards, sampling, recent developments.

711 SPECIAL TOPICS: INORGANIC CHEMISTRY 1-3 credits
May be repeated. Prerequisite: permission. Consideration of topics in modern inorganic chemistry such as coordination compounds, chemistry of the solid state, representative elements, nonaqueous solvents, organometallic compounds, homogeneous catalysis.

712 SPECIAL TOPICS: ORGANIC CHEMISTRY 1-3 credits
May be repeated. Prerequisite: permission. Topics in advanced organic chemistry such as natural products, heterocyclic compounds, photochemistry.

713 SPECIAL TOPICS: PHYSICAL CHEMISTRY 1-3 credits
May be repeated. Prerequisite: Subject from modern physical chemistry.

715 SPECIAL TOPICS: BIOCHEMISTRY 1-3 credits
May be repeated. Prerequisite: permission. Recent developments in areas of biochemistry.

721 ADVANCED BIOCHEMICAL TECHNIQUES 3 credits
Prerequisites: 402/502, 405/505. An advanced lecture course on physical techniques in biochemistry. Includes optical and hydrodynamic methods; radioanalytical techniques, scattering and magnetic resonance spectroscopy.

722 ENZYMATIC REACTIONS 3 credits
Prerequisites: 405/505, 402/502 or permission. Mechanisms of enzyme catalyzed reactions, general aspects and specific examples for phosphoryl, aroyl, glycoyl transfers, eliminations, oxidation/reduction, isomerization and rearrangements of catalysts.

724 BIOINORGANIC CHEMISTRY 3 credits
Prerequisites: 405/505 and 402/502. Survey of the structure and properties of metal complexes with amino acids, nucleotides, metabolites andmacromolecules; metal ion metabolism; metals in medicine.

726 ADVANCED METABOLISM 3 credits
Prerequisites: 405/505 and 402/502. Study of advanced pathways in carbohydrate, lipid and protein metabolism with emphasis placed on metabolic dysfunction.

740 PHYSICAL ORGANIC CHEMISTRY 3 credits
Prerequisites: 683, 684 or permission of instructor. An advanced treatment of the theory and mechanisms of organic chemistry: FMO theory, molecular mechanics, molecular strain, kinetics, thermodynamics, acidity functions, oxidation/reduction, isomerization and rearrangements.

750 ADVANCED SYNTHETIC ORGANIC CHEMISTRY 3 credits
Prerequisites: 683, 684 or permission of instructor. An advanced treatment of organic functional group manipulations in the context of the total synthesis of natural products.

899 DOCTORAL DISSERTATION 1-10 credits
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
(May be repeated for credit with another cuneiform language) Prerequisite: permission of instructor. The Akkadian language.

590 WORKSHOP IN CLASSICS 1-3 credits
(May be repeated with change in topic) Group studies of special topics in Classics. Cannot be used to fulfill undergraduate major requirements in Classics; for elective credit only.

5978 READING AND RESEARCH IN THE ANCIENT NEAR EAST 1-3 credits
Prerequisite: permission of instructor. Advanced work in various aspects of Ancient Near Eastern Studies (Archaeology, Assyrology, Egyptology, etc.).

ANTHROPOLOGY 3230:

510 EVOLUTION AND HUMAN BEHAVIOR 3 credits
Prerequisite: 151. 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: 151 or 3850/3850. This course explores cross-cultural variation regarding sex, gender, and sexuality. It examines the ways that cultures create, maintain, and reproduce gender conceptions and gender relations.

520 THE ANTHROPOLOGY OF FOOD 3 credits
Prerequisite: 150. 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: 150 or permission. Examination of functional and causal relationships between culture and individual cognition and behavior. Lecture.

557 CULTURE AND MEDICINE 3 credits
Prerequisite: 150 or permission. 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 key informant interviewing, focus groups and other methods. Includes the use of computer-based programs for rapid appraisal strategies.

563 SOCIAL ANTHROPOLOGY 3 credits
Prerequisite: 150 or 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 SPECIAL TOPICS: ANTHROPOLOGY
2 credits
(May be repeated) Prerequisites: 150 and 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 only.

651 SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS
2 credits

693 INDIVIDUAL INVESTIGATION
13 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
Prerequisites: 250 and permission. Advanced Seminar covering history of scientific archaeological enterprise, including major theoretical paradigms, and current trends in archaeology. Required for Certificate in Field Archaeology.

510 ARCHAEOLOGICAL PHYSICAL SURVEY
3 credits
Prerequisites: 250 or 3070.101 or 3560.310. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic georadar and electrical resistivity techniques, image processing and geological and archaeological interpretation.

520 ARCHAEOLOGY OF OHIO
3 credits
Prerequisites: 250. 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: 250. Corequisite: O-credit laboratory enrollment. Laboratory-based course teaching students to develop experience of artifact documentation, handling and analysis. Focus on quantification, statistics, conservation, illustration, lithics, ceramics, paleofaunal, paleobotanical remains and soils.

550 ARCHAEOLOGICAL FIELD SCHOOL
2 credits
Field-based course teaching basic archaeological techniques: mapping, excavation of prehistoric and historic sites, survey and documentation. Repeatable for up to 6 credits.

572 SPECIAL TOPICS IN ARCHAEOLOGY
3 credits
Prerequisite: 250 or permission. Designed 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.

ECONOMICS
3250:

506 STATE AND LOCAL PUBLIC FINANCE
3 credits
Prerequisites: 410. Recommended: 405. 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: 200. 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
Prerequisites: 200, 201, and 244. Forecasting models of economic activity: measurement, construction, and interpretation. Repeatable up to 6 times.

530 LABOR MARKET AND SOCIAL POLICY
3 credits
Prerequisite: 250. Intensive study of current labor and social policy issues (e.g. discrimination, poverty, immigration, education, demographic and labor market changes, impact of international trade on employment).

534 LABOR MARKET ANALYSIS AND EVALUATION
3 credits
Prerequisites: 410. In-depth study of labor market research including special techniques. Emphasis on health, education, and other current policy issues and programs analyzed and evaluated. Open to advanced students.

540 SPECIAL TOPICS: ECONOMICS
2 credits
Prerequisite: permission. Opportunity to study special topics and current issues in economics.

560 ECONOMICS OF DEVELOPING COUNTRIES
2 credits
Prerequisites: 200 or 201, or 244. Basic problems of economic development. Theories of economic development. Discussion of issues including population, health, and poverty.

561 PRINCIPLES OF INTERNATIONAL ECONOMICS
3 credits
Prerequisites: 250 or permission. An in-depth study of international trade and foreign exchange. Focus on analysis of international trade and monetary problems.

575 DEVELOPMENT OF ECONOMIC THOUGHT
3 credits
Prerequisites: 200 or 201, or 244. Evolution of theory and method, relation of ideas of economics to contemporary economic conditions.

581 MONETARY AND BANCING POLICY
3 credits
Prerequisites: 380, 400. Control over currency and credit, policies of control of central banks and governments, United States Treasury and Federal Reserve System.

583 URBAN ECONOMICS: THEORY AND POLICY
3 credits
Prerequisites: 200 and 201 or 244. Research on urban incomes, an economic perspective. Emphasis on urban growth, land-use patterns, housing, income distribution, poverty, and urban fiscal policy.

591 WORKSHOP IN ECONOMICS
3 credits (May be repeated) Group studies of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only.

600 FOUNDATIONS OF ECONOMIC ANALYSIS
3 credits
Prerequisites: 120. Determination of national income, employment, and price levels; aggregate consumption, investment and asset holding; decision problems faced by households and firms. Price, equilibrium and analysis of production and competition and monopoly and general equilibrium analysis. May not be substituted for 602, 603, 609, or applied toward the 30 graduate credits required for M.A. in economics.

602 MACROECONOMIC ANALYSIS I
3 credits
Construction of static macroeconomic models. Analysis predominantly in terms of comparative statics with only relatively simple dynamic models.

606 ECONOMICS OF THE PUBLIC SECTOR
3 credits
Examination of public sector economies and social costs of public production. Effects of government on the determination of specific taxes, program benefit analysis, expenditures analysis, fiscal federalism, and unemployment.

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
Modern microeconomic theory. Consumer behavior and the firm. Determination of market prices. Optimization models, establishment of criteria for productive, allocative and distributive efficiency.

615 INDUSTRIAL ORGANIZATION
3 credits
Prerequisite: 611 or permission. Examines rational, methods and success of government regulation of public utility, transportation and communications industries.

620 APPLICATIONS OF MATHEMATICAL MODELS TO ECONOMICS
3 credits
Prerequisite: courses in intermediate microeconomics. Review of selected topics of linear algebra to application to economic theory. Static open and closed input-output tables, dynamic models, consumption and capital theory and policy of demand, linear programming, general equilibriums, and analysis.

626 STATISTICS FOR ECONOMISTS
3 credits
Prerequisites: courses in elementary differential and integral calculus, 650-321, 322, or equivalent. A review of statistical concepts and their application to problems in economics. Emphasis is on estimation and hypothesis testing as a prelude to econometrics.

629 ECONOMETRICS
3 credits
Prerequisite: 620 or equivalent. Formulation of functional relations among economic variables suitable for statistical estimation from observational data and construction of multiequation econometric models and methods of estimation.

628 SEMINAR IN RESEARCH METHODS
3 credits
Prerequisite: 629 or permission of instructor. A seminar in the research application of mathematical economics or econometrics. Emphasis is on individual development of a theoretical proposition or empirical examination and policy implications.

633 THEORY OF WAGES AND EMPLOYMENT
3 credits
Analytical approach to integration of economic theory with observed labor market phenomena. Discussion of wage and employment theories, effects of unions, collective bargaining theories and policies of government regulation.

664 SEMINAR ON ECONOMIC GROWTH AND DEVELOPMENT
3 credits
Study of major theories of economic growth since the age of classical economics. Problems of development of emerging countries. Discussion of intensive case studies of developing countries and emerging market economies.

665 SEMINAR IN ECONOMIC ANALYSIS AND DEVELOPMENT
3 credits
Study of a particular national or international regional development. Any one or a combination of following regions may be considered: Middle East, North Africa, areas within Latin America, Southern Europe, Southeast Asia or Eastern Europe.

670 INTERNATIONAL MONETARY ECONOMICS
3 credits
International financial relations, foreign exchange market and exchange rate adjustments. Balance of payments adjustment policies. International monetary system.

671 INTERNATIONAL TRADE
3 credits
Traditional trade theory. Recent developments in trade theory, policy implications in trade relations among developed and developing economies.

683 MONETARY ECONOMICS
3 credits
Prerequisites: courses in intermediate microeconomics. Review of selected topics of linear algebra to application to economic theory. Static open and closed input-output tables, dynamic models, consumption and capital theory and policy of demand, linear programming, general equilibriums, and analysis.

684 ECONOMIC PERFORMANCE
3 credits
Study of a particular national or international regional development. Any one or a combination of following regions may be considered: Middle East, North Africa, areas within Latin America, Southern Europe, Southeast Asia or Eastern Europe.

697,8 READING IN ADVANCED ECONOMICS
1-4 credits each
Prerequisite: instructor. Since the subject matter is decided upon in each case, the course may be taken repeatedly for credit.

698 MASTER'S THESIS
3 credits
(May be repeated for a total of six credits)

ENGLISH
3300:

500 ANGLO SAXON
3 credits
Prerequisites: 111 and 112 or their equivalents, or permission of the instructor. Study of Old English language and Old English prose and poetry, including Beowulf.

501 DEVELOPMENT OF THE ARTHURIAN LEGEND
3 credits
Prerequisites: 111 and 112 or their equivalents, or permission of the instructor. Traces evolution of Arthurian materials from 640 to 1500 and beyond, with emphasis on characters, themes, events, and textual-critical examination.

506 CHAUCER
3 credits
Prerequisites: 111 and 112, or their equivalents, or permission of the instructor. Close study of Chaucer's major works – The Canterbury Tales and Troilus and Criseyde. In Middle English.

507 MIDDLE ENGLISH LITERATURE
3 credits
Prerequisites: 111 and 112. Study of genres, topics, styles, and writers of the Middle English literary works from 12th to 15th centuries. Readings in Middle English.

512 SWIFT AND POPE
3 credits
Prerequisites: 111 and 112, or their equivalents, or permission of the instructor. An intensive study of the major satires of Swift and Pope. Concentration on the rhetorical strategies of each author within the context of the shifting intellectual and cultural milieu at the end of the 18th and beginning of the 19th Centuries.

524 EARLY ENGLISH FICTION
3 credits
Prerequisites: 111 and 112. Study of English fiction before 1830. Focus on works of Defoe, Richardson, Fielding, Smollett, Sterne, Austen and Scott.

530 VICTORIAN POETRY AND PROSE
3 credits
Poetry, prose, of the late 19th Century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers.
535 20TH CENTURY BRITISH POETRY
Concentrated study of major poems of Yeats, Eliot, and Auden with attention also to Hardy, Joyce, Pound, Sassoon, Dylan Thomas and others. 3 credits
536 BRITISH FICTION: 1900-1925
Study of Conrad, Joyce, D.H. Lawrence, and Virginia Woolf with attention to their innovations in narrative and style, their psychological realism and symbolism. 3 credits
537 BRITISH FICTION SINCE 1925
Study of important British novelists since 1925, including Lawrence, Joyce, and Woolf. Attention to development of British short story from 1925 to present. 3 credits
548 AMERICAN ROMANTIC FICTION
Examination of early American literature, tracing its genesis, romantic period and germinal movements toward realism. Writers discussed include Cooper, Poe, Hawthorne, and Melville. 3 credits
549 AMERICAN FICTION: REALISM AND NATURALISM
Examination of American writers of realism and naturalistic fiction (e.g., Howells, James, Crane, Dreiser), tracing developments in American fiction against background of cultural and historical change. 3 credits
550 MODERN AMERICAN FICTION
Study of significant American short and long fiction from World War I to the present. 3 credits
553 AMERICAN WOMEN POETS
Prerequisites: 111 and 112. Study of modern poets' uses and revisions of tradition, women's relationships, conceptions of art and of the artist-as-woman, and the debate between "public" and "private" poetry. 3 credits
556 THOREAU, EMERSON, AND THEIR CIRCLE
A study of work and life of Henry David Thoreau, Ralph Waldo Emerson, and other key figures of the American Renaissance. 3 credits
557 MODERN EUROPEAN FICTION
Representative European writers from about 1850 to present, in translation. Focus on fiction of such writers as Zola, Tolstoy, Dostoevsky, Mann, Prout, Kafka and Scholzenthin. 3 credits
558 EROS AND LOVE IN EARLY WESTERN LITERATURE
An analysis of sex and love in the Western literatures from Greco-Roman times to 1500. Emphasizes allegorical, satanic, fantastic or realistic uses of sexuality and "romantic" love. 3 credits
570 HISTORY OF ENGLISH LANGUAGE
Prerequisite: 111 and 112 or their equivalents, or permission of the instructor. Development of English language, from its beginnings: sources of its vocabulary, its sounds, its rules; semantic change; political and social influences on changes; dialect origins; correctness. 3 credits
575 U.S. DIALECTS: BLACK AND WHITE
Prerequisite: 111 and 112 or their equivalents, or permission of the instructor. Study of differences in pronunciation, vocabulary and grammar among U.S. language varieties. Origins, regional and social dimensions are explored. Correctness, focusing on black English and Appalachian speech, explored. 3 credits
579 SYNTAX
Prerequisites: 371, 111 and 112 or their equivalents, or permission of the instructor. Principles of syntactic description. Sentence structures are investigated from a variety of languages, with emphasis on English. 3 credits
573 SEMINAR IN TEACHING ESL: THEORY AND METHOD
Prerequisite: 111 and 112 or their equivalents, or permission of the instructor. Theoretical issues in linguistic description and language acquisition as relevant to teaching of a second language. Emphasis on principles of the teaching of English as a second language based on research in linguistics, psycholinguistics and second language pedagogy. 3 credits
575 THEORY OF RHETORIC
Prerequisite: 111 and 112 or their equivalents, or permission of the instructor. Ancient and modern theories of rhetoric, with attention to classical oration, "topics" of rhetoric and their application to teaching of English. 3 credits
585 SCIENCE FICTION
A study of twenty-first-century British and American science fiction, featuring primary forms of the science fiction story and the world of major authors. 3 credits
589 SEMINAR IN ENGLISH
Prerequisites: 111 and 112 or their equivalents, or permission of the instructor. (May be repeated with different topics.) Special studies, and methods of literary research, in selected areas of American and English literature. 3 credits
590 WORKSHOP IN ENGLISH
Prerequisites: 111 and 112 or their equivalents, or permission of the instructor. (May be repeated with different topics.) Special studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English, for elective credit only. 3 credits
600 TEACHING COLLEGE COMPOSITION PRACTICUM
Prerequisite: teaching assistantship. Orientation and weekly analysis of teaching rationale and practice, limited to teaching assistants in the Department of English. (Credits may not be used to meet M.A. in English degree requirements.) 1 credit
615 SHAKESPEAREAN DRAMA
Concurrent study of several Shakespearean plays with emphasis on historical, critical and dramatic documents pertinent to development of Shakespeare's art. 3 credits
616 SHAKESPEARE'S CONTEMPORARIES IN ENGLISH DRAMA
Readings in such playwrights as Lyly, Greene, Marlowe, Jonson, Beaumont, Fletcher, Webster, Middleton and Ford and in contemporary writings relevant to theory and practice of drama. 3 credits
618 MILTON
Emphasis on Milton's major poems and prose works: Paradise Lost, Paradise Regained, Areopagitica. Student becomes acquainted with Milton the man and Milton the artist. 3 credits
619 SEVENTEENTH-CENTURY ENGLISH LITERATURE
An examination of seventeenth-century British authors, including Donne, Jonson, Marvell, Milton, Bacon and Bunyan, and their canonical positions, their craft, and their literary criticism. 3 credits
620 AUTOBIOGRAPHIC AS LITERATURE
This course examines the genre of autobiography and memoir. A wide representation of autobiographies will be the focus of discussion and analysis. 3 credits
625 AUTOBIOGRAPHICAL WRITING
Using a workshop format, this course examines autobiographical essays written by class members. Emphasis will be given to the art and craft of writing autobiography. 3 credits
626 KEATS AND HIS CONTEMPORARIES
Writings of John Keats, studied against background of romantic poetic theory and poetry of Keats' contemporaries. 3 credits
633 SEMINAR IN JAMES
A study of Henry James' life and works. Primary emphasis will be on James' fiction, both long and short, early and late, but some attention will also be given to his literary criticism, travel pieces and plays. 3 credits
652 POE AND HAWTHORNE
Substantial readings from each author: tales, novels, essays, letters, poetry. Also, representa- tive literary criticism about each author. 3 credits
660 CULTURAL STUDIES: THEORY AND PRACTICE
This course explores the relationships between Cultural Studies and English Studies, examine- ing the impact of Cultural Studies on the practice of textual analysis. 3 credits
665 LITERARY CRITICISM
 Inquiry into nature and value of literature and problems of practical criticism as represented in major statements of ancient and modern critics. 3 credits
670 MODERN LINGUISTICS
Introductionary examination of methods and results of modern grammatical research in syntax, semantics, phonology and dialects. Goals include understanding of language variation and its application in preparation for Linguistics studies of literature. 3 credits
673 THEORIES OF COMPOSITION
Study of composition theories and research, with attention to their implications for writing and writing instruction. Particular focus on such topics as composing processes, invention, form, style, modes of writing, language variables and evaluation of writing. Class sessions include discussion of readings and presentations. 3 credits
674 RESEARCH METHODOLOGIES IN COMPOSITION
Research methodologies in composition and their application. Students will define research areas, summarize and evaluate work already done, and propose and complete semester research projects. 3 credits
675 WRITING FOR MBAs
Emphasizes managerial writing. Writing tasks are presented as decision-making tools, and students develop strategies for messages to subordinates, analytical reports and messages to outside audiences. 3 credits
676 THEORY AND TEACHING OF BASIC COMPOSITION
Review of current research and exploration of specific instructional methods for teaching basic composition. 3 credits
679 SCHOLARLY WRITING
Practice of composing, analyzing and evaluating academic arguments. Practice in specific forms of academic writing such as reviews of research, articles and book reviews. 3 credits
683 SEMINAR IN SATRE
A study of satre from the middle ages through the late 20th Century, with particular attention to techniques of satric attack, modes of comedy and irony and literary criticism. 3 credits
685 SEMINAR IN ENGLISH
May be repeated with different topics. Special topics within the general field of literature and language, usually focusing on important major figures or themes. 2-3 credits
691 BIBLIOGRAPHY AND LITERARY RESEARCH
Choosing research topics, typical problems in literary scholarship, abstracting of scholarly material and bibliographical sources for literary research. Bibliographic exercises done, models of literary scholarship read. 3 credits
698 INDIVIDUAL READING IN ENGLISH
1-3 credits
Individual study under guidance of professor who directs and coordinates student’s reading and research. 3 credits
699 MASTER'S THESIS
Original work in the field of literature and language and completion of graduate student's required thesis. 1-3 credits

GEOGRAPHY AND PLANNING 3350:
505 GEOGRAPHIC INFORMATION SYSTEMS
Prerequisite: 540 or permission. Introduction to the principles and concepts underlying geo- graphic information systems (GIS) and their application in professional practice and academic research. Laboratory. 3 credits
507 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS
Prerequisite: 505. Advanced instruction in the theory and application of geographic informa- tion systems (GIS) including hands-on experience with both raster and vector GIS. Labarato- ry. 3 credits
509 ARCHAEOGEOGRAPHICAL SURVEY
Prerequisites: 2540:250 or 3570:101 or 3350:310. Advanced instruction in subsurface geo- physical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical geophysical techniques, mapping and geological and archaeological interpretation. 3 credits
515 ENVIRONMENTAL PLANNING
Scientific and technical principles for decision-making in planning, with emphasis on soils, land use classification systems and sea level quality issues. Data sources and methods of site evaluation. 3 credits
520 URBAN GEOGRAPHY
Scientific and technical principles for decision-making in planning, with emphasis on soils, land use classification systems and sea level quality issues. Data sources and methods of site evaluation. 3 credits
522 TRANSPORTATION SYSTEMS PLANNING
Prerequisite: 320 or permission. Study and analysis of transportation systems from a geo- graphic perspective. Emphasis on transportation problems and issues, elements of transpor- tation planning. 3 credits
528 INDUSTRIAL AND COMMERCIAL SITE LOCATION
Prerequisite: 320 or permission. Relationship between land, resources, population, transporta- tion and industrial and commercial location process. 3 credits
532 LAND USE PLANNING LAW
Prerequisite: 320 or permission. Relationship between land, resources, population, transporta- tion and industrial and commercial location process. 3 credits
533 PRACTICAL APPROACHES TO PLANNING
Prerequisite: 320 or permission. Role of geographic investigation in city, regional and resource planning. 3 credits
536 URBAN LAND USE ANALYSIS
Prerequisite: 320 or permission. Land use classification systems and their spatial variation in urban areas. Land use data are collected by student field work and analyzed to identify the associations and structure of land use. 3 credits
537 PLANNING ANALYSIS AND PROJECTION METHODS
Introduction to the primary analytic techniques for small-area demographic and economic forecasting. 3 credits
538 LAND USE PLANNING METHODS
Application of GIS and other computer-based tools to the preparation, implementation and evaluation of comprehensive land-use plans. 3 credits
539 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 "read- ing" settlements as visual landscapes. 3 credits
540 PRINCIPLES OF CARTOGRAPHY 3 credits
Theoretical and practical applications of cartographic principles used to design and produce maps, particularly for research reports, publications, and other professional purposes.

542 THEMATIC CARTOGRAPHY 3 credits
Prerequisite: 340 or permission. Principles and techniques of thematic mapping. Stresses maps as communication tools. Examines principal thematic mapping techniques and methods of presenting quantitative and qualitative data. Laboratory.

544 APPLICATIONS IN CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS 3 credits
Prerequisites: 340 or 540 or 345 and 406 or 505 or permission. Application of analytic and presentation techniques from cartography and geographic information systems to practical problems in geography and planning. Laboratory.

547 REMOTE SENSING 3 credits
Prerequisite: 305 or permission. Concepts, systems, and methods of applying aerial photography, satellite imagery, and other remote-sensing data for analyzing geographic, geological, and other earth phenomena.

548 ADVANCED CARTOGRAPHY 3 credits
Prerequisite: 342/540 or permission. Advanced study of cartographic principles with emphasis on the use of color for map design and production. (Laboratory.)

549 ADVANCED REMOTE SENSING 3 credits
Prerequisite: 447/547 or permission. Current research in remote sensing. Applications in study of physical and biological environments, remote sensing in planning, design, evaluation, and interpretation of remote sensing studies. (Laboratory.)

550 DEVELOPMENT PLANNING 3 credits
A study of planning concepts and techniques for developing countries, including growth and development, planning agencies, regional inequities and alternative approaches.

551 GLACIAL GEOLOGY 3 credits
Prerequisite: 20 or permission. Causes and effects of Pleistocene expansion of polar ice sheets, glacial deposits and world climate changes.

552 COASTAL GEOLOGY 3 credits
Prerequisites: 101, 324 or permission of instructor. Study of the origins and evolution of coastal and coastal deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features.

553 PRINCIPLES OF SEDIMENTARY BASIN ANALYSIS 3 credits
Prerequisites or corequisites: 324 and 360, or permission. Primarily the study of depositional sequences, applications of sequence stratigraphy, classification of marine rocks, and techniques used in the exploration for petroleum and minerals.

555 OPTICAL MINERALOGY-INTRODUCTORY PETROGRAPHY 3 credits
Prerequisites: 230 and 231 or equivalent. Optical techniques for identification, characterization, and application to geological problems. Laboratory.

557 ADVANCED PETROGRAPHY 3 credits
Prerequisite: 552. Petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and mineral assemblages using thin section. Laboratory.

558 PETROLEUM GEOLOGY 3 credits
Prerequisite or recommendation: 324. Natural occurrences of petroleum. Characterization, origin, entrapment and exploration methods. Laboratory.

560 GEOLGY 3 credits
Prerequisites: 101, 102; recommended: 324. Origin, composition and occurrence of coal with emphasis on depositional environments, coalification processes, exploration, evaluation and exploitation. Laboratory.

559 ECONOMIC GEOLOGY 3 credits
Prerequisites: 231 and 235. Study of metallic and nonmetallic mineral deposits emphasizing economic aspects.

561 FUNDAMENTALS OF GEOPHYSICS 3 credits
Prerequisites: 340/522 or permission and 360/522. Fundamental concepts in solid earth geophysics, planetary physics, geodesy, and geomagnetism. Emphasis on contributions to recent major developments in geoscience.

562 ENVIRONMENTAL MAGNETISM 3 credits
Prerequisites: 101 or permission of instructor. Introduction to the theory and methods of environmental magnetism and the application of environmental magnetism to interpreting sedimentary deposits.

563 EXPLOITATION GEOPHYSICS 3 credits
Prerequisites: 340/522 or permission and 360/522 or permission. Basic principles and techniques of geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical methods and application to geological problems. Laboratory.

564 BOREHOLE GEOPHYSICS 3 credits
Prerequisite: permission of instructor. Basic principles and techniques of geophysical well logging with emphasis on electrical, radioactive and sonic measurements and their quantitative evaluation. Applications in oil, gas and groundwater exploration. Laboratory.

565 ADVANCED STRUCTURAL GEOLOGY 3 credits
Prerequisite: 350 or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory.

566 ADVANCED PALEONTOLOGY 3 credits
Prerequisites: 360 and 360 lab. Provides advanced training in paleontological subjects. Topics will include palaeoecology, palaeoecological biogeography, fossil preservation, diversification and extinction patterns and geochemical signals of fossils.

568 MICROPALAEONTOLOGY 3 credits
Prerequisites: 360 or permission. Introduction to techniques of micropalaeontology evolution and paleoecology of selected microfossil groups. Laboratory.

570 GEOCHEMISTRY 3 credits
Prerequisites: 101, 230, 231, 350/551, 152, 153, or permission. Application of chemical principles to the study of geologic processes. Laboratory.

572 STABLE ISOTOPE GEOCHEMISTRY 3 credits

574 GROUNDWATER HYDROLOGY 3 credits
Prerequisites: 101. Origin, occurrence, regimen and utilization of groundwater. Qualitative and quantitative presentation of geological and geochemical aspects of groundwater hydrology. Laboratory.

575 ANÁLYTICAL METHODS IN GEOLOGY 3 credits
Prerequisites: 250 and 231. A survey of analytical methods used to solve geologic problems with emphasis on method selection, proper sample collection, analysis of data quality and data presentation.

576 GEOSCIENCE INFORMATION ACQUISITION AND MANAGEMENT 2 credits
Prerequisites: Must be a Geology Department graduate student or senior in major in geology, or have permission of instructor. Methods for finding, gathering, organizing, and evaluating geoscience information. Emphasis on finding data sources (including electronic), creating valid databases, and preparing reports.

577 INDIVIDUAL READINGS IN GEOPHYSICS 1-4 credits
Prerequisite: permission of graduate advisor required. (May be repeated for a total of 8 credits under the same title, but only 3 credits may be applied to total credit hours needed for degree requirements.) Credit/Non-Credit.

579 INDIVIDUAL READINGS IN GEOLOGY 1-4 credits
Prerequisite: 481/581 or permission. Critical review of major developments in geological concepts from ancient times to present.

581 FACILITIES PLANNING 3 credits
Study of need, process and limitation of urban facilities planning.

583 COMPARATIVE PLANNING 3 credits
A survey of national, regional and local planning implementation measures in use in the developing world. Particular attention will be given to the planning experiences of European nations and their impact on American planning theory and practice.

584 ADVANCED SPATIAL ANALYSIS 3 credits
Prerequisites: 365/563 or permission. Advanced concepts and methodologies in geographic information systems. Emphasis on quantitative revolution in geographical analysis including multivariate techniques and factor discriminant and economical analysis, and multidimensional scaling.

585 PLANNING INTERNSHIP 3 credits
Prerequisite: permission. Individual experience in selected planning agencies for supervised performance in professional planning work. (May be repeated but only 3 credits may be applied to total credit hours needed for degree requirements.) Credit/Non-Credit.

586 HISTORICAL GEOGRAPHIC THOUGHT 3 credits
Prerequisite: 481/581 or permission. Critical review of major developments in geographic concepts from ancient times to present.

589 GEOLGY 3 credits
Prerequisite: 210 or permission. Independent original work toward a thesis.

595 COLLOQUIUM 1 credit
(May be repeated for a maximum of four credits.) Lecture series on topics of interest in geology. Planning, by academic and nonacademic professionals for both faculty and students. Does not satisfy degree requirements. Credit/Non-Credit.

596INDIVIDUAL READING AND RESEARCH 1-3 credits
(May be repeated for a maximum of six credits) Prerequisite: permission of instructor. Intensive investigation of selected topics under guidance of faculty member.

599 T H E S I S 1-6 credits
Indepedent original work toward a thesis.

ARCHAEOLOGICAL GEOLOGY 3 credits (includes lab)
Prerequisite: 101 or by permission of instructor. Provides background in geologic principles and techniques relevant to archaeologists. Topics include stratigraphy, absolute dating, location assessment, zooarchaeology, taphonomy, and remote sensing. Required lab.

ARCHAEOGEOPHYSICAL SURVEY 3 credits
Prerequisites: 3240/250 or 3370/310 or 3350/310. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geologic and archaeological interpretation.

REGIONAL GEOLOGY OF NORTH AMERICA 3 credits
Prerequisites: 101, 230, 231 or permission recommended. Examination of physical provinces of North America emphasizing structure, tectonic setting, stratigraphy and processes responsible for landforms in each province. Laboratory.
501 JAPAN AND THE PACIFIC WAR, 1895-1945
This course examines the interactions between the work of academic historians and the public in areas such as local history, museums, oral history, film, and the internet.

587 SCIENCE AND TECHNOLOGY IN U.S. HISTORY
This course examines the role of science and technology in U.S. history and its social, economic, and political effects.

593 WORKSHOP IN HISTORY
Course examines the interactions between the work of academic historians and the public in areas such as local history, museums, oral history, film, and the internet.

594 WORKSHOP IN HISTORY
Course examines the interactions between the work of academic historians and the public in areas such as local history, museums, oral history, film, and the internet.

611 GRADUATE WRITING SEMINAR–
Comparative historiography on world civilizations: East, South Asia, Middle East, Africa, and the Americas. Emphasis on key themes: kingship, empire, colonization, nationalism.

612 READING SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815
Course examines the development of science and technology in U.S. history and its social, economic, and political effects.

623 WRITING SEMINAR IN ANCIENT HISTORY
Prerequisite: 622. Research and writing in selected topics of ancient history, particularly Greek and Roman eras.

625 READING SEMINAR IN MEDIEVAL HISTORY
Study of historical literature, sources of materials and major interpretations of medieval European history.

626 WRITING SEMINAR IN MEDIEVAL HISTORY
Study of historical literature, sources of materials and major interpretations of medieval European history.

631 READING SEMINAR IN MODERN EUROPEAN HISTORY TO 1815
Study of historical literature, sources of materials, major interpretations of early modern European history to Napoleonic era.

632 READING SEMINAR IN MODERN EUROPEAN HISTORY TO 1815
Study of historical literature, sources of materials, major interpretations of early modern European history to Napoleonic era.

635 WRITING SEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE
Study of historical literature, sources of materials and major interpretations of British imperialism, colonialism, and nationalism.

640 WRITING SEMINAR IN THE HISTORY AND IDEOLOGY OF THE AMERICAN REVOLUTION
Study of historical literature, sources of materials and major interpretations of early modern European history, occasionally including social, economic and intellectual subjects.

641 READING SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815
Study of historical literature, sources of materials and major interpretations of early modern European history, occasionally including social, economic and intellectual subjects.

643 GEOSTATISTICS
Prerequisites: 330, 430/630, 631, 632, or permission of instructor. A study of the role of science and technology in U.S. history and its social, economic, and political effects.

645 THE UNITED STATES AS A WORLD POWER
This course examines the role of science and technology in U.S. history and its social, economic, and political effects.

650 GLOBAL TECTONICS
Prerequisites: 340, 430/630, or permission of instructor. A study of the role of science and technology in U.S. history and its social, economic, and political effects.

656 THE ORIGINS OF MODERN AMERICA, 1877-1917
Survey of economic development since 1900; topics include agriculture, business and labor, special emphasis on role of big business and evolution of monetary and fiscal policy.

676 HISTORY OF EUROPEAN POP CULTURE
Study of the role of science and technology in U.S. history and its social, economic, and political effects.

677 HISTORY OF THE AMERICAN REVOLUTION
Study of the role of science and technology in U.S. history and its social, economic, and political effects.

688 GEOLOGY TEACHING PRACTICUM
Course examines the role of science and technology in U.S. history and its social, economic, and political effects.

907 THE UNIVERSITY OF KENTUCKY
Prerequisites: 688, 695, and 696. A study of historical literature, sources of materials and major interpretations of early modern European history, occasionally including social, economic and intellectual subjects.

908 THE UNIVERSITY OF KENTUCKY
Prerequisites: 688, 695, and 696. A study of historical literature, sources of materials and major interpretations of early modern European history, occasionally including social, economic and intellectual subjects.
Graduate Courses

501 HISTORY OF MATHEMATICS 3 credits
Prerequisite: 207 with a grade of C- or better. Origin and development of mathematical ideas. Course does not meet degree requirements in the department.

510 ADVANCED LINEAR ALGEBRA 3 credits
Prerequisite: 317. Study of vector spaces, linear transformation, canonical and quadratic forms, inner product spaces.

511 ABSTRACT ALGEBRA I 3 credits
Prerequisite: 307 or permission. Study of groups, rings, fields, integral domains, vector spaces, field extensions. Galois theory.

512 ABSTRACT ALGEBRA II 3 credits
Prerequisite: 410/510 or permission. Study of groups, rings, fields, integral domains, vector spaces, field extensions. Galois theory.

513 THEORY OF NUMBERS 3 credits
Prerequisite: 222 or permission. Euclidean algorithm, unique factorization theorem, congruences, primitive roots, indices, quadratic residues, number-theoretic functions, Gaussian integers and continued fractions.

515 COMBINATORICS AND GRAPH THEORY 3 credits
Prerequisite: 222 or permission. Introduction to basic ideas and techniques of mathematical counting properties of structure of systems.

520 MATHEMATICAL TECHNOLOGY AND COMMUNICATION 3 credits
Prerequisites: 222 and 315. Permission of the instructor. Graphical, numerical, and algorithmic computation with applications using a variety of mathematical hardware and software: symbolic manipulators, dynamic geometry software, programs, scripts and web browsers.

521,2 ADVANCED CALCULUS I AND II 3 credits each
Sequential. Prerequisite: 223. 307 is highly recommended. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals.

525 COMPLEX VARIABLES 3 credits
Prerequisite: 422 or permission. Complex variables, elementary functions, differentiation and analytic functions; integration and Cauchy's theorem; power series and Laurent series; residue theorem; conformal mappings and integral transform.

527 APPLIED NUMERICAL METHODS I 3 credits
Prerequisites: 222 and 3400:208 or permission of instructor. Numerical methods in polynomial interpolation, rootfinding, numerical integration, and numerical linear algebra.

528 APPLIED NUMERICAL METHODS II 3 credits
Prerequisites: 335 and 427 or permission of instructor. 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.

529 NUMERICAL SOLUTIONS FOR ORDINARY DIFFERENTIAL EQUATIONS 3 credits

530 NUMERICAL SOLUTIONS FOR PARTIAL DIFFERENTIAL EQUATIONS 3 credits
Prerequisite: 427 or 427 or permission of instructor. Advanced undergraduate and graduate studies in the study of finite difference and finite element methods for partial differential equations — consistency, stability, convergence and computer implementation.

531 ADVANCED COMBINATORICS 4 credits
Prerequisite: 335. The classical initial value and boundary value problems of mathematical physics developed and solved using Fourier series and integral transforms.

535 SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS 3 credits
Prerequisites: 335 and either 312 or 428 or permission. Analysis, solution of systems of equations, linear, nonlinear. Topics: stability theory, perturbation methods, asymptotic methods, applications from physical, social sciences.

536 MATHEMATICAL MODELS 3 credits
Prerequisite: 335 and sylvour course in an approved area of application, or 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 systems.

538 ADVANCED ENGINEERING MATHEMATICS I 3 credits
Prerequisites: 335 and 312 or permission. Matrices, eigenvalue problems, systems of ODEs, vector analysis, complex variables.

539 ADVANCED ENGINEERING MATHEMATICS II 3 credits
Prerequisites: 335 and 312 or permission. Special functions, fourier series and transforms, etc.

541 CONCEPTS IN GEOMETRY 4 credits
Prerequisite: 222 or permission of instructor; 307 is recommended. Axiomatic treatment of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, constructions and theorems.

545 INTRODUCTION TO TOPOLOGY 3 credits
Prerequisite: 307 or permission of instructor. Introduction to topological spaces and topologies, mapping, cardinality, homeomorphisms, connected spaces, metric spaces.

589 TOPICS IN MATHEMATICS 1-4 credits
(May be repeated for a total of six credits) Prerequisite: Permission of instructor. Selected topics in mathematics and applied mathematics at an advanced level.

591 WORKSHOP IN MATHEMATICS 1-3 credits
(May be repeated) Prerequisite: Group study of special topics in mathematics and statistics. May not be used to meet undergraduate or graduate major requirements in mathematics and statistics. May not be used for elective credit only.

611 TOPICS IN ALGEBRA 3 credits
Prerequisite: 412/512. Advanced study of selected topics in some of the following areas: semigroups, groups, rings, modules and fields.

621 REAL ANALYSIS 3 credits
Prerequisite: 422/522 or permission. In-depth study of real analysis — metric spaces, normed vector spaces, integration theory, Hilbert spaces.

622 MEASURE THEORY 3 credits
Prerequisite: 621. Measure, measurable function, Lebesgue integral, convergence theorems, Lp-spaces, Radon-Nikodym theorem.

625 ANALYTIC FUNCTION THEORY 3 credits
Prerequisite: 422/522. Complex number system, holomorphic functions, continuity, differentiability, power series, complex integration, residue theory, singularities, analytic continuation, asymptotic expansion.

627 ADVANCED NUMERICAL ANALYSIS I AND II 3 credits each
Prerequisite: 422/522. Theoretical analysis of numerical methods in linear algebra, polynomial interpolation and approximation, integration and ordinary differential equations.

631 CALCULUS OF VARIATIONS 3 credits
Prerequisite: 335. Problems with fixed and movable endpoints, problems with constraints, generalization to several variables, the maximality principle, linear time-optimal problems, the connection between classical theory and the maximality principle.

632 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS 3 credits
Prerequisite: 432/532 or permission. Existence, uniqueness and stability of solutions to general classes of partial differential equations. Methods for solving these classes introduced, emphasizing both analytical and numerical techniques.

633,4 METHODS OF APPLIED MATHEMATICS I AND II 3 credits each
Prerequisites: 421/521 or 438/538, 439/539 or permission. Methods of applied mathematics concentrating on techniques for analysis of differential and integral equations — applied complex analysis, integral transforms, partial differential equations, and integral equations.

635 OPTIMIZATION 3 credits
Prerequisite: 422/522 or permission. Unconstrained and constrained optimization theory and methods in applied problems.

636 ADVANCED COMBINATORICS AND GRAPH THEORY 3 credits
Prerequisite: 335. Theory and techniques of combinatorics as applied to network problems and to theoretical computer science.

638 THEORY AND APPLICATION OF WAVETRICES 3 credits
Prerequisite: permission of instructor. Theory of wavelets and applications to signal and image analysis. Topics include time-frequency representations, filter banks, discrete and continuous wavelet transforms, wavelet packets, and applications.

689 ADVANCED TOPICS IN MATHEMATICS 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission of advisor. Seminar-type discussions on topics in mathematics leading to supervised research project. No more than 2 credits apply to major requirements.

692 SEMINAR IN MATHEMATICS 1-3 credits
(May be repeated) 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.

695 PRACTICUM IN MATHEMATICS AND STATISTICS 1-2 credits
(May be repeated) Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of mathematical sciences. May not be used to meet degree requirements. Credit/No Credit.

697 INDIVIDUAL READING 1-3 credits
(May be repeated) Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of mathematical sciences. May not be used to meet degree requirements. Credit/No Credit.

699 MASTER'S RESEARCH 1-6 credits
(May be repeated) Prerequisite: permission of advisor. Research in suitable topics in mathematics or applied mathematics culminating in a research paper. No more than 2 credits applicable to major requirements.

711 CONCEPTS IN HISTORY OF MATHEMATICS 1-2 credits
(May be repeated for a total of six credits) Prerequisite: permission of advisor. Seminar-type discussions on topics in mathematics leading to supervised research project. No more than 2 credits apply to major requirements.

721,2 FUNCTIONAL ANALYSIS I AND II 3 credits each
Prerequisites: 412/512. Introduction to functional analysis and applications, including linear operators, spectral theory, and applications to differential equations.
728 MATRIX ITERATIVE ANALYSIS 3 credits
Prerequisite: 312 or permission of the instructor. Basic iterative methods, Matrix Properties and Concepts, Linear and Nonlinear equation solvers, Semi-iterative and conjugate-gradient methods.

730 ADVANCED NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS 3 credits
Prerequisites: 422/522 and 426/526, or 628, or equivalent. Derivation, analysis, and implementation of difference and differential equation-based methods for the solution of partial differential equations and systems of differential equations.

732 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS II 3 credits

733A ASYMPTOTIC METHODS AND NONLINEAR EQUATION I and II 3 credits
Prerequisites: 633/634 or equivalent. Survey of asymptotic and perturbation methods as applied to integrals and differential equations. Topics: bifurcation and stability with applications from the physical sciences and engineering.

758 DYNAMICAL SYSTEMS 3 credits
Prerequisite: 422/522 or equivalent. The study of mathematical models of systems which evolve over time. An introduction to maps and applications to ordinary differential equations.

COMPUTER SCIENCE 3460:

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 degree requirements.)

506 INTRODUCTION TO C AND UNIX 3 credits
Prerequisite: Programming experience. C language programming. UNIX shell programming, file structure, system calls, and interprocess communication. (May not be used to meet computer science degree requirements.)

508 WINDOWS PROGRAMMING 3 credits
Prerequisites: 208 or 210 or 406 or 508 or permission. Windows operating systems, integrated development environments, basic graphical user interface, use of object libraries, component object model, object linking and embedding, client-server computing.

518 INTRODUCTION TO DISCRETE STRUCTURES 3 credits
Prerequisite: 210 or permission. Introduction to algebraic structures of particular importance in computer science. Topics include graphs and digraphs, trees and lattices, principles of counting, and recurrence relations.

521 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING 3 credits
Prerequisite: 316. Object-oriented design, analysis, and programming using different development models. Emphasis on object-oriented programming paradigms.

526 OPERATING SYSTEMS 3 credits
Prerequisites: 306 and 316, or 508 or equivalent. Introduction to various types of operating systems, computer architectures, multiprogramming systems, and interprocess communication. Concepts and techniques of operating system design.

529 UNIX SYSTEM PROGRAMMING 3 credits
Prerequisites: 316 and knowledge of C. An overview of the UNIX operating system. Shell programming, process management, file management, file protection, system calls, and system programming.

530 THEORY OF PROGRAMMING LANGUAGES 3 credits
Prerequisite: 316. Advanced concepts underlying programming languages and their applications, formal definitions of programming languages, abstract syntax, semantics, and formal language models. (May not be used to meet computer science master's degree requirements.)

535 ANALYSIS OF ALGORITHMS 3 credits
Prerequisites: 316 and 486/586. Design and analysis of efficient algorithms for random access machines, derivation of pattern classification algorithms.

540 COMPILER DESIGN 3 credits
Prerequisites: 307 and 316. Techniques used in writing and modifying compilers including translation, debugging, analysis, program optimization, and interfacing. Concepts and techniques of compiler design tools and building tools.

555 DATABASE MANAGEMENT AND COMPUTER NETWORKS 3 credits
Prerequisites: 316, 486/586, OSI-ISO, TOSIP, SNA data switching, protocols, flow and error control, routing, topology, Network trends, network taxonomies, and socket-based programming.

557 COMPUTER GRAPHICS 3 credits
Prerequisite: Completion of 316 with a grade of C- or better and knowledge of C. Topics in the BUGS environment, Introduction to computer graphics and computer vision, Introduction to computer graphics and computer vision.

560 ARTIFICIAL INTELLIGENCE AND HEURISTIC PROGRAMMING 3 credits
Prerequisite: 316. Study of various programs which have displayed some intelligence behavior. Exploration of level at which computers can display intelligence.

561 COMPUTER ORGANIZATION 3 credits
Prerequisites: 210, 306, 4400/4300. An introduction to the hardware organization of the computer at the register, processor and systems level. An in-depth study of the architecture of a particular computer systems family. (May not be used to meet computer science master's degree requirements.)

565 MICROPROCESSOR PROGRAMMING AND INTERFACING 3 credits
Prerequisites: 316, 360. Detailed study of a particular microcomputer architecture and interconnection set. Standard device interface components. Real time programming concepts.

570 AUTOMATA, COMPUTABILITY AND FORMAL LANGUAGES 3 credits
Prerequisites: 316. Introduction to automata theory of formal languages and their relation to computer science. Topics include description of languages; regular context-free and context-sensitive grammars; pushdown and linearly bounded acceptors; Turing machines; closure properties; computational complexity; stack automata and decidability.

575 DATABASE MANAGEMENT 3 credits
Prerequisite: 316. Fundamentals of database organization, data manipulation and representation, data integrity, privacy.

580 INTRODUCTION TO SOFTWARE ENGINEERING AND FORMAL METHODS 3 credits
Prerequisite: 316. Introduction to formal software specification and validation. Introduction of computer science formalisms. Techniques for development, validation, and maintenance.

589 TOPICS IN COMPUTER SCIENCE 1-3 credits
(VMay be repeated) Prerequisite: permission of instructor. Selected topics in computer science at an advanced level.

591 WORKSHOP IN COMPUTER SCIENCE 1-2 credits
(VMay not be used to meet computer science master's degree requirements)

597 INDIVIDUAL STUDY IN COMPUTER SCIENCE 1-3 credits
(VMay be repeated) Prerequisite: special permission of department head. Individual study of research problems under the supervision of a designated faculty member.

626 ADVANCED OPERATING SYSTEMS 3 credits
Prerequisite: 426/526 or equivalent. Advanced topics in operating system design: synchronization mechanisms, performance evaluation, security, distributed operating systems.

630 ADVANCED THEORY OF PROGRAMMING LANGUAGES 3 credits
Prerequisites: 430/530 and 418/518, or equivalent. An in-depth study of various issues in the design and implementation of programming languages, such as formal type systems, operational semantics, and verification.

635 ADVANCED ALGORITHMS AND COMPLEXITY THEORY 3 credits
Prerequisites: 492/592 or equivalent. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theory, complexity hierarchies, NP-complete and intractable problems, approximation techniques.

640 ADVANCED COMPILER DESIGN AND CONSTRUCTION 2 credits
Prerequisite: Continuation of 446/546. Theory of LL(k) and LR(k) parsing, compiler writing tools and environments, code optimization, implementation of advanced language features. Major programming project required.

655 COMPUTER NETWORKS AND DISTRIBUTED PROCESSING 3 credits
Prerequisites: 460/560 or maturity in mathematics. Architecture of expert systems, knowledge representation and acquisition, inference mechanisms for expert systems, uncertainty management, expert system tools and applications.

656 ADVANCED COMPUTER ARCHITECTURE 3 credits
Prerequisites: 466/566 or equivalent. Fundamentals of computer architecture and design, with emphasis on cost/performance tradeoffs. Studies of pipeline, vector, RISC, and multiprocessor architectures.

670 ADVANCED AUTOMATA AND COMPUTABILITY 3 credits
Prerequisites: 470/570 or equivalent. Continuation of 460/560. Theory of formal languages and automata. Topics include nondeterministic automata, recursive function theory, the Church-Turing thesis, learning and undecidability.

675 ADVANCED DATABASE MANAGEMENT 3 credits
Prerequisites: 470/570 or equivalent. Relational database theory, including formal query languages; query processing and optimization techniques; reliability techniques including recovery, concurrency, security, and integrity; current trends in database technology.

677 PARALLEL PROCESSING 3 credits
Prerequisites: 477/577. Advanced computer architectures, theories of parallel computing, system design and construction optimization, programming languages and application requirements of cost-effective computer systems. Classical results and practical insights into implementing parallel algorithms on actual parallel machines.

680 SOFTWARE ENGINEERING 3 credits
Prerequisites: 307 and 316. Introduction to current techniques and methodologies used in software design, development, validation, and maintenance.

689 ADVANCED TOPICS IN COMPUTER SCIENCE 1-3 credits
(VMay 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. (Departmental approval required for use as an elective to computer science master's degree's requirements)

692 SEMINAR IN COMPUTER SCIENCE 1-3 credits
(VMay be repeated) Prerequisite: permission of instructor. Seminar-type discussions on topics in computer science. (May not be repeated more than twice.)

695 PRACTICUM COMPUTER SCIENCE 1-3 credits
Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of computer science under the supervision of an experienced faculty member. May not be used to meet degree requirements. Credit/no-credit.

697 INDIVIDUAL STUDY IN COMPUTER SCIENCE 1-3 credits
(VMay be repeated) Prerequisite: special permission of department head. At most, six credits may be applied to degree requirements. Selected topics in computer science at an advanced level. (Departmental approval required for use as an elective to computer science master's degree's requirements)

698 MASTERS RESEARCH 1-6 credits
(VMay be repeated) Prerequisite: permission of advisor. Research in suitable topics in computer science culminating in a research paper. No more than two credits apply to major requirements.

699 MASTERS THESIS 1-6 credits
Prerequisite: permission. (VMay be repeated for a total of six credits.) A properly qualified candidate for a master's degree may obtain 2-4 credits for research experience which culminates in a thesis. Approval of the thesis is a condition for a Ph.D. degree.

STATISTICS 3470:

550 PROBABILITY 3 credits
Prerequisites: 340/421. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes.

551,2 THEORETICAL STATISTICS I and II 3 credits each
Prerequisite: Statistical methods. Sequential. Prerequisites: 340/421. 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.
560 STATISTICAL METHODS Application of statistical methods to the social sciences including description statistics, probability distributions, statistical inference (parametric, nonparametric), categorical data analysis, linear regression, correlation, computer applications. May not be used to meet Mathematical Sciences degree requirements.

561 APPLIED STATISTICS I Prerequisite: 440/540-542 or 298 or equivalent. Applications of statistical theory to natural sciences and social sciences, including probability distributions, interval estimation, hypothesis testing (parametric and nonparametric), and simple linear regression and correlation.

562 APPLIED STATISTICS II Prerequisite: 461/561 or equivalent. Applications of the techniques of regression and multifactor analysis of variance.

565 DESIGN OF SAMPLE SURVEYS Prerequisite: 461/561 or equivalent. Design and analysis of frequently used sample survey techniques.

566 RELIABILITY MODELS Prerequisite: 461/561. Selected topics in reliability modeling including parametric and nonparametric models, competing modes of failure, censored data and accelerated life models.

571 ACTUARIAL SCIENCE Prerequisite: 551 or 561 or equivalent. Study of various statistical, financial, and mathematical models used in insurance risk assessment. May not be used to meet degree requirements. Credit/noncredit.

572 ACTUARIAL SCIENCE II Prerequisite: 471/571. Continuation of Actuarial Science I. Study of multiple life functions, multiple decrement models, applications of statistical inference, ANOVA, correlation and regression.

575 FOUNDATIONS OF STATISTICAL QUALITY CONTROL Prerequisite: 461/561 or equivalent. Course provides a solid foundation in the theory and applications of statistical techniques widely used in industry.

580 STATISTICAL DATA MANAGEMENT Prerequisites: 561 or equivalent. Students learn data organization and structures, design of statistical databases, statistical software analysis, importing and exporting of data between software, and missing data analysis.

589 TOPICS IN STATISTICS (May be repeated for a total of six credits) Prerequisite: permission. Selected topics in advanced statistics, including quality control, reliability, sampling techniques, decision theory, advanced inference, stochastic processes and others.

591 WORKSHOP IN STATISTICS (May be repeated with change of topic) Prerequisites: 461/561 or equivalent. May not be used to meet undergraduate or graduate major requirements in mathematics and statistics. May be used for elective credit only.

595 STATISTICAL CONSULTING (May be repeated) Prerequisite: 480/580 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 mathematics department majors.

596 ADVANCED PROBABILITY AND STOCHASTIC PROCESSES Prerequisite: 651. Random walk, distributions, unlimited sequence of trials, laws of large numbers, convolutions, branching processes, renewal theory, Markov chains, time-dependent stochastic processes.

597 PROBABILITY AND STATISTICS Prerequisite: 3450:223 or equivalent. Probability, random variables, moments and generating functions, random vectors, special distributions, limit theorems, sampling, point estimation, hypothesis testing, confidence estimation.

598 ADVANCED MATHEMATICAL STATISTICS Prerequisite: 651. Convergence of random variables, the Central Limit Theorem; theory of estimation; theory of hypothesis testing; the multivariate normal density; introduction to linear models; Bayesian statistics.

599 LINEAR MODELS Prerequisites: 3450:32 and 651 or equivalent. General linear model in matrix notation, general linear hypothesis, regression models, experimental design models, analysis of variance and covariance, variance components.

600 ADVANCED STATISTICAL METHODS Prerequisite: 460/560 or 461/561 or 664 or equivalent or permission. Theory and applications of the techniques of regression and multifactor analysis of variance.

601 STATISTICS FOR THE LIFE SCIENCES 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.

603 EXPERIMENTAL DESIGN Prerequisite: 461/561 or equivalent or permission. Selected topics in experimental design including random and fixed effects, nested designs, split plot designs, confounding, fractional factorials, Latin squares, and analysis of covariance.

604 STATISTICS FOR THE HEALTH SCIENCES (May not be used to meet degree requirements for mathematical sciences majors) Prerequisite: college-level algebra or equivalent. Descriptive statistics, probability and probability distributions, discrete and continuous probability distributions, nonparametric statistics, regression and correlation.

605 REGRESSION Prerequisite: 461/561 or equivalent or permission. Correlation, simple and multiple linear regression: least squares, matrix notation, model building and checking estimation, hypothesis testing, outliers, influence, multicollinearity, transformations, categorical regressors, logistic regression.

606 NONPARAMETRIC STATISTICS-METHODS Prerequisites: 460/560 or 461/561 or equivalent or permission. Theory and practice using techniques requiring less restrictive assumptions. Nonparametric analogues to t- and F-tests, ANOVA, regression and correlation. Computer applications.

607 FACTOR ANALYSIS Prerequisite: 461/561 or 460/560 or 461/561 or 664 or equivalent or permission. Theory and statistical methods for identifying variables through use of principal components and factor analysis. Identification of groups using cluster analysis. Computer applications.

608 MULTIVARIATE STATISTICAL METHODS Prerequisite: 462/562 or 663 or 665 or equivalent or permission. Multivariate techniques including distance concept, Hotelling T2, multivariate ANOVA, regression and correlation, linear contrasts, factorial experiments, nested and repeated measure designs, Bonferroni’s closed test, linear discrimination analysis, canonical correlations, application.

670 BIOSTATISTICS Prerequisite: 460/561 or 461/561 or 664 or equivalent or permission. Statistical issues and methods for biological, medical and health sciences including: clinical trials, sample size, power, loglinear models, survival analysis, and bioassay. Computer applications.

675 RESPONSE SURFACE METHODOLOGY Prerequisite: 462/562 or 663 or 665 or equivalent or permission. First and second order response designs, efficient experimental plans, methods for the analysis, and optimization of response functions.

689 ADVANCED TOPICS IN STATISTICS (May be repeated for a total of six credits) Prerequisite: 651. Selected topics in statistics including: order statistics, advanced inference, sequential analysis, stochastic processes, reliability theory, Bayesian statistics and regression.

692 STATISTICS MASTERS PAPER (May be repeated) Prerequisite: permission of advisor. Supervised writing of paper for Masters of Science in Statistics-Northeast Option.

693 ADVANCED TOPICS IN STATISTICS AND MATHEMATICS Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of statistics. May not be used to meet degree requirements. Credit/noncredit.

697 INDIVIDUAL READING (May be repeated for a total of four credits) Prerequisites: graduate standing and permission. Directed studies in statistics under guidance of selected faculty member.

698 MASTER’S RESEARCH (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.

699 MASTER’S THESIS (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 (May be repeated) 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.

981 PRELIMINARY RESEARCH (May be repeated) Prerequisite: Permission. May be repeated.) Completion of qualifying examination and approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation topic.

999 DOCTORAL DISSERTATION (May be repeated.) 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 Prerequisite: permission of instructor. (May be repeated for a maximum of 8 credits) Group studies of special topics in modern languages.

5978 LATIN READING AND RESEARCH Prerequisites: 205 and 306 or equivalent. Group studies of special topics in modern languages.

LATIN

3510:

5978 LATIN READING AND RESEARCH

FRENCH

3520:

502 ADVANCED FRENCH GRAMMAR Prerequisite: 302 or equivalent. Advanced study of normative French grammar with emphasis on word formation, morphology, grammar, structure and phonetic pronunciation.

507 FRENCH LITERATURE OF THE MIDDLE AGES AND THE RENAISSANCE Prerequisite: 305 or 361 or equivalent. Reading and discussion of selected Medieval and Reformation literary works. Conducted in French.

511 17TH CENTURY FRENCH LITERATURE Prerequisite: 305 or 361 or equivalent. Reading and discussion of selected works in poetry, drama and novels. Conducted in French.

513 FRENCH CINEMA Prerequisite: 301 or 202 with permission of instructor. Study and discussion of various aspects of French culture and civilization as characterized in movies.

515 18TH CENTURY FRENCH LITERATURE Prerequisite: 305 or 361 or equivalent. Reading and discussion of selected authors: emphasis on Molière. Conducted in French.

519 19TH CENTURY FRENCH LITERATURE Prerequisite: 305 or 361 or equivalent. Reading and discussion of selected works pertaining to romantic, realistic and naturalistic movements. Conducted in French.

522 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS OR CULTURE OR LITERATURE Prerequisite: 202 or equivalent. 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 Prerequisite: 305 or 361 or equivalent. Reading and discussion of the most representative works of period. Conducted in French.

560 SELECTED THEMES IN FRENCH LITERATURE (May be repeated) Prerequisite: 305 and 361 or equivalent. Reading and discussion of literary works selected according to an important theme.

5978 INDIVIDUAL READING IN FRENCH Prerequisite: 302 and permission of the French section. Individual reading in French. Offered at the graduate level. (May be repeated for a total of eight credits.)

6978 INDIVIDUAL READING AND RESEARCH IN FRENCH Prerequisites: 202 and permission of the Department Chair. Independent study and research in specific areas. Considerable reading and writing required.
GERMAN 3530:
522 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS, CULTURE, AND LITERATURE 4 credits
Prerequisites: 301 and graduate standing. Development of specialized language skills; advanced readings in German literature or culture. (May be repeated for a total of eight credits.)
5928 INDIVIDUAL READING IN GERMAN 4 credits
Prerequisites: 301 and graduate standing. Individual reading in German, offered at the graduate level. (May be repeated for a total of eight credits.)

ITALIAN 3550:
597 INDIVIDUAL READING IN ITALIAN 4 credits
Prerequisites: graduate standing and permission of instructor and department chair. Individual study under guidance of professor who directs and coordinates student’s reading and research.

SPANISH 3580:
504 INTRODUCTION TO SPANISH LINGUISTICS 4 credits
Prerequisites: 401, 402, and 403 or instructor’s permission. 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
Prerequisite: 401, 402, and 403 or instructor’s permission. Descriptive study of Spanish phonetics and morphology, comparison of Spanish and English sounds, historical aspects, regional accents and sociolinguistic variation. Conducted in Spanish.
506 SPANISH LINGUISTICS; SYNTAX 4 credits
Prerequisite: 401, 402, and 403 or instructor’s permission. Descriptive study of Spanish syntax; introduction to theories of grammar; overview of Spanish semantics and pragmatics. Conducted in Spanish.
509 CULTURAL MANIFESTATION IN MEDIEVAL AND RENAISSANCE SPAIN 4 credits
Prerequisites: 407 or 408 or permission of instructor. Comparative study of representative artistic and literary works of the Medieval and Renaissance periods. Conducted in Spanish.
510 SPANISH APPLIED LINGUISTICS 4 credits
Prerequisites: 401, 402, and 403 or instructor’s permission. This course discusses current theories and applications of second language acquisition and their implications for the learning of problematic Spanish structures.
511 SPAIN DURING THE BAROQUE PERIOD 4 credits
Prerequisite: 407 or 408 or instructor’s permission. A comparative study of the different cultural manifestations during the 17th century in Spain. Conducted in Spanish.
512 CERVANTES: DON QUIJOTE 4 credits
Prerequisites: 407 or 408 or permission of instructor. Reading and analysis of selected works from the 20th century that depict women in Hispanic countries. Methodologies of feminist criticism will be considered. Conducted in Spanish.
515 CERVANTES: DON QUIJOTE 4 credits
Prerequisites: 407 or 408 or permission of instructor. Study of the evolution of the Don Juan myth from its origins to its latest versions in the 20th century. Conducted in Spanish.
516 CULTURAL POLITICS IN THE RIVER PLATE 4 credits
Prerequisite: 407 or 408 or permission of instructor. This course will examine the military dictatorships of the seventies and eighties in Argentina and Uruguay by looking at how these regimes affect culture.
517 THE AGE OF REASON AND THE ROMANTIC REBELLION IN SPAIN 4 credits
Prerequisite: 407 or 408 or permission of instructor. Study of the Enlightenment and the Romantic movement as reflected in the works of the major artists and writers of these periods. Conducted in Spanish.
518 REPRESENTING REALITY IN 19TH CENTURY SPAIN 4 credits
Prerequisite: 407 or 408 or permission of instructor. A comparative study of the major literary and artistic movements in Spain from Realism to Modernism. Conducted in Spanish.
519 20TH CENTURY SPAIN: THE AVANT-GARDE IN LITERATURE AND ART 4 credits
Prerequisites: 407 or 408 or permission of instructor. A comparative study of the major literary and artistic movements in Spain which illustrate the cultural changes of the century. Conducted in Spanish.
521 THE SPANISH CIVIL WAR AND ITS CULTURAL IMPACT 4 credits
Prerequisites: 407 or 408 or permission of instructor. 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: 407 or 408 or permission of instructor. May be repeated. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.
523 SPANISH-AMERICAN LITERATURE BEFORE 1900 4 credits
Prerequisite: 407 or 408 or permission of instructor. Reading of representative Spanish-American literature from the discovery to 1900. Oral and written reports. Conducted in Spanish.
524 RACE AND ETHNICITY: INDIGENOUS CULTURES IN 20TH CENTURY SPANISH AMERICA 4 credits
Prerequisite: 407 or 408 or permission of instructor. Traces the diverse representations of indigenous cultures in literature. Takes into account the interactive forces of class, gender, race, and ethnic difference. Conducted in Spanish.
525 20TH CENTURY SPANISH-AMERICAN NOVEL 4 credits
Prerequisite: 407 or 408 or permission of instructor. Reading and discussion of representative contemporary Latin American novels. Conducted in Spanish.
527 LATINO CULTURES IN THE USA 4 credits
Prerequisites: 407 or 408 or permission of instructor. Inquiry into the Latino experience of displacement and acculturation through the analysis of cultural manifestations in the USA. Conducted in Spanish.
530 WOMEN IN 20TH CENTURY HISPANIC LITERATURE 4 credits
Prerequisite: 407 or 408 or permission of instructor. Reading and discussion 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
Prerequisites: Two of the group 401, 402, 403, or permission of instructor. Study of society, customs, history, art, music, etc. of Spain, from a Hispanic perspective. Conducted in Spanish.
532 HISPANIC CULTURE: SOUTH AMERICA 4 credits
Prerequisites: Two of the group 401, 402, 403, or permission of instructor. Study of society, customs, history, art, music, etc. of South America, from a Hispanic perspective. Conducted in Spanish.
533 HISPANIC CULTURE: MEXICO AND CENTRAL AMERICA 4 credits
Prerequisite: Two of the group 401, 402, 403, or permission of instructor. Study of society, history, and culture of Mexico, Central America and the Hispanic Caribbean, from a Hispanic perspective. Conducted in Spanish.
561 SPANISH TEACHING PRACTICUM 2 credits
Prerequisite: teaching, assistantship or permission. 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.
9798 INDIVIDUAL READINGS IN SPANISH 4 credits each
Content of given individual reading program taken from course contests approved for graduate work in Spanish.

PHILOSOPHY 3600:
511 PLATO 3 credits
Prerequisite: 211 or 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: one course in philosophy or 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.
518 20TH CENTURY ANALYTIC PHILOSOPHY 3 credits
Prerequisite: one course in philosophy or 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.
519 BRITISH EMPIRICISM 3 credits
Prerequisites: one introductory course and 312 or permission of instructor. Intensive analysis of selected major writings of Locke, Berkeley and Hume.
521 CONTINENTAL RATIONALISM 3 credits
Prerequisites: one introductory course in philosophy, 314, or permission of instructor. In-depth inquiry into the thought of Kant, Fichte, Schelling, Hegel, Fichte, Schelling, and other existentialists with their concern for the human condition.
526 PHENOMENOLOGY 3 credits
Prerequisite: one introductory course in philosophy, 314, or permission of instructor. In-depth inquiry into methodology of Husserl and Heidegger and their influence upon Western European and American thought.
531 ARISTOTLE 3 credits
Prerequisite: 211 or permission of instructor. Detailed study of Aristotle’s metaphysics, philosophy of nature, philosophy of mankind and ethics.
534 KANT 3 credits
Prerequisite: 312 or 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.
562 THEORY OF KNOWLEDGE 3 credits
Prerequisite: one course in philosophy or permission of instructor. Examination of nature of knowledge, theories of perception, conception and truth, problem of induction and relation of language to knowledge.
564 PHILOSOPHY OF SCIENCE 3 credits
Prerequisites: 101, 170 or permission of instructor. Nature of scientific inquiry, types of explanation, 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: one course in philosophy or permission of instructor. Theories about the ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.
580 SEMINAR 3 credits
May be repeated. Prerequisite: permission of instructor.
581 PHILOSOPHY OF LANGUAGE 3 credits
Prerequisites: 101 and 170 or 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.

PHYSICS 3650:
506 PHYSICAL OPTICS 3 credits
531 MECHANICS I 3 credits
Prerequisites: 292 and 3450:335. Mechanics at intermediate level. Newtonian mechanics, motion of a particle in one dimension, central field problem, system of particles, conservation laws, rigid bodies, gravitation.
532 MECHANICS II 3 credits
Prerequisites: 435/415. Advanced mechanics at the senior or beginning graduate level, moving coordinate systems, mechanics of continuous media. Lagrange’s equations, tensor algebra and stress analysis, rotation and rigid bodies, vibration theory.
536 ELECTROMAGNETISM I 3 credits
Prerequisites: 292, 3450:335 or permission of instructor. Electromagnetism and magnetism at intermediate level. Electrodynamics and magnetostatics, electric field, scalar potential, dielectrics, Laplace’s and Poisson’s equations, current, magnetic field, vector potential, magnetic materials, induction.
537 ELECTROMAGNETISM II 3 credits
Prerequisites: 435/415. Special relativity, four vectors, Maxwell’s equations in covariant form, propagation, reflection and refraction of electromagnetic waves, multiple radiation.
541 QUANTUM PHYSICS I 2 credits
Prerequisites: 351 and 3450:335. Introduction to quantum theory. Schrodinger equation, observables, angular momentum, perturbation theory, variational principle, bound states, scattering theory, radiative interactions, spin and the Pauli Principle.
1 credit

1-7 credits

1-6 credits

1 credit

1-4 credits

1 credit

1 credit

1 credit

1 credit

1 credit

1 credit

6 credits

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1-15 credits
590 WORKSHOP IN POLITICAL SCIENCE  1-2 credits
(May be repeated for a total of nine credits.) Timely workshops on varying subjects to meet the changing needs of our students in response to new and emerging political issues and controversies.

600 SCOPE AND THEORIES OF POLITICAL SCIENCE  3 credits
Prerequisite: six credits of political science or permission of instructor. Emphasis on the nature, scope and content of political theory; theory construction and validation in political science.

601 RESEARCH METHODS IN POLITICAL SCIENCE  3 credits
Prerequisite: six credits of political science or permission. Analysis of current problems in the theory and practice of politics and organization.

620 SEMINAR IN COMPARATIVE POLITICS  3 credits
Prerequisites: six credits of political science or permission. Research selected topics in comparative politics. Comparative method.

622 SEMINAR IN ALTERNATIVES TO VIOLENCE AT HOME AND ABROAD  3 credits
An interdisciplinary analysis of the nature of violence from interpersonal to international to enhance our capacity to reduce violence and other threats to liberty.

626 SEMINAR IN POLITICS OF DEVELOPING NATIONS  3 credits
Prerequisites: six credits of political science or permission. Selected topics investigated. Emphasis on theories of political development.

630 SEMINAR IN NATIONAL POLITICS  3 credits
Prerequisites: six credits of political science or permission. Reading and research on a variety of subjects including political parties, interest groups, public opinion, and foreign affairs.

650 SEMINAR ON LAW, PUNISHMENT AND POLITICS: U.S. AND THE WORLD  3 credits
Prerequisites: six credits of political science or permission. Reading and research on the multiple and contingent interconnections between law, punishment, politics, and power.

668 SEMINAR IN PUBLIC AGENDA POLICIES AND DECISIONS  3 credits
Prerequisites: six credits of political science or permission. Reading and research on the development of political party issues and modes of decision making used by policy makers.

672 SEMINAR: POLITICAL INFLUENCE AND ORGANIZATIONS  3 credits
Prerequisites: permission of instructor. An examination of the political actions and demands of a variety of organizations.

690 SPECIAL TOPICS IN POLITICAL SCIENCE  3-3 credits
Prerequisites: six credits of political science or permission. Graduate-level examination of selected topics in American politics, comparative politics, international politics, international political theory or political theory.

695 INTERNSHIP IN GOVERNMENT AND POLITICS  3-6 credits
(May be repeated for a total of six credits.) Prerequisite: Permission of graduate advisor. Supervised placement in political public offices or party organizations or law firms and other organizations providing professional-level work.

696 TOPICS IN MASTER’S RESEARCH  3 credits
Prerequisite: permission of instructor. (May be repeated for a total of 9 credits. No more than 6 credits may be applied to degree requirements.) Research in suitable topics in political science requiring a graduate level examination in an Essay of Distinction. Credit/No Credit.

697 INDEPENDENT RESEARCH AND READINGS  3-14 credits
(May be repeated, but no more than six credits toward the master’s degree in political science) Prerequisite: permission.

699 MASTER’S THESIS  2-6 credits

PSYCHOLOGY  3750:

500 PERSONALITY  4 credits
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  4 credits
Prerequisite: admission to the Graduate School. Consideration of the nature, construction and use of tests and measures in industry, government and education. Includes aptitude and achievement tests, rating scales, attitude and opinion analysis.

520 ABNORMAL PSYCHOLOGY  4 credits
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  4 credits
Prerequisite: admission to the Graduate School. Survey of syndromes, etiology and treatments of behavioral disorders in children from the standpoint of developmental psychology. Behavioral data and treatment approaches emphasized.

543 HUMAN RESOURCE MANAGEMENT  4 credits
Prerequisite: admission to the Graduate School. The application of psychological theory to the effective management of human resources in an organization, including recruitment, selection, training and retention of personnel.

544 ORGANIZATIONAL THEORY  4 credits
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 INTELLIGENCE AND SMALL-GROUP BEHAVIOR  4 credits
Prerequisite: admission to the Graduate School. Intensive investigation of factors affecting behavior and performance in small group including effects of personality, social structures, task and social-conceptual variables.

550 COGNITIVE DEVELOPMENT  4 credits
Prerequisite: admission to the Graduate School. Theory and research on life-span changes in cognitive processes including the concept formation/categoryization, information processing and Piagetian assessment tasks.

560 HISTORY OF PSYCHOLOGY  3 credits
Prerequisite: admission to the Graduate School. Psychology in pre-scientific period and details of developmental or symptomatic viewpoints in 19th and 20th Centuries.

590 WORKSHOP IN PSYCHOLOGY  3-15 credits
Prerequisite: admission to the Graduate School. May be repeated. May not be used to meet undergraduate or graduate major requirements in psychology. Group studies of special topics in psychology.

601,2 PSYCHOLOGICAL RESEARCH USING QUANTITATIVE AND COMPUTER METHODS I AND II  4 credits each
Sexual orientation: C2 sexual orientation: gender identity in psychology or the collaborative doctoral program in counseling psychology or special nondegree students with permission. Psychological research problem applying quantitative and computer methods. Topics include research design, sampling, controlling, threats to validity, hypothesis testing, psychological measurement, error, robustness and power.

610 I: SOCIAL PSYCHOLOGY  2 credits
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.

610 II: COGNITIVE PSYCHOLOGY  2 credits
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 cognitive behavior, focusing on topics like perception, memory, and thought processes.

620 PSYCHOLOGY OF SMALL GROUP BEHAVIOR  3 credits
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 small group behavior, focusing on topics like group cohesion, group dynamics, and small group decision making.

630 HUMAN RESOURCE MANAGEMENT  4 credits
Prerequisite: admission to the Graduate School. The application of psychological theory to the effective management of human resources in an organization, including recruitment, selection, training and retention of personnel.

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Prerequisite: admission to the Graduate School. Psychology in pre-scientific period and details of developmental or symptomatic viewpoints in 19th and 20th Centuries.

590 WORKSHOP IN PSYCHOLOGY  3-15 credits
Prerequisite: admission to the Graduate School. May be repeated. May not be used to meet undergraduate or graduate major requirements in psychology. Group studies of special topics in psychology.
714 OBJECTIVE PERSONALITY EVALUATION 4 credits
Prerequisites: completion of 630 or 400/500, and 420/520, and 5600.645. Study of the development of personality, motivation, and interpretation of objective instruments for personality assessment (MMPI, CPI, MBTI, IIEF 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 procedures, and review of current research.

717 ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY 4 credits
Prerequisite: 630; one semester of practicum work. Critical examination and application of recent multicultural theory in counseling diverse populations, focusing on race/ethnicity, sex/gender, sexual orientation, age, disability, and spirituality.

718 HISTORY AND SYSTEMS IN PSYCHOLOGY 2 credits
Prerequisite: 530. Philosophical 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: 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 and psychopathology, perception, memory, and socialization and intervention approaches.

728 APPLIED COGNITIVE AGING PSYCHOLOGY: SOCIAL DEVELOPMENT 4 credits
Prerequisites: 722; graduate standing in psychology, or permission of instructor. Study of factors influencing social development in the later years. Topics to be covered include: social support, life stress, well-being, health, caregiving, and other issues.

731 APPLIED COGNITIVE AGING PSYCHOLOGY: INFORMATION PROCESSING 4 credits
Prerequisite: 722. Psychological processes such as environmental design, mobility, independence, neuropsychological assessment, and skilled performance.

732 APPLIED COGNITIVE AGING PSYCHOLOGY: HIGHER PROCESSES 4 credits
Prerequisites: 722; graduate standing in psychology, or permission of instructor. Memory, conceptual processes, information processing, and relation of everyday functioning in areas such as dementia, communication, judgment, awareness, expertise, wisdom, and creativity.

733 APPLIED COGNITIVE AGING PSYCHOLOGY: RESEARCH 4 credits
Prerequisite: 722; graduate standing in psychology, or permission of instructor. Intensive reading in selected content area; design and conduct of a complete research study. (May be repeated.)

735 APPLIED COGNITIVE AGING PSYCHOLOGY: RESEARCH 4 credits
Prerequisite: 722; graduate standing in psychology, or permission of instructor. Study of methods, evaluation, child abuse, early intervention, day care, kibbutzim, social networks, subcultural variations, and hospice/living.

740 INDUSTRIAL GERONTOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Study of age-related changes in work involving adult and older adults, with topics include personal selection, training, motivation and appraising older employees; health and safety; job design, stress, and empowerment.

750 ADVANCED PSYCHOLOGICAL TESTS AND MEASUREMENTS 2 credits
Prerequisite: graduate standing in psychology or in the collaborative program in counseling psychology or permission of the instructor. Analysis of test construction techniques. Statistical analyses of tests with review of published tests and measurements used in psychology. Study of psychometric theory and principles.

751 ORGANIZATIONAL PSYCHOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Use of general systems theory framework to the study of the relationships between organizational structure and human behavior; the internal processes of organizations, and the relationships between organizations and their environment.

752 PERSONNEL SELECTION AND ADVANCED APPLIED TESTING ISSUES 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Review of industrial training methods and programs in terms of various theoretical orientations, as well as considerations of how to evaluate these programs.

754 RESEARCH METHODS IN PSYCHOLOGY 4-3 credits
Prerequisite: 660, graduate standing in psychology or permission of instructor. Scientific method and its specific application to psychology. Topics include data collection, validity, reliability, use of general linear model and its alternatives and power analysis.

755 COMPUTER APPLICATIONS IN PSYCHOLOGICAL RESEARCH 4 credits
Prerequisite: graduate standing in psychology or permission of instructor. Use of computers to psychological research including data collection, analysis and interpretation. Also covers computer simulation of decision making including use of different models.

756 ROLE OF ATTITUDES AND VALUES IN INDUSTRIAL/Organizational Psychological Issues in Aging 4 credits
Prerequisite: 660; graduate standing in psychology, or permission of instructor. Consideration of the role of attitudes and values in the prediction of behavior including consumer psychology, explaining attitude changes, measurement of attitudes and the use of survey methodology.

757 ORGANIZATIONAL MOTIVATION AND LEADERSHIP 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Consideration of the role of attitudes and values in the prediction of behavior including consumer psychology, explaining attitude changes, measurement of attitudes and the use of survey methodology.

759 JOB EVALUATION AND EQUAL PAY 4 credits
Prerequisite: 660. Major job evaluation systems will be reviewed and critiqued. Issues such as methodology, qualifications for a job will be reviewed. Advantages and disadvantages of various job evaluation systems will be compared. Issues concerning federal regulation including the Equal Pay Act and comparable worth will be discussed. Regression approaches to job evaluation and applicable court cases will be reviewed.

760 ORGANIZATIONAL CHANGE AND TRANSFORMATION 4 credits
Prerequisites: 660 or permission of instructor. Survey of theories and introduction to practical methodologies of organizational change and transformation used to increase organizational effectiveness and improve employee quality of work life.

761 INFORMATION PROCESSING AND INDUSTRIAL/Organizational Psychology 4 credits
Prerequisite: 660. Coverage of current trends and theories in psychology is applied to traditional concerns of industrial/organizational psychology such as performance appraisal or motivation.

762 PERSONNEL PSYCHOLOGY AND THE LAW 4 credits
Prerequisite: 660. Issues in personnel psychology which have legal implications are reviewed. The impact of recent court decisions are evaluated in staffing and compensation.

763 PERFORMANCE FEEDBACK AND EVALUATION 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Examines current research and practice in the area of performance appraisal. Topics will include: criterion development, rater training, appraisal effectiveness, feedback processes, and performance measurement.

780 GRADUATE SEMINAR IN PSYCHOLOGY 1-4 credits
Prerequisite: may be repeated. Prerequisites: graduate standing in psychology and permission of the instructor. Special topics in psychology.

795 ADVANCED COUNSELING PRACTICUM 4 credits
Prerequisite: may be repeated. Prerequisites: 671, 672, 673 and permission of instructor. This course provides supervised, in-service training for students in the role of counselor and social worker. Client contacts and supervisory experiences under faculty supervision. Credit/Noncredit.

796 COUNSELING PSYCHOLOGY PRACTICUM 4 credits
Prerequisite: may be repeated. Prerequisites: 795; eight hours or 5600.675 (five hours). Advanced counseling psychology students will have supervised training with clients in a variety of settings and will focus on supervised development of specialized theoretical applications. Credit/Noncredit.

797 INDEPENDENT READING AND/OR RESEARCH 1-3 credits
Prerequisite: permission of the instructor. Individual readings and/or research on a topic under supervision of faculty member with whom specific arrangements have been made.

899 DOCTORAL DISSERTATION 1-2 credits
Prerequisite: major standing. Research in psychology for theses for qualified students. Minimum duration 12 credits, maximum subject to departmental approval. Supervised research on topic deemed suitable by the dissertation committee.

3850: SOCIOLOGY

510 SOCIAL STRUCTURES AND PERSONALITY 3 credits
Prerequisite: 100 or permission. Interrelationships between position in society, personality characteristics. Personality treated as both result and determinant of social structure and process. Lecture.

511 SOCIAL INTERACTION 3 credits
Prerequisite: 100 or permission. Intensive study of advanced theory and research in social psychology, particularly how social interaction and self-conception affect one another. Lecture.

512 SOCIALIZATION: CHILD TO ADULT 3 credits
Prerequisite: 100 or permission. Theoretical and empirical analyses of process by which infant, child, adolescent and adult learn social and cultural requirements necessary to function in new roles, changing roles and society in general.

521 RACIAL AND ETHNIC RELATIONS 3 credits
Prerequisite: 100 or permission. Analysis of structure and dynamics of race and ethnic relations from a variety of perspectives emphasizing both historical and contemporary issues. Lecture.

523 SOCIOLOGY OF WOMEN 3 credits
Prerequisite: 100 or permission of instructor. Examination of research and theories pertaining to women’s status in society, including economic conditions, the relationship between structure and experience, and other gender-related issues.

525 SOCIOLOGY OF URBAN LIFE 3 credits
Prerequisite: 100 or permission. Emergence and development of urban society. Examination of urban social structure from neighborhood metropolis, the problems and prospects. Emphasis on various life styles of urban subcultures. Lecture/discussion.

528 THE VICTIM IN SOCIETY 3 credits
Prerequisite: 100 or permission of instructor. Study of the nature, causes, and consequences of victimization with special focus on crime victimization.

530 JUVENILE DELINQUENCY 3 credits
Prerequisite: 100 or permission. Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/discussion.

531 CORRECTIONS 3 credits
Prerequisite: 330 or 430. Theories, beliefs and practices of community and institutional corrections systems, including past and current social research. Course taken prior to 3 credit hour Field Placement in Corrections (3850.647).

533 SOCIOLOGY OF DEVIANT BEHAVIOR 3 credits
Prerequisite: 100 and at least six additional credits of sociology courses or permission. Survey of theories of deviant behavior and relevant empirical research. Special emphasis given to interaction processes and social control. Lecture.

541 SOCIOLOGY OF LAW 3 credits
Prerequisite: 100 and at least six additional credits of sociology courses or permission. Social origins and consequences of law and legal processes. Emphasis on uses of law, social change and aspects of legal professions. Lecture.

544 SOCIOLOGICAL ISSUES IN AGING 3 credits
Prerequisite: 100 or permission. A look into the major issues and problems facing older persons. Special attention is given to the unmet needs of the elderly as well as an examination of current societal policy and programs to meet these needs.

550 SOCIOLOGY OF MENTAL ILLNESS 3 credits
Prerequisite: 100 or permission. The social history of the mental hospital, theories and epidemiology of mental illness, community-based treatment models, the organization of mental health services, the role of personal social networks and mutual support groups.

555 FAMILY VIOLENCE 3 credits
Prerequisite: 100. Family violence with a focus on child abuse, courtship violence, spouse/partner abuse, and elder abuse. Theories, methodologies, and strategies to end family violence are explored.

560 SOCIOLOGICAL THEORY 4 credits
Prerequisite: 100 or permission. An overview and examination of theoretical issues in sociology, through the study of both classical and contemporary theoretical work.

601 PROSEMINAR IN SOCIOLOGY 1 credit
Prerequisites: teaching/thesis assistant in sociology or permission of instructor. Introduction to professional aspects of sociology and major areas of study/research in the field. Seminar. Credit/Noncredit.
<table>
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<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
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<td>625</td>
<td>Sociology of Sentiments and Emotions</td>
<td>3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<tr>
<td>646</td>
<td>Social Inequalities</td>
<td>3</td>
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<td>645</td>
<td>Social Organization</td>
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<td>649</td>
<td>Sociology of Work</td>
<td>3</td>
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<td>604</td>
<td>Research Design and Methods</td>
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<td>678</td>
<td>Social Gerontology</td>
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<td>664</td>
<td>Sociology of Criminal Behavior</td>
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<td>657</td>
<td>Urban Health Care</td>
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<td>666</td>
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<td>651</td>
<td>Seminar in Race Relations</td>
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<td>652</td>
<td>Family and Society</td>
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<td>699</td>
<td>Master's Thesis</td>
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<td>700</td>
<td>College Teaching of Sociology</td>
<td>3</td>
<td>Prerequisite: Teaching assistant in sociology or permission of instructor.</td>
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<td>708</td>
<td>Multivariate Techniques in Sociology</td>
<td>3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>711</td>
<td>Survey Research Methods</td>
<td>3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<tr>
<td>712</td>
<td>Experimental and Quasi-Experimental Research in Sociology</td>
<td>3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>715</td>
<td>Special Topics in Sociological Theory</td>
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<tr>
<td>716</td>
<td>Qualitative Methodology</td>
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<td>717</td>
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<td>Juvenile Delinquency: Theory and Research</td>
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<td>719</td>
<td>Social Stratification</td>
<td>1-3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>720</td>
<td>Cross Cultural Perspectives in Aging</td>
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<td>723</td>
<td>Sociology of Occupations, Professions and Health Care</td>
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<td>Sociology of Mental Health and Mental Disorders</td>
<td>3</td>
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<td>3</td>
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<td>726</td>
<td>Individual Investigation</td>
<td>3</td>
<td>Prerequisite: one semester of graduate work, permission of instructor.</td>
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<td>686</td>
<td>Population</td>
<td>3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>687</td>
<td>Social Change</td>
<td>3</td>
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<td>696</td>
<td>Master's Research Paper</td>
<td>1-6</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>699</td>
<td>Special Topics in Deviance and Disorganization</td>
<td>1-3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>700</td>
<td>Contemporary Sociological Literature</td>
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<td>715</td>
<td>Criminal Behavior</td>
<td>3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>716</td>
<td>Juvenile Delinquency: Theory and Research</td>
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<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>717</td>
<td>Social Stratification</td>
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<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>719</td>
<td>Cross Cultural Perspectives in Aging</td>
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<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>720</td>
<td>Special Topics in Sociological Theory</td>
<td>1-3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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<td>721</td>
<td>Stratification and Health</td>
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<td>Contemporary Sociological Theory</td>
<td>3</td>
<td>Prerequisite: Graduate standing in Sociology or permission of instructor.</td>
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Graduate Courses

899 DOCTORAL DISSERTATION 3-9 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. (Must be repeated for a minimum of 30 credits) (Dissertation. Game as KSU 6299)

PUBLIC ADMINISTRATION AND URBAN STUDIES 3980:

590 WORKSHOP 3 credits
Prerequisite: permission. (May be repeated for a maximum of six credits) Group study of special topics in urban studies and public administration. May not be used to meet core graduate requirements. May be used for elective credit only.

600 BASIC QUANTITATIVE RESEARCH 3 credits
Prerequisite: permission. Examines basic framework of social science research methodology and basic complementary statistical techniques, including probability and sampling.

601 ADVANCED RESEARCH AND STATISTICAL METHODS 3 credits
Prerequisite: 600. Extends study of social science to include more advanced research designs and multivariate statistical techniques.

602 HISTORY OF URBAN DEVELOPMENT 3 credits
Examination of major literature on processes of urbanization in the United States and selected facets of urban institutional development.

610 LEGAL FOUNDATIONS OF PUBLIC ADMINISTRATION 3 credits
Prerequisite: permission. Introduction to the legal foundations and context of public administration, including the interaction of the course, public organizations, public administration and the public.

611 INTRODUCTION TO THE PROFESSION OF PUBLIC ADMINISTRATION 3 credits
Prerequisite: permission. Introduction to the theory and practice of the field of public administration. Foundation course for later MPA study.

612 NATIONAL URBAN POLICY 3 credits
Prerequisite: permission. Major federal policies that relate to urban problems examined in regard to policymaking processes, implementation and impact.

613 INTERGOVERNMENTAL MANAGEMENT 3 credits
Prerequisite: permission. Examines the field of intergovernmental relations as it applies to urban administration and management.

614 ETHICS AND PUBLIC SERVICE 3 credits
Prerequisite: permission. Provides in-depth research hours in the MPA program or permission. Examination of the ethical problems and implications of decisions and policies made by those whose actions affect the public and public policy.

615 PUBLIC ORGANIZATION THEORY 3 credits
Prerequisites: 611 and 610 or equivalent. Examines the development of public organizational theories in the current status of theoretical development in the field of public administration.

616 PERSONNEL MANAGEMENT IN THE PUBLIC SECTOR 3 credits
Fundamental issues and principles of public sector personnel administration, including recruitment, selection, training, motivation, supervision, evaluation, labor relations and affirmative action.

617 LEADERSHIP AND DECISION-MAKING 3 credits
Examines the context of public organizational management including relevant organizational theories, strategic management and planning and sector leadership.

618 CITIZEN PARTICIPATION 3 credits
The fundamental theory, background, techniques, and issues of citizen participation in urban planning.

619 COMMUNITY ORGANIZING 3 credits
Prerequisite: permission. Examines the implementation of emergency management policy at the federal, state, and local levels. Analyzes current policy initiatives in this emerging field.

620 SOCIAL SERVICES PLANNING 3 credits
Prerequisite: permission. In-depth analysis of total social services requirements and various ways in which social services planning function is carried out in urban communities.

621 URBAN SOCIETY AND SERVICE SYSTEMS 3 credits
Prerequisite: permission. Analysis of social bases of urban society, hierarchies, social problems, relationships to planning, public services.

622 HEALTH PLANNING AND PUBLIC POLICY 3 credits
Basic knowledge of the health service delivery system is provided for planners and administrators in the public sector.

623 PUBLIC WORKS ADMINISTRATION 3 credits
Prerequisite: permission. Examines the building, maintenance and management of public works.

624 EMERGENCY MANAGEMENT POLICY IMPLEMENTATION AND ANALYSIS 3 credits
Prerequisite: permission. Examines the implementation of emergency management policies at the federal, state, and local levels. Examines current policy initiatives in this emerging field.

625 STRATEGIC PERSPECTIVES IN EMERGENCY MANAGEMENT 3 credits
Prerequisite: permission. Public administration responsibilities in emergency management. Examines unfunded mandates and the optimal strategies for success in the four phases of emergency management.

626 GRANTSMANSHIP 3 credits
Students will gain knowledge of the grant-seeking and awarding process. Emphasis is on public funding opportunities and public organizations in the states.

636 PARKS AND RECREATION 3 credits
Prerequisite: permission. Deals with theory, practice, evaluation of recreational administration, parks planning.

640 FISCAL ANALYSIS 3 credits
Prerequisite: permission. Study of revenue and expenditure patterns of the city's government.

641 URBAN ECONOMIC GROWTH AND DEVELOPMENT 3 credits
Prerequisite: permission. Examination of urban economic unit and its susceptibility to social, economic, political and physical change.

642 PUBLIC BUDGETING 3 credits
Prerequisite: permission. Current professional practice and theoretical issues in public budgeting and management of capital and operating budgets.

644 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 recordkeeping and reporting data related to public projects or programs and reviews methods for investing project funds.

650 COMPARATIVE URBAN SYSTEMS 3 credits
Prerequisite: permission. Conceptual schemes and methodology for comparative urban analysis among a number of major cities selected from each.

660 STRATEGIC MANAGEMENT IN PUBLIC AND NON PROFIT SECTORS 3 credits
This course examines disciplined effort to produce fundamental decisions and actions that shape what public organizations are, what they do and why they do it.

661 PROJECT DESIGN AND MANAGEMENT 3 credits
Prerequisites: 600, 642. Provides indepth theoretical overview of the public project cycle including hands-on approaches to design and management. Examines frameworks for implementation, monitoring and evaluation of project impact.

662 FUNDRAISING AND RESOURCE MANAGEMENT 3 credits
Prerequisite: permission. Examines alternative methods of fundraising and unique 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, resource 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.

670 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 future 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 communities.

673 COMPUTER APPLICATIONS IN PUBLIC ORGANIZATIONS 3 credits
Prerequisite: 600 and 601. Introduction to computer applications in the public sector, including programming, statistical analysis, report writing, graphical representation and spreadsheets.

674 ANALYTICAL TECHNIQUES FOR PUBLIC ADMINISTRATORS 3 credits
Prerequisite: 600. Public sector applications of quantitative methods, including decision analysis, queuing theory, mathematical modeling, forecasting, and simulation.

675 ADVANCED TECHNIQUES IN POLICY ANALYSIS 3 credits
Prerequisites: 600, 601. Public sector application of techniques for analyzing policy proposals under conditions of uncertainty and risk.

860 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 3 credits
Prerequisite: 6 credits in urban studies core plus quantitative methods. Urban research methods applied to specific urban research area. Comprehensive paper required.

691 MASTER'S COLLOQUIUM 3 credits
This course is required for masters students on assistantships. The course reviews programmatic, research, and curricula issues in the masters program.

695 INTERNATIONAL 1-3 credits
Faculty-supervised work experience for "pre-service" students participating in policy planning and administration in public and non-profit organizations.

695 INDIVIDUAL STUDIES 1-3 credits
Prerequisite: permission. (May be repeated for a total of six credits) Directed individual readings or research on specific area or topic.

695 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
Prerequisite: 702 or equivalent. Continuation of 702. Emphasis placed upon conceptual 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 tradition examining urban problems; for students entering the doctoral program in urban studies (first two-course sequence).

702 URBAN THEORY II 3 credits
Prerequisite: 702. Review of major professional disciplines dealing with urban problems; for students entering the doctoral program in urban studies (second in two-course sequence).

704 PUBLIC BUREAUCRACY 3 credits
Prerequisite: permission. Analysis of bureaucratic operations in the implementation of public policies, including special attributes of public service organizations and the democratic theory debate.

705 ECONOMICS OF URBAN POLICY 3 credits
Prerequisite: Master's level knowledge of macroeconomics and microeconomics or special permission. Use of research tools of economic analysis in seminar format to examine options available to urban policy-makers in operation of public services and economic development of cities.

706 PROGRAM EVALUATION 3 credits
Prerequisite: permission. Advanced treatment of topics in program evaluation.

707 URBAN PLANNING AND MANAGEMENT STRATEGIES 3 credits
Prerequisite: permission. Analysis of urban planning policy issues and strategies for implementation in public policy formulation. Emphasis on use of planning process as integrative mechanism.

708 URBAN POLICY: THE HISTORICAL PERSPECTIVE 3 credits
Prerequisite: permission. Critical examination of major ideas about the city from Aristotle to the 20th Century and of the impact on urbanization on society and public policy.

709 SYSTEMS AND PROCESSES OF POLICY ANALYSIS 3 credits
Prerequisite: permission. Analysis of interrelated processes within public organizations, federal, state and local in the United States; emphasis on urban community.
Engineering

GENERAL ENGINEERING 4100:

600 CURRICULAR PRACTICAL TRAINING 6 credits
Prerequisite: Student must have completed at least one academic year in the program. Exposure to engineering research practice in industry or federal labs. Credits equivalent to preliminary research, master research, or master project. Engineering dean approval.

697 ENGINEERING MANAGEMENT REPORT 2 credits
Prerequisite: Permission of advisor. An excellent problem in engineering management is studied in depth. Final report must be approved by advisor and advisory committee.

CHEMICAL ENGINEERING 4200:

521 FUNDAMENTALS OF MULTIPHASE TRANSPORT PHENOMENA 3 credits
Prerequisites: 521 or equivalent and permission. Major topics to be covered include inphase and interphase transport phenomena, transport phenomena in multiphase fluids, transport in porous media, transport in gas/liquid pipe flows, computational fluid dynamics of multiphase systems, and case studies.

535 PROCESS ANALYSIS AND CONTROL 3 credits
Prerequisites: 330, 363. This course is intended for a student holding a BS in a discipline other than chemical engineering. Response of simple and chemical processes and design of appropriate control systems.

541 PROCESS DESIGN I 3 credits
Prerequisites: 330, 351, 363. Application of chemical engineering fundamentals to the design of a multi-unit process. Emphasis on use of process simulators. Advanced equipment design, ork, written communication skills, teamwork.

561 SOLIDS PROCESSING 3 credits
Prerequisites: 321 and 353 or permission. Comprehensive problems in sedimentation, fluidization, drying and other processes involving mechanical particulates solid in liquid and gas continua.

563 POLLUTION CONTROL 3 credits
Prerequisite: 353 or permission. Air and water pollution sources and problems. Engineering and control methods.

566 DIGITIZED DATA AND SIMULATION 3 credits
Prerequisite: Permission. Data acquisition and analysis by digital devices, digital control applications and design.

570 ELECTROCHEMICAL ENGINEERING 3 credits
Prerequisites: 322, 330. Chemical engineering principles as applied to the study of electrolyte processes and to the design of electrochemical reactors. Topics include electrochemical thermodynamics, cell polarization, current distribution, the Nernst equation, electrode kinetics, transport processes in electrochemical systems, current distributions, reactor design, experimental methods, commercial processes, and batteries and fuel cells.

572 SEPARATION PROCESSES IN BIOCHEMICAL ENGINEERING 3 credits
Prerequisite: 353. Introduction to the separation and purification techniques pertinent to bioproducts, with emphasis on the engineering considerations for large-scale operations.

600 TRANSPORT PHENOMENA 3 credits
Prerequisite: 322 or permission. Systematic presentation of conservation of momentum, energy and mass at microscopic and macroscopic levels in conjunction with illustrative examples and analogies.

605 CHEMICAL REACTION ENGINEERING 3 credits
Prerequisite: 330 or permission. Kinetics of homogeneous and heterogeneous reactions. Reaction design for ideal and non-ideal flow systems.

610 CLASSICAL THERMODYNAMICS 3 credits

621 SURFACE SCIENCE IN CHEMICAL ENGINEERING 3 credits
Prerequisite: Permission of instructor. This course emphasizes the basics of surface science (surface energy, wetting, adhesion; surface characterization techniques (contact angle, ellipsometry, XPS); and surface engineering methods (SAMs, soft-lithography).

622 BIOCHEMICAL ENGINEERING 3 credits
Application of chemical engineering principles to biological processes which produce desirable compounds or destroy unwanted or hazardous substances.

625 PHYSICAL PROPERTIES OF STRUCTURAL BIOPOLYMERS 3 credits
Prerequisite: Permission of instructor. Examination of the physical properties of biological materials, orsizing from a material science perspective leading to a rational design of biopotential materials.

630 CHEMICAL PROCESS DYNAMICS 3 credits
Prerequisite: 600. Development and solutions of mathematical models for chemical processes, including models based upon transport phenomena principles, population balance methods and systems analysis.

631 CHEMICAL ENGINEERING ANALYSIS 3 credits
Prerequisites: 322, 325, 330. Mathematical analysis of problems in transport processes, chemi- cally kinetics and control systems. Solution techniques for these problems and their practical sig- nificances are stressed. Heuristic proofs will be given for necessary theory developments.

632 NONLINEAR DYNAMICS AND CHAOS 3 credits
Prerequisites: 340/349A, Description and analysis of the complex behavior exhibited by nonlinear systems. Emphasis is on the numerical methods to quantify chaos.

633 COLLOIDS—PRINCIPLES AND PRACTICE 3 credits
Prerequisite: Permission of instructor. Colloid science and applications in chemical and bio- materials engineering; disperse systems, inter particle forces, surface tension, interfacial ther- modynamics, colloid applications, biomaterials applications and characterization techniques.

634 APPLIED SURFACANT SCIENCE 3 credits
Prerequisite: 610. The basics of surfactant science, the chemical engineering application of surfactants including use in polymerization media, separations, emulsion, micellar, and a theology modifier.

635 ADVANCED POLYMER ENGINEERING 3 credits
Prerequisite: 322 or 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer rheology.

640 ADVANCED PLANT DESIGN 3 credits
Prerequisite: Permission. Topical treatment of process and equipment design, scale-up, opti- mization, process synthesis, process operation. Case problems.

674 RENEWABLE RESOURCES FOR ENVIRONMENTALLY BENIGN CHE PRODUCTION 3 credits
Prerequisite: Permission of instructor. Focus is on chemical and biochemical processes and technologies for the preparation of fuels, polymeric materials, and specialty chemicals from renewable resources.

680 HETEROGENEOUS CATALYSIS 3 credits
Prerequisite: 330. Kinetics and mechanisms of heterogeneous and homogeneous catalytic reactions; characterization and design of heterogeneous catalysts.

696 TOPICS IN CHEMICAL ENGINEERING 1-3 credits
May be repeated for a total of six credits. Prerequisite: permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthetic fuels processing, biomass gasification, complex heat and mass transfer phenomena and new separation techniques.

697 CHEMICAL ENGINEERING REPORT 2 credits
Prerequisite: Permission of advisor. A relevant problem in chemical engineering is studied. Required course for students electing non-thesis option. Final report must be approved by advisor and advisory committee.

699 MASTER’S THESIS 16 credits
May be repeated to a maximum of six credits. For properly qualified candidate the master’s degree. Supervised original research in specific area of chemical engineering selected on basis of availability of staff and facilities.

701 ADVANCED TRANSPORT PHENOMENA 3 credits
Prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multiphase reactive transport, and multiphase transport. Illustrative practical examples presented.

702 MULTIPHASE TRANSPORT PHENOMENA 3 credits
Prerequisite: 600. General transport theorems, kinetics, Cauchy’s lemmas and the jump boundary conditions are developed followed by the theory of volume averaging. The single phase equations are then volume averaged to obtain the multiphase equations of change. The practical importance of using these equations and their practical significance is also covered.

706 ADVANCED REACTION ENGINEERING 3 credits
Prerequisite: 605. Kinetics of heterogeneous systems, steady and unsteady state mathematical modeling of chemical reactors, fluidization and additional topics drawn from current literature.

1000 The University of Akron 2004-2005
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<th>Course Code</th>
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<td>514</td>
<td>DESIGN OF EARTH STRUCTURES</td>
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<td>518</td>
<td>SOIL AND ROCK EXPLORATION</td>
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<td>CHEMISTRY FOR ENVIRONMENTAL ENGINEERS</td>
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<td>525</td>
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<td>527</td>
<td>WATER QUALITY MODELING AND MANAGEMENT</td>
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<td>528</td>
<td>HAZARDOUS AND SOLID WASTES</td>
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<td>543</td>
<td>APPLIED HYDRAULICS</td>
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<td>DYNAMICS OF STRUCTURES</td>
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<td>564</td>
<td>MULTISTORY BUILDING</td>
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<td>SANITARY ENGINEERING PROBLEMS</td>
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<td>622</td>
<td>AQUATIC CHEMISTRY</td>
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<td>PHYSICAL/CHEMICAL TREATMENT PROCESSES</td>
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<td>624</td>
<td>BIOLOGICAL WASTEWATER TREATMENT PROCESSES</td>
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<td>WATER TREATMENT PLANT DESIGN</td>
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<td>627</td>
<td>ENVIRONMENTAL OPERATIONS LABORATORY</td>
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<td>631</td>
<td>SOIL REMEDIATION</td>
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<td>635</td>
<td>AIR POLLUTION CONTROL</td>
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<td>665</td>
<td>TRAFFIC DETECTION AND DATA ANALYSIS</td>
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<td>672</td>
<td>LIMIT ANALYSIS IN STRUCTURAL ENGINEERING</td>
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<td>ADVANCED SEMINAR IN CIVIL ENGINEERING</td>
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<td>681</td>
<td>ENGINEERING REPORT</td>
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<td>682</td>
<td>MASTER'S RESEARCH</td>
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<td>DOCTORAL DISSERTATION</td>
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**ELECTRICAL ENGINEERING**

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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>548</td>
<td>OPTICAL COMMUNICATION NETWORKS</td>
<td>3</td>
<td>Optical waveguides and optical integrated components, optical transmitters and receivers, optical communication network design.</td>
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<tr>
<td>549</td>
<td>DIGITAL COMMUNICATION</td>
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<td>Corequisites: 549, 549. Introduction to digital communication theory and systems; coding, analog and digital information; digital modulation techniques. Introduction to information theory.</td>
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<td>555</td>
<td>MICROWAVES</td>
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<td>Corequisites: 555, 555. Microwave field theory and wave equations. Field analysis of wave guides, microwave components, techniques, and systems.</td>
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<td>556</td>
<td>WIRELESS COMMUNICATIONS</td>
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<td>Corequisites: 556, 556. Theory and analysis of wireless communication systems, wireless propagation, multiple access, modulation, demodulation, multipath channel characterization, diversity, and combinatorial techniques.</td>
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<td>558</td>
<td>PROGRAMMABLE LOGIC</td>
<td>4</td>
<td>Corequisites: 558, 558. Electronic circuit design in logic circuits, methods of implementation, threshold logic analysis, synthesis, development of computer arithmetic elements, memory, storage devices,</td>
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</table>
570 MICROPROCESSOR INTERFACING 3 credits
Microprocessor structure, bus interface. Digital controller devices and their relationship to both the computer and physical environment.

572 CONTROL SYSTEMS II 3 credits
Prerequisite: 571. State variable analysis, design of control systems. Discrete systems, analysis, digital computer control. Experiments include hybrid, AC control system, digital computer control.

583 POWER ELECTRONICS I 3 credits
Prerequisite: 332. Elements of power electronics circuits. Rectifiers, converters, inverters analysis and design.

584 POWER ELECTRONICS LABORATORY AND DESIGN PROJECT 2 credits
Prerequisite: 483/583 or equivalent. Experiments on different types of power electronic converters: DC/DC, DC/AC, and AC/AC. Design project to include design, simulation, building, and testing of a power electronic circuit.

585 ELECTRIC MOTOR DRIVES 3 credits
Prerequisite: 681. Application of electric machines, choice of motor for particular drive. Application of power semiconductor circuits in electric machinery.

589 TOPICS IN ELECTRICAL ENGINEERING 12 credits
(May be taken more than once.) Prerequisite: permission of department chair. Special topics in electrical engineering.

600 ADVANCED MICROCOMPUTER SYSTEMS 3 credits
Prerequisite: 365 or permission. Discussion of multiprocessing, numerical data processors, multitasking, system bus architectures, 8-bit and 32-bit microprocessor architectures, multilevel protection and virtual memory, as supported by commercial microprocessor.

631 CIRCUIT ANALYSIS 3 credits
Prerequisite: 411. Functional and topological circuits. Operational methods, time domain analysis, state variable methods and matrix techniques applied in circuit analysis. Realizability and synthesis of driving point impedance and transfer functions.

641 RANDOM SIGNAL ANALYSIS 3 credits
Prerequisite: 447. Analysis, interpretation and smoothing of engineering data through application of statistical and probability methods.

642 IMAGING SYSTEM ENGINEERING 3 credits
Prerequisite: 561. Engineering样品 of imaging systems, analysis, design, and evaluation of imaging systems, processing, and applications.

643 INFORMATION THEORY AND CODING 3 credits
Prerequisite: 561 or permission. Sources, channels, entropy, mutual information, Shannon theorem and channel coding theorem. Channel coding theorem for waveform channels. Source coding and rate-distortion theory.

644 CHANNEL CODING 3 credits
Prerequisite: 561 or permission. Algebraic structure of error control codes; techniques for encoding and decoding. Coverage of the major classes of linear block codes and convolutional codes.

645 DIGITAL SIGNAL PROCESSING 3 credits
Prerequisite: 533. Relations between continuous- and discrete-time Fourier expansions. Sampling, aliasing, sampling rate conversion. Operator concepts in signal processing, all-pass systems, Fourier digital filter design.

647 DIGITAL SPECTRAL ANALYSIS AND SIGNAL MODELING 3 credits
Prerequisites: 646 or permission of instructor. Methods and theory of spectral analysis and signal modeling are investigated in detail. Applications of theory include speech processing, optimal filtering, biomedical systems, digital communications.

648 OPTICAL NETWORK ARCHITECTURE 3 credits
Prerequisite: 548. Principles of optical network architecture, analysis, design, control, and fault management.

649 STATISTICAL COMMUNICATION THEORY 3 credits
Prerequisite: 641 or permission. Fundamental principles of transmission of digital information over noisy channels. Optimum receivers. Bandwidth and dimension. Capacity of the bandlimited white gaussian noise channel.

650 ELECTROMAGNETIC THEORY I 3 credits
Prerequisite: permission of instructor. Electrodynamics: uniqueness theorem, boundary-value problems, constructions of Green's functions. Magnetostatics. Electrodynamics: energy and momentum. EM formulation of problems of electromagnetic theory.

651 ELECTROMAGNETIC THEORY II 3 credits
Prerequisite: 650 or permission of the course instructor. Scattering, TEM waves, guided wave theory, multimode transmission lines, closed boundary guides and cavities, modal orthogonality and completeness, Green's function, excitation and coupling, open boundary waveguides.

652 COMPUTATIONAL ELECTROMAGNETICS 3 credits
Prerequisite: 650 or permission of course instructor. Analytic and numerical techniques for electromagnetic fields, conformal mapping, finite difference method, finite element method, and the method of moments.

655 ADVANCED ANTENNA THEORY AND DESIGN 3 credits
Prerequisites: 740/550 or equivalent. Basic properties and recent advances of microstrip antennas. Analysis and design of reflector antennas. Analysis and synthesis of linear and planar antenna arrays.

661 DESIGN OF DIGITAL SYSTEMS 3 credits
Prerequisite: 465. Applications of logic circuits in modern digital electronic computer and in digital communication systems. Computer organization and control, input-output devices and interface standards, advanced topics in computers.

662 TOPICS IN ELECTRONS 3 credits
Prerequisite: permission of department chair. Discussions of recent advances in electronics.

666 INTEGRATED CIRCUITS DESIGN 3 credits
Prerequisites: 603, 532, or equivalent. Develops physical and analytical descriptions of solid-state electronic devices leading to equations and models of (Schottky and PN) diodes and field-effect and bipolar transistors.

671 DISCRETE CONTROL SYSTEMS 3 credits
Prerequisite: 472/572 or permission. Theory, techniques for analysis, design of discrete control systems, analysis and design of inverse transform technique, stability analysis, frequency response, Optimization. Digital computer control.

673 NONLINEAR CONTROL 3 credits
Course 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 locking and inverse transform technique, coverage of specialized topics. Lapunov theory, bifurcation of attractors, and routes to chaos.

674 CONTROLLER SYSTEM THEORY 3 credits
Prerequisite: 571 or instructor permission. Advanced modern control theory for linear systems. Controllability, observability, minimal realizations of multiple systems, stability, state variable feedback, estimation, and an introduction to optimal control.

675 SYSTEM SIMULATION 3 credits
Prerequisite: 472 or permission of the instructor. This course is designed to provide the control engineer with tools necessary to simulate continuous systems on a digital computer. Topics include linear multistep methods, nonlinear methods, stiff systems, optimization, parallel computing and simulation languages.

676 RANDOM PROCESS ANALYSIS 3 credits
Prerequisite: 642. Analysis and design of control systems with stochastically defined input. Introduction to estimation filters.

677 OPTIMAL CONTROL I 3 credits
Prerequisite: 574. Formulation of optimization problem; application of variational calculus, maximum principle and optimality principle to control problems. Computational techniques in optimization.

678 DYNAMICS AND CONTROL OF POWER ELECTRIC CIRCUITS 3 credits
Prerequisites: 483/583 or equivalent. Averaged and sampled-data models for rectifiers and DC/DC converters. Small- and large-signal models about the cyclic steady-state. Feedback controls using classical and modern approaches.

681 POWER SYSTEM ANALYSIS 3 credits
Prerequisite: 480. Short circuit and load flow analysis of power systems with emphasis on computer solution. transient analysis.

682 POWER SYSTEM STABILITY 3 credits
Prerequisite: 681. Steady state and transient stability of power systems with emphasis on computer solution.

683 ECONOMICS OF POWER SYSTEMS 3 credits
Prerequisite: 681. Analysis and operation of power system for economic dispatching using a computer.

684 PROTECTIVE RELAYING 3 credits
Prerequisite: 480. Principles and application of relays as applied to protection of power systems.

685 SURGE PROTECTION 3 credits
Prerequisites: 681. Phenomena of lightening and switching surges on electrical systems. Protection of systems and apparatus by line design, application of protective devices and insulation coordination.

686 DYNAMICS OF ELECTRIC MACHINES 3 credits
Prerequisites: graduate status in Electrical Engineering. Voltage and mechanical differential equations of electric machines, analytical and numerical methods for solution of a system of differential equations.

687 POWER ELECTRONICS II 3 credits
Prerequisite: 483/583 or equivalent. Effects of the nonlinearities of the power circuit components, magnetics, base and gate drives, thyristor, commutation circuits, heat transfer and thermal issues. Analysis and design of advanced power circuits.

688 CONTROL OF ELECTRIC MACHINES 3 credits
Prerequisites: student in Electrical Engineering. Elements of control circuits for electric drives, techniques for torque/speed control of electric machines.

689 POWER SEMICONDUCTOR DEVICES 3 credits
Prerequisite: graduate status in Electrical Engineering. Structure and physics of power semiconductor devices: diodes, Bipolar junction transistors, MOSFETS, Thyristors, Power MOS- Bipolar devices (IGBTC). Emphasis on the issues that characterize these devices from the lower power semiconductor devices.

693 SPECIAL PROBLEMS 1-3 credits
(May be taken more than once.) Prerequisite: permission of department chair. For a qualified graduate student. Supervised research or investigation in major field of training or experience. Credits depend upon nature and extent of project.

698 MASTER'S RESEARCH 1-6 credits
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in electrical engineering culminating in a master's thesis.

699 MASTER'S THESIS 1-6 credits
Prerequisite: permission of department chair. Research and thesis on some suitable topic in electrical engineering.

749 FUNCTIONAL ANALYTIC METHODS IN SYSTEM THEORY 3 credits
Prerequisite: permission of instructor. A course providing necessary background in advanced functional analysis techniques required students in communication, control, and mathematics.

753 TOPICS IN ELECTROMAGNETICS 3 credits
Prerequisite: 651. Introduction to advanced techniques in fields. Topics include application of advanced techniques to boundary value and eigenvalue problems.

756 MODEL REDUCTION TECHNIQUES FOR CONTROL SYSTEMS 3 credits
Prerequisites: 674 or permission of the instructor. Classical, modern, and optimal techniques for computing reduced order models of linear, nonlinear, and infinite dimensional systems. Minimal realizations of multi-variable systems are also considered.

774 ADVANCED LINEAR CONTROL SYSTEMS 3 credits
Prerequisites: 674 and a course in Real Analyis or equivalent. Covers topics related to the design of robust control systems. The synthesis of controllers which yield stable closed-loop systems will be considered. The H2-optimality criterion for controller design is included. Special emphasis will be given to the robust stabilization problem and the disturbance attenuation problem.

775 ROBUST CONTROL 3 credits
Prerequisite: 674. Input-output and state-space characteristics of robust control systems, and design techniques based on the algebraic Riccati equation. Decentralized and reliable control design methodologies.

777 OPTIMAL CONTROL II 3 credits
Prerequisite: 677 Advanced state-feedback optimal control. Output feedback issues, including loop transfer recovery, optimal observer design, reduced-order controllers, frequency weighting, and decentralized control.

778 ADAPTIVE CONTROL 3 credits
Prerequisite: 671 or permission of instructor. This course will provide the advanced graduate student with the techniques required for the control of time-varying nonlinear and stochastic systems. Topics include minimum prediction error control, least squares estimation, certainty equivalence and adaptive control. Kalman filtering, minimum variance control, LQG control and stochastic-adaptive control.

779 ADVANCED TOPICS IN CONTROL 3 credits
Prerequisite: 776. Discussions of recent advances in control systems.

784 ADVANCED SEMINAR 1-3 credits
May (May be taken more than once.) Prerequisite: permission of department chair. Advanced level seminar. Coverage of specialized topics. For student seeking Ph.D. in engineering.

898 PRELIMINARY RESEARCH 1-8 credits
May (May be repeated.) Prerequisite: approval of dissertation director. Preliminary investigations prior to submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.
DOCTORAL DISSERTATION 1-15 credits

May be repeated.) Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student.

COMPUTER ENGINEERING 4450:

526 OBJECT ORIENTED DESIGN 3 credits
Prerequisites: 3460:208 or equivalent. Investigation of object-oriented design paradigm and the design implementation with the object-oriented programming language C++.

576 VLSI DESIGN AND CAD 3 credits
Graduate level introduction to VLSI design. MOSFET structures, design rules, and fabrication. Static, dynamic CMOS, PLAs, ROMs, and RAMs. Layout methodologies and tools. System architecture.

597 SPECIAL TOPICS: COMPUTER SCIENCE 1-2 credits
(May be taken more than once.) Prerequisite: permission of department chair. Special topics in computer science.

606 COMPUTER ARCHITECTURE 3 credits
Prerequisite: 4400:363 or equivalent. Historical development of computer architecture. Design methodologies. Processor organization and design of instruction sets. Parallel processing. Control. Section implementations. Memory organization. System configurations.

607 PARALLEL COMPUTER ARCHITECTURE 3 credits
Prerequisite: 606 or equivalent. This course provides an introduction to parallel computer architecture and parallel processing based on a single instruction, message-passing, or shared memory.

610 COMPUTER ALGORITHMS I 3 credits

611 COMPUTER ALGORITHMS II 3 credits
Prerequisite: 610 or permission. Data structures and algorithm design for minimum execution time for computer programs. Analysis of error and convergence properties of algorithms.

642 ADVANCED KNOWLEDGE ENGINEERING 3 credits
Prerequisite: 641 or equivalent. Advanced study of knowledge acquisition and expert system project management.

643 FRAME-BASED EXPERT SYSTEM DESIGN 3 credits
Prerequisites: 441, 641, or equivalent. Introduction to the design and development of frame-based expert systems.

663 VLSI DESIGN AND AUTOMATION 3 credits
Prerequisite: 576. Methodologies for automated design of VLSI systems. Computer-aided design tools and methodologies. Design for low power; high performance; testability. Research topics in VLSI design.

698 ADVANCED SEMINAR 3 credits
(May be taken more than once.) Prerequisite: permission of department chair. Advanced level coverage of various topics. Intended for student seeking Ph.D. in engineering.

MECHANICAL ENGINEERING 4600:

500 THERMAL SYSTEM COMPONENTS 3 credits
Prerequisites: 331, 311, 310, 337. Performance analysis and design of basic components of thermal energy exchange and conversion systems. Components studied include heat exchangers, pumps, compressors, turbines and expansion engines.

510 HEATING AND AIR CONDITIONING 3 credits
Prerequisite: 305 or permission. Coursework: 315 or permission. Thermodynamics of gas mixtures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling, and humidity.

513 COMPRESSIBLE FLUID MECHANICS 3 credits

515 FUNDAMENTALS OF FLIGHT 3 credits
Prerequisite: 311. Introduction to the basics of aerodynamics, airplane performance, stability and control, aeronautics and propulsion. Design considerations are emphasized.

516 INTRODUCTION TO AERODYNAMICS 3 credits
Prerequisite: 311. Introduction to aerodynamic concepts; conformal transformations; theory of thin airfoils, 2-dimensional airfoil theory, wings of finite span, lifting line theories, lumped vortexes, vorticity, and panel methods.

514 INTRODUCTION TO AEROSPACE PROPULSION 3 credits
Prerequisite: 311. Introduction to propulsion systems currently used in aerospace fields; propulsion principles for turbojets, chemical rockets, and electrical rocket propulsion.

515 ENERGY CONVERSION 3 credits
Prerequisites: 301 or permission; corequisite: 315 or permission. Topics from fields of internal combustion engines, cycle analysis, modern combustion devices.

516 INLET TRANSFER PROCESSES 3 credits
Prerequisite: 316 or permission. Analysis, design of extended surfaces. Natural convection and mixed convection, combined modes of heat transfer with phase changes.

522 EXPERIMENTAL STRESS ANALYSIS I 3 credits
Prerequisite: 336 or permission. Experimental methods of determining stress or strain: brittle, ductile, strain gages, photelasticity, full field thermal techniques.

531 FUNDAMENTALS OF MECHANICAL VIBRATIONS 3 credits
Prerequisites: 203 or permission and 3460:355 or permission. Undamped and forced vibrations of systems having one or two degrees of freedom.

532 VEHICLE DYNAMICS 3 credits

540 SYSTEM DYNAMICS AND CONTROL 4 credits

541 CONTROL SYSTEMS DESIGN 3 credits
Prerequisite: 340 or permission. Methods of feedback control design such as minimized error, rootlocus, frequency domain. Compensation techniques. Multivariable and nonlinear design methods and computer aided control design.

542 INDUSTRIAL AUTOMATIC CONTROL 3 credits
Prerequisites: 341 or permission. Operation of basic control mechanisms. Study of mechanical, hydraulic, pneumatic, fluidic control systems, including application areas. Tuning of control devices for optimum performance parameters. Case studies on control applications from industry, e.g., boilers, furnaces, process heaters.

543 OPTIMIZATION METHODS IN MECHANICAL ENGINEERING 3 credits
Prerequisite: 360 or permission. Development and method of solution of optimization problems in mechanical engineering. The use of dynamic programming and operational research methods for optimization including computer utilization and applications.

544 ROBOT DESIGN, CONTROL AND APPLICATION 3 credits
Prerequisites: 202 or permission and 341 or permission. Robot design and control. Dynamic transformations, velocities and accelerations, path trajectories and dynamics, control and sensing in robotics. The automation trend in robotics with robot application.

550 INTRODUCTION TO COMPUTATIONAL FLUID FLOW AND CONVECTION 3 credits
Prerequisites: 315 or permission and 380 or permission. Numerical modeling of fluid/thermal systems, numerical solution of the momentum and thermal boundary layer equations; flow simulation using advanced heat transfer/fluidsgraphics packages.

562 PRESSURE VESSEL DESIGN 3 credits
Prerequisite: 308 or permission. Introduction to modern pressure vessel technology. Topics include basic structural considerations, materials and their environment and design-construction features.

563 COMPUTER AIDED DESIGN AND MANUFACTURING 3 credits
Prerequisites: 360 or permission. 365 or permission. The use of computer systems to assist in the creation, modification, analysis, or optimization of engineering designs, and to plan, manage, and control manufacturing plants.

600 GAS DYNAMICS 3 credits

608 THERMODYNAMICS 3 credits
Prerequisite: 305 or equivalent. Extension and generalization of basic laws of thermodynamics with application to a variety of physical and biological systems. Introduction to irreversible thermodynamics, the third law and statistical thermodynamics.

598 FUNDAMENTAL ANALYSIS I 3 credits
Prerequisite: 522 or equivalent. Introduction of finite element method as applied to various topics from continuum mechanics. Areas covered include plane; axisymmetric and 3-D stress analysis; fluid mechanics; transient problems and geometric and material nonlinearity.

610 DYNAMICS OF VISCOUS FLOW I 3 credits
Prerequisites: 330, 331 or equivalent. Derivation and solution of equations governing laminar viscous flow. Applications include unsteady flows, slow viscous flows, parallel flows, lubrication flow and laminar boundary layers.

611 COMPUTATIONAL FLUID DYNAMICS I 3 credits
Prerequisite: 315 or permission of instructor. Study of numerical methods in fluids; numerical errors and stability; finite differencing; nonlinear convection terms; Poisson equations; boundary conditions, turbulence, spectral and finite element techniques.

615 CONDUCTION HEAT TRANSFER 3 credits
Prerequisite: 315 or equivalent. Study of one-, two-, and three-dimensional heat conduction. Development of analytical techniques for analysis and design.

616 CONVECTION HEAT TRANSFER 3 credits
Prerequisite: 311 or equivalent. Heat transfer from laminar, turbulent external, internal flows. Effective heat transfer at high velocities. Heat transfer to liquid metals; high Prandtl number fluids.

617 RADIATION HEAT TRANSFER 3 credits
Prerequisite: 315 or equivalent. Study of governing radiation laws. Black and real systems, geometric factors, gray enclosures, non-gray systems, gaseous radiation, radiation equipment.

618 BOILING HEAT TRANSFER AND TWO-PHASE FLOW 3 credits
Prerequisites: 330, 331 or equivalent. Techniques to determine heat transfer and pressure drop in components such as boilers, heat exchangers, and steam generators, with boiling heat transfer mechanism, slip ratio, boiling flow and instabilities in boiling flow systems.

620 EXPERIMENTAL STRESS ANALYSIS II 3 credits
Prerequisites: 422/522. Dynamic strain gage methods, transducer design, More fringe techniques and topics in photoelasticity.

621 INTRODUCTION TO TIRE MECHANICS 2 credits
Prerequisite: permission. Topics include tire as vehicle component, tire traction and wear, laminestrated structures, tire stress and strains and advanced tire models.

622 CONTINUUM MECHANICS 2 credits
Prerequisites: 203 or permission. Analysis of stress and deformation at a point. Derivation of fundamental field equations of fluid and solid mechanics by applying basic laws of dynamics, continuum and conservation of mass and energy. Development of constitutive laws.

623 APPLIED STRESS ANALYSIS I 3 credits
Prerequisite: 622. Continuation of 622 with specific application to solid mechanics. Development of energy theorems due to Ritz; variational and generalized Hamilton's principle. Solutions to static and dynamic problems.

624 FOUNDATIONAL MECHANICS 3 credits
Prerequisites: 203 or permission. Emphasis on advanced nonlinear structural mechanics. Stresses, strains, stress concentration and buckling. Stress concentrations, finite element approaches to fracture mechanics.

625 ANALYSIS OF MECHANICAL COMPONENTS 3 credits
Prerequisites: 307 or equivalent. Analysis of failure and plastic flow. Fatigue, creep analysis and introduction to fracture mechanics.

626 FATIGUE OF ENGINEERING MATERIALS 3 credits
Prerequisites: 204 or permission. Fatigue of materials: cyclic and dynamic behavior; dislocation networks and their interactions; correlation of dislocation-microstructure interactions; crack initiation; crack propagation; short cracks, crack closures.

627 ADVANCED MATERIALS AND MANUFACTURING PROCESSES 2 credits
Prerequisite: 360. Manufacturing processes for advanced materials; classification; technological aspects of bulk deformation, rapid solidification; economic aspects; technical activity.
689 SPECIAL TOPICS IN MECHANICAL ENGINEERING

Prerequisite: Permission. For qualified candidate for graduate degree. Supervised research in the student's major field of training or experience. Credit depends upon nature and extent of project as determined by advisor and department chair.

697 ENGINEERING REPORT

Prerequisite: Permission of advisor. A relevant problem in mechanical engineering for students electing the non-thesis option. The final engineering report must be approved by the advisor and the advisory committee.

698 MASTER’S RESEARCH

Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in mechanical engineering culminating in a master’s thesis.

699 MASTER’S THESIS

Prerequisite: Permission of advisor. (May be repeated.) Supervised research in a specific area of mechanical engineering.

704 FINITE ELEMENT ANALYSIS II


705 FINITE ELEMENT ANALYSIS III


710 DYNAMICS OF VISCOUS FLOW II

Prerequisite: 610. Introduction to turbulence. Turbulence modeling and turbulent boundary layers. Practical methods of solution of boundary layer problems. Transition process.

711 COMPUTATIONAL FLUID DYNAMICS II

Prerequisite: 611 or permission of instructor. Development of advanced computational techniques for convection-dominated flows. Higher order explicit and implicit schemes including non-oscillatory front-tracing methods applied to benchmark problems.

715 HYDRODYNAMIC STABILITY


719 ADVANCED HEAT TRANSFER

Prerequisites: 615, 616. Topics include nonhomogeneous or nonuniform boundary value problems of heat conduction, heat transfer with melting, solidification and ablation, heat transfer in porous media and hydrodynamically and thermally unsteady convection.

723 APPLIED STRESS ANALYSIS II

Prerequisite: 623. 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

Prerequisite: 622. Finite deformation and 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

Prerequisites: 660. Continuation of 630. Vibration 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.

731 RANDOM VIBRATIONS

Prerequisite: 630 or equivalent. Stationary random processes and their transmission through linear time-invariant discrete and continuous vibrating systems. Analysis of random data and interaction between mechanisms of failure.

732 ADVANCED MODAL ANALYSIS OF STRUCTURES

Prerequisites: 635 or equivalent. Structural excitation techniques. Modal parameter estimation. System modification, modal shaping, lumping matrices substructuring. Prediction and evaluation of structural modified dynamic characteristics.

741 OPTIMIZATION THEORY AND APPLICATIONS

Prerequisite: Permission. Theory of optimization in engineering systems, development and method of solution optimization algorithms for physical processes, large systems. Use of dynamic programming, operational research methods of system optimization, control.

763 ADVANCED METHODS IN ENGINEERING ANALYSIS

Prerequisites: 630, 625 or equivalent. Numerical methods for problems of difference and finite element methods, variational methods, integral methods and similarity transforms to engineering problems in heat transfers, fluid mechanics, fibre mechanics, and electromagnetic systems.

790 ADVANCED SEMINAR IN MECHANICAL ENGINEERING

May be repeated for a total of nine credits. Prerequisite: permission of department chair. Advanced projects and studies in various areas of mechanical engineering. Intended for students seeking Ph.D. in engineering degree.

898 PRELIMINARY RESEARCH

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 Interdisciplinary Doctoral Committee and approval by the dissertation director. Original research by the doctoral student.

BIOMEDICAL ENGINEERING

522 PHYSIOLOGICAL CONTROL SYSTEMS

Prerequisites: 3100:202 and 3450:203. The basic techniques employed in control theory, systems analysis, and model identification as they apply to physiological systems.

523 DESIGN OF MEDICAL IMAGING SYSTEMS

Prerequisites: 3100:205, 3650:292, 4440:353, 4800:395, or by 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 imaging.

535 IMAGE SCIENCE

Prerequisites: 3100:200, 3650:292, 4440:343, or by permission of the instructor. Principles of image science, image perception, computer vision and image assessment techniques of medical imaging systems, with emphasis on digital radiography, tomographic imaging, ultrasonography and magnetic resonance imaging.

573 PHYSICS OF MEDICAL IMAGING

Prerequisites: 3100:200, 3650:292, 4440:353, 4800:395. 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.
653 TRANSPORT PHENOMENA IN BIOLOGY AND MEDICINE 3 credits
Prerequisites: 4200:231, 222 or 4600:330, 351 or equivalent. 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: graduate standing in engineering, mathematics, or science; or permission of the instructor. Devices for rehabilitation, interfacing the motor and/or sensory impaired, quantitative assessment techniques, prosthetics and orthotics, bedside mechanics, emerging technologies.

660 BIOMATERIALS AND LABORATORY 3 credits

663 ARTIFICIAL ORGANS 3 credits
Prerequisites: graduate standing in the College of Engineering or permission of instructor. Study and rationale for the ethical and clinical aspects required for the design and variety of artificial organs, with an emphasis on the heart and artificial kidney.

670 MATHEMATICAL MODELING IN BIOLOGY AND MEDICINE 3 credits
Prerequisites: graduate standing in engineering, mathematics, or physics; or permission of instructor. Modeling of pharmacokinetic, cardiovascular, neurovascular, 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, tissue compatibility, optimization techniques, government regulations, and legal liability.

697 SPECIAL TOPICS IN BIOMEDICAL ENGINEERING 1-4 credits
(May be repeated) Specialized areas of study as defined by the instructor.

698 MASTER'S RESEARCH 1-6 credits
Prerequisite: Permission of advisor. (May be repeated) Research on a suitable topic in biomedical engineering culminating in a master's thesis.

699 MASTER'S THESIS 1-6 credits
Prerequisite: permission of advisor. (May be repeated) Supervised research in the specific area of biomedical engineering.

730 FABRICATION AND DESIGN OF MICROSENSORS 3 credits
Prerequisites: course in digital design, including design of digital circuits. Sensing principles, fabrication, and engineering design of microsensors for diagnostic, monitoring, and analytical biological applications.

735 IMAGE 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.

898 PRELIMINARY RESEARCH 1-6 credits
(May be repeated) Approval of the dissertation director. Preliminary investigations including submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.

899 DOCTORAL THESIS 1-6 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.

512 DESIGN AND PRODUCTION OF INSTRUCTIONAL MATERIALS 3 credits (20 clinical hours)
Design, adaptation and preparation of instructional materials using graphics, transparency production, video equipment, computer authoring software, mounting and laminating processes, photography and other procedures.

520 INTRODUCTION TO INSTRUCTIONAL COMPUTING 3 credits
Prepares the student in the use of instructional technologies in educational and business settings. Segments of the course are offered in an online format.

590,1 WORKSHOP 1-3 credits (20 clinical hours)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

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741 DATA COLLECTION METHODS

The theory and practice of Instructional Design (ID) involves a systematic approach to the analysis, design, development, evaluation, and implementation of effective instructional systems.

743 ADVANCED EDUCATIONAL STATISTICS

Prerequisite: 741. Emphasis on interpreting advanced statistics in education and the social sciences.

788 RESEARCH PROJECT IN SPECIAL AREAS

Prerequisite: permission of department chair and instructor. Critical and in-depth study of specific problem in educational foundations.

801 RESEARCH SEMINAR

Prerequisites: 640 and 741; permission of department chair and instructor. Intensive study of research methods applicable to education. Emphasis on developing a dissertation proposal.

897 INDEPENDENT STUDY

May be repeated for a total of eight credits. Prerequisites: permission of department chair and instructor. Specific area of inquiry within humanistic and behavioral foundations of education determined in advance by student and faculty advisor.

GENERAL ADMINISTRATION 5170:

747 PRINCIPLES OF CURRICULUM DEVELOPMENT

3 credits

Prerequisites: 601 and 5100:640. An examination of the general concepts, models, practical applications and considerations involved in the evaluation of educational organizations.

748 SCHOOL LAW

3 credits

Prerequisites: 601 and 5100:640. An examination of the legal principles underlying education in the United States as reflected in statutory provision, court decisions and administrative orders. Field based research required.

749 SCHOOL FINANCE AND ECONOMICS

3 credits

A study of financial operations of school systems, including taxes, other sources of revenue, expenditures, budgeting and effects of economic factors.

750 PRINCIPLES OF CURRICULUM DEVELOPMENT

3 credits

Prerequisites: 601 and 5100:640. An introduction to the school function that helps improve instruction through direct assistance, curriculum, staff, group development and action research.

751 ADMINISTRATION OF PUPIL SERVICES

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. Field based research required.

752 THE PRINCIPALSHIP

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.

753 INDEPENDENT STUDY

1-3 credits

Prerequisites: permission of advisor and supervisor of the independent study. Area of study determined by student's needs. (May be repeated for a total of six credits.)

754 ADVANCED PRINCIPLES OF CURRICULUM DEVELOPMENT

3 credits

Study of organizations and strengths and weaknesses of common methods of administering them. Practical means by which overcoming bureaucratic weaknesses of bureaucracies are offset or lessened by educational institutions.

755 DECISION MAKING IN EDUCATIONAL ADMINISTRATION

3 credits

Decision making is portrayed as a central function of the educational administrator with a unit of presentation of the theory, research and practice of decision making.

756 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 superintendent.

757 ECONOMICS IN EDUCATION

3 credits

Issues related to the changing marketplace of public, private schooling and higher education institutions as they relate to an urban environment.

758 ADVANCED PRINCIPLES OF CURRICULUM DEVELOPMENT

3 credits

A second course in curriculum development with an emphasis on the performance competencies needed to engage in curriculum planning and decision making.

759 ADVANCED CURRICULUM ORGANIZATION

3 credits

An in-depth study of educational leadership as it pertains to the function and role of the administrator as instructional leader; disciplinarian; building, facilities, and auxiliary services manager.

760 ADVANCED CURRICULUM DESIGN

3 credits

An evaluation course to help educational leaders plan and assess educational priorities and instructional leader; disciplinarian; building, facilities, and auxiliary services manager.

761 ADMINISTRATIVE FUNDAMENTALS

3 credits

Prerequisites: 601 and 5100:640. An in-depth study of the law as it pertains to the function and role of the administrator as instructional leader; disciplinarian; building, facilities, and auxiliary services manager.

762 ADMINISTRATIVE PRACTICES

3 credits

Prerequisites: 601 and 5100:640. An examination of leadership as it relates to the development and maintenance of a school climate and culture conducive to teaching and learning.

763 ADMINISTRATIVE ANALYSIS

3 credits

An examination of the general concepts, models, practical applications and considerations involved in the evaluation of educational organizations.

764 SCHOOL LAW

3 credits

Prerequisites: 601 and 5100:640. An examination of the legal principles underlying education in the United States as reflected in statutory provision, court decisions and administrative orders. Field based research required.

765 SCHOOL FINANCE AND ECONOMICS

3 credits

A study of financial operations of school systems, including taxes, other sources of revenue, expenditures, budgeting and effects of economic factors.

766 PRINCIPLES OF CURRICULUM DEVELOPMENT

3 credits

Prerequisites: 601 and 5100:640. An introduction to the school function that helps improve instruction through direct assistance, curriculum, staff, group development and action research.

767 INDEPENDENT STUDY

1-3 credits

Prerequisites: permission of advisor and supervisor of the independent study. Area of study determined by student's needs. (May be repeated for a total of six credits.)

768 ADVANCED PRINCIPLES OF CURRICULUM DEVELOPMENT

3 credits

Study of organizations and strengths and weaknesses of common methods of administering them. Practical means by which overcoming bureaucratic weaknesses of bureaucracies are offset or lessened by educational institutions.

769 DECISION MAKING IN EDUCATIONAL ADMINISTRATION

3 credits

Decision making is portrayed as a central function of the educational administrator with a unit of presentation of the theory, research and practice of decision making.

770 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 superintendent.

771 ECONOMICS IN EDUCATION

3 credits

Issues related to the changing marketplace of public, private schooling and higher education institutions as they relate to an urban environment.

772 ADVANCED PRINCIPLES OF CURRICULUM DEVELOPMENT

3 credits

A second course in curriculum development with an emphasis on the performance competencies needed to engage in curriculum planning and decision making.

773 ADVANCED CURRICULUM ORGANIZATION

3 credits

An in-depth study of educational leadership as it pertains to the function and role of the administrator as instructional leader; disciplinarian; building, facilities, and auxiliary services manager.

774 ADVANCED CURRICULUM DESIGN

3 credits

An evaluation course to help educational leaders plan and assess educational priorities and instructional leader; disciplinarian; building, facilities, and auxiliary services manager.
### Higher Education Administration 5190:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>731 RESIDENCY SEMINAR</td>
<td>3</td>
<td>Prerequisite: 601. Focus on current research in administration and educational administration.</td>
</tr>
<tr>
<td>732 PUBLIC AND MEDIA RELATIONS IN EDUCATIONAL ORGANIZATIONS</td>
<td>3</td>
<td>A course in public relations intended to help educational leaders facilitate the development of common perceptions about school issues with multiple constituencies.</td>
</tr>
<tr>
<td>740 THEORIES OF EDUCATIONAL SUPERVISION</td>
<td>3</td>
<td>Extends 600, including student models, staff development, and the organizational environment’s impact on the climate for effective supervision.</td>
</tr>
<tr>
<td>745 SEMINAR: URBAN EDUCATIONAL ISSUES</td>
<td>3</td>
<td>A study of the linkages between educational organizations and their social contexts, particularly as they relate to educational change. Research project required.</td>
</tr>
<tr>
<td>746 POLICIES OF EDUCATION</td>
<td>3</td>
<td>Emphasis given to current efforts to bring about reform at all levels of the educational enterprise and to conceptual perspectives and research findings.</td>
</tr>
<tr>
<td>795, 8 INTERNSHIP IN EDUCATIONAL ADMINISTRATION</td>
<td>1-6</td>
<td>Students required to successfully complete a two-semester internship in a school district chosen by the student and his/her advisor.</td>
</tr>
<tr>
<td>897 INDEPENDENT STUDY</td>
<td>1-3</td>
<td>Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in education. (May be repeated for a total of six credits.)</td>
</tr>
<tr>
<td>899 DOCTORAL DISSERTATION</td>
<td>1-2</td>
<td>Prerequisite: permission of advisor. Specific research problem that requires student to apply research skills and techniques to the problem being studied.</td>
</tr>
</tbody>
</table>

### Postsecondary Technical Education 5400:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</tr>
</thead>
<tbody>
<tr>
<td>500 POSTSECONDARY LEARNER</td>
<td>3</td>
<td>Describes characteristics of the postsecondary learner; studies issues, factors, and strategies pertinent to successful facilitation of learning in a variety of postsecondary learning environments. Delivered in web-based format.</td>
</tr>
<tr>
<td>501 LEARNING WITH TECHNOLOGY</td>
<td>1</td>
<td>An overview of information systems and research technologies used and applied in postsecondary education and training by practitioners/learners for research, learning, and evaluation. Delivered in web-based format.</td>
</tr>
<tr>
<td>505 WORKPLACE EDUCATION FOR YOUTH AND ADULTS</td>
<td>3</td>
<td>Prerequisite: 501 or permission of instructor. 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.</td>
</tr>
<tr>
<td>515 TRAINING IN BUSINESS AND INDUSTRY</td>
<td>3</td>
<td>Prerequisite: 501 or permission of instructor. Examine the role and mission of the training function in the modern industrial setting. Foundation for students interested in industrial trainer or training supervisor positions.</td>
</tr>
<tr>
<td>520 POSTSECONDARY INSTRUCTIONAL TECHNOLOGY</td>
<td>3</td>
<td>Experiences in using, developing, and evaluating instructional technology and media used in postsecondary learning environments. Delivered in web-based format.</td>
</tr>
<tr>
<td>530 SYSTEMATIC CURRICULUM DESIGN FOR POSTSECONDARY INSTRUCTION</td>
<td>3</td>
<td>Prerequisites: 501 and 5100. Development of postsecondary curriculum using sound instructional systems design principles and instructional technologies. Delivered in web-based format.</td>
</tr>
<tr>
<td>535 SYSTEMATIC INSTRUCTIONAL DESIGN IN POSTSECONDARY EDUCATION</td>
<td>2</td>
<td>Prerequisites: 501, 500, 5100; 520, admission to program, or permission of instructor. Best practices in instructional strategies appropriate for postsecondary instructors. Emphasis on instructional design and learner outcomes assessment. Delivered in web-based format.</td>
</tr>
<tr>
<td>541 EDUCATIONAL GERONTOLOGY SEMINAR</td>
<td>3</td>
<td>Designed for person practicing in field of gerontology or preparing for a specialization in education, including persons responsible for development and implementation of courses, seminars, operational training programs and workshops for older people.</td>
</tr>
<tr>
<td>580 SPECIAL TOPICS: WORKFORCE EDUCATION/TRAINING</td>
<td>1-3</td>
<td>Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in workforce education/training.</td>
</tr>
<tr>
<td>590, 2 WORKSHOP</td>
<td>1-3</td>
<td>Each individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.</td>
</tr>
<tr>
<td>594 EDUCATIONAL INSTITUTES</td>
<td>1-4</td>
<td>Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.</td>
</tr>
<tr>
<td>600 SURVEY OF POSTSECONDARY INSTITUTIONS</td>
<td>3</td>
<td>Prerequisite: 501 or permission of instructor. Introduces students to the nature, purpose, and philosophy of postsecondary institutions. Includes an examination of two-year colleges, technical schools, proprietary schools, and higher education institutions offering courses at the postsecondary level. Delivered in web-based format.</td>
</tr>
<tr>
<td>605 ADVANCED SYSTEM DESIGN: NEEDS ASSESSMENT AND EVALUATION</td>
<td>3</td>
<td>Prerequisites: 501, 520, 530, and 5100. An examination of the instructional design in workforce education and training and supporting research in effective performance-based program needs, assessment, and evaluation processes.</td>
</tr>
<tr>
<td>612 POLICY AND PRACTICES OF POSTSECONDARY EDUCATION</td>
<td>3</td>
<td>Prerequisite: permission of instructor. 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.</td>
</tr>
<tr>
<td>613 INTRODUCTION TO THE STUDY OF HIGHER EDUCATION</td>
<td>3</td>
<td>Prerequisites: 501, 520, 530, or permission of instructor. Examination of many current problems and issues in institutions of higher education; adult education, technical institutes, community colleges, proprietary schools, undergraduate, graduate and professional education.</td>
</tr>
<tr>
<td>620 POSTSECONDARY DISTANCE LEARNING</td>
<td>3</td>
<td>Prerequisite: 501 or permission of instructor. Introduction of the nature, purpose, and philosophy of distance learning; examination of current scope, history, theory, institutions, and programs of distance learning.</td>
</tr>
<tr>
<td>630 CURRENT ISSUES IN HIGHER EDUCATION</td>
<td>3</td>
<td>Prerequisite: permission of instructor. Examination of many current problems and issues in institutions of higher education; adult education, technical institutes, community colleges, proprietary schools, undergraduate, graduate and professional education.</td>
</tr>
<tr>
<td>631 FIELD EXPERIENCE: HUMAN SERVICES</td>
<td>1-8</td>
<td>Prerequisites: 501, 520, 530, or permission of instructor. Course provides an in-depth study of the role and mission of the training function in the modern industrial setting. Foundation for students interested in industrial trainer or training supervisor positions.</td>
</tr>
<tr>
<td>632 INDEPENDENT STUDY</td>
<td>1-5</td>
<td>May be repeated for a total of six credits. Prerequisites: permission of advisor and supervisor of independent study. Area of study determined by student’s need.</td>
</tr>
<tr>
<td>634 MASTER’S PROBLEM</td>
<td>3</td>
<td>Prerequisite: permission of advisor. In-depth study of an instructional or curricular problem in workforce education or training. Student must be able to demonstrate needed analytical, evaluative, and problem-solving skills.</td>
</tr>
<tr>
<td>635 MASTER’S DISSERTATION</td>
<td>3</td>
<td>Prerequisite: permission of advisor. Opportunity to conduct research on a problem in workforce education or training. Student must be able to demonstrate needed analytical, evaluative, and basic research skills. Credit/noncredit.</td>
</tr>
</tbody>
</table>

### Curricular and Instructional Studies 5500:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>522 CONTENT AREA LITERACY</td>
<td>3</td>
<td>Examines instructional strategies for constructing meaning in content subjects (e.g., science, social studies, mathematics) using print and electronic texts.</td>
</tr>
<tr>
<td>524 TEACHING READING TO CULTURALLY DIVERSE LEARNERS</td>
<td>3</td>
<td>Knowledge, skills and attitudes to employ effective methods of teaching reading to diverse populations and cultures and their language patterns are nonstandard.</td>
</tr>
<tr>
<td>540 PRINCIPLES OF BILINGUAL/MULTICULTURAL EDUCATION</td>
<td>3</td>
<td>An introduction to the theoretical, cultural, sociolinguistic bases of bilingual/multicultural education. Legislation, court decisions, program implementation included.</td>
</tr>
<tr>
<td>541 TEACHING LANGUAGE LITERACY TO SECOND LANGUAGE LEARNERS</td>
<td>4</td>
<td>Prerequisite: permission of instructor. Course applies methodologies for teaching reading, language arts in the bilingual/multicultural classroom. The bilingual student’s native language stressed.</td>
</tr>
<tr>
<td>542 TEACHING MATHEMATICS, SOCIAL STUDIES AND SCIENCE TO BILINGUAL STUDENTS</td>
<td>3</td>
<td>Prerequisites: 523, 510, admission to program. Course applies methodologies for teaching mathematics, science, social studies in the bilingual/multicultural classroom. The bilingual student’s native language stressed.</td>
</tr>
</tbody>
</table>
615 SECONDARY SCIENCE CURRICULUM AND INSTRUCTION 3 credits
A critical analysis of the theory and practice of curriculum and instructional methods in science with an emphasis on teacher preparation for early adolescent and adolescent learners.

616 FIELD EXPERIENCE: COLOQUIUM 1 credit
Preliminary: admission to student teaching; corequisite: 694. Instructional experience in the 7-12 classroom to apply theory and research to practice.

617 FIELD EXPERIENCE: MASTER’S WITH LICENSURE 1-3 credits
Preliminary: admission to student teaching; corequisite: 694. Instructional experience in the 7-12 classroom to apply theory and research to practice. (May be repeated for a maximum of 6 credits.)

618 FIELD EXPERIENCE: CLASSROOM INSTRUCTION 1-2 credits
Preliminary: approved student teaching application, pass PRAXIS II subject tests, approved portfolio and/or approval of the Student Teaching Committee; corequisite: 692. Planned teaching experience in schools selected and supervised by Office of Field Experience.

619 FIELD EXPERIENCE: MASTER’S 16 credits
Preliminary: permission of advisor and department chair. Experience in an educational setting to apply theory and research to practice.

620 INDEPENDENT PROJECTS 14 credits
Preliminary: 694. Student project. In-depth investigation of a particular area of curriculum and instruction.

621 INDEPENDENT STUDY 1-3 credits
Preliminary: permission of advisor and department chair. Selected area of independent investigation as determined by advisor and related to student’s academic needs.

622 MASTER’S THESIS 4-6 credits
Preliminary: 690, 693, and permission of advisor and department chair. In-depth study of a research problem in education. Student must be able to demonstrate necessary competence to deal with research problem in education.

623 ASSESSMENT OF READING DIFFICULTIES 3 credits

500 MUSCULOSKELETAL ANATOMY I: UPPER EXTREMITY 3 credits
Prerequisites: 3100:200, 201, 202, 203 and 5550:201. Designed to address the upper portions of the musculoskeletal system in comprehensive detail. Includes articulations, anatomy, histology, neurological integration with lab and practical experiences.

501 MUSCULOSKELETAL ANATOMY II: LOWER EXTREMITY 3 credits
Prerequisites: 3100:200, 201, 202, 203 and 5550:201. Designed to address the lower portions of the musculoskeletal system in comprehensive detail. Includes articulations, anatomy, histology, neurological integration with lab and practical experiences.

510 INTRODUCTION TO SPORT SOCIOLOGY 3 credits
Provides information to students about the sociological aspects of sport. The course will educate students about gender and sport, race, and sport economics in sport, media and sport, children, and sport, and intercollegiate athletics.

522 SPORTS PLANNING/PROMOTION 3 credits
Analysis of marketing/promotions from a sport manager’s perspective. Emphasis on market strategy, tactics, and development in sport delivery systems.

527 FIELD EXPERIENCE 1-3 credits
This course has been designed to introduce the students to current issues related to leadership, management, and supervision. Course also will examine current sport leadership research as well as the fundamental governance structure of amateur and professional sport organizations.

530 FOUNDATIONS AND ELEMENTS OF ADAPTED PHYSICAL EDUCATION 3 credits
Prerequisites: admission to the Ph.D. program in either Elementary Education or Secondary Education program. Learners will develop an individualized program of study and plan their doctoral studies. An overview of process and procedures will be addressed.

532 SPORTS LEADERSHIP 3 credits
Provides information to students about the sociological aspects of sport. The course will educate students about gender and sport, race, and sport economics in sport, media and sport, children, and sport, and intercollegiate athletics.

533 FOUNDATIONS AND ELEMENTS OF ADAPTED PHYSICAL EDUCATION 3 credits
Principles, components, and strategies necessary in providing motor activities for handicapped students via application of a neo-developmental model and alternative methods. Three hour lecture.

541 INJURY MANAGEMENT FOR TEACHERS AND COACHES 2 credits
This course challenges the graduate student to understand ways to provide and care for the safety of individuals they teach.

542 ADVANCED ATHLETIC INJURY MANAGEMENT: UPPER EXTREMITY 4 credits
Prerequisites: 3100:200, 201, 202, 203 and 5550:240. This course is designed to develop techniques and skills of Sports Medicine personnel in the selection and implementation of therapeutic modalities and drugs.
551 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours) Prerequisites: permission of advisor; investigation analysis, and selection of appropriate assessment instruments, as well as methodology for determining instructional objectives and activities for handicapped students. Three hour lecture.

552 PRINCIPLES OF COACHING 3 credits Basics for becoming a successful coach. Discussion of principles applying to most sports, players, and coaches. Ten (10) clinical hours required.

556 LEGAL/ETHICAL ISSUES IN PHYSICAL AND LEISURE ACTIVITIES 2 credits Legal and ethical issues of greatest concern to those interested in physical and leisure activity: risk management, playground safety, blood-borne pathogens, ethics.

560, 1, 2 WORKSHOP 1-3 credits Practical, intensive, and concentrated involvement with current curricular practices in areas related to physical education.

600 BIOMECHANICS APPLIED TO SPORT AND PHYSICAL ACTIVITY 4 credits Training for professionals in an integrated approach to qualitative diagnosis of motor skills for a variety of professional settings. Required clinical/field experiences.

601 SPORTS ADMINISTRATION AND SUPERVISION 3 credits Organizational and administrative efficiency in implementing sports programs (event management, budgeting, public relations); objective and effective procedures for evaluation/selection of personnel; periodic program reviews.

602 MOTOR BEHAVIOR APPLIED TO SPORTS 3 credits Coaching education principles related to motor development and motor skill learning. Focus on effective practices for learning and advanced skills teaching for coaches.

603 TACTICS AND STRATEGIES IN THE SCIENCE OF COACHING 3 credits Course focuses on coaching and teaching the skills, tactics, and strategies in individual and team sports.

604 CURRENT ISSUES IN PHYSICAL EDUCATION 3 credits This course represents a planned experience in interpretation and articulation of information within the context of selected aspects of current issues in sport.

605 PHYSIOLOGY OF MUSCULAR ACTIVITY AND EXERCISE 3 credits Functions of body systems and physiological effects of exercise. Laboratory experiences, lectures, discussions.

606 STATISTICS: QUANTITATIVE AND QUALITATIVE METHODS 3 credits Prerequisite: 5000:640. 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.

609 MOTIVATIONAL ASPECTS OF PHYSICAL ACTIVITY 3 credits Analysis of factors influencing motivation of motor performance with emphasis on competition, audience effects, aggression.

610 MASTERING TEACHING AND COACHING 3 credits To learn about becoming master teachers and coaches, students will apply effective teaching skills, focus on context, 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 professional competencies needed to become an effective teacher of physical education.

620 SPECIAL TOPICS IN HEALTH AND PHYSICAL EDUCATION 2-4 credits (May be repeated) Prerequisite: permission of instructor. Special topics in health and physical education related to sports medicine.

621 FIELD EXPERIENCE: MASTER'S 1-6 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.

625 INDEPENDENT STUDY 1 credit Prerequisite: permission of advisor. In-depth analysis of current practices or problems related to physical education. Documentation of project required.

627 MASTERS' PROBLEM 2-4 credits Prerequisite: permission of advisor. Independent study. The experience may not be part of current position. Prerequisite: permission of instructor. Student must be able to demonstrate necessary competencies to deal with a research problem in physical education.

630 PRACTICUM IN OUTDOOR EDUCATION 2-4 credits (60-120 field hours) Prerequisites: 550, 552 and permission of advisor. Supervised practical experience with existing outdoor education programs. In conjunction with practical work student meets regularly with advisor.

635 FIELD EXPERIENCE: MASTER'S 2-6 credits (80-180 field hours) Prerequisite: permission of advisor. Participation and documentation of practical professional experience related to outdoor education.

657 INDEPENDENT STUDY 1-3 credits (70-90 field hours) Prerequisite: permission of advisor. In-dep exploration of current practices or problems related to outdoor education. Documentation of study required.

658 MASTER'S PROBLEM 2-4 credits Prerequisite: permission of advisor. Intensive research study related to a problem in outdoor education or related discipline.

659 MASTER'S THESIS 4-6 credits An original composition demonstrating independent scholarship in a discipline related to outdoor education.

HEALTH EDUCATION 5570:

520 COMMUNITY HEALTH 2 credits Study of current public health problems. Organization and administration of various agencies and their roles in the solution of community health problems.

521 COMPREHENSIVE SCHOOL HEALTH 4 credits Prerequisite: admission to Graduate School. This course explains and presents comprehensive school health 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 3 credits Prerequisite: permission of advisor. Planning, organization, use of instructional resources and delivery of health education content and teaching processes (pre K-12).

560 PRACTICUM IN HEALTH EDUCATION 2-6 credits Prerequisite: permission of instructor. The practicum in Health Education is an on-site participation in a community health organization, agency, or resource.

EDUCATIONAL GUIDANCE AND COUNSELING 5600:

550 COUNSELING PROBLEMS RELATED TO LIFE-THREATENING ILLNESS AND DEATH 3 credits Prerequisite: permission. Consideration of the global issues, current research, coping behavior, support systems and family and individual needs in regard to life-threatening situations.

590 WORKSHOP 1-3 credits Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

595 SEMINAR IN COUNSELING 1 credit Prerequisite: counseling majors must elect 600 prior to electing 651 and/or within the first 10 credits of 5600 course work. Structured group experience designed to help students to become better counselors in the profession.

596 COUNSELING SKILLS FOR TEACHERS 3 credits Prerequisite: 651 or 653 or permission. The study and practice of selected counseling techniques that can be applied by teachers in working with students, parents and colleagues.

602 ISSUES IN SEXUALITY FOR COUNSELORS 3 credits A seminar covering, in addition to changing current topics, sexuality across the lifespan, diversity and sexual orientation, and assessment.

612 COUNSELING YOUTH AT RISK 3 credits This course is designed to prepare counselors and other helping professionals to work with at-risk children and adolescents in school and community settings.

613 INTRODUCTION TO PLAY THERAPY 3 credits Prerequisite: enrolled in a master's or doctoral program in counseling or related field, or special nondegree students (i.e., professional counselor). This course is designed to give students an introduction to play therapy from a child-centered perspective. Students will develop competencies in child-centered play therapy.

618 MARRIAGE AND FAMILY COUNSELING/ETHICS AND PROFESSIONAL IDENTITY 3 credits This course is designed to help students learn about marriage and family counseling/therapy as a distinct profession and about it corresponding ethical codes.

631 ELEMENTARY/SECONDARY SCHOOL COUNSELING 3 credits Special emphasis on developmental issues for elementary and secondary school counseling practices.

635 COMMUNITY COUNSELING 3 credits Overview of community and college counseling services; their evaluation, philosophy, organization, and administration.

640 COUNSELING ADOLESCENTS 2 credits Prerequisite: graduate student in counseling or related field. The examination of the physical, cognitive, emotional, and social developmental processes of the adolescent as these affect learning performance in a diverse population will be addressed.

643 COUNSELING THEORY AND PHILOSOPHY 3 credits Examination of major counseling systems including client-centered, behavioral and existential theories. Philosophical and theoretical dimension stressed.

645 TESTS AND APPRAISAL IN COUNSELING 4 credits Prerequisites: 5000:640. Study of the nature of tests and appraisal in counseling including reliability, validity, test construction and selection, administration, scoring, and basic interpretation of selected measures.

646 MULTICULTURAL COUNSELING 3 credits Prerequisite: 642 or permission of instructor. An examination of multicultural counseling theory and research necessary to work with culturally diverse people.

647 CAREER DEVELOPMENT AND COUNSELING ACROSS THE LIFE-SPAN 3 credits Overview of career development and choice over the life-span. Personal, family, and societal characteristics that affect choice, career choice, and implementation are discussed.

648 INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN 3 credits An exploration of individual and family development, human behavior, and theories of learning and personality. Emphasis will be placed on understanding the relationship between the individual and his/her family.

OUTDOOR EDUCATION 5560:

550 APPLICATION OF OUTDOOR EDUCATION TO THE SCHOOL CURRICULUM 4 credits Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.

552 RESOURCES AND RESOURCE MANAGEMENT FOR THE TEACHING OF OUTDOOR EDUCATION 4 credits Resourses and instructional techniques which are applicable to outdoor education, and in-depth study of methods and designs, unique to the process of teaching.

555 RESIDENT OUTDOOR EDUCATION 2 credits Focus on helping physical education teachers use critical thinking to review programs/organizational techniques relevant to outdoor education programs. Extended experience in outdoor settings required.

556 OUTDOOR PURSUITS 4 credits Instruction and participation in practical experiences in outdoor pursuits.

590 WORKSHOP: OUTDOOR EDUCATION 1-3 credits Practical application of contemporary idea, methodologies, knowledge relevant to outdoor education. Emphasis on participant involvement in educational practices, utilizing the natural environment.

594 EDUCATIONAL INSTITUTES: OUTDOOR EDUCATION 3-4 credits Practical experience with current research or curricular practices involving expertise persons in outdoor education.

600 OUTDOOR EDUCATION: RURAL INFLUENCES 3 credits Prerequisite: 550 or 552. Utilization of resources of rural area as a learning/teaching environment. Content and methodology appropriate for teaching school-age children in rural setting.

605 OUTDOOR EDUCATION: SPECIAL TOPICS 2-4 credits (May be repeated with change in topic) Prerequisite: permission of instructor. Group and individual study of special topics of contemporary concern in outdoor education.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>718</td>
<td>HISTORY AND SYSTEMS IN PSYCHOLOGY</td>
<td>3</td>
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<tr>
<td>717</td>
<td>ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY</td>
<td>4</td>
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<tr>
<td>3 credits</td>
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<tr>
<td>716</td>
<td>RESEARCH DESIGN IN COUNSELING II</td>
<td>5</td>
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<tr>
<td>4 credits</td>
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<tr>
<td>712</td>
<td>PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING</td>
<td>4 credits</td>
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<td>4 credits</td>
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<tr>
<td>710</td>
<td>THEORIES OF COUNSELING AND PSYCHOTHERAPY</td>
<td>3 credits</td>
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<tr>
<td>4 credits</td>
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<tr>
<td>659</td>
<td>MARRIAGE AND FAMILY THEORY: THEORY AND TECHNIQUES</td>
<td>3 credits</td>
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<tr>
<td>6 credits</td>
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<tr>
<td>667</td>
<td>MARITAL THERAPY</td>
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<tr>
<td>659</td>
<td>ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES</td>
<td>3 credits</td>
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<tr>
<td>653</td>
<td>CONSULTANT COUNSELING</td>
<td>3 credits</td>
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<tr>
<td>651</td>
<td>GROUP COUNSELING</td>
<td>4 credits</td>
</tr>
<tr>
<td>655</td>
<td>RESEARCH METHODS AND TREATMENT ISSUES IN MARRIAGE AND FAMILY THERAPY</td>
<td>3 credits</td>
</tr>
<tr>
<td>711</td>
<td>THEORIES OF CODING AND PSYCHOTHERAPY</td>
<td>4 credits</td>
</tr>
<tr>
<td>710</td>
<td>INDEPENDENT STUDY</td>
<td>1-3 credits</td>
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<tr>
<td>702</td>
<td>ADVANCED COUNSELING PRACTICUM</td>
<td>4 credits</td>
</tr>
<tr>
<td>709</td>
<td>FIELD EXPERIENCE: MASTERS THERAPY</td>
<td>1-2 credits</td>
</tr>
<tr>
<td>712</td>
<td>SUPERVISION IN COUNSELING PSYCHOLOGY I, II</td>
<td>4 credits</td>
</tr>
<tr>
<td>713</td>
<td>INTRODUCTION TO COUNSELING PSYCHOLOGY</td>
<td>2 credits</td>
</tr>
<tr>
<td>717</td>
<td>QUESTIONS OF COUNSELING AND PSYCHOTHERAPY</td>
<td>4 credits</td>
</tr>
<tr>
<td>711</td>
<td>THEORIES OF INTELLIGENCE TESTING</td>
<td>4 credits</td>
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<tr>
<td>712</td>
<td>PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING</td>
<td>4 credits</td>
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<tr>
<td>713</td>
<td>PROFESSIONAL, ETHICAL AND LEGAL ISSUES IN COUNSELING PSYCHOLOGY</td>
<td>4 credits</td>
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<tr>
<td>714</td>
<td>OBJECTIVE PERSONALITY EVALUATION</td>
<td>4 credits</td>
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<tr>
<td>715</td>
<td>RESEARCH DESIGN IN COUNSELING</td>
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<tr>
<td>716</td>
<td>RESEARCH DESIGN IN COUNSELING II</td>
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<tr>
<td>717</td>
<td>INTEGRITY AND ETHICS IN COUNSELING PSYCHOLOGY</td>
<td>4 credits</td>
</tr>
<tr>
<td>718</td>
<td>HISTORY AND SYSTEMS IN PSYCHOLOGY</td>
<td>2 credits</td>
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**Special Education 5610:**

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<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>540</td>
<td>DEVELOPMENTAL CHARACTERISTICS OF EXCEPTIONAL INDIVIDUALS</td>
<td>3 credits</td>
</tr>
<tr>
<td>544</td>
<td>DEVELOPMENTAL CHARACTERISTICS OF INTELLECTUALLY GIFTED INDIVIDUALS</td>
<td>3 credits</td>
</tr>
<tr>
<td>547</td>
<td>DEVELOPMENTAL CHARACTERISTICS OF INDIVIDUALS WITH MILD/MODERATE EDUCATIONAL NEEDS</td>
<td>4 credits</td>
</tr>
<tr>
<td>548</td>
<td>DEVELOPMENTAL CHARACTERISTICS OF INDIVIDUALS WITH MODERATE/INTENSIVE EDUCATIONAL NEEDS</td>
<td>4 credits</td>
</tr>
<tr>
<td>550</td>
<td>SPECIAL EDUCATION PROGRAMMING: EARLY CHILDHOOD</td>
<td>3 credits</td>
</tr>
<tr>
<td>551</td>
<td>SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE</td>
<td>3 credits</td>
</tr>
<tr>
<td>552</td>
<td>SPECIAL EDUCATION PROGRAMMING: SECONDARY/TRANSITION</td>
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**Graduate Courses 111:**

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<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>720</td>
<td>TOPICAL SEMINAR: GUIDANCE AND COUNSELING</td>
<td>1-4 credits</td>
</tr>
<tr>
<td>722</td>
<td>INTRODUCTION TO PLAY THERAPY</td>
<td>3 credits</td>
</tr>
<tr>
<td>725</td>
<td>PROFESSIONAL AND LEGAL ISSUES IN COUNSELOR EDUCATION</td>
<td>3 credits</td>
</tr>
<tr>
<td>732</td>
<td>ADDICTION COUNSELING I: THEORY AND ASSESSMENT</td>
<td>3 credits</td>
</tr>
<tr>
<td>734</td>
<td>ADDICTION COUNSELING &amp; TREATMENT PLANNING AND INTERVENTION STRATEGIES</td>
<td>3 credits</td>
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<tr>
<td>756</td>
<td>OUTCOME RESEARCH IN MARRIAGE AND FAMILY THERAPY</td>
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<tr>
<td>760</td>
<td>COUNSELING CHILDREN</td>
<td>3 credits</td>
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<tr>
<td>765</td>
<td>ADDICTION METHODS AND TREATMENT ISSUES IN MARRIAGE AND FAMILY THERAPY</td>
<td>3 credits</td>
</tr>
<tr>
<td>767</td>
<td>FIELD EXPERIENCE: DOCTORAL</td>
<td>1-2 credits</td>
</tr>
<tr>
<td>769</td>
<td>INDEPENDENT STUDY</td>
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<td>770</td>
<td>ADVANCED COUNSELING PRACTICUM</td>
<td>4 credits</td>
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<tr>
<td>772</td>
<td>SUPERVISION IN COUNSELING PSYCHOLOGY I, II</td>
<td>4 credits</td>
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<tr>
<td>773</td>
<td>INTRODUCTION TO COUNSELING PSYCHOLOGY</td>
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<tr>
<td>774</td>
<td>THEORIES OF INTELLIGENCE TESTING</td>
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<td>775</td>
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<td>RESEARCH DESIGN IN COUNSELING</td>
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<tr>
<td>779</td>
<td>RESEARCH DESIGN IN COUNSELING II</td>
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<tr>
<td>780</td>
<td>INTEGRITY AND ETHICS IN COUNSELING PSYCHOLOGY</td>
<td>4 credits</td>
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<tr>
<td>781</td>
<td>HISTORY AND SYSTEMS IN PSYCHOLOGY</td>
<td>2 credits</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>697</td>
<td>INDEPENDENT STUDY (May be repeated for a total of nine credits) Prerequisites: permission of advisor and supervisor of independent study. Specific area of investigation determined in accordance with student's needs.</td>
<td>1-3</td>
</tr>
<tr>
<td>698</td>
<td>MASTER’S PROBLEM 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 special education.</td>
<td>2-4</td>
</tr>
<tr>
<td>699</td>
<td>MASTER’S THESIS 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.</td>
<td>4-6</td>
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</tbody>
</table>

**School Psychology**

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>600</td>
<td>SEMINAR: ROLE AND FUNCTION OF THE SCHOOL PSYCHOLOGIST 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.</td>
<td>3</td>
</tr>
<tr>
<td>601</td>
<td>COGNITIVE FUNCTION MODELS FOR PRESCRIPTIVE EDUCATIONAL PLANNING Prerequisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.</td>
<td>3</td>
</tr>
<tr>
<td>602</td>
<td>BEHAVIORAL ASSESSMENT Prerequisite: permission of instructor. Overview of behavioral theory and its application focusing on the practice of school psychology as related to consultant process and with school and agency personnel, parents and children.</td>
<td>3</td>
</tr>
<tr>
<td>603</td>
<td>CONSULTATION STRATEGIES IN SCHOOL PSYCHOLOGY 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.</td>
<td>3</td>
</tr>
<tr>
<td>611</td>
<td>PRACTICUM IN SCHOOL PSYCHOLOGY FALL/SPRING 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.</td>
<td>3-4</td>
</tr>
<tr>
<td>640</td>
<td>FIELD SEMINAR I: CURRENT PROFESSIONAL TOPICS/ISSUES IN SCHOOL PSYCHOLOGY 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.</td>
<td>3-6</td>
</tr>
<tr>
<td>641</td>
<td>FIELD SEMINAR II: LOW INCIDENCE/RELATED INQUIRIES 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.</td>
<td>3</td>
</tr>
<tr>
<td>642</td>
<td>RESEARCH PROJECT IN SPECIAL AREAS Prerequisite: permission of advisor. Study analysis and reporting of school psychology problem.</td>
<td>1-3</td>
</tr>
<tr>
<td>645</td>
<td>FIELD EXPERIENCE: MASTER’S Prerequisite: permission of instructor. Practical school psychology-related experience in school psychology.</td>
<td>1-3</td>
</tr>
<tr>
<td>697</td>
<td>INDEPENDENT STUDY Prerequisites: permission of advisor and supervisor of the independent study. Documentation of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.</td>
<td>1-4</td>
</tr>
<tr>
<td>698</td>
<td>MASTER’S PROBLEM 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.</td>
<td>2-4</td>
</tr>
<tr>
<td>699</td>
<td>MASTER’S THESIS Prerequisite: permission of instructor. Thorough study, analysis and reporting in depth of an educational problem; field projects in special areas; synthesis of existing knowledge in relation to specific topic.</td>
<td>4-6</td>
</tr>
</tbody>
</table>

**Special Educational Programs**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>590</td>
<td>WORKSHOP IN ECONOMIC EDUCATION OR IN SOCIAL STUDIES Prerequisites: individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.</td>
<td>1-3</td>
</tr>
<tr>
<td>591</td>
<td>WORKSHOP IN ARITHMETIC OR IN PHYSICAL SCIENCE Prerequisites: individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.</td>
<td>1-3</td>
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</tbody>
</table>

**Business Administration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>520</td>
<td>ADVANCED ACCOUNTING Prerequisites: 6203.231 and 322. Examination of accounting theory emphasizing accounting for business combinations, partnerships, foreign operations, nonprofit entities and consolidated statements.</td>
<td>3</td>
</tr>
<tr>
<td>530</td>
<td>TAXATION I Prerequisites: 620 or 621. Federal tax law related to individuals. Master of Taxation students must be able to take this course to satisfy tax electives in the Master of Taxation program.</td>
<td>3</td>
</tr>
<tr>
<td>531</td>
<td>TAXATION II Prerequisites: 6203.230 or permission. Federal income tax law related to partnerships, corporations, trusts and estates; also includes an overview of federal estate and gift tax law.</td>
<td>3</td>
</tr>
</tbody>
</table>
6400: FINANCE

538 INTERNATIONAL BANKING 3 credits
Prerequisite: 371 or 602. Examination of recent trends in the expansion of international banking activities and associated revenue maximizing strategies.

620 MANAGERIAL FINANCE 3 credits
Prerequisite: 6200:608 or 6400:602 may be taken concurrently. Emphasis on decision making related to the economic and market forces that influence securities.

263 LEGAL ASPECTS OF BUSINESS TRANSACTIONS 3 credits
(Not open to students with six credits of undergraduate business law.) Advanced legal analysis of contracts, UCC, debtor-creditor relationships, business organizations, property, and government regulation.

611 UNITED STATES TAXATION AND TRANSNATIONAL OPERATIONS 2 credits
Prerequisite: completion of M.Tax foundation courses. Examines United States taxation of foreign investors, international domestic transactions, citizens and residents, as well as United States income of nonresident aliens and foreign corporations.

613 TAX-EXEMPT ORGANIZATIONS 2 credits
Prerequisite: completion of M.Tax foundation courses. Analysis of tax aspect of tax-exempt organizations, including the tax consequences of their exemptions.

614 INDEPENDENT STUDY IN TAXATION 1-3 credits
Prerequisite: permission of instructor. Intensive study of particular topic or limited number of topics not otherwise offered in curriculum. (May be repeated for a total of six credits.)

615 ADVANCED INFORMATION SYSTEMS 3 credits
Prerequisites: 603 or equivalent. Advanced study of information system theory, elements, principles, design and implementation. Practical data processing and networking to control flow of information.

616 ENTERPRISE RISK ASSESSMENT AND ASSURANCES 3 credits
Prerequisite: completion of 601 or equivalent. Introduction to the assessment of risk-related controls, and assurance services resulting from and related to the e-business environment.

617 ASSURANCE SERVICES WITH DATA WAREHOUSING AND DATA MINING 3 credits
Prerequisite: 655. Application of data warehousing and data mining to the assurance services function. Special topics not otherwise offered in curriculum. (May be repeated for a total of six credits.)

619 INFORMATION SYSTEMS AUDIT AND CONTROL PROJECT 3 credits
Prerequisites: 603 and 610. Comprehensive, hands-on information systems audit and control project approved by the instructor.

620 CORPORATE PERFORMANCE EVALUATION AND CONTROL SYSTEMS 3 credits
Prerequisite: 603. Investigation of the role of financial information systems in developing strategy, planning, measuring results, and motivating managers to define and pursue organizational goals and objectives.

621 INTERNATIONAL ACCOUNTING 3 credits
Prerequisite: 603. Examination of accounting theory and practice from international perspective with emphasis on multinational investment, business and auditing activities and reporting arrangements.

622 SELECTED TOPICS IN TAXATION 1-3 credits
(May be repeated for a total of six credits.) Prerequisite: completion of M.Tax foundation courses. Provides study in contemporary issues in taxation that are not covered in current courses.

623 GRADUATE INTERNSHIP IN ACCOUNTING 3 credits
Prerequisite: 601. An internship in a governmental, business, or professional environment. May be repeated for a total of six credits.

624 INDEPENDENT STUDY IN TAXATION 1-3 credits
(May be repeated for a total of six credits) Focus on special topics of study and research in accounting on an independent basis.

ENTREPRENEURSHIP

6300: FINANCING THE ENTREPRENEURIAL VENTURE 3 credits
Prerequisite: 6500:508. Examination of financing, legal, taxation, and insurance issues involved with entrepreneurial ventures.

631 MANAGING ENTREPRENEURIAL GROWTH 3 credits
Prerequisite: 6500:508 and 6300:540. Interdisciplinary capstone course focusing on problems and opportunities associated with the management of entrepreneurial growth in existing entrepreneurial ventures. Includes a field project.

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686 E-BUSINESS: FINANCIAL STRATEGY AND PLANNING 3 credits
Prerequisite: minimum of six credits of E-Business foundation courses. Study of finance issues relating to analyzing, valuation, planning, long and short term financing, and management of E-Business projects.

690 SELECTED TOPICS IN FINANCE 3 credits
(May be repeated for a total of six credits) Prerequisite: 602 or equivalent. Provides study of contemporary finance issues and problems not covered in current finance graduate courses.

691 INTERNATIONAL MARKETS AND INVESTMENTS 3 credits
Prerequisites: 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 3 credits
(May be repeated for a total of six credits) Focus on special topics of study and research in the legal aspects of business administration.

698 INDEPENDENT STUDY: BUSINESS LAW 3 credits
(May be repeated for a total of six credits) Focus on special topics of study and research in the legal aspects of business administration.

MANAGEMENT 6500:

571 MANAGEMENT PROJECT 3 credits
Prerequisite: 670. Student applies modern management principles, practices, theory to an actual problem in industry.

580 INTRODUCTION TO HEALTH-CARE MANAGEMENT 3 credits
Prerequisites: upper-college or graduate standing (Students who are required to take 300 or 600 or have completed 300 or 600 or equivalent are ineligible to take this course for credit). Introduces 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 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 issues and/or aspects related to health-care organizations and related topics may be repeated for a maximum of six credits. For those registered for graduate credit, a major research paper is required.

590 MANAGEMENT AND ORGANIZATIONAL BEHAVIOR 3 credits
Course examines management principles, concepts, functions, and process as well as human behavior in organizations.

591 QUANTITATIVE DECISION MAKING 3 credits
Applies quantitative techniques to business decision making. Topics covered include probability estimation and hypothesis testing, simple and multiple regression and correlation analysis, and analysis of variance and nonparametric statistics.

592 COMPUTER TECHNIQUES FOR MANAGEMENT 3 credits
Introduction to the use of integrated spreadsheet software, database management software, and computerized information systems and data analysis and databases.

595 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.

598 ENTREPRENEURSHIP 3 credits
Prerequisites: upper-college or graduate standing and 300 or 600 or equivalent. Students develop new products and work with entrepreneurial businesses in the development of business plans that are presented to investors and entrepreneurs in local and international business plan competitions.

600 E-BUSINESS FOUNDATIONS 3 credits
Provides an understanding of the foundation of Electronic Business focusing on business and application issues.

602 E-BUSINESS TECHNOLOGIES 3 credits
Prerequisite: 600 or 602. 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.

609 E-BUSINESS PROJECT 3 credits
A capstone course that integrates the foundation and functional courses. Student teams will apply project management methods as they design and develop an e-business project.

609 MANAGEMENT INFORMATION SYSTEMS 3 credits
Prerequisite: 602 or equivalent. Examines issues, strategies, and tactics for managing information systems within organizations, including IS architecture, databases, development, outcomes, emerging technologies, and enabling business strategy.

611 BUSINESS DATABASE SYSTEMS 3 credits
Prerequisite: 602. Introduction to issues underlying the analysis, design, implementation, and management of business databases.

612 SYSTEMS SIMULATION 3 credits
Prerequisites: 600, 602, 604, 605, or 607. A partial treatment of the methods used to develop different types of business information systems.

619 KNOWLEDGE MANAGEMENT AND BUSINESS INTELLIGENCE 3 credits
Explores the technologies of Business Intelligence (data warehouses, data mining, portals) and the analysis and design of management information systems.

620 ADVANCED MANAGEMENT INFORMATION SYSTEMS 3 credits
Prerequisite: 640. Examines management challenges for difficult and cross-cultural IS items such as business-technology alignment, metrics, mergers, legacy systems, ERP IS projects, critical IS teams, and global sources and solutions, and explores IS knowledge management.

628 PROCESS DESIGN WITH ENTERPRISE RESOURCE PLANNING 3 credits
Prerequisite: 602. An investigation of the cross-functional design and integration of business processes using the enterprise resource planning software in this effort.

629 MANAGEMENT OF TELECOMMUNICATIONS 3 credits
Prerequisite: 602 or 6200-603. An introduction to the use and management of telecommunication resources to support the activities of the organization.

636 BUSINESS DATABASE 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 individual and group behavior, motivation, leadership and communication in organizations.

653 ORGANIZATIONAL THEORY 3 credits
Prerequisite: 600. Examines the structure and design and overall effectiveness of a business organization from a macro-perspective.

654 MANAGEMENT OF EMPLOYEE AND LABOR RELATIONS 3 credits
Prerequisite: 600 or equivalent. Study of labor relations, responsibilities, and policies of management operating in union and nonunion workplaces.

655 COMPENSATION AND PERFORMANCE MANAGEMENT 3 credits
Prerequisite: 600 or equivalent. The development and analysis of systems of payment and rewards in businesses with special attention placed on performance evaluation methods and productivity enhancement.

656 MANAGEMENT OF INTERNATIONAL OPERATIONS 3 credits
Prerequisite: 600 or equivalent. For students with international experience in the field of business, this course introduces students to the unique business environment that exists in international businesses.

657 THE LEADERSHIP ROLE IN ORGANIZATIONS 3 credits
Prerequisite: 600. Analysis and development of leadership theory and thought. Identification of leaders in both formal and informal organizations. Training and development methods of leaders evaluated. Individual and small group field study assignments.

658 STRATEGIC AND GLOBAL HUMAN RESOURCES MANAGEMENT 3 credits
Prerequisites: 602 or equivalent. The formulation, design and implementation of human resource practices designed to generate competitive cost advantages for business firms operating in domestic and/or international markets.

659 INTERNATIONAL HUMAN RESOURCE MANAGEMENT 3 credits
Prerequisite: 600. A comprehensive study of management of business databases.

660 STAFFING AND EMPLOYMENT REGULATION 3 credits
Prerequisite: 602 or equivalent. Examination of labor and employment policies, practices, and implementation of staffing practices and systems for businesses with an emphasis on the implications of federal regulations on the staffing credit card.

662 APPLIED OPERATIONS RESEARCH 3 credits
Prerequisite: 600 or equivalent. Survey of techniques of operations research. Stresses application to functional area of business.

663 DATA ANALYSIS FOR MANAGERS 3 credits
Prerequisite: 600 or equivalent. Design, evaluation and interpretation of research in business and organizations. Integrates quantitative and behavioral concepts and processes encountered in conducting such research, including ethical issues.

664 APPLIED INDUSTRIAL STATISTICS 3 credits
Prerequisite: 600 or equivalent. Applications of multiple regression including determining "best" set of independent combination models, validation of variance models including multifactor models. Experimental designs including randomized block and Latin square designs.

665 MANAGEMENT OF TECHNOLOGY 3 credits
Survey of the principles and management practices of technology driven organizations are discussed with concepts, models and case studies for managers of technology intensive operations.

669 POLYMER MANAGEMENT DECISIONS 3 credits
Introduces major polymer concepts, production processes, and uses of polymeric materials in an easy-to-comprehend interdisciplinary instructional way. Industrial case studies help integrate enterprise-wide innovation and technology management related decisions.

670 MANAGEMENT OF OPERATIONS 3 credits
Prerequisite: 600, 602, 604, 607, or equivalent. An overview of the issues directly related to the management of operations at the strategic, tactical, and operational levels of the organization.

673 QUALITY AND PRODUCTIVITY TECHNIQUES 3 credits
Prerequisite: 600. Introduction to techniques for improving productivity and quality, including statistical process control (SPC), general requirements planning (MRP), just-in-time (JIT) inventory control and management of the program.

675 SUPPLY CHAIN MANAGEMENT 3 credits
Prerequisite: 600. Focuses on the integration of activities and information/resources flows among multiple organizations that comprise the supply chain, and the relationships among these elements.

676 MANAGEMENT OF PRODUCTION AND OPERATIONS 3 credits
Prerequisites: 600, 602, 662. Surveys the management of resources required to transform inputs into products or services. Addresses issues related to services, materials, people and equipment utilized for production.

678 PROJECT MANAGEMENT 3 credits
Prerequisites: 600, 601, 604. Provides working knowledge of tools and methods available to project managers including computerized analysis of network models to aid in the planning and control functions.

681 HEALTH SERVICES SYSTEMS MANAGEMENT 3 credits
Prerequisite: 580 or 600 or equivalent or permission of instructor. Study of health services organizations, comparative delivery systems, the roles of third party payers and government programs in health care. Seminar format; major research paper required.

684 HEALTH SERVICES RESEARCH PROJECT 3 credits
Prerequisites: 600 or permission of instructor. In-depth field study in health services administration with applications of research and analysis skills. Course requires review of literature and a major research paper.

689 INDEPENDENT STUDY IN HEALTH SERVICES ADMINISTRATION 3 credits
(May not be repeated for more than three credits) Prerequisites: 580 or 600 or equivalent or permission of instructor. Independent study and research of a special topic of interest in health services administration (e.g., management), chosen by the student in consultation with and under the supervision of the instructor.

690 SELECTED TOPICS IN MANAGEMENT 3 credits
(May be repeated for a total of six credits) Prerequisite: 652. Selected topics in historical, contemporary and/or behavioral issues in management.

695 BUSINESS STRATEGY AND POLICY: DOMESTIC AND INTERNATIONAL 3 credits
Prerequisite: to be final course in M.B.A. program. A case-oriented course which focuses on integration of theoretical and practical knowledge acquired in core business courses. Students analyze, evaluate, formulate organization objectives and strategies within domestic and international environmental contexts.

The University of Akron 2004-2005
### Marketing Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>540</td>
<td>Product and Brand Management</td>
<td>3</td>
</tr>
<tr>
<td>575</td>
<td>Business Negotiations</td>
<td>3</td>
</tr>
<tr>
<td>576</td>
<td>Sales Management</td>
<td>3</td>
</tr>
<tr>
<td>600</td>
<td>Marketing Concepts</td>
<td>3</td>
</tr>
<tr>
<td>630</td>
<td>Strategic Marketing Management</td>
<td>3</td>
</tr>
<tr>
<td>631</td>
<td>Marketing of Services</td>
<td>3</td>
</tr>
<tr>
<td>635</td>
<td>E-BUSINESS: ELECTRONIC MARKETING STRATEGIES and TACTICS</td>
<td>3</td>
</tr>
<tr>
<td>640</td>
<td>Business Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>645</td>
<td>Innovative Marketing Strategies</td>
<td>3</td>
</tr>
<tr>
<td>655</td>
<td>Marketing Communications</td>
<td>3</td>
</tr>
<tr>
<td>670</td>
<td>Competitive Business Strategy</td>
<td>3</td>
</tr>
<tr>
<td>697</td>
<td>Independent Study in Marketing</td>
<td>3</td>
</tr>
<tr>
<td>698</td>
<td>Colloquium in Business</td>
<td>3</td>
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### Professional Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>690</td>
<td>Professional Responsibility</td>
<td>1</td>
</tr>
<tr>
<td>692</td>
<td>International Business</td>
<td>1</td>
</tr>
<tr>
<td>694</td>
<td>Applied Business Documentation and Contact</td>
<td>1</td>
</tr>
<tr>
<td>695</td>
<td>Internship in Business</td>
<td>1-3</td>
</tr>
<tr>
<td>696</td>
<td>Special Topics in Professional Development</td>
<td>1-3</td>
</tr>
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<tbody>
<tr>
<td>605</td>
<td>International Business Environments</td>
<td>3</td>
</tr>
<tr>
<td>630</td>
<td>International Marketing Policies</td>
<td>3</td>
</tr>
<tr>
<td>635</td>
<td>Multinational Corporations</td>
<td>3</td>
</tr>
<tr>
<td>637</td>
<td>Seminar in International Business</td>
<td>3</td>
</tr>
<tr>
<td>697</td>
<td>Independent Study in International Business</td>
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</table>

### Fine & Applied Arts Courses

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<tr>
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<tbody>
<tr>
<td>500</td>
<td>Art in the United States Before World War II</td>
<td>3</td>
</tr>
<tr>
<td>501</td>
<td>Special Topics in History of Art</td>
<td>1-3</td>
</tr>
<tr>
<td>502</td>
<td>Museology</td>
<td>3</td>
</tr>
<tr>
<td>505</td>
<td>History of Art Symposium</td>
<td>1-3</td>
</tr>
<tr>
<td>510</td>
<td>Methods of Teaching Elementary Art</td>
<td>3</td>
</tr>
<tr>
<td>511</td>
<td>Methods of Teaching Secondary Art</td>
<td>3</td>
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### Family and Consumer Sciences Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>500</td>
<td>Nutrition Communication and Education Skills</td>
<td>4</td>
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<td>501</td>
<td>American Families in Poverty</td>
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<td>503</td>
<td>Advanced Food Preparation</td>
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<td>504</td>
<td>Middle Childhood and Adolescence</td>
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<td>505</td>
<td>Family Financial Management</td>
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<td>507</td>
<td>FCS Occupational Employment Experience</td>
<td>4</td>
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<tr>
<td>518</td>
<td>History of Interior Design I</td>
<td>4</td>
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<tr>
<td>520</td>
<td>Experimental Foods</td>
<td>3</td>
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523 PROFESSIONAL IMAGE ANALYSIS 2 credits
Prerequisites: Senior status. Comparison of theories associated with projecting and maximizing one’s image to approximate professional image consistent with career goals and objectives.

524 NUTRITION IN THE LIFE CYCLE 3 credits
Prerequisite: 386. Study of the physiological basis for nutritional requirements; interrelating factors which affect growth, development, maturation and nutritional status from conception through the elderly years.

525 ADVANCED TEXTILES 2 credits
Prerequisite: 121. Evaluation of physical, aesthetic, comfort, and durability properties of textiles and techniques to determine suitability for desired end use.

527 GLOBAL ISSUES IN TEXTILES AND APPAREL 3 credits
Prerequisite: 139. Examines the global structure and scope of the textile and apparel industries emphasizing an economic perspective.

531 PROFESSIONAL PRESENTATION SKILLS IN FAMILY & CONSUMER SCIENCES 3 credits
Prerequisite: 141 or 250. Emphasis on development of abilities and strengths in coordination of educational materials, motion, speech, and presentation delivery relating to education and industry in Family and Consumer Sciences.

536 TEXTILE CONSERVATION 2 credits
Prerequisites: 121, 123, 371. Principles and practices of textile conservation with emphasis on processes appropriate for collectors and small historical agencies.

537 HISTORIC COSTUME 3 credits
Study of western costume and textiles from antiquity to 1850, with emphasis on social-cultural influences.

538 HISTORY OF FASHION 3 credits
Prerequisite: 207. Study of western fashion, textiles, and designers from the nineteenth 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 HUMAN SEXUALITY 3 credits
Prerequisite: 205 or permission of instructor. Introduction to problems and values. Emphasis is on the role of values in intimate relationships, the diverse dimensions of sexual responsibility.

546 CULTURE, ETHNICITY AND THE FAMILY 3 credits
Study of the role of culture and ethnicity in adaptation of the family system to environment. Program applications considered.

548 BEFORE AND AFTER SCHOOL CHILD CARE 3 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: 122 or equivalent. Theory and experience in clothing design using flat pattern techniques.

551 CHILD IN THE HOSPITAL 3 credits
Prerequisite: 265, comparable course or permission of instructor. Seminar dealing with special needs and problems of hospitalized child and family. Literature related to effects, separation, stress and stress. Examination of strategies for coping.

555 PRACTICUM EXPERIENCE IN A CHILD LIFE PROGRAM 3 credits
Prerequisite: 45/5531. 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 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 3 credits
Prerequisite: 461/561. 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.

563 PRACTICUM IN CROSS-SYSTEMS CASE MANAGEMENT FOR CHILDREN AND FAMILIES 2 credits
Prerequisites: 461/561, 462/562, and six hours of electives. Provides on-site opportunities to apply skills in cross-system collaborative Case Management with children and families. Includes analysis of strategies, strengths, and survival skills, and supervision.

570 THE FOOD INDUSTRY: ANALYSIS AND STUDY FIELD 3 credits
Prerequisite: 245 or 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.

575 ANALYSIS OF FOOD 3 credits
Prerequisite: 250/350. General chemistry or equivalent. Comprehensive course in the theory and practice of food analysis by classical and modern chemical and instrumental methods. Prerequisite emphasized by experimentation and demonstration.

576 DEVELOPMENTS IN FOOD SCIENCE 3 credits
Prerequisite: 246. Advanced study of the chemistry and physics of food components, affecting chemical and physical characteristics of foods. Critical evaluation of current basic and applied research emphasis.

580 COMMUNITY NUTRITION I-LECTURE 3 credits
Corequisite: 481 for CP student only. Socio-cultural aspects of community assessment, program planning, implementation, and evaluation, and rationales for nutrition services.

581 COMMUNITY NUTRITION I-CLINICAL 1 credit
Prerequisite: CP Students only 428. Corequisite: 480/580. Field placement in area agencies offering nutrition services. Study of the agency’s goals, organization, and philosophy of nutrition care. Credit/noncredit.

582 COMMUNITY NUTRITION II-LECTURE 3 credits
Prerequisites: 480/580 (483/583 for CP student only). Corequisite: 482/582 for CP student only. This course will focus on managing nutrition services for productivity (economic, community, and labor resources, and evaluation), and educating the dietitians “various publics” about nutrition.

583 COMMUNITY NUTRITION II-CLINICAL 1 credit
Prerequisite: CP students only 483/583. Corequisite: 482/582. Field placement in area agencies offering nutrition services. Study of the agency’s goals, organization, and philosophy of nutrition services. Credit/noncredit.

584 HOSPITAL SETTINGS, CHILDREN, AND FAMILIES 3 credits
Prerequisite: 265, comparable course or permission of instructor. Focuses on hospital as a major health institution; input and output procedures and functions of the hospital; roles played by various hospital personnel plus cursory knowledge of medical terminology, common childhood diseases, illnesses and injuries.

585 SEMINAR IN FAMILY AND CONSUMER SCIENCES 1 credit
Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas.

587 SPORTS NUTRITION 3 credits
Prerequisite: 265, 380, 465:270; 390/413 or 203 or permission of instructor. In-depth study of energy metabolism and utilization before, during, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations are emphasized.

588 PRACTICUM IN DIETETICS 1-3 credits
Prerequisite: approval of advisor/instructor. Practical experience in application of the principals of dietetics.

589 PROFESSIONAL PREPARATION FOR DIETETICS 1 credit
Prerequisite: open to those dietetics students in the Didactic Program or Graduate program who plan to apply for a Dietetic Internship. Historical aspects of dietetics and where the profession is going. Specialty areas of dietetics practice are explored. Students prepare the application for dietetric internship.

590 WORKSHOP IN FAMILY AND CONSUMER SCIENCES 1-3 credits
Prerequisite: at least junior standing. Investigation on current issue or topic in selected areas of family and consumer sciences. May be on off-campus study tour or an on-campus full-time group meeting.

591 CAREER-TECHNICAL FCS INSTRUCTIONAL STRATEGIES 3 credits
Prerequisite: senior standing or permission. Organization of Career-Technical Family and Consumer Sciences programs in public schools grades 4-12. Emphasis on strategies, compliance with state career-technical education standards, student assessment, and program planning.

594 PRACTICUM IN PARENT AND FAMILY EDUCATION 3 credits
Prerequisites: 596, 605. Provides on-site opportunities to apply parent and family education skills. Includes a review of strategies, ethical considerations, and supervision by the on-site director.

595 CHILD LIFE INTERNSHIP 5 credits
Prerequisite: Acceptance into the program. Field experience in a child life program at an approved pediatric facility under the supervision of Certified Child Life Specialists.

596 PARENT EDUCATION 3 credits
Prerequisite: 265, comparable course, or permission. Practical application that requires and analyzes various parenting techniques with major emphasis on the evaluation of parent education programs.

598 STUDENT TEACHING SEMINAR 1 credit
Corequisites: 650/655. Seminar for students currently enrolled in Family and Consumer Sciences student teaching. Emphasis on block and lesson plan development, licensure, portfolio development, PRAXIS II, professional development, and student teacher reflections.

602 FAMILY IN LIFE-SPAN PERSPECTIVE 3 credits
Study of individual and family development across life span. Emphasis on adjustment patterns and interpersonal competence. Implications for education, theory research and social policy.

603 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.

604 ORIENTATION TO GRADUATE STUDIES IN FAMILY AND CONSUMER SCIENCES 1 credit
Introduction to the concepts and processes necessary for graduate study in the interdisciplinary field of family and consumer sciences.

605 DEVELOPMENTAL PARENT-CHILD INTERACTIONS 3 credits
A comparative study of developmental theories of the child within the family context. Application of the theories to child rearing in the family will be emphasized.

606 ADVANCED HUMAN NUTRITION I 3 credits
Prerequisite: Undergraduate or graduate-level courses in nutrition and biochemistry. In-depth study of human nutrition emphasizing metabolism, physiological functions, and interrelationships of carbohydrate, protein and lipids and the determinants of human energy requirements.

607 ADVANCED HUMAN NUTRITION II 3 credits
Prerequisite: 624 or equivalent in-depth study of human nutrition and with emphasis in the utilization, physiological functions and interrelationships of vitamins and minerals.

609 PROBLEMS IN DESIGN 1-2 credits
(5 may be repeated, but no more than 6 credits will apply to the M.A.) Prerequisite: written proposal approved by faculty advisor. Individual solution of a specific design problem within the student’s area of clothing, textiles and interior specialization.

612 ADVANCED FOOD THEORY AND APPLICATIONS 3 credits
Prerequisite: 420/520 or permission. Advanced study of the chemistry and physics of food components, attesting the characteristics of foods. Critical evaluation of current basic and applied research emphasis.

613 MATERIAL CULTURE STUDIES 3 credits
Prerequisites: 265. Study of historical clothing, textiles, and interiors from a cultural and historical perspective.

619 THEORIES OF FASHION 3 credits
In-depth analysis of the theories underlying fashion and evaluation of current research related to the study of fashion.

640 NUTRITION IN MINIMIZED HEALTH 2 credits
Prerequisite: 428 or permission. An examination of concepts related to nutritional intervention associated with selected pathophysiological and debilitating conditions throughout the life cycle.

651 FAMILY AND CONSUMER LAW 3 credits
Study of laws which control and protect individuals within family. Emphasis on current trends, legal rulings. Course taught by attorney.

652 PROFESSIONAL PRESENTATION IN FAMILY AND CONSUMER SCIENCES 3 credits
Developing effective family and consumer sciences professional presentations. Emphasis on visuals, display demonstrations, public relations materials, user manuals, conference management, portfolio development, and learning styles.
665 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD 3 credits
Analysis of research and theoretical frameworks regarding infant and child development from birth to age five. Implications for guidance and intervention.

677 SOCIAL PSYCHOLOGY OF DRESS AND THE NEAR ENVIRONMENT 3 credits
Study of dress and the near environment as they relate to human behavior in the micro and macro level.

680 HISTORICAL AND CONCEPTUAL BASES OF FAMILY AND CONSUMER SCIENCES 3 credits
History of the field of family and consumer sciences with emphasis on the leaders and the conceptual basis of the field.

685 RESEARCH METHODS IN FAMILY AND CONSUMER SCIENCES 3 credits
A study of family and consumer sciences research methods emphasizing concept and theory development, policy application and ethical considerations.

698 PRACTICUM IN FAMILY AND CONSUMER SCIENCES 3 credits
Prerequisite: permission of advisor/instructor. A minimum of 150 hours of supervised experience in an approved supervised setting to acquire skills related to area of specialization.

690 THESIS/RESEARCH/READING 3 credits
Prerequisite: permission of thesis advisor. Supervised research and reading related to approved thesis topic. May be repeated once.

MUSIC

750: 2 credits

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 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. Review of basic music history of graduate students. Coverage extends from antiquity to the present. Both reading and listening assignments will be required.

532 TEACHING 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.

531 INTRODUCTION TO MUSICOLOGY 2 credits
Prerequisite: 352. Comparative musicology; aesthetics; theory of music history; historical musicology.

552 PROGRAMMING SOFTWARE SURVEY AND USE 2 credits
Prerequisite: 92 or permission of instructor. A survey and evaluation of available software in the various forms of musical instruction. Students will design a course suitable for submission to a prospective employer.

555 ADVANCED CONDUCTING: INSTRUMENTAL 2 credits (30 clinical hours)
Prerequisites: 361 and 442 or permission. Baton techniques and problems relating to practice, notation, rehearsal, preparation of scores, organization of ensembles; programming; conducting large instrumental ensembles. One hour required.

556 ADVANCED CONDUCTION: CHORAL 2 credits
Prerequisite: 361 or equivalent. Conducting techniques to the choral ensemble, including leadership, error detection, tonal development, stylistic analysis and performance. One hour lab required.

565 REPERTOIRE AND PEDAGOGY: ORGAN 3 credits
Prerequisite: permission of instructor. Survey of organ literature of all eras and styles, and of methods of teaching organ, applying principles to literature.

595 REPERTOIRE AND PEDAGOGY: STRING INSTRUMENTS 3 credits
Prerequisite: permission of instructor. Study in depth of the four bowed string instruments, their teaching and close relationship. Despite obvious difference in physical application of cello and viola, and methods of bowing, sound production and coloring are closely related. Application of the instruments to solo, chamber and orchestral playing.

567 GUITAR PEDAGOGY 2 credits
Prerequisite: permission of instructor. A systematic study 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. Comparative analysis of selected examples, student make original solo guitar arrangements of works written for other solo instruments.

570 HISTORY AND LITERATURE OF THE GUITAR AND LUTE 2 credits
Prerequisite: permission of instructor. Study of plucked, fretted, string instruments from the Renaissance to the present; construction, notation, literature and performance practices. Modern editions and recordings evaluated.

570 STUDIES IN CHORAL LITERATURE I: MEDIEVAL/RENAISSANCE 2 credits
A survey of choral repertoire in terms of general structure, style, technique, notation, and interpretation of dynamics, rhythm, articulation, and tempo.

571 STUDIES IN CHORAL LITERATURE II: 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 conduct an effective rehearsal which respond to the needs of the singers while maintaining stylistic integrity in executing the music.

579 WORKSHOP IN MUSIC 13 credits
Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate student must fulfill additional requirements.

581 CHORAL LITERATURE 2 credits
Prerequisite: permission of instructor. Study in depth of style, structure, technical demands, manners of setting text, and special performance problems found in masterworks by great choral composers of nine centuries.

590 DEVELOPMENT OF ORCHESTRA 2 credits
Prerequisite: permission of instructor. Growth and development of orchestra from 1600 to present. Includes detailed examination of structural and stylistic changes as well as performance practices.

595 BEGINNING ITALIAN I FOR SINGERS 2 credits
Instruction in given in grammar, pronunciation, and syntax in the Italian language. Classroom drills will involve reading in Italian with special attention to pronunciation for singing.

606 BEGINNING ITALIAN II FOR SINGERS 2 credits
Prerequisite: 605 or equivalent. Instruction is given in grammar, pronunciation, and syntax in the Italian language. Classroom drills will involve reading in Italian with special attention to pronunciation for singing.

609 PEDAGOGY OF JAZZ IMPROVISATION 3 credits
Prerequisite: permission of instructor. Methodology of improvisation and development of jazz improvisation.

611 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION 3 credits
Prerequisite: permission of instructor. Study of basic philosophical, historical, sociological and psychological concepts among which public school music programs function.

612 PRACTICALS AND TRENDS IN MUSIC EDUCATION 2 credits
Prerequisite: permission of instructor. In-depth exploration of innovative practices and trends in music education. Findings of research and practice related to prevailing situations in public school programs.

613 INSTRUCTIONAL PROGRAMMING IN MUSIC FOR THE MICROCOMPUTER 3 credits
Prerequisite: 452/553/ 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
Prerequisite: permission of instructor. Study and application of principles of music aptitude, music achievement and content evaluation; and research as a function of evaluation.

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 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 the period of 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 Wagner 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.

619 THEORY AND PEDAGOGY 2 credits
Prerequisite: permission of instructor. Methodology of theory teaching in 20th Century. Focus on differing philosophies of approach to theory instruction as noted from texts on subject. Recent innovations and theories of teaching, such as programmed material, computer-assisted instruction studied.

620 COMPUTER ANALYSIS IN MUSIC 2 credits
Prerequisite: a minimum of one course in the 615-618 series. A systematic study of analytical techniques in music which make use of the computer. Hands-on experiences with music encoding, card manipulation, interactive, systems and program writing as related to music analysis.

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 approach normal to study of music history; selected readings related to each student's particular fields of interest; project papers.

623 MUSIC HISTORY SURVEY: CLASSIC-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 approach normal 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 normal 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 literature; research methods for thesis preparation and professional publishing; field trips to music libraries, computerized music research.

627 COMPUTER STUDIO DESIGN 2 credits
The design and maintenance of music 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 pedagogical value 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 or 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 major majors. Forum for student and faculty providing lectures, recitals, and opportunities to practice for successful music performance.

665 VOCAL PEDAGOGY 3 credits  
Prerequisite: permission. In-depth study of subjects dealing with teaching of voice: physiology of vocal instrument, principles governing vocal production and application of vocal pedagogy.

666 ADVANCED SONG LITERATURE 3 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  
(3 credits, Intensive examination of special topics in the field of music education.

687 WORKSHOP IN CHORAL MUSIC EDUCATION 2 credits  
A seminar dealing with the selection of choral repertoire for multiple choir programs at all levels. Approaches to score preparation, programming, rehearsal, and vocal techniques will be studied.

687 ADVANCED PROBLEMS IN MUSIC 1-3 credits  
(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 698 for the additional credit. Once passed, may not be repeated for credit.

699 MASTER'S THESIS/PROJECT 1-3 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 as well as special University appearances. Major conducted ensemble.

604 SYMPHONIC BAND 1 credit  
Membership by audition. The University Symphonic 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 study. Coaching and rehearsal of solo and ensemble literature for voices of operatic, oratorio and lieder repertoire.

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 woodwind literature from all periods for various combinations of woodwinds. Develops performance skills and knowledge of woodwind literature.

614 KEYBOARD ENSEMBLE 1 credit  
Involves three hours a week of accompanying. Keyboard major required to enroll for at least three years. Music education major may substitute another musical organization for one year.

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 rehearse and performs a selected body of music.

620 CONCERT CHOIR 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.

626 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.

627 BLUE AND GOLD BRASS 1 credit  
The official band for Akron home basketball games. Membership is by audition.

628 UNIVERSITY BAND 1 credit  
This ensemble is active during spring Semester Only. This concert band is open to all members of the University Community.

629 BLUE AND GOLD BRASS II 1 credit  
The official band for Akron home ladies basketball games. Membership is by audition.

**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 100 for freshman, 200 for sophomore, etc. A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

521 PERCUSSION 522 CLASSICAL GUITAR 523 HARP 524 VOICE 525 PIANO 526 ORGAN 527 VIOLIN 528 VIOLA 529 CELLO 530 STRING BASS 531 TRUMPET OR CORNET 532 FRENCH HORN 533 TROMBONE 534 BARITONE 535 TUBA 536 FLUTE OR PICCOLO 537 OBOE OR ENGLISH HORN 538 CLARINET OR BASS CLARINET 539 BASSOON OR CONTRABASSOON 540 SAXOPHONE 541 HARPSICHORD 542 PRIVATE LESSONS IN MUSIC COMPOSITION 2-4 credits each  
(May be repeated) Prerequisites: 7500-254 and permission of instructor. Private instruction in composition. Primarily for student whose major is theory-composition.

563 JAZZ VOCAL STYLES 561-569 2 or 4 credits each  
Graduate study in applied music  
(May be repeated) Prerequisites: 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 HARPSICHORD 642 APPLIED COMPOSITION 661 JAZZ PERCUSSION 662 JAZZ GUITAR 663 JAZZ ELECTRIC BASS 664 JAZZ PIANO 665 JAZZ TRUMPET
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 national and international media, radio, television.

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: 201 or permission of the instructor. This class will look at how today's professional and para-professional practice online publishing. Students will work on writing and reporting skills needed in New Media.

517 NEW MEDIA PRODUCTION 3 credits
Prerequisites: 375 or permission of the instructor and 516. Covers practical applications of software to create on-line multimedia documents and explores design ideas for New Media content.

520 MAGAZINE WRITING 3 credits
An advanced writing class designed to develop the specialized reporting, researching, and writing skills needed in consumer and specialized business magazines today.

525 ELECTRONIC COMMUNICATION 3 credits
The student will conduct a thorough investigation of the business and production principles of electronic publishing of magazines.

535 COMMUNICATION IN ORGANIZATIONS 3 credits
Overview of theories and approaches for understanding communication flow and practices in organizations, including interdepartmental, networked, superordinate/subordinate, formal and informal communication.

536 ANALYZING 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; statistical analysis.

537 TRAINING METHODS IN COMMUNICATION 3 credits
Prerequisite: 345 or permission. 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 minority media decisionmakers as providers of media counterparts to these images.

554 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 their times.

559 LEADERSHIP AND COMMUNICATION 3 credits
Theories of leadership and communication across public, organizational, small group, interper- sonal, and political contexts. Assessment tools provided. Guest speakers.

562 ADVANCED MEDIA WRITING 3 credits
Prerequisites: 201, 260, 281 or equivalent. Practical applications of script writing principles and techniques, focusing on the skills and discipline required to finish an entire script.

568 NONLINEAR VIDEO EDITING 3 credits
Prerequisites: 283 or equivalent. 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 language, thought, and intellectual, social and political contexts.

581 FILM AS ART: AN INTRODUCTION TO THE FILM FORUM 3 credits
Explores the formal laws that govern a film acquainting the students with the film narrative and its stylistic elements.

590 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.

594 PRODUCTION PRACTICUM 3 credits
Prerequisite: permission. Practical application of writing, directing, management, recording, and editing skills in problems in electronic media production.

600 INTRODUCTION TO GRADUATE STUDY IN COMMUNICATION 3 credits
Introduction to the ideas and scholarship that constitute the various research interests in the department.

603 EMPIRICAL RESEARCH IN COMMUNICATION 3 credits
An introduction to elementary concepts of empirical and quantitative research and their application in studies of mass media research topics.

604 INTRODUCTION TO QUANTITATIVE RESEARCH IN COMMUNICATION 3 credits
Prerequisite: 603 or equivalent. An introduction to reading and understanding research designs employing basic parametric and nonparametric descriptive and hypotheses testing statistical models in mass media communication.

606 COMMUNICATION PROBLEMS IN THE BASIC SPEECH COURSE 1 credit
Designed to train a graduate student in methods and materials of introductory speech course. Required of all teaching graduate assistants.

608 COMMUNICATION PEDAGOGY 3 credits
Familiarizes students with aspects of teaching communication and media courses at the college level.

624 SURVEY OF COMMUNICATION THEORY 3 credits
Survey of the traditions of field of communication: information analysis, social interaction and semantic analysis.

625 THEORIES OF MASS COMMUNICATION 3 credits
A review of theories of mass media and studies exploring the effect of media.

628 CONTEMPORARY PUBLIC RELATIONS THEORY 3 credits
Study and practical application of communication concepts, theories and skills relevant to pub- lic relations programs in businesses and nonprofit organizations.

645 INTERCULTURAL COMMUNICATION THEORY 3 credits
Analysis of the impact on the communication process of cultural difference between commu- nicators; examination of existing literature in intercultural communication.

670 COMMUNICATION CRITICISM 3 credits
Introduces the basic elements, approaches and types of critical discourse as it is relevant to communication and mass media studies.

680 GRADUATE COMMUNICATION INTERNSHIP 1-8 credits
(May be repeated for a total of six credits.) Prerequisites: must have attained the category of full admission and be in good standing in the School's graduate program; must receive permission and approval of internship placement and research proposal. Provides communication graduate students with opportunity to obtain experience and to apply knowledge of academic concepts in a supervised working setting in the communication field.

681 ADVANCED COMMUNICATION STUDIES 3 credits
May be repeated for a total of six credits. Special topics in communication in areas of particular faculty expertise. Consult department for particular topic each semester.

687 GRADUATE RESEARCH IN COMMUNICATION 1-6 credits
May be repeated for a total of six credits. Prerequisites: 7800/800 and approval of project prospectus one term prior to undertaking the project. Performance of research on problems found in mass media communication.

688 MASTER'S PROJECT/PRODUCTION 1-6 credits
May be repeated for a total of six credits. Prerequisite: Permission of the school director.

699 MASTER'S THESIS 1-6 credits
May be repeated for a total of six credits. Prerequisite: Permission of the school director.

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY 7700:

530 ASPECTS OF NORMAL LANGUAGE DEVELOPMENT 3 credits
Not open to communicative disorders major. Introduction to acquisition and development of comprehension and production of language – phonologically, semantically and syntactically. Relates language acquisition to conceptual development of children and looks at functions and effects of language in individual, family and school.

540 AUGMENTATIVE COMMUNICATION 3 credits
Prerequisites: 530 or 490320 or permission of instructor. Overview of augmentative communi- cation-systems–candidates, symbol systems, devices, vocabulary, funding. Considers inter- disciplinary issues in assessment/intervention.

545 MULTICULTURAL CONSIDERATIONS FOR AUDIOLOGISTS AND SPEECH-LANGUAGE PATHOLOGISTS 2 credits
Prerequisite: 7700/110 or graduate standing. This course introduces the multicultural consider- ations faced by audiologists and speech-language pathologists providing services to families and individuals with communication disorders.

560 SPEECH-LANGUAGE AND HEARING DISORDERS IN THE PUBLIC SCHOOLS 2 credits
Not open to communicative disorders major. Nature, causes and treatment of speech, hear- ing and language disorders in public schools. Special reference to role of classroom teacher in identifying and referring students with speech and language disorders and in working with school clinician.

561 ORGANIZATION AND ADMINISTRATION: PUBLIC SCHOOL SPEECH-LANGUAGE AND HEARING PROGRAMS 2 credits
Prerequisites: Senior or graduate standing. For clinicians who plan to work in public school sys- tems. Covers program requirements and professional/ethical issues imposed by P.L. 94-142.

580 EARLY INTERVENTION FOR PRESCHOOLERS 2 credits
Prerequisite: graduate status. This course explores model programs currently being offered to the three to five year old population, with and without disabilities at two different levels.

585 DEVELOPMENTAL DISABILITIES 2 credits
Prerequisite: graduate status. Current practice related to clinical intervention designed for indi- viduals with developmental disabilities. Explores the use of the natural environment and the computer as intervention tools.

590 WORKSHOP: SPEECH-LANGUAGE PATHOLOGY AND/OR AUDIOLOGY 1-3 credits
May be repeated for a total of four credits. Prerequisite: course permission. Group investigation of particular phase of speech pathology and/or audiology not offered by other courses.

610 INSTRUMENTATION IN SPEECH PATHOLOGY AND AUDIOLOGY 2 credits
Principles and use of clinical and research instrumentation in speech and hearing.

611 RESEARCH METHODS IN COMMUNICATIVE DISORDERS 3 credits
Introduction to experimental design in field of communicative disorders.

612 RESEARCH METHODS IN COMMUNICATIVE DISORDERS II 3 credits
Prerequisite: 611. Advanced experimental methods; development of a research study.

620 ARTICULATION 2 credits
Historical background, current theories and research related to articulation, evaluation and treat- ment of articulation and phonology disorders.

622 SUPPORT SYSTEMS FOR INDIVIDUALS AND FAMILIES WITH COMMUNICATIVE DISORDERS 2 credits
Enhances students’ abilities to interview, provide educational information, and create support systems for persons with communicative handicaps and their families.

624 NEUROGENIC SPEECH AND LANGUAGE DISORDERS 3 credits
Prerequisite: graduate status. Course presents current theories and research related to neu- roanatomical etiology, diagnosis, classification and treatment of adult with neuropsychologically based communication disorders.

626 VOICE AND CLEFT PALATE 3 credits
Prerequisite: graduate status. Background and current research related to normal vocal and velopharyngeal function as well as the etiology, diagnosis, and treatment of voice and cleft palate.

627 STUTTERING: THEORIES AND THERAPIES 2 credits
Prerequisites: graduate status. This course provides information and discussion on theories, classification, diagnosis, and treatment of fluency disorders.

628 TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS 2-6 credits
May be repeated for a total of four credits. Prerequisite: permission of director of Speech and Hearing Center.

629 TOPICS: SPEECH PATHOLOGY AND AUDIOLOGY 2 credits
Prerequisite: permission of instructor. Selected current topics in clinical and/or experimental areas of speech pathology, audiology, or language. Emphasis on review of current and histor- ical literature.
360 CLINICAL ISSUES IN CHILD LANGUAGE 4 credits
Prerequisite: graduate status. Presents current research perspectives on child language disorders and possible methodologies in language assessment and intervention.

631 ACQUIRED BRAIN INJURY 3 credits
Prerequisites: permission of instructor. A study of behavioral deficits, stages of recovery, assessment techniques, and principles of cognitive rehabilitation related to closed head injury.

632 DIVERSITY 3 credits
Outlines etiology, assessment, and treatment for infants, children, and adults with feeding and swallowing disorders (dysphagia). It provides actual experiences in diagnosis and feeding technique issues.

633 PROFESSIONAL ISSUES 2 credits
Prerequisite: graduate status. Ethical, moral, and legal processes within current SLP professional issues are discussed. Students are encouraged to develop personal professional viewpoints and identity.

638 SEMINAR IN LANGUAGE AND SPEECH OF THE HEARING IMPAIRED 2 credits
Prerequisite: enrollment in a degree program and speech in hearing-impaired children, emphasis on the ch-Kay approach, and means of intervention. Communicative processes of hearing-impaired adults. Effect of conditions of minimal auditory stimulation and acoustic feedback on speech and language. Methods of speech conservation.

639 ADVANCED CLINICAL TESTING Theoretical basis for pure tone, speech tests, masking and acoustic impedance measure- ment techniques and current literature related to above tests.

650 ADVANCED CLINICAL PRACTICUM: SPEECH-LANGUAGE PATHOLOGY 4 credits
Prerequisite: Permission may be required. Supervised clinical practicum in evaluation and treatment of speech and language disorders; includes preparation of written reports.

669 EXTERNALS: SPEECH PATHOLOGY 3 credits
Prerequisite: Permission may be repeated once. Clinical practicum in a selected speech-lang uage pathology or audiology facility.

699 EXTERNALS SEMINAR 1 credit
(May be repeated once) Corequisite: 699. Taken concurrently with externship in speech-lang uage pathology. Review and discuss issues raised during extern experience.

701 BASIC AND APPLIED PHYSICAL ACOUSTICS FOR AUDIOLOGY 3 credits
Prerequisite: admission to the Au.D program or permission of instructor. Study of physical acoustics, basic electricity and electronics, as well as principles, methodology, calibration and maintenance of audiological equipment (includes 1 credit hour lab).

702 ANATOMY AND PHYSIOLOGY OF THE PERIPHERAL AUDITORY AND VESTIBULAR SYSTEMS 3 credits
Prerequisite: admission to the Au.D program or permission of instructor. A study of the anatomy, biophysics, and physiology of the auditory and vestibular systems.

703 ACOUSTIC PHENOMENA 4 credits
Prerequisite: admission to the Au.D program or permission of instructor. Study of the acoustics, measurement, and nomenclature of speech sounds and theoretical and acoustic bases of speech perception (includes 1 credit hour lab).

704 CRITICAL ANALYSIS OF RESEARCH IN AUDIOLOGY I 4 credits
Prerequisite: admission to the Au.D program or permission of instructor. General introduction to the research process with an emphasis on acquiring a reading knowledge of research and an ability to evaluate research.

705 AUDITORY DISORDERS 2 credits
Prerequisite: admission to the Au.D program. Study of conditions/diseases that can affect the auditory system.

706 ANATOMY AND PHYSIOLOGY UNDERLYING NEURO-OPTOLOGY 4 credits
Prerequisite: 702. An in-depth study of the anatomy and physiology of the central auditory and vestibular nervous systems (includes 1 credit hour lab).

707 PSYCHOACOUSTICS 3 credits
Prerequisite: admission to the Au.D program or permission of instructor. Study of the principles, psychophysics, and research methods in the psychoacoustics: the relationships between physical dimensions of auditory stimuli and the resultant perceptual experience with normal and impaired hearing.

708 CRITICAL ANALYSIS OF RESEARCH II 2 credits
Prerequisite: 704. Development of a reading knowledge of research and the ability to evalu- ate the quality of research studies.

711 AUDILOGIC ASSESSMENT 3 credits
Prerequisite: 705, 703. Theoretical basis for tests underlying basic audiologic assessments.

719 INDUSTRIAL AND COMMUNITY NOISE 3 credits
Prerequisite: admission to the Au.D program or permission of instructor. Theoretical principles of noise measurement; etiology of noise-induced hearing loss and occupational treatment, industrial hearing conservation program, Ocupational Health and Safety Act; community and recrea- tional music evaluation and management.

711 SPEECH-LANGUAGE PATHOLOGY FOR THE AUDIOLOGIST 4 credits
Prerequisite: admission to the Au.D program or permission of instructor. Examination of normal and abnormal aspects of speech and language including their impact on auditory function and testing.

712 DIAGNOSIS OF AUDITORY DISORDERS 3 credits
Prerequisite: 709. Underlying theory and principles of administration and interpretation of speech tests.

713 HEARING AID TECHNOLOGY 4 credits
Prerequisite: 701. Study of amplification systems for the hearing impaired.

714 GERONTOLOGICAL ISSUES IN AUDIOLOGY 3 credits
Prerequisite: admission to the Au.D program or permission of instructor. Physiological, psychological, and sociological theories of aging with a focus on the etiology, symptomatology, assessment, and habilitation of older adults with hearing impairments.

715 CENTRAL AUDITORY PROCESSING: EVALUATION AND MANAGEMENT 3 credits
Prerequisites: 705 and 706. Study of auditory evaluation and habilitation/rehabilitation pro- cedures for people having auditory difficulty.

716 ADULT HEARING AID FITTING AND SELECTION 3 credits
Prerequisite: 713. Examination of the theory and practice of hearing aid fittings. Emphasis on special pediatric procedures, research needs, and evolving technology in hearing instruments (includes 1 credit hour lab).

717 PEDIATRIC AUDIOLOGY 3 credits
Prerequisite: 709. Study of audiologic diagnostic and auditory habilitative protocols for the birth to 3 population. Both assessment and management strategies will be emphasized.

718 COCHLEAR IMPLANTS 3 credits
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.

719 COUNSELING IN AUDIOLOGY 3 credits
Prerequisite: admission to the Au.D. program or permission of instructor. Focus on interview- ing, counseling, and interacting with individuals with hearing impairments, their families, and significant others.

720 PEDIATRIC AMPLIFICATION 3 credits
Prerequisites: 719, 713. Focus of study is on amplification systems and fitting tech- niques for the pediatric population.

721 EVALUATION AND MANAGEMENT OF BALANCE DISORDERS 3 credits
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 disorders patient (includes 1 credit hour lab).

722 AUDIOLOGIC MANAGEMENT OF THE SCHOOL-AGED CHILD 3 credits
Prerequisite: 717. Focus on educational audiologic. Features delivery of audiological services designed to access the social environment for children ages 4-21.

723 AUDIOLOGIC REHABILITATION OF ADULTS 4 credits
Prerequisite: 716. Study of current methodologies employed in the audiological rehabilitation of adults with hearing impairments. Implementation of remedial strategies is emphasized.

724 HISTORY OF AUDIOLOGY 1 credit
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.

725 MEDICAL MANAGEMENT OF AUDITORY DISORDERS 2 credits
Prerequisite: 712. A study of the multidisciplinary approach to medical/surgical management of patients with auditory system disorders.

726 ELECTROPHYSIOLOGICAL TECHNIQUES IN AUDIOLOGY 2 credits
Prerequisite: 708. Study of evoked responses used in diagnostic audiology, including ABR, MEL, ECochG, ENOG, AIR, PLM, VR, VER, and SSER.

727 CULTURAL ISSUES IN DEAFNESS 3 credits
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 mem- bers of the deaf community.

728 SEMINAR IN AUDIOLOGY 2 credits
Prerequisite: admission to the Au.D. program or permission of instructor. Selected current top- ics in audiology with emphasis on review of current literature. Course may be repeated up to six times.

729 RESEARCH PROJECT IN AUDIOLOGY 3 credits
Prerequisite: admission to the Au.D. program or permission. Completion of a Doctoral Research Project including data collection, analysis, write-up, and oral presentation.

730 PRACTICE MANAGEMENT IN AUDIOLOGY 4 credits
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 prac- tice, reimbursement, marketing, record keeping and professional liability.

731 SEMINAR: SUPERVISED PROFESSIONAL EXPERIENCE 16 credits
Corequisites: 750 or 751. Basic course in supervised practicum in audiology. In depth consideration of topics/issues in the practice of audiology with emphasis upon issues related to clinical rotation issues. Repeat- able up to six times.

741 DIRECTED OBSERVATION IN AUDIOLOGY I 1 credit
Prerequisite: admission to the Au.D. program or permission of instructor. Introduction to clini- cal practicum in Audiology. Directed observation of clinical practice including audiological diag- nosis and audiological rehabilitation are required.

742 DIRECTED OBSERVATION IN AUDIOLOGY II 1 credit
Prerequisite: admission to the Au.D. program or permission of instructor. Introduction to clini- cal practicum in Audiology. Directed observation of clinical practice including audiological diag- nosis and audiological rehabilitation are required.

743 CLERKSHIP I 1 credit
Corequisite: 709. Clinical practicum in audiology during which students perform discrete tasks under supervision.

744 CLERKSHIP II 1 credit
Prerequisite: 741. Supervised clinical practicum in audiology during which students will per- form discrete clinical tasks while under supervision.

745 INTERNSHIP IN AUDIOLOGY I 2 credits
Prerequisite: 744. Supervised practicum in audiology requiring the independent performance of basic audiological procedures, including hearing aid management.

746 INTERNSHIP IN AUDIOLOGY II 3 credits
Prerequisites: 76, permission. Supervised clinical practicum in audiology requiring the independent performance of diagnostic audiology, hearing aids, and audiological rehabilitation procedures.

747 GRADUATE AUDIOLOGIST I 3 credits
Prerequisite: 746. Supervised clinical practicum in audiology which encompasses audiological assessments and audiological rehabilitation.

748 GRADUATE AUDIOLOGIST II 3 credits
Prerequisite: 746 and permission. Supervised clinical practicum in audiology which encompasses the entire range of audiological procedures including neurophysiological based proce- dures.

750 SUPERVISED PROFESSIONAL EXPERIENCE IN AUDIOLOGY I 14 credits
Prerequisites: 749 and permission and successful completion of the PRAxis Examination. Corequisite: 731. Full-time clinical practicum in audiology at an off-campus site.

751 SUPERVISED PROFESSIONAL EXPERIENCE IN AUDIOLOGY II 14 credits
Prerequisites: 750 and permission. Corequisite: 731. Full-time clinical practicum in audiology at an off-campus site.

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SOCIAL WORK 7750:

501 SOCIAL WORK PRACTICE I 2 credits
Prerequisite: 276 or permission of instructor. Basic concepts and methods of social work prac- tice, particularly relating to understanding and working with individuals and families.

502 SOCIAL WORK PRACTICE II 2 credits
Prerequisite: 401 or permission of instructor. Concepts and methods of social work practice par- ticularly relating to understanding and working with groups in various settings in our society.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>503</td>
<td>SOCIAL WORK PRACTICE III</td>
<td>3</td>
<td>Prerequisite: 401 or permission of instructor. Development of understanding and practical methods to facilitate coalition, implementation and social planning as social work process in assessing problems and developing programs to meet needs.</td>
</tr>
<tr>
<td>504</td>
<td>SOCIAL WORK PRACTICE IV</td>
<td>3</td>
<td>Prerequisite: 402 or permission of instructor. Professional social work practice with families in situations of family violence, the dynamics of family systems, assessment of family function and dysfunction, professional helping processes.</td>
</tr>
<tr>
<td>510</td>
<td>MINORITY ISSUES IN SOCIAL WORK PRACTICE</td>
<td>3</td>
<td>Prerequisite: 527 or permission of instructor. The course is offered only Fall Semester. Prerequisite: 400 or permission of instructor. A course which examines the multicultural issues and social work practice with minority groups, race and ethnicity, gender, sexual and gender identity, age, and sexual orientation, and the impact of these issues on the social work profession.</td>
</tr>
<tr>
<td>519</td>
<td>SOCIAL WORK ETHICS</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. Social Worker's code of ethics as applied to problems and issues in social work practice.</td>
</tr>
<tr>
<td>527</td>
<td>HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT I</td>
<td>3</td>
<td>Prerequisite: 427 or permission of instructor. For 527: permission of instructor. Social work practice on human development across the life cycle. Human diversity approach consistent with the needs of social work students preparing for practice.</td>
</tr>
<tr>
<td>530</td>
<td>HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT II</td>
<td>3</td>
<td>Prerequisites for 430: 276, 427 or permission of instructor; for 530: permission of instructor. Emphasis on social workers' understanding of and individual interaction and growth within a family as a group, roles, organizations, community, and culture.</td>
</tr>
<tr>
<td>540</td>
<td>SOCIAL WORK PRACTICE I</td>
<td>3</td>
<td>Prerequisites for 440: 426, 476 or permission of instructor for 540: permission of instructor. Social work practice and skill for successful social work practice with people involved in substance abuse.</td>
</tr>
<tr>
<td>541</td>
<td>SOCIAL WORK PRACTICE II</td>
<td>3</td>
<td>Prerequisite for 441:440 or permission of instructor; for 541: permission of instructor. Evaluation of social work intervention with individual, group, and community levels of social work practice and interpreting agency information for better practice, policy, and administrative decisions.</td>
</tr>
<tr>
<td>545</td>
<td>SOCIAL WORK PRACTICE I</td>
<td>3</td>
<td>Prerequisites for 445: 426, 476 or permission of instructor. A course that focuses on understanding of quantitative and qualitative methodologies and the use of descriptive and inferential statistics in analyzing research data.</td>
</tr>
<tr>
<td>550</td>
<td>SOCIAL WORK IN CHILD WELFARE</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. In-depth exploration of structure and functions of child welfare system, policy, and practice in child welfare settings.</td>
</tr>
<tr>
<td>554</td>
<td>SOCIAL WORK IN MENTAL HEALTH</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. Issues, organization, development, and methodologies of current professional social work practice in mental health settings.</td>
</tr>
<tr>
<td>555</td>
<td>SOCIAL WORK IN JUVENILE JUSTICE</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. Prerequisite: 402 or permission of instructor. The course is offered only Fall Semester. An examination of the role and function of social work in the juvenile justice systems of the United States. Traditional procedures and recent developments in programs, prevention, diversion, and community outreach, legal concerns, case management, institutional functioning.</td>
</tr>
<tr>
<td>556</td>
<td>SOCIAL WORK IN COMMUNITY HEALTH SERVICES</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. Policies, programs and practice in health-care settings: short-term, intermediate and long-term, hospitals, outpatient services, emergency ser- vices, day clinics, day hospitals, day treatment, home services, nursing homes, pediatrics services, self-help organizations.</td>
</tr>
<tr>
<td>558</td>
<td>ADULT DAY CARE</td>
<td>3</td>
<td>Prerequisite: 458: 578 or permission of instructor; for 558: permission of instructor. Plan, implement, evaluation and delivery of adult day care services.</td>
</tr>
<tr>
<td>559</td>
<td>SOCIAL WORK WITH THE MENTALLY RETARDED</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. Application of social work principles in the provision of services to meet the need of the mentally retarded and developmentally disabled and their families.</td>
</tr>
<tr>
<td>565</td>
<td>ADMINISTRATION AND SUPERVISION IN SOCIAL WORK</td>
<td>3</td>
<td>Prerequisite: 404 or permission of instructor. Preparation for use of supervision, staff development program planning in a social work agency. Evaluates the social worker/agency interface as it affects its organizational goal-setting and program-implementation problems.</td>
</tr>
<tr>
<td>570</td>
<td>LAW FOR SOCIAL WORKERS</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. Basic terminology, theories, principles, organization, and procedures of law will be explored along with the relationships between social work and law and comparisons of the theoretical bases of the two professions.</td>
</tr>
<tr>
<td>575</td>
<td>SUBSTANCE ABUSE AND SOCIAL WORK PRACTICE</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. Prerequisite: 402 or permission of instructor. A course that examines the social work practice with substance-abusing clients with the essential knowledge and skills that will be successful in social work practice with people involved in substance abuse.</td>
</tr>
<tr>
<td>580</td>
<td>SPECIAL TOPICS IN SOCIAL WORK AND WELLNESS</td>
<td>3</td>
<td>Prerequisite: permission of instructor. Analysis of current social work and social welfare theories, methods, and techniques as they are integrated into effective social work methodology.</td>
</tr>
<tr>
<td>590</td>
<td>INDIVIDUAL INVESTIGATIONS IN SOCIAL WORK PRACTICE</td>
<td>3</td>
<td>Prerequisite: 567 or permission of instructor. A course that examines the social work practice with individuals, families and small groups and the application of a range of theory bases.</td>
</tr>
<tr>
<td>602</td>
<td>FOUNDATION FIELD PRACTICUM</td>
<td>3</td>
<td>Prerequisites: second of two field practicum courses to be taken in the first year of the MSW program. A two-semester, 400 clock hour, supervised internship at a social service agency. Credit/Noncredit. (Offered only Fall Semester.)</td>
</tr>
<tr>
<td>603</td>
<td>ADVANCED FIELD PRACTICUM</td>
<td>3</td>
<td>Prerequisites: first of two field practicum courses to be taken in the second year of the MSW program. A two-semester, 650 clock hour, supervised internship in a social service agency, based on the student's concentration and specialization. Credit/Noncredit. (Offered only Fall Semester.)</td>
</tr>
<tr>
<td>604</td>
<td>ADVANCED FIELD PRACTICUM</td>
<td>3</td>
<td>Prerequisites: second of two field practicum courses to be taken in the second year of the MSW program. A two-semester, 650 clock hour, supervised internship in a social service agency, based on the student's concentration and specialization. Credit/Noncredit. (Offered only Spring Semester.)</td>
</tr>
<tr>
<td>605</td>
<td>SOCIAL WORK PRACTICE WITH LARGE SYSTEMS</td>
<td>3</td>
<td>Prerequisite: 604 or permission of instructor. Provides the basic knowledge, skills, and strategies of social work practice with task groups, organizations and communities.</td>
</tr>
<tr>
<td>607</td>
<td>ADVANCED PRACTICE WITH SMALL SYSTEMS</td>
<td>3</td>
<td>Prerequisite: second level graduate standing or permission of instructor. This course focuses on the differential assessment of individuals, families and small groups and the application of a range of theory bases.</td>
</tr>
<tr>
<td>608</td>
<td>ADVANCED PRACTICE WITH SMALL SYSTEMS</td>
<td>3</td>
<td>Prerequisite: 704 or permission of instructor. As a continuation of Advanced Practice I, this course focuses on the development and implementation of intervention strategies with and on behalf of small systems.</td>
</tr>
<tr>
<td>609</td>
<td>SOCIAL WORK PRACTICE WITH SMALL SYSTEMS</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. Provides the basic knowledge, skills, professional ethics and values necessary for beginning social work practice with small client systems.</td>
</tr>
<tr>
<td>611</td>
<td>DYNAMICS OF RACISM AND DISCRIMINATION</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. Provides an introduction to the logic of scientific inquiry, the research process, and the relationship between research and practice.</td>
</tr>
<tr>
<td>612</td>
<td>FUNDAMENTALS OF RESEARCH I</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. Provides students with an understanding of quantitative and qualitative methodologies and the use of descriptive and inferential statistics in analyzing research data.</td>
</tr>
<tr>
<td>613</td>
<td>HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT: SMALL SOCIAL SYSTEMS</td>
<td>3</td>
<td>Prerequisites: graduate status or permission of instructor. Provides an integrative view of social work practice with an emphasis on values, foundation knowledge and skills, and evaluation of professional interventions.</td>
</tr>
<tr>
<td>614</td>
<td>HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT: LARGE SOCIAL SYSTEMS</td>
<td>3</td>
<td>Prerequisites: 611 or permission of instructor. This course focuses on the human behavior of people as members of larger social systems including formal and informal organizations, communities and institutions.</td>
</tr>
<tr>
<td>646</td>
<td>SOCIAL WELFARE POLICY</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. Examines the historical, philosophical and value bases of social welfare as well as the relationship between social work practice, policy and service delivery.</td>
</tr>
<tr>
<td>647</td>
<td>SOCIAL WELFARE POLICY</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. This course prepares students with the beginning skills to engage in social policy/practice analysis.</td>
</tr>
<tr>
<td>650</td>
<td>ADVANCED STANDING INTEGRATIVE SEMINAR</td>
<td>6</td>
<td>Prerequisites: status as graduate student or permission of instructor. Provides students with an understanding of qualitative and quantitative methodologies and the use of descriptive and inferential statistics in analyzing research data.</td>
</tr>
<tr>
<td>656</td>
<td>SOCIAL WORK PRACTICE WITH GAYS AND LESBIANS</td>
<td>3</td>
<td>Prerequisites: status as graduate student or permission of instructor. This course examines gay and lesbian culture and lifestyles, discrimination based on sexual orientation, and intervention strategies appropriate to practice with gays and lesbians.</td>
</tr>
<tr>
<td>663</td>
<td>PSYCHOPATHOLOGY AND SOCIAL WORK</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. An examination of the symptoms, theories, and treatments of various aspects of mental illness, and the role of the social worker in the treatment of mental disorders.</td>
</tr>
<tr>
<td>664</td>
<td>DIRECT PRACTICE RESEARCH</td>
<td>3</td>
<td>Prerequisite: status as 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.</td>
</tr>
<tr>
<td>665</td>
<td>SUPERVISION AND STAFF DEVELOPMENT</td>
<td>3</td>
<td>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 in supervision/staff development; and problems encountered.</td>
</tr>
<tr>
<td>671</td>
<td>SOCIAL WORK ADMINISTRATION</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. Emphasizes the historical development and application of several community-based strategies utilized to identify community problems, and how to organize and empower diverse community groups.</td>
</tr>
<tr>
<td>672</td>
<td>STRATEGIES OF COMMUNITY ORGANIZATION</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. Emphasizes the historical development and application of several community-based strategies utilized to identify community problems, and how to organize and empower diverse community groups.</td>
</tr>
<tr>
<td>673</td>
<td>COMMUNITY ORGANIZATION AND PLANNING</td>
<td>3</td>
<td>Prerequisite: status as graduate student or permission of instructor. Provides an integrative view of social work practice with an emphasis on values, foundation knowledge and skills, and evaluation of professional interventions.</td>
</tr>
<tr>
<td>674</td>
<td>COMMUNITY, ECONOMIC SYSTEMS AND SOCIAL POLICY ANALYSIS</td>
<td>3</td>
<td>Prerequisites: status as graduate student or permission of instructor. This course provides an introduction to the logic of scientific inquiry, the research process, and the relationship between research and practice.</td>
</tr>
<tr>
<td>675</td>
<td>PROGRAM EVALUATION</td>
<td>3</td>
<td>Prerequisites: status as graduate student or permission of instructor. This course provides students with an understanding of quantitative and qualitative methodologies and the use of descriptive and inferential statistics in analyzing research data.</td>
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</tbody>
</table>

**Graduate Courses**

121
THE UNIVERSITY OF A KRON 2004-2005

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 AGING AND SOCIAL WORK PRACTICE 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination and evaluation of aging programs and policies, demographic trends and the changing role of social work service providers.

681 AGING: POLICIES AND PROGRAMS 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination and evaluation of aging programs and policies, demographic trends and the changing role of social work service providers.

685 SOCIAL WORK PRACTICE: FAMILY AND CHILDREN 3 credits
Prerequisite: second level graduate student or permission of instructor. Examines the major problems encountered by children and families in the life cycle and explores intervention strategies and programs to address their needs and strengths.

686 SOCIAL WELFARE POLICY AND SERVICES: FAMILY AND CHILDREN 3 credits
Prerequisite: second level graduate student or permission of instructor. Examines the federal and state laws, policies and programs governing children and families, including the supportive, supplemental and substitute 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 working with people involved in substance abuse, evaluating programs, and preventive work.

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.

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 planning, evaluation, and program planning.

THEATRE 7800:

567 CONTEMPORARY THEATRE STYLES 3 credits
A detailed examination of representative plays of the contemporary theatre.

570 THEATRE IN EDUCATION 3 credits
An in-depth experience with current theories, methods, and materials in P-12 theatre education and the use of drama in the classroom. Field experience provided when possible.

576 ACTING FOR THE MUSICAL THEATRE 3 credits
Prerequisite: permission. A scene study course in analyzing and performing roles in American musicals. Accompanied by voice/movement lab.

600 RESEARCH AND WRITING TECHNIQUES 3 credits
Exploration of the basic research tools and methods appropriate to the discipline, including utilization of the computer. Guidelines for writing thesis.

603 SPECIAL TOPICS IN THEATRE ARTS 1-4 credits (May be repeated as different subject areas are covered, but no more than 12 credits may be applied toward M. A. degree)
Traditional and experimental courses in theatre, supplementing those listed in the General Bulletin.

605 COLLOQUIUM ON THE ARTS 3 credits
A brief exploration of the major visual and performing arts and organizations examined in relationship to the business management of arts. Team-taught.

641 PROBLEMS IN DIRECTING 3 credits
Advanced directing course with special emphasis on staging of complex plays from all periods of dramatic literature.

643 SEMINAR IN DRAMATIC LITERATURE 3 credits
Representative Western stage play (non-American) are examined in theatrical, historical, and critical/theoretical contexts.

646 GRADUATE ACTING: TECHNIQUES 3 credits
Advanced study of acting in the theatre of today, especially Stanislavski, through analysis and performance. Voice/Movement Lab required.

648 GRADUATE ACTING: PROBLEMS 3 credits
Study of problems confronting the advanced actor in various modern styles of performance. Voice/Movement Lab required.

658 SEMINAR IN SCENE DESIGN 3 credits
Prerequisite: 106 or undergraduate scene design course or permission of instructor. Study of problems theory and practice in scene design, construction of flats, drapery, and properties and techniques in multimedia.

659 HISTORY OF THEATRE 3 credits
Theatre history from the Greeks to the present with emphasis on physical theatre, conventions, and theatre architecture of each period.

660 HISTORY AND THEORY OF STAGE LIGHTING 3 credits
Historical survey of evolution of stage lighting culminating in understanding of modern lighting design skills and their practical application. Term paper or major project required.

661 ADVANCED TECHNICAL THEATRE 3 credits
Processes including multiple set productions, revolves and their rigging, techniques in simple and complex set designs, and the use of new technologies in theatre.

662 SEMINAR IN SCENE DESIGN 3 credits
Prerequisite: 106 or undergraduate scene design course or permission of instructor. Study of problems in scene design, design of sets and scenic properties, research of noted designers, studies of theatre spaces, and new scenic technologies.

665 AUDIENCE DEVELOPMENT 3 credits
Developing audiences for the arts through Arts marketing techniques, including season and single ticket campaigns, promotional strategies, media/public relations, market research, and marketing automation.

666 PRINCIPLES OF ARTS ADMINISTRATION 3 credits
Principles and practices in non-profit arts management, including organizational structure, function of boards, personnel and volunteer management, and public policy for the arts.

682 FUNDRAISING AND GRANTMAINTSHIP IN THE ARTS 3 credits
Techniques and execution of a development campaign for individuals, corporations, foundations, federal and state grants, and endowment, including research and proposal writing.

690 GRADUATE RESEARCH/READINGS 1-3 credits (May be repeated for a total of nine credits)
Prerequisite: permission. Individual research or independent readings under supervision of member of graduate faculty.

691 ARTS ADMINISTRATION PRACTICES AND POLICIES 3 credits
Financial management of the arts, facilities management, presenting performances, touring, and unique management problems in non-profit theatre companies, dance companies, orchestras, and museums.

692 LEGAL ASPECTS OF ARTS ADMINISTRATORS 3 credits
Legal responsibilities and liabilities of arts organization, contracts, copyright law, insurance, labor laws, artists' rights, personnel law, and labor law.

698 INTERNSHIP 3 credits
Prerequisite: permission. Faculty supervised work experience in which student participates in an arts management, performance or technical situation with a selected cultural organization.

699 MA THESIS 3 credits
Prerequisite: permission of graduate coordinator of theatre arts program. Research related to the completion of the master's thesis.

THEATRE ORGANIZATIONS 7810:

601 PRODUCTION PRACTICUM/DESIGN/TECHNOLOGY 12 credits
Prerequisite: permission of instructor. Practice in selected production design/technology operations, applications and techniques as they apply to production projects and technical departmental productions.

605 PERFORMANCE PRACTICUM 12 credits
Prerequisite: may be repeated for a total of 12 credits) Prerequisite: permission of project advisor. Recognition of work undertaken by the student when performing a role in a theatre production. Credit assigned and work supervised by faculty project supervisor.

DANCE PERFORMANCE 7920:

590 WORKSHOP IN DANCE 1-3 credits
Prerequisite: 5070:225, 5070:225 or 600; corequisite: 225 or 650. Emphasis on clinical psychology and health care will be considered.

512 GLOBAL PERSPECTIVES OF HEALTH AND HEALTH CARE 2 credits
Prerequisite: Senior or graduate status. May be repeated for a maximum of 6 credits. Cultural, political, educational, and 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 1 5 credits
Prerequisite: 6900:525, 523, 520 and 6900:225 or 650; corequisite: 225 or 650. Emphasis on clinical psychology and health care will be considered.

554 SCHOOL NURSE PRACTICUM II 5 credits
Prerequisite: 5070:521, 523, 520 and 6900:225 or 650. Emphasis on clinical psychology and health care will be considered.

561 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE I 3 credits
Prerequisite: acceptance into Graduate School. This course presents in-depth study of physiological processes in the areas of neurological, neuromuscular and cardiovascular physiology and their interrelationship with therapeutic agents.

662 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE II 3 credits
Prerequisite: 627. This course is focused on nursing informatics to enhance positive health behavior outcomes of children/adolescents with minor health or behavioral problems and chronic illnesses.

691 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE I 3 credits
Prerequisite: acceptance into Graduate School. This course presents in-depth study of neurological, neuromuscular and cardiovascular physiology and their interrelationship with therapeutic agents.

557 SPECIAL TOPICS: NURSING 14 credits
May not be used as new topics are presented. Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit.

593 WORKSHOPS 14 credits
May be repeated as new topics are presented. Selected topics in nursing. May be used to meet undergraduate/graduate requirements at the discretion of the college.

598 SPECIAL READINGS 14 credits
May not be used as new topics are presented. Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. Special readings may not be used to satisfy requirements of the major.

603 THEORETICAL BASIS FOR NURSING 3 credits
Prerequisite: Admission to the Graduate Program. Overview of essential nursing science. Evaluation and critique of nursing conceptual models. Analysis of the relationships of theory, research, and practice.

606 INFORMATION MANAGEMENT IN ADVANCED NURSING PRACTICE 3 credits
Prerequisite: Admission to MSN Program, completion of Statistics and/or successful completion of NURS 613 Nursing Inquiry I. Corequisite: 613. This course is focused on nursing informatics to support clinical decision making in advanced practice and administration.

607 POLICY ISSUES IN NURSING 3 credits
Prerequisite: Admission to Graduate Program. Analysis of policy issues that impact on nursing and health care delivery to diverse populations. Examine methods to shape policy, distribution, and allocation of resources.

608 PATHOPHYSIOLOGICAL CONCEPTS OF NURSING CARE 3 credits
Prerequisite: Admission to the Graduate Program. In-depth study of pathological conditions and related treatment modalities. The course focuses on specific nursing interventions relating to diagnosis and clinical management.

610 ADVANCED ADULT/GERONTOLOGICAL ASSESSMENT 3 credits
Prerequisite: Admission to Graduate Program, admission to Advanced Practice Nursing tracks, 500, 521, 527 or permission of instructor. Corequisite: 524. Advanced adult/gerontological assessment and clinical reasoning in primary health care nursing with introduction to differential diagnosis and clinical management.
612 ADVANCED CLINICAL PHARMACOLOGY
Prerequisites: Admission to Graduate Program, 608. Students who believe or know that they have a disability should register with ACCESS, Office of Disability. The University of Akron, 612. Examines principles of pharmacology and therapies for major pharmacologic agents used by Advanced Practice Nurses to manage adult/gerontological problems in primary health care settings. 3 credits

613 NURSING INQUIRY I
Prerequisites: Graduate level statistics, admission to Graduate Program. Concepts and ethical issues related to scientific inquiry are examined, emphasizing the phases of the research process. Students participate in critical analysis of nursing research. 3 credits

618 NURSING INQUIRY II
Prerequisite: Consent of instructor. Emphasis on development of competencies in scientific inquiry. Research practice will involve at least a pilot study; or participation in faculty research. 3 credits

620 ADULT/GERIOTRONOMICAL HEALTH NURSING NP I
Prerequisite: Admission to Adult/Gerontology Nurse Practitioner track: corequisite: 610. Research and theory integral to advanced nursing practice of adults/older adults/families with selected common health problems. Emphasis on comprehensive assessment, health promotion, and risk reduction for common health problems of adults/older adults. 2 credits

621 ADULT/GERIOTRONOMICAL HEALTH NURSING NP II
Prerequisite: 610,620, corequisite: 680. Focuses on problems common to acute illness in adults, older adults in acute, episodic care settings. Multidisciplinary care planning and coordination are emphasized, including transition to community-based care. 2 credits

622 ADULT/GERIOTRONOMICAL HEALTH NURSING NP III
Prerequisites: 621, 680, corequisite: 692. Focuses on nursing care of middle aged/older adults and their families experiencing chronic illness. Emphasizes management of problems common to acute and chronic illness states. 2 credits

623 PRACTICUM: ADULT/GERIOTRONOMICAL HEALTH NURSING NP
Prerequisite: 622; corequisite: 684. Integration of nursing knowledge and skills with an advanced adult population and their families. Emphasis on implementation and evaluation of programmatic interventions. 3 credits

627 ADULT/GERIOTRONOMICAL HEALTH NURSING NP I PRACTICUM
Prerequisites: Consent of Adult/Gerontology Nurse Practitioner program or Post-Master's Adult/Gerontology NP program: corequisite: 610. Practicum with emphasis on comprehensive assessment, health promotion, and risk reduction for common health problems of adults/older adults. 2 credits

628 ADULT/GERIOTRONOMICAL HEALTH NURSING NP II PRACTICUM
Prerequisites: 610, 620, or acceptance into Post-Master's Adult/Gerontology NP program, 622,680, corequisite: 621 or acceptance into Post-Master's Adult/Gerontology NP program. Practicum with emphasis on health appraisal/risk reduction and common, uncomplicated acute or chronic illness states of the adult/older adults/families. 2 credits

629 ADULT/GERIOTRONOMICAL HEALTH NURSING NP III PRACTICUM
Prerequisites: 628, 680, corequisite: 692. Practicum with emphasis on complex chronic illness states and Comorbidities of the adult/older adult. 3 credits

630 RESOURCE MANAGEMENT IN NURSING SETTINGS
Prerequisites: Admission to Graduate Program or permission of instructor: Examines management of fiscal and human resources in nursing service settings; analyzes impact of economic forces on policy related to health and nursing care. 3 credits

632 FISCAL MANAGEMENT IN NURSING ADMINISTRATION
Prerequisites: Admission to Graduate Program or permission of instructor: Examines management of fiscal resources in nursing service settings. 3 credits

633 LEADERSHIP IN NURSING ORGANIZATIONS I
Prerequisites or Corequisites: 630, 632, 635. Leadership and management theories are utilized to guide practice in the role of nurse administrator. 3 credits

634 LEADERSHIP IN NURSING ORGANIZATIONS II
Prerequisites: 633, 638. Leadership and management theories are utilized to guide study of the role of nurse administrator. 3 credits

640 SCIENTIFIC COMPONENTS OF NURSE ANESTHESIA
Prerequisite: Admission into the Nurse Anesthesia program. The course presents content dealing with the chemical and physical components of anesthesia agents. 3 credits

641 PHARMACOLOGY FOR NURSE ANESTHESIA I
Prerequisite: 640. The study of intravenous induction agents, injectable anesthetics and inhalation anesthetics commonly used in the administration of general anesthesia. Includes use of muscle relaxants. 3 credits

642 INTRODUCTION TO NURSE ANESTHESIA
Prerequisite: admission into the Nurse Anesthesia program. This course provides a general overview of anesthetic concepts and prepares students for their in-hospital residency. The course includes a lecture component and selected laboratory experiences. 2 credits

643 PRINCIPLES OF ANESTHESIA I
Prerequisite: 640. This course focuses on the acquisition of basic skills related to nursing anesthesia care and administration of anesthesia agents, with a focus on equipment. 4 credits

644 PHARMACOLOGY FOR NURSE ANESTHESIA II
Prerequisite: 641. Focuses on mechanisms of drug transport within the human body for parenterally administered medications. The effects of accessory drugs are also discussed. 3 credits

645 PRINCIPLES OF ANESTHESIA II
Prerequisite: 643. Emphasis on pre-operative anesthesia care including induction techniques. Discusses administration of anesthetic, fluid therapy, and ventilator use. 4 credits

646 NURSE ANESTHESIA RESIDENCY I
Prerequisite: 637 Concentration on the theoretical basis for specific nursing interventions and the theoretical basis for their use in thoracic anesthesia, cardiac anesthesia, vascular anesthesia, and neurosurgical anesthesia management. 3 credits

647 PROFESSIONAL ROLE SEMINAR
Prerequisites: 644, 645. Discusses issues, concepts and theories related to the professional role of nurse anesthetists. Focuses on leadership/management content as well as professional ethical issues. 2 credits

648 NURSE ANESTHESIA RESIDENCY II
Prerequisite: 646. Focuses on the understanding of physiologic and pathophysiologic principles of particular organ systems and the relevant implication that govern anesthetic management. 4 credits

649 NURSE ANESTHESIA RESIDENCY IV
Prerequisite: 648. Comprehensive review of basic and advanced anesthetic concepts important to the entry-level nurse anesthetist. 4 credits

650 ADvanced PEDIATRIC/ADOLESCENT ASSESSMENT
Prerequisite: Admission to Child and Adolescent Health Nursing I and 608, or permission of faculty; corequisite: 651. Advanced pediatric/adolescent assessment and clinical reasoning for primary health care nursing with introduction to differential diagnosis and clinical management. 3 credits

651 CHILD AND ADOLESCENT HEALTH NURSING I
Primary care nursing to enhance positive health behaviors outcomes of well children/adolescents and those with minor health disruptions and problems in family/community contexts. 3 credits

652 CHILD AND ADOLESCENT HEALTH NURSING I PRACTICUM
Prerequisite: Admission to Child and Adolescent Health Nursing I track: corequisite: 653. Child and Adolescent Health Nursing I NP program. Clinical practicum course emphasizing primary health care nursing to enhance positive health behavior outcomes of well children/adolescents and those with minor health disruption/problems in family/community contexts. 2 credits

653 CHILD AND ADOLESCENT HEALTH NURSING II PRACTICUM
Prerequisite: 651. Clinical practicum course emphasizing primary health care nursing to enhance positive health behavior outcomes of children/adolescents with acute and/or chronic health disruption in family/community contexts. 2 credits

654 CHILD AND ADOLESCENT HEALTH NURSING III PRACTICUM
Prerequisite: 652. Clinical practicum course emphasizing primary health care using consultation and program development, marketing related to development and implementation of care to children/adolescents, and families. 2 credits

655 CHILD AND ADOLESCENT HEALTH NURSING II
Emphasis on primary health care nursing to enhance positive health behavior outcomes of children/adolescents with acute and/or chronic health disruptions in family/community contexts. 3 credits

656 PHARMACOLOGY FOR CHILD AND ADOLESCENT HEALTH NURSING
Prerequisite: Admission to Graduate Program. Emphasis on major categories of pharmacologic agents, that influence growth and development and potential outcomes of children/adolescents in ambulatory, acute and chronic care environments. 3 credits

657 CHILD AND ADOLESCENT HEALTH NURSING III
Emphasis on advanced practice in primary health care using consultation and program development/marketing related to developmental and health behavior outcomes of children/adolescents, and families. 3 credits

658 CHILD AND ADOLESCENT HEALTH NP INTERNSHIP
Prerequisites/corequisites: Post-MSN CAH certification program students—651 and 655 or MSN CAH students: 655 and 657. Opportunity for the advanced graduate nursing practitioner in Child and Adolescent Health Nursing. 1–4 credits

693 PRACTICUM: CHILD AND ADOLESCENT HEALTH NURSING
Prerequisite: 657. Integration of knowledge and skills with a specified population of children/adolescents and their families. Emphasis on implementation of programmatic intervention and evaluation. 5 credits

694 BEHAVIORAL HEALTH NURSING I PRACTICUM
Prerequisites: 608,660,661. Development of clinical competencies in direct intervention techniques in the delivery of behavioral health care to individuals. 2 credits

695 BEHAVIORAL HEALTH NURSING I
Prerequisite: Admission to the program. Focuses on the theories, concepts, and techniques utilized in the delivery of behavioral health care to individuals. Theoretical framework for direct intervention are examined. 3 credits

696 CLINICAL PSYCHOPHARMACOLOGY
Prerequisites: 608 or permission of instructor: corequisite: 612. Examines principles of neuroscience, pharmacology and therapeutics for psychopharmacologic agents used to manage mental health problems. 2 credits

697 BEHAVIORAL HEALTH NURSING INTERNSHIP
Prerequisites: 661, 665. Focuses on behavioral health interventions with families and groups. Theoretical framework for direct intervention are examined. 1–4 credits

698 BEHAVIORAL HEALTH NURSING II PRACTICUM
Prerequisites: 608,660,661. Development of clinical competencies in direct intervention therapies with families/groups experiencing the stress of actual or potential health problems. 2 credits

699 BEHAVIORAL HEALTH NURSING II
Prerequisites: 608, 660, 661. Focuses on advanced practice behavioral health nursing with families/groups experiencing the stress of actual or potential health problems. Theoretical frameworks for direct intervention are examined. 3 credits

700 BEHAVIORAL HEALTH NURSING III
Prerequisites: 660, 661,664, 665. Focuses on consultation, collaboration and program development in behavioral health nursing practice. Frameworks for practice in psychiatric and non-psychiatric settings are discussed. 3 credits

780 PRACTICUM: BEHAVIORAL HEALTH NURSING
Prerequisites: 672. This course utilizes consultation and program development in behavioral health nursing practice. Practice is in psychiatric and non-psychiatric settings. 2 credits

772 INDEPENDENT STUDY
Opportunity for advanced graduate nursing practice in a selected area of specialization. 1–4 credits

773 ADULT/GERIOTRONOMICAL HEALTH NURSING I
Prerequisites: Admission to the MSN program or permission. Development of clinical competencies in the clinical role of advanced practice nursing of adult/older adults/families with selected common health problems with focus on comprehensive assessment, health promotion and risk reduction. 2 credits
835 NURSING AND HEALTH CARE POLICY
Prerequisite: Admission to the Ph.D. Program or permission of the professor. Critical examination of policies and promotional strategies that affect health care delivery. (KSU 70735)

836 ADVANCED INTERDISCIPLINARY LEADERSHIP FOR THE HEALTH SCIENCES
Prerequisites: Admission to the Ph.D. Program or permission of the professor. Seminar on advanced leadership in healthcare and the health sciences to assist students to become leaders within practice, academia, and the community. (KSU 70735)

837 ADVANCED HEALTH CARE STATISTICS
Prerequisite: 827 and admission to the Ph.D. Program or permission of instructor. This course synthesizes and applies knowledge of advanced multivariate and statistical techniques commonly used in health care and nursing research. (KSU 70735)

840 NURSING SCIENCE SEMINAR I
Prerequisite: 820. Seminar on critical analysis and synthesis of theoretical models and empirical research that form the foundation for the student's research. Funding sources are examined. (KSU 86091, 86291, 86391)

841 MEASUREMENT IN NURSING RESEARCH
Prerequisite: 820 and admission to the Ph.D. Program or permission of instructor. Theories and concepts related to measurement and nursing research including techniques for construction, testing, and refining measurement instruments with assessment of reliability and validity. (KSU 86091, 86191, 86192)

847 APPLICATION OF QUALITATIVE METHODS
Prerequisite: 820 and admission to the Ph.D. Program or permission of instructor. Achieve an in-depth understanding of one qualitative research approach (chosen by student according to higher research plans), including associated philosophical foundations, key concepts, typical methods, and evaluative criteria. (KSU 86091, 86191, 86192)

848 NURSING PROGRAM EVALUATION IN NURSING
Prerequisites: 660 and admission to the Ph.D. Program or permission of instructor. Seminar and lecture; analysis of theories and models of program evaluation and their relationships to design, processes, techniques, and instruments in nursing related evaluations. (KSU 86091, 86191, 86192)

849 GRANT DEVELOPMENT AND FUNDING
Prerequisite: 820 and admission to the Ph.D. Program or permission of instructor. Advanced seminar on critical analysis of proposal and grant development, funding, peer review, and advocacy process with emphasis on the development of a grant proposal. (KSU 86091, 86191, 86192)

850 NURSING SCIENCE SEMINAR II
Prerequisites: 820 and 840. Focus on advancement of student's scholarship within one of the following areas: discovery, teaching, or application through design and implementation of a faculty/facilitated project. (KSU 70735)

851 EVALUATION IN NURSING EDUCATION
Prerequisites: 820 and admission to the Ph.D. Program or permission of instructor. Seminar on critical analysis of proposal and grant development, funding, peer review, and advocacy process with emphasis on the development of a grant proposal. (KSU 70735)

852 PRACTICUM: ACADEMIC ROLE OF THE NURSE EDUCATOR
Prerequisites: 861, 862, 863. Precepted study and practice in the role of a nurse educator. Each student presents lecture content and provides clinical supervision to a group of students. (KSU 70735)

853 CRITICAL THINKING IN NURSING
Prerequisite: admission to Adult/Gerontological Nursing Practitioner certificate program. Focus on critical thinking and problem solving skills using evidence-based clinical reasoning. (KSU 70735)

854 ACUTE CARE NURSE PRACTITIONER I
Prerequisites: 608, 610, 612. Focus on common chronic and acute problems of adults in primary/ternary health care settings. Emphasis on health promotion and risk assessment. (KSU 70735)

855 ACUTE CARE NURSE PRACTITIONER II
Prerequisite: 691 corequisite: 692. Focus is on advanced nursing interventions related to systemic health care problems of adults in tertiary care settings. (KSU 70735)

856 ACUTE CARE NURSE PRACTITIONER III
Prerequisites: 681, 682, 683. Precepted study and practice in the role of a nurse educator. Each student presents lecture content and provides clinical supervision to a group of students. (KSU 70735)

857 CLINICAL MANAGEMENT I
Prerequisites: admission to Adult/Gerontological Nursing Practitioner track or the Post-MSN NP Adult/Gerontological track and 620 or its equivalent for the Post-MSN student. Corequisites: 624, 626, 628. Critical management of chronic common and acute problems of adults in primary health care settings. Focus on episodic management using differential diagnosis and clinical reasoning. (KSU 70735)

860 NURSING SCIENCE SEMINAR
Prerequisites: 820 and admission to the Ph.D. Program or permission of instructor. Seminar and lecture; analysis of theories and models of program evaluation and their relationships to design, processes, techniques, and instruments in nursing related evaluations. (KSU 86091, 86191, 86192)

861 EVALUATION IN NURSING EDUCATION
Prerequisites: 820 and admission to the Ph.D. Program or permission of instructor. Seminar on critical analysis of proposal and grant development, funding, peer review, and advocacy process with emphasis on the development of a grant proposal. (KSU 70735)

862 FIELD EXPERIENCE IN NURSING
Prerequisite: Admission to the Ph.D. Program or permission of instructor. Individual enrolment in clinical practice in specialty or partnership settings related to nursing. (KSU 70735)

863 SPECIAL TOPICS IN NURSING
Prerequisite: Admission to the Ph.D. Program or permission of instructor. Study of important topics in nursing practice, research, or the profession. Offering in response to existing interests and opportunities. Topics will be announced when scheduled. (KSU 70735)

864 INDIVIDUAL INVESTIGATION IN NURSING
Prerequisite: Admission to the Ph.D. Program or permission of instructor. Individual enrollment for independent study in nursing carried out by student under supervision of a doctoral faculty member. (KSU 70735)

865 RESEARCH IN NURSING
Prerequisite: Admission to the Ph.D. Program or permission of instructor. Research carried out by student under faculty supervision. In-depth inquiry should result in a paper or appropriate product. (KSU 70735)

866 DOCTORAL DISSERTATION
Prerequisite: Advancement to candidacy. (May be repeated) Independent dissertation research under the guidance of a faculty chairperson and a dissertation committee. (KSU 80099)

867 NURSING AND HEALTH CARE POLICY
Prerequisite: Admission to the Ph.D. Program or permission of the professor. Critical examination of policies and promotional strategies that affect health care delivery. (KSU 70735)

868 BIOSTATISTICS IN PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Biostatistics basics, statistical inference, central tendency tests, analysis of variance, survival analysis, and applications in public health. Epi Info and JMP statistical packages. (KSU 70735)

869 EPIDEMIOLOGY IN PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Epidemiological concepts, methods, and public health applications. Student presentations to focus on special topics such as infectious diseases, chronic conditions, etc. (KSU 70735)

870 NURSING AND HEALTH CARE POLICY
Prerequisite: Admission to the MPH program. Organizational structure, history, law, ethics, essential services, global problems, and future of public health. (KSU 70735)

871 SOCIAL AND BEHAVIORAL SCIENCES IN PUBLIC HEALTH
Prerequisites: Admission to the MPH program. Theories of health education and promotion, interventions (communication, collaboration, and strategies); socio-cultural, diversity, and regional issues as pertains to public health. (KSU 70735)

872 EPIDEMIOLOGY IN PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Epidemiological concepts, methods, and public health applications. Student presentations to focus on special topics such as infectious diseases, chronic conditions, etc. (KSU 70735)

873 BIOSTATISTICS IN PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Biostatistics basics, statistical inference, central tendency tests, analysis of variance, survival analysis, and applications in public health. Epi Info and JMP statistical packages. (KSU 70735)

874 HEALTH SERVICES ADMINISTRATION IN PUBLIC HEALTH
Prerequisites: admission to the MPH program. Administration principles, planning and evaluation, grant-writing, economics, policy, data sources, and applications to public health. (KSU 70735)

875 ENVIRONMENTAL HEALTH SCIENCES IN PUBLIC HEALTH
Prerequisites: admission to the MPH program. Water quality, food hygiene, sanitation, solid waste management, hazardous materials management, vectorborne disease, occupational health, and environmental issues, legislation, and implementation and response. (KSU 70735)

876 GRANT WRITING IN PUBLIC HEALTH PRACTICE
Prerequisite: Admission to the MPH program. Elective course for MPH students with minimum grant writing experience. Methods and techniques for writing grant proposals to fund health programs and special health programs. (KSU 70735)

877 SPECIAL TOPICS IN PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Elective course for MPH students with minimum grant writing experience. Methods and techniques for writing grant proposals to fund health programs and special health programs. (KSU 70735)

878 PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Organizational structure, history, law, ethics, essential services, global problems, and future of public health. (KSU 70735)
Polymer Science & Polymer Engineering

POLYMER ENGINEERING 9841:

525 INTRODUCTION TO BLENDING AND COMPOUNDING POLYMERS
3 credits
Prerequisite: 4200:321 or 4600:310 or permission. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers. Mixing Mechanisms.

527 MOLD DESIGN
3 credits
Prerequisite: 4200:321 or 4600:310 or permission. Molding methods to manufacture polymeric parts. Machinery, materials, molds, equipment, computer-aided design.

550 ENGINEERING PROPERTIES OF POLYMERS
3 credits
Prerequisite: 4600:336 or permission. Introduction to engineering properties and polymer processing. Analyzing mechanical polymer tests in glass, rubbery, and fluid states. Product design, rheology, morphology, and polymer processing concepts.

551 POLYMER ENGINEERING LABORATORY
3 credits
Prerequisite: 4200:321; corequisite: 422. Laboratory experiments on the rheological characterization of polymer melts, fabrication of engineering products, structural investigation of polymer parts.

601 POLYMER ENGINEERING SEMINAR
1 credit
Presentations of recent topics on polymer engineering by internal and external speakers.

611 STRUCTURAL CHARACTERIZATION OF POLYMERS WITH ELECTROMAGNETIC RADIATION
2 credits

621 RHEOLOGY OF POLYMER FLUIDS
3 credits
Experimental methods of determination of rheological properties of polymer melts, solutions, elastomers. Stress-flow behavior relationships, viscoelastic fluid theory, application to extrusion, fiber, film processing molding. Structural development in processing experiments.

622 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS I
3 credits
Prerequisite: 621. Mathematical modeling and engineering design analysis of polymer processing operations including extruder screws, injection molds, dies, fibers, film formation.

623 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS II
3 credits
Prerequisite: permission of instructor. Basic studies on non-isothermal phenomena in polymer engineering emphasizing crystallization, vitrification, frozen-in orientation and residual stress, applications, including fiber spinning and film extrusion.

631 ENGINEERING PROPERTIES OF SOLID POLYMERS
2 credits
Thermal properties as a function of polymer structure, optical characteristics, mechanical including ultimate properties, viscoelastic behavior of elastomers and plastics, large strain behavior. Engineering design by experimental methods.

641 POLYMERIC MATERIALS ENGINEERING SCIENCES
2 credits
Physico-chemical properties of amorphous and crystalline polymers. Glass transitions, crystalization, molecular orientation and morphology of important commercial polymers, fabrication of products and composite materials.

642 ENGINEERING ASPECTS OF POLYMER COLOIDS
2 credits
Thermodynamic properties of polymer colloids, solgel rheology, polymer of solutions, gels, suspensions and emulsions, phase separation, applications to paints and plastic technologies.

650 INTRODUCTION TO POLYMER ENGINEERING
3 credits
Basic concepts of general and polymer engineering taught in lecture-recitation format intended for orientation of new graduate students. Intention is to team-teach the class.

651 POLYMER ENGINEERING LABORATORY
3 credits
Prerequisite: permission of instructor. Course focuses on the fundamental aspects of nanotechnology in general and basic knowledge of polymerization nanoscience and nanotechnology in particular.

661 POLYMERIZATION REACTOR ENGINEERING
3 credits
Prerequisite: permission of instructor. Course focuses on the fundamental aspects of polymerization in batch and continuous stirred tank reactors, flow patterns around agitators, tubular reactors, reactor stability.

670 POLYMER NANOCOMPOSITES
3 credits
Prerequisite: permission of instructor. Course focuses on the fundamental aspects of polymerization in batch and continuous stirred tank reactors, flow patterns around agitators, tubular reactors, reactor stability.

675 CARBON-POLYMER NANOTECHNOLOGY
3 credits
Prerequisite: permission of instructor. Course focuses on the fundamental aspects of polymerization in batch and continuous stirred tank reactors, flow patterns around agitators, tubular reactors, reactor stability.

680 POLYMER COATINGS
3 credits
Prerequisite: permission of instructor. Course focuses on the fundamental aspects of polymerization in batch and continuous stirred tank reactors, flow patterns around agitators, tubular reactors, reactor stability.

699 MASTER’S THESIS
16 credits
(May be repeated) Supervised original research in specific area of polymer engineering.

711 ADVANCED ELECTROMAGNETIC AND OPTICAL PROPERTIES AND INVESTIGATIONS OF POLYMERS
2 credits
Prerequisite: permission of instructor. Theory of dielectric, electret, birefringence and dichroism and representation of orientation, optical instruments, piezoelectricity, scattering and diffraction of x-rays and light, Mie scattering, applications.

712 RHEOLOGY OF POLYMERS
2 credits
Prerequisite: permission of instructor. Applications of rheo-optical methods as means of determining stress fields in polymer glasses and fluids during deformation, rheo-optical properties of polymers in glassy, rubbery and fluid states. Theory of dynamic viscoelasticity and implication to mechanical relaxations of amorphous and semi-crystalline polymers, and recent experimental results.

713 RADIATION SENSITIVITY AND DIFFRACTION BY POLYMERIC MATERIALS
2 credits
Prerequisite: permission of instructor. Applications of x-rays and light, Mie scattering, analysis and determination of crystal structures, mathematical description of orientation distribution of polymer and determination of orientation factors by X-ray and other methods.

720 MOLECULAR ASPECTS OF POLYMER RHEOLOGY
2 credits
Prerequisite: permission of instructor. Molecular theory for concentrated solutions and melts of flexible homopolymers, molecular rheology of miscible polymer blends, block copolymers, and liquid crystalline polymers.

721 RHEOLOGY AND PROCESSING TWO-PHASE POLYMER SYSTEMS
2 credits
Prerequisite: permission of instructor. Principles of analysis and design and theory of polymer processing, composites and two-phase polymer systems.

722 ADVANCED MODELING OF POLYMER PROCESSING
2 credits
Prerequisite: permission of instructor. Modeling of processing operations including extrusion molding, fiber spinning, coating, and film processing.

723 RHEOLOGY AND PROCESSING OF ELASTOMERS
2 credits
Prerequisite: permission of instructor. Rheology of rubber melts, extrusion, injection molding, and vulcanization molding.

724 ADVANCED EXTRAUSION AND COMPOUNDING
2 credits
Prerequisite: permission of instructor. Principles of analysis and design and theory of polymer processing, composites and two-phase polymer systems.

725 CHEMORHEOLOGY AND PROCESSING OF THERMOSETS
2 credits
Prerequisite: permission of instructor. Rheological behavior of thermosets, vulcanization of rubbers, time-temperature-transition relationships in thermosets, reaction injection molding, compression molding, vulcanization.

727 ADVANCED POLYMER RHEOLOGY
2 credits
Prerequisite: permission of instructor. Mathematical modeling and engineering design analysis of polymer processing operations including extruder screws, injection molds, dies, fibers, film formation.

728 NUMERICAL ANALYSIS OF POLYMER PROCESSING OPERATIONS
2 credits
Prerequisite: permission of instructor. Principles of analysis and design and theory of polymer processing, composites and two-phase polymer systems.

731 STRESS ANALYSIS OF POLYMERS AND COMPOSITES
2 credits
Prerequisite: permission of instructor. Stress analysis of polymer melts, fabrication of engineering products, structural investigation of polymer parts.

741 PHASE TRANSFORMATIONS IN POLYMERIC MATERIALS
2 credits
Prerequisite: permission of instructor. Engineering design analysis of polymer processing operations including extruder screws, injection molds, dies, fibers, film formation.

742 POLYMER BLENDS AND ALLOYS
2 credits
Prerequisite: permission of instructor. Basic studies on non-isothermal phenomena in polymer engineering emphasizing crystallization, vitrification, frozen-in orientation and residual stress, applications, including fiber spinning and film extrusion.

743 LIQUID CRYSTALS
2 credits
Prerequisite: permission of instructor. Structure of low molecular weight and polymeric liquid crystals, characterization, physical properties including optical properties, phase transitions, structure-property relationships, processing of polymeric species.

744 ADVANCED POLYMER COATING TECHNOLOGY
2 credits
Prerequisite: permission of instructor. Basic studies on non-isothermal phenomena in polymer engineering emphasizing crystallization, vitrification, frozen-in orientation and residual stress, applications, including fiber spinning and film extrusion.

745 LIQUID CRYSTALS
2 credits
Prerequisite: permission of instructor. Structure of low molecular weight and polymeric liquid crystals, characterization, physical properties including optical properties, phase transitions, structure-property relationships, processing of polymeric species.

746 ADVANCED FUNCTIONAL POLYMERS
2 credits
Prerequisite: permission of instructor. Advanced studies involving flows of polymeric fluids through channels of single and twin-screw extruders and dies and molds with the aid of commercial software such as Polymers and Moldflow.

747 ADVANCED TOPICS IN POLYMER ENGINEERING
2 credits
(May be repeated) Prerequisite: permission of instructor. Advanced special topics intended for Ph.D. students in polymer engineering.

898 PRELIMINARY RESEARCH
1-6 credits
May be repeated) Prerequisite: completion of qualifying examination. Approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

899 DOCTORAL DISSERTATION
1-6 credits
(May be repeated) Prerequisite: completion of candidacy examination by Student Advisory Committee. Original research by Ph.D. candidate.

POLYMER SCIENCE 9871:

601 POLYMER CONCEPTS
2 credits
Prerequisite: 350:264 and 350:314 or equivalent courses or permission of instructor. Introduction to basic concepts in polymer science, including polymerization, copolymerization processes, and nature and properties of polymers, Polymer nomenclature, definitions and classifications. Polymer stereochemistry and structure-property relationships.

602 SYNTHESIS AND CHEMICAL BEHAVIOR OF POLYMERS
2 credits
Prerequisite: 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 and purification.

604 SPECIAL PROJECTS IN POLYMER SCIENCE
1-3 credits
Prerequisite: permission. Research projects of limited nature assigned to student entering thesis year. Projects limited in scope and time, and their applications. Preparation and technology using batch and continuous mixers. Mixing Mechanisms.

699 MASTER’S THESIS
16 credits
(May be repeated) Supervised original research in specific area of polymer engineering.
6078 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 or corequisites: at least one of the courses 601, 631, 674, or 701, or permission of instructor. Laboratory experiments in synthesis, characterization, physical properties and processing and testing of polymers.

615 LABORATORY COMPUTER APPLICATIONS IN POLYMER SCIENCE 3 credits
Prerequisites: Basic knowledge of computer programming and permission of instructor. Laboratory use of computers in polymer science research for data acquisition, data analysis, 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; time-dependent 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; semicrystalline polymers; viscoelasticity; rubber elasticity; rubber vulcanization.

674 POLYMER STRUCTURE AND CHARACTERIZATION 2 credits
Prerequisites: 3150:313 and 3150:214 or permission of instructor. Presentation of statistical description of polymer molecular properties including chain 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 polymeric 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
Prerequisite: 701 or permission of instructor. Rubber industry, rubber compounding and processing; vulcanization; rubber testing, plastics preparation and compounding, manufacturing processes. Lecture/laboratory.

703 POLYMER TECHNOLOGY III 2 credits
Prerequisite: 702 or permission of instructor. Flow properties, extrusion, calendaring and milling, molding, mixing, bond operations, engineering properties, rubber springs, viscoelastic analysis and design consideration. Lecture/laboratory.

704 CONDENSATION POLYMERIZATION 2 credits
Prerequisites: 3150:463/563 or permission of instructor. Survey of the theory and practice of condensation polymerization. Numerous commercial examples are presented with special emphasis being placed on the properties and applications of polymers prepared by this technique. Structure-property relationships are highlighted for each major polymer class.

705 FREE RADICAL REACTIONS IN POLYMER SCIENCE 2 credits
Prerequisite: 674 or permission of instructor. Covers the kinetics and mechanisms of free radical initiated reactions encountered in polymer science, including polymerization methods, detailed considerations of the initiation, propagation and termination steps in vinyl polymerizations and copolymerization, preparation of block and graft copolymers by free radical initiated reactions and the mechanisms of free radical induced polymer degradation reactions.

706 IONIC AND MONOMER INSERTION REACTIONS 2 credits
Prerequisites: 3150:463/563 or permission of instructor. Covers the scope, kinetics and mechanisms of polymerization initiated by anions, carbenium ions and cationic ions as well as polymerizations induced by coordination catalysts. Living polymerizations, molecular weights, molecular weight distributions, stereochemistry, solvent effects, counterion effects, temperature effects, Ziegler-Natta catalysts, olefin metathesis, functionalization of polymers, graft and block copolymer synthesis.

711 SPECIAL TOPICS: POLYMER SCIENCE 3-12 credits
Prerequisite: permission. Topics of current interest in polymer science, encompassing chemistry, physics or technological aspects of macromolecular substances, including laboratory work where applicable.

712 SPECIAL TOPICS: POLYMER SCIENCE 2 credits
Prerequisite: permission. Topics of current interest in polymer science, encompassing chemistry, physics or engineering aspects of macromolecular science.

899 DOCTORAL DISSERTATION 1-18 credits
Open to properly qualified students accepted as candidates for Doctor of Philosophy in Polymer Science depending on the availability of staff and facilities.

APPENDICES

Grievance Procedures for Graduate Students

Purpose
The procedures set forth in this document are intended to provide graduate students with a formal channel of appeal and redress of grievances arising out of their academic and/or employment relationship with the University.

Procedures
1. Any graduate student who believes that he or she has valid grounds for a complaint shall attempt to resolve the problem through a conference with the faculty member involved, the department head, and/or the graduate advisor. Following that, the student may attempt to resolve the problem with the assistance of the academic dean. A graduate student presenting a case to the academic dean must provide a full written statement of the grievance, together with all appropriate supporting material. When or if the problem has not been adequately 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: 1) the Dean of the Graduate School wishes to have a Hearing Committee render a recommendation on the grievance; or 2) the student wishes to appeal the recommendation of the Dean of the Graduate School. The student must notify the Senior Vice President and Provost in writing within one week of notification of the Dean of the Graduate School’s decision on the complaint.

4. Upon receipt of the grievance, the Senior Vice President and Provost shall notify in writing the President of Graduate Student Government that a Hearing Committee should be constituted. The Hearing Committee shall be organized in no more than two weeks.

5. When the grievance has been filed with the Chairperson of the Hearing Committee, it shall be the responsibility of that Chairperson to notify in writing all parties involved in the grievance within five working days. This notification shall include the following information: that a grievance has been filed; the nature of the grievance; and the parties involved.

6. If the charged party in that grievance admits the validity of the grievance, the Chairperson of the Hearing Committee shall waive the hearing and shall direct an appropriate resolution in consultation with the Hearing Committee.

7. If the party charged in the grievance denies the validity of the grievance, the Hearing Committee shall conduct the hearing.

8. At any point in the grievance process, the Chairperson may extend the deadlines with the mutual consent of all parties.

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 chosen at random from an established pool selected by the Graduate Council 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. A graduate student not involved with the complainant and not from the complainant’s department, 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. A faculty member not involved with the complainant and not from the complainant’s department, 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.
   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.
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 three 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. The Hearing Committee shall recommend a resolution to the Dean of the Graduate School.
3. The Dean of the Graduate School shall recommend a resolution to the Senior Vice President and Provost.
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. The Hearing Committee shall recommend a resolution to the Dean of the Graduate School.
3. The Dean of the Graduate School shall recommend a resolution to the Senior Vice President and Provost.

**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.
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 located in the Office of the Vice President for Student Affairs.
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 located in the Office of the Vice President for Student Affairs.

Right to File a Complaint
You have the right to file a complaint with the Family Educational Rights and Privacy Act Office at the Department of Education, 600 Independence Avenue, S.W., Washington, D.C., 20202-3887, (202) 260-9001, 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. Director (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) 972-6097.

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 authored 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 (e.g., sponsors such as corporations and individuals seeking certain research from the University). The University and the principal investigator may have agreed to maintain this proprietary information in confidence. In some situations, proprietary information of a sponsor 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 forms 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 is subject to confidentiality provisions. 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 in 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 and/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 a re-evaluation of valid inventors. However such as re-evaluation by patent counsel shall only occur with the prior knowledge of your faculty advisor, Department Chair and Dean.
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.

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College of Polymer Science and Polymer Engineering

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Political Science, 33, 95
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