Fall Semester 2003

Day and evening classes begin: Mon., Aug. 25

*Labor Day (day and evening) Mon., Sept. 1

Spring 2004 graduation applications due Mon., Sept. 15

Veterans Day (classes held; staff holiday) Tues., Nov. 11

**Thanksgiving Break Thu.-Sat., Nov. 27-29

Classes resume Mon., Dec. 1

Final instructional day Sat., Dec. 6

Final examination period Mon.-Sat., Dec. 8-13

Commencement Sat., Dec. 13

Winter Intercession Mon.-Sat., Dec. 15-Jan. 10

Spring Semester 2004

Day and evening classes begin: Mon., Jan. 12

*Martin Luther King Day Mon., Jan. 19

Summer 2004 graduation applications due Mon., Feb. 16

*Presidents’ Day Tue., Feb. 17

Spring Break Mon.-Sat., Mar. 22-27

Classes resume Mon., Mar. 29

Final instructional day Sat., May 1

Final examination period Mon.-Sat., May 3-8

Commencements Sat.-Sun., May 8-9

Summer Sessions I, II and III 2004

First 5- and 10-week Sessions begin Mon., May 10

Fall 2004 graduation applications due Fri., May 15

Commencement for School of Law Sun., May 16

*Memorial Day Mon., May 31

First 5-week Session ends Sat., Jun. 12

Second 5- & 10-week Sessions begin Mon., Jun. 14

*Independence Day Mon., Jul. 5

First 10- and second 5-week Sessions end Sat., Jul. 17

Third 5-week Session begins Mon., Jul. 19

Second 10- and third 5-week Sessions end Sat., Aug. 21

Summer Commencement Sat., Aug. 21

*Classes cancelled (day and evening)

**Classes cancelled from Wednesday at 5 p.m. through Monday at 6:45 a.m.

The Graduate Bulletin is a supplement to The University of Akron Undergraduate Bulletin. The Undergraduate Bulletin contains information on undergraduate degree programs, non-degree continuing education programs, and additional information on the policies of The University of Akron.
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 (4836)

Graduate School
Vice President for Research, & Dean, Graduate School
Dr. George R. Neuwome ........................................ 972-6458
Interim Director, Graduate Outreach Programs
Dr. Giannina D'Agruma ....................................... 972-6266
Assistant to the Vice President for Research & Dean, Graduate School
Mrs. Doli Quattrocchi Gold ................................. 972-6737
Senior Executive Administrative Assistant
Mrs. Cynthia S. Angersten ................................... 972-6458
Administrative Assistant Senior
Ms. Heather A. Blake ......................................... 972-7664
Coordinator, Graduate Student Financial Aid
Mrs. Karen L. Caldwell ...................................... 972-6310
Examiner Associate
Ms. Elicia Calhoun ........................................... 972-2411
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 Student Government
Billi F. Copeland ............................................. 972-8233

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

Important Phone Numbers

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)
The connection between The University of Akron and its surrounding community has been a recurring theme in its history. The institution was founded as a small denominational college in 1870 and has grown to its current standing as a major metropolitan, state-assisted university. It is significant that the efforts, energy, and financial support of an Akron manufacturer of farm equipment, John R. Buchtel, were instrumental in persuading the Ohio Universalist Convention to build its college on a hill overlooking the town that stretched along the Ohio Canal. The grateful trustees responded by naming the school Buchtel College. It is also significant that during its first four decades, the struggling institution was 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 causes 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 198 to nearly 10,000.

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

Changes within the Municipal University’s curriculum reflected the strong inter-relationship 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 (1924), Fine and Applied Arts (1967), and Nursing (1967).

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

Research, innovation, and creativity actively take many forms at the University—
in the sciences and in the arts and humanities. Today, University faculty study ways of matching workers with jobs to maximize performance; develop new ways to synthesize fuel; write and produce plays, pen poetry, choreograph dance works; explore improved methods of tumor detection; evaluate water quality in northeast Ohio; provide speech and hearing therapy to hundreds of clients; aid the free enterprise system by sharing the latest in business practices with new and established companies alike; provide health care in community clinics; and study political campaign financing and reform. Faculty are awarded research each year for work on new technologies and products. The University of Akron’s continuing centrality 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 1882. 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 163, 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 120,000 and include scientists, engineers, artists, lawyers, educators, nurses, writers, business people, and other professionals at work in every state and 84 foreign countries.
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, 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 that 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, free from sexual, persons of all colors and ethnicities, and persons with varying abilities, spiritual preference, or sexual orientation with equitable respect and consideration. Faculty should value and pursue excellence in teaching as well as research. Faculty shall not engage in sexual or other forms of harassment or engage in inappropriate dual relationships with students. Faculty must not tolerate academic dishonesty nor discrimination or harassment from students to other students.

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

On the Campus

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

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

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

Additional Behavioral Expectations

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

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 LaSalle Street, Suite 2400 Chicago, IL 60602-1400 1-800-621-7408 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 of Nurse Anesthetists—Council on Accreditation
American Association for Family and Consumer Science
American Association of Marriage and Family Therapy
American Chemical Society
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 Association of Counseling Services
National Accrediting Agency for Clinical Laboratory Sciences
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 Council for Accreditation of Teacher Education
National League of Nursing Accrediting Commission
North Central Association for Teacher Education
Ohio Board of Nursing
Ohio Department of Education
Ohio Department of Health
Ohio State Department of Public Instruction

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

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

The University also holds membership in the following educational organizations:

American Association of Colleges for Teacher Education
American Association of Colleges of Nursing
American Association of Community Colleges
American Association of State Colleges and Universities
American Council on Education
American Society for Engineering Education
American Society for Training and Development
Council of Graduate Schools
Department of Baccalaureate and Higher Degree Programs (National League for Nursing)
International Council on Education for Teaching (associate)
Midwestern Association of Graduate Schools
National Association of Graduate Admission Professionals
National Association of State Universities and Land-Grant Universities
North American Association of Summer Sessions
Ohio College Association
Ohio Continuing Education Association
United States Association of Evening Students
University Council on Education for Public Responsibility
University Continuing Education Association

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

Currently, the Akron campus covers 216 acres and encompasses 77 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 centrally located within the Akron, is surrounded by park-like pedestrian areas. Students have easy access to retail outlets, transportation, and churches. The University of Akron is located between East Market Street and East Exchange Street on the eastside of the downtown area. Akron is easily reached by automobile from major national east-west routes (Interstates 80, 90, 79, 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:

- **Akor Polymer Training Center.** The Akron Polymer Training Center at 225 East Mill Street is an instructional classroom 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 Biology Research Facility.
- **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 audio-visual 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. It provides office space for numerous academic administrative offices of the University.
- **Buckingham Center.** Located at 220 Wolf Ledges Parkway in the renovated Union Depot Building. This building houses the offices of the Associate Provost, Multicultural Development, Office of Multicultural Development, Black Cultural Center, Academic Achievement Programs, classrooms and a repository of African-American history.
- **Business Administration Building.** This $9.1 million facility, located at 259 South Broadway, was completed in 1991. The structure consolidates office, classroom, and laboratory facilities for the dean of the College of Business Administration; the George W. Davenio School of Accountancy, and the departments of Finance, Marketing, and Management.
- **Carroll Hall,** Adjacent to the new Student Union, Carroll Hall houses offices of The Faculty Senate, New Student Orientation, Adult Focus, and interim space for the Student Union; in addition to classrooms, laboratories, and offices for department of Counseling and Special Education and Developmental Programs.
- **Center for Children’s Development.** The former Girl Scout regional headquarters building at 108 Fir Hill has been renovated to accommodate the University’s Center for Child Development.
- **Computer Center.** This building at 185 Carroll Street houses the University’s Information Services offices, main computer, and workrooms.
- **Crouse Hall,** Crouse Hall houses the Department of Geology, the Center for Environmental Studies, classrooms, and some of the College of Education offices.
- **E.J. Thomas Performing Arts Hall,** Named for Edwin J. Thomas, prominent industrialist and dedicated member of the University Board of Trustees from 1952 to 1975, this cultural center, which cost more than $13.9 million, was formally opened in 1973. Designed to accommodate concerts, opera, ballet, and theater productions, the hall is a masterpiece in architecture, acoustics, and creative mechanisms. It stands at the corner of University Avenue and Hill Street.
- **Firestone Conservatory,** On the first floor of Guezetta 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 Schiller Myers School of Art. Studios are available for leather working, ceramics, jewelry making, wood working, painting, drawing, and other artistic activities.
- **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.
- **Guezetta Hall,** Located at 157 University Avenue, Guezetta 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 intercollegiate basketball facility seating 7,001, an indoor jogging track, physical education laboratories, classrooms, the athletic director’s office, the sports information office, athletic offices, and a ticket office.
- **Hower House,** Located on Fir Hill, this 19th-century mansion has been designated a Historic Place by the National Park Service.
- **Knight Chemical Laboratory,** This $10 million complex is named in honor of Dr. Charles M. Knight, who taught the first courses in rubber chemistry at Buchtel College of Science as early as 1909. Opened in 1979, the building houses the Department of Chemistry and features many innovative laboratories with the most sophisticated safety equipment, as well as classrooms and faculty and administrative offices.
- **Kolbe Hall,** Named for the first president of the Municipal University of Akron, this building was remodeled for the School of Communication 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, WZIQ-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 Teaching 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 between 11:30 a.m. and 2 p.m. Business and department services, banquet, 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 gymnasion, 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 intramural sports office, and classrooms.
- **Oakeshott Natatorium,** The $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 raquetball courts, two tennis courts, and some of the College of Education offices.
- **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.

The University of Akron 2003-2004
Olson Research Center.  This facility, adjacent to the new Polymer Engineering Academic Center on Forge Street, houses space for the Department and Institute of Biomedical Engineering and the Department and Institute of Polymer Engineering.

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

The Polyclimate Building.  This adjacent academic building in Ohio, this renovated downtown department store is home to the Graduate School. Also located here are the University Archives, the Archives of the History of American Psychology, the School of Speech-Language Pathology and Audiology and its Audiology and Speech Center, the Department of Public Administration and Urban Studies, the School of Social Work, the Center for Student Development, the Office of the International Programs, the Associate Vice President for Research and Technology Transfer, including the Office of Research Services and Sponsored Programs, the Institute for Policy Studies offices, and the Center for Health and Social Policy. A University food service facility and a campus bookstore are in operation on the High Street level (third floor).

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

Robertson Dining Hall.  This building at 248 East Buchtel Avenue has a cafeteria and dining room for students, as well as the campus infirmary, which provides health services for the University.

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

Schrank Hall.  Named for Harry P. Schrank, longtime member and chairman of UAF's Board of Trustees, this complex, which adjoins Auburn Science and Engineering Center, is composed of two academic structures and a parking deck. Schr ank Hall North contains space for the Counseling, Testing, and Career Center (including placement services), some Civil and Mechanical Engineering faculty offices and research space, a College of Engineering minority students study area, the Biology lab and Learning Resource Center, and general purpose classroom space. Schr ank Hall South provides facilities for the School of Family and Consumer Sciences.

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

Student Administrative Services Building.  This building located at 185 E. Mill Street houses the Registrar's Office, Cashier, Parking, Loans and Receivables, Student Financial Aid, Academic Advising, Coordinator, Auditor, University College, and the Office of Accessibility.

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 facility houses various food service facilities, meeting rooms, a movie theater, Computer Solutions--The University of Akron's computer tech store, the DocuZip copy center, a bank, Ticketmaster/Film/Fax Center, the Information Center and a bookstore. Phase I of the $41 million Student Union was completed in 2002 and Phase II is under construction. Visit our website at http://www.uakron.edu/studentunion.

Whitby Hall.  Located at 200 Buchtel Common, Whitby Hall is named in honor of G. Stafford Whitby, a pioneer in the development of polymer science. This newly renovated building will be occupied by the Department of Chemical Engineering during Fall 2003.

Zook Hall.  Named to honor George F. Zook, president of the University from 1925 to 1933, this Buchtel Common facility houses the College of Education offices of the Dean, Associate Dean for Academic Affairs, Assistant Dean for Student Affairs, and admission advisement offices. Other facilities include a lecture room that seats 245, general classrooms, a science and mathematics classroom/lab, a distance learning classroom, a Center for Literacy, two technology-enhanced demonstration class-rooms, two computertraining classrooms, and a multi-media laboratory.

FACILITIES AND EQUIPMENT

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

Buchtel College of Arts and Sciences

The Department of Biology houses greenhouses, controlled-environment chambers, a new animal research facility, a molecular biology research laboratory, modern laboratory equipment that includes advanced light microscopes (differential interference contrast, fluorescence), electron microscopes (transmission and scanning), scintillation counters, ultracentrifuges, DNA sequencing apparatus, and physiographs; vehicles and boats and a 400-acre nature preserve are available for field study. Many of the college and department’s student computer lab for review of multimedia presentations, data analysis, simulations, Internet and Web assignments, teleconferencing, scanning, word-processing, and printing.

The Department of Chemistry is located in Knight Chemical Laboratories. The department offers outstanding instrumentation, such as nuclear magnetic resonance spectrometers, research-grade gas chromatographs, infrared and ultraviolet spectrophotometers, and other modern research tools for identification and characterization of compounds. The Chemical Stores facility maintains an inventory of more than 1,100 items, including chemicals, glassware, and apparatus.

The Department of Classical Studies, Anthropology and Archaeology has a Macintosh-based computer lab which gives easy student access to a collection of several thousand original digital images of ancient Mediterranean buildings, artifacts and artwork. Access to the Research Center in the Greek world (20,000 images and most of Greek literature both in Greek and in translation), and to the Internet and the Web. The lab includes an extensive suite of graphics software, three dual-monitor authoring workstations as well as desktop machines, flatbed and film scanners, and an accelerated 100-base-T local area network connected to the University backbone. Digital investigation and creation are a regular part of most classes. The Interdisciplinary Archaeology Program laboratories contain fossil and archeological collections, and a variety of equipment utilized in current research projects as well as student and faculty projects. The program is affiliated with the Institute for History and Social Policy. The Archaeology website is www.uakron.edu/anthro. It contains current course listings, the “Notes from the Field” Newsletter and information on research.

The Department of Computer Science is located on the second floor of the new College of Arts and Sciences Building. The computer laboratory has access to a wide variety of computing facilities, operating environments, languages and software in laboratories maintained in and by the department. In addition to a PC lab, a UNIX lab and a Graduate Research lab, the department has a 24-node cluster computer available for research and instruction. Our facilities are state-of-the art, the result of a broadbased strategic plan and an accelerated commitment of experience that is attractive to potential employers. Departmental computer services provide access to the Internet, the World Wide Web, and the computational resources of the Ohio Supercomputing Center in Columbus. In addition, there are connections to the VBNs Internet II network. Many department computers have access to a powerful Unix-Linux box running with this trend, the department recently opened a new computer laboratory for faculty and students. The lab is equipped with the latest equipment, running with this trend, the department recently opened a new computer laboratory for faculty and students. The lab is equipped with the latest equipment, running Windows environment. In addition, the department has a variety of software, including economic tutorials, word processing programs, SAS/MVS, SAS/VMS, and SAS/PC. The lab is also equipped with laser printers. Network access allows students to search for books, journals articles, the latest economic data, etc., remotely from either OhioLink or the World Wide Web. The lab is located in close proximity to the faculty offices which facilitates interaction between faculty and students, and enhances the students’ educational experiences.

The Department of Economics is housed on the fourth floor of the College of Arts and Sciences Building. The new office complex includes space for faculty and graduate students. Economics as a discipline has become increasingly analytic. In keeping with this trend, the department recently opened a new computer laboratory for faculty and students. The lab is equipped with the latest equipment, running Windows environment. In addition, the department has a variety of software, including economic tutorials, word processing programs, SAS/MVS, SAS/VMS, and SAS/PC. The lab is also equipped with laser printers. Network access allows students to search for books, journals articles, the latest economic data, etc., remotely from either OhioLink or the World Wide Web. The lab is located in close proximity to the faculty offices which facilitates interaction between faculty and students, and enhances the students’ educational experiences.

The Department of English has a state-of-the-art Computer Classroom. The department includes editors of the journals Composition Forum, Seventeenth Century News, and The Social History of Alcohol Review. Additional information about the department, the faculty, and the programs is available on the department website at www.uakron.edu/english.

The Department of Geography and Planning has an instructional computer lab and specialized labs for research and production work in cartography, geographic information systems (GIS), remote sensing, and soils analysis. These labs have a variety of cartographic, GIS, remote sensing, database, spreadsheet and statistical analysis software as well as digitizers, scanners, printers and plotters. The department also houses a diverse collection of maps, aerial photographs and satellite images.

The Department of Geology has modern instrumentation for field and laboratory studies which includes an automated electron microprobe, automated X-ray diffractometer, ion-coupled plasma spectrometer, atomic absorption spectrometer, ion chromatograph, coal and sulfur analyzers, oxygen bomb calorimeter, gravimeter, resistivity cell, x-ray diffraction apparatus, magnetometers, image analyzer, cathodoluminescope, laboratory computer with printers, map and video digitizers, wide carriage network printer, flat bed and slide scanner, core laboratory, research microscopes, a well-equipped darkroom, rock saws, automated thin-section equipment, portable rock core, Göttingen soil probe, a four-wheel-drive vehicle, and two passenger vans.

The Department of History occupies one wing on the second floor of the new College of Arts and Sciences Building. This new office complex includes a multimedia room for web-based computer work in close proximity to faculty offices, enhancing students-faculty interaction. The endowed interdisciplinary Sally A. Miller endowed History Center is housed within the department and offers faculty fellows, spon- sors speakers, and runs pedagogical workshops. The online Journal of Northeast Ohio History, which offers both editorial experience and opportunities of scholarly publication, has its office in the department. The History suite contains three separate seminar rooms, where small, intimate discussions take place. More information about the department can be found on its website: www3.uakron.edu/history.

The Department of Modern Languages has a Language Resource Center in Olin Hall. The Language Resource Center contains facilities for students to listen to audiotapes and view videotapes as a class or individually. Fourteen networked mul-
timed media 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.uakron.edu/modlang/.

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

The Department of Physics is located on the first three floors of Ayer Hall. Facili-
ties include a research lab, laboratories for student research, 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. The department has an e-mail 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 lab-
atory consisting of 16 computers and a scanner. This laboratory is used by Polit-
ical 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 Inter-
et. 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. A full-time research programmer/analyst provides hard-
ware and software support for the department and writes 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 coun-
seling 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 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-enhanced course offerings. Each computer has SPSS X, SAS, and other sta-
tistical packages. Research design, methods, and computer applications classes are taught in the lab. In 2002, the department co-sponsored the creation of the
Center for Public Sector Research and Training in the Institute of Health and Social
Policy (a more detailed description of the Center is found in this bulletin). The Cen-
ter is the focus for public service outreach and community engagement for the Uni-
versity. Many members of the non-profit sector research and grant activity of the
department faculty is supported through the Center.

The Department of Sociology facilities include research laboratories used for
funded research projects. The Newman Library, providing many current professional
journals, is open for students’ 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-
matics 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 109, is being used for various undergraduate and graduate sta-
tistics courses. The Center for Statistical Consulting, housed in the department
and maintained by the Department of Mathematics and Statistics, provides opportu-
nities 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 a wide variety of computing facilities,
operating computer systems, and access to computer classrooms. The department
also contains a large computer classroom, each equipped with 36 personal computers and
a homework computer classroom. The department also contains a computer class-
room with 50 personal computers at the Ohio Supercomputing Center in Columbus, Ohio
which can then be shown to students to provide immediate feedback. This facility is a
key resource in college programs for training in sales, sales management, negotiation,
leadership, and employment interview preparation.

The Goodyear Tire and Rubber Company Lecture Hall, the building’s largest classroom, is
equipped with a state-of-the-art audio-visual system capable of projecting textbook
material, transparency, slides, videotapes, computer screen images, and the like onto the
twenty-two-by-10 foot screen. The office space also contains computer workstations.

Facilities for seminars, continuing education programs, and student organization meet-
ings are provided in the John P. Murphy Executive Room and adjacent small group meet-
ing room.

College of Business Administration

The College of Business Administration is located in the 81,000 square-foot, four-
story College of Business Administration Building, that houses the college’s offices,
classrooms, computer laboratories, and advising services. The departments of Finance,
Management, Marketing, the George W. Daverio School of Accountancy, the Fitzger-
ald Institute for Entrepreneurial Studies, the Fisher Institute for Professional Selling
and the Center for Global Business Studies share the GBA. Graduate programs are fully accred-
ited by AACSB International—The Association to Advance collegiate Schools of Busi-
ness, the most prestigious accrediting agency for business schools.

Tiered, amphitheater-style classrooms permit close contact between students and pro-
fessors. The Milton and Henrietta Kushkin Computer Laboratory provides three com-
puter classrooms, each equipped with 36 personal computers and a homework
workstation for students with more than 75 computers. Each PC is equipped with cur-
rent versions of word processors, spreadsheets, database managers, and multi-media
software and all are connected to the Internet.

The nationally acclaimed Carl V. and Clyde A. Fisher Sales Laboratory offers six small
lab rooms connected by one-way mirrors to a central monitoring and control room.
Sophisticated videotape equipment permits the recording of activities in each lab room
which can then be shown to students to provide immediate feedback. This facility is a
key resource in college programs for training in sales, sales management, negotiation,
leadership, and employment interview preparation.
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, Schrann 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 Physicochemical 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 Imaging Devices, Detector and Sensors Laboratory has instrumentation for design, production, and analysis of medical imaging devices. The Image Processing Laboratory is built around Sun Sparc workstations, two of which are equipped with image processing accelerators. Image processing and display software and a large database of medical images are available for students to use in individual research and class projects.

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 arthritic patients. 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-100EMG system, and associated computer hardware and software.

The Biostereometrics Laboratory is equipped to perform spatial analysis using three-dimensional sensing technology, which includes a Kern Maps-200 Digitizing System, and associated computer hardware and software. 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 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 Lexel argon-ion laser, a vibration isolated optical bench, a Brookhaven correlation and probability analyzer, FTIR-Ramen, 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 luminence, U/VIS, and RI detectors. The labs are well equipped with several bioreactor assemblies, Sorvall RC-RC refrigerated super centrifuge, Perkin-Elmer UV/VIS spectrometer and LS-50B luminence spectrophotometer, and on-line NAD(P)H fluorometers. The Biomaterials Laboratory is available for polymer synthesis and storage include a nitrogen hood, Sephadex separation columns, an oil bath, a dry bath, a vacuum oven, a laboratory refrigerator, and a Laboratory nitrogen generator.

The Catalysis Research Laboratory is equipped with high pressure and high temperature IR reactor system with a Nicolet Magna-IR 550 Spectrometer Series II, a Nicolet Magna-IR 660 Spectrometer E.S.P. and a Balzers Prisma QMG 200 Mass Spectrometer for in situ catalyst preparation, in situ characterization, temperature programmed desorption of NO, H2, CO, and CO2 in situ reaction studies. The Multiphase and Solids Processing Laboratory is equipped to do research in filtration and flows through porous media. The labs are equipped with a gamma ray instrument for measuring porosity of packed columns and filter cakes, a Frazier Test to measure air permeability of filter media, a Haac Royco BR8 particle counter, a Zeta Meter and a Brookhaven EKA Streaming Potential instrument for measuring zeta potentials. An optical system is set up to measure particle sizes and size distribution. The Nonlinear Control Laboratory is equipped with Unix based work-stations and a variety of engineering software packages.

The Supercritical Fluids Laboratory, a key lab in the Ohio Supercritical Fluid Technology Consortium, is equipped with FTR/IRRANAVAT, GC/FID/TC high pressure phase behavior apparatus, Berty Reactor, 1-liter stirred Reactor, dynamic light scattering, mechanical testing and high temperature GC. The Thin Film Laboratory is equipped with plasma systems, thermal chemical vapor deposition, and in situ microwave absorption.

The Department of Civil Engineering is located in the Auburn Science and Engineering Center and Schrann Hall North and has five major laboratories.

In the Environmental Engineering Laboratory, students learn to analyze water, wastewater and contaminated soils to assess its quality and to determine the most effective treatment techniques. Laboratory equipment includes UV-visible spectrophotometers, respirometers, gas chromatographs, high-performance liquid chromatographs, toxicity analyzers, and a total organic carbon analyzer. Water and wastewater analytical kits and specialized meters are also available for field studies.

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

In the soil mechanics and foundation engineering lab, students analyze soil by a variety of tests and equipment to determine shear strength characteristics, compaction characteristics, and seismic and electrical resistivity equipment for geophysical exploration of soil and rock deposits. The laboratory also has a computer-controlled cyclic triaxial testing system, a uniaxial testing machine, a portable static/dynamic cone penetrometer, a pile-driving analyzer, and capability for ground vibration monitoring and analysis.

In the structural materials laboratory, the opportunity to observe experimental verifications of the behavior of structural members subjected to tension, compression, bending, and torsion. Physical tensile is accomplished with the use of two universal testing machines for maximum capacity of 500,000 pounds, five closed-loop servohydraulix testing machines with a loading capacity to 100,000 pounds, a load frame used to test full scale members and structural systems and a Charpy impact machine. One of the closed loop machines has the capacity to apply both axial and torsional loads. Further, a full array of data acquisition equipment is available.

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

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

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

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

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

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

The energy conversion laboratory 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 measurement 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 antennae 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 eight laboratories in the Department of Mechanical Engineering. The Thermal and Fluid Science Laboratory has internal combustion engines, a supersonic wind tunnel, a subsonic wind tunnel, and a water tunnel. The Heat Transfer Laboratory has a complete heat exchangers, and a spectrum of heat exchangers. The Mechanical Measurements Laboratory has a complete complement of transducers, calibration equipment and standards, signal conditioners, analog recording devices and microprocessor-based digital data acquisition systems. The Materials Testing Laboratory has a computer controlled servo-hydraulic mechanical testing machine with a uniaxial machine for performing static, quasistatic, cyclic and dynamic tests 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 servovalve and systems controlled by PLCs and computer controllers. The Experimental Mechanics Laboratory has photoelastic strain measuring equipment and associated facilities, coupled with a complete range of strain gage instrumentation for both static and dynamic measurements. The Mechanical Design Laboratory has several machine shops, workspaces for metal and wood cutting, and an Instron. The Engineering Computer Network Facility (ECNF). The System Dynamics and Controls Laboratory is composed of several microprocessors, analog computers, and digital

Background Information
College of Nursing

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

College of Polymer Science and Polymer Engineering

The facilities of the Department of Polymer Science and the Maurice Morton Institute of Polymer Science support fundamental and applied research in polymer chemistry, 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 operates a variety of analytical and compounding/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 instrumentation 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/mechanical characterization facilities. Processing facilities include unique blending/compounding facilities using five twin-screw extruders, a Buss kneader, and seven internal mixers including flow visualization capability; seven 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 stretch line. Characterizing facilities include screw injection molding capability of commercially feasible machines, blow 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. Characterization capability includes scanning and transmission electron microscopy, X-ray diffraction (including a rotating anode X-ray generator), Fourier transform infrared, small angle light scattering, optical microscopy and retardation, radiography, differential scanning calorimetry, thermogravimetric analysis, dielectric thermal analysis, and surface profiling, rheological and mechanical testing, including elongational flow, rotational and capillary 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 industrial-government-university consortium, to train machine operators and technicians for the polymer industry. The Center provides classrooms and laboratories for graduate students 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, bibliographic 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, periodicals, government documents, curricular materials, microforms, maps, audio-visual materials, and archival documents. The library receives nearly 8,000 magazines, journals, newspapers, and other serial publications. Through the library’s memberships in the Center for Research Libraries, the Ohio Library and Information Network, the Online Computer Library Center (OCLC), and the Ohio Network of American History Research Centers, access to vast resources is greatly increased for University students, faculty, and staff.

University identification cards function as library cards. Group study rooms, photocopy service, making copies from microform, and special collections are available in Bierce Library and in the Science Library. In Bierce Library, students can use one of the 150 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 (films, videos, 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 management system.
VPCIO Division

The Vice President for Information and Instructional Technologies, Libraries and Institutional Planning (VPCIO Division) supports the entire University technology needs including data, communications and library services. In today’s environment, professors, students, administrators and staff use the same technology and products. Information is available directly to those who need it. Personal productivity tools, network connectivity and services provide a common infrastructure for the dissemination of information and communications. The VPCIO Division is prepared for the University’s future technology needs with an emphasis on the continued convergence of voice, video and data networks into a single digital network environment.

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

- **Computer Labs**: 150 IBM wireless laptops are available for two-hour loans in Bierce Library. The wireless laptops can be used anywhere within the library 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 103. Students can also check-out wireless laptops for two hours in the new Student Union by going to the information desk.

- **Computer Acquisition**: Computer Solutions (www.uakron.edu/compsotre) 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 IBM laptop wireless computers can be purchased at Computer Solutions, located in the Student Union. The wireless laptops can be used within any building on campus as well as outside within the campus area green spaces. Details of the laptop program can be found at (www.uakron.edu/laptop).

- **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 wire-less for residence hall students.

- **Student Computer Support Services hours of operation are:**
  - Monday - Friday 7:30 a.m.-4:00 p.m.
  - The Technology Learning Support Center (TLSC) is located in Bierce Library, room 69, and provides call-in (330) 972-6888 and walk-in support for all students, faculty and staff.
  - The Technology Learning Support Services hours of operation are:
    - 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

- **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.

- **Network and Communication Services** provide dial-in lines for faculty, staff and students to use with their computers and modems from home to access UA and Internet networks. UA’s computer network, named UAnet, has about 4,000 computers connected on campus. To use these services, faculty, staff and students should go to the Technology Learning Support Center, at Bierce Library, room 69 to obtain a UAnet ID. The network provides access to ZiplINK, UAs library catalog, OhioLINK, the library catalogs of all State of Ohio universities and colleges; electronic mail (e-mail); the Internet, including the popular World Wide Web multimedia information protocol; usenet newsgroups; discussion lists; Wayne College; IBM mainframes and Digital servers.

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.

Visit our website at http://GoZips.uakron.edu/is for more information.

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. Most of 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 adjunct of The University of Akron and its Department of Political Science. The broad purposes of the institute, in keeping with the career of its namesake, Ray C. Bliss, are: to give all citizens, and particularly students, an opportunity to learn how to become active and competent in political life; to help maintain a tradition of ethical public service in politics; to foster useful relationships between applied politics and political science; to promote public comprehension of political organizations and the requirements for their effectiveness; and to improve understanding of continuity and change in American political institutions.

Institute for Biomedical Engineering Research

Daniel B. Sheffer, Ph.D., Interim 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 (IRPA, 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, w Lyons@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.

**Center for Emergency Management and Homeland Security Policy Research**

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 95 affiliates in 33 disciplines with the needs of students seeking study and research opportunities in complex environmental issues. Since its founding in 1970, the center has sponsored, or in other ways supported, activities appropriate to the goal of attaining a quality environment for mankind.

The center 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 energy, natural history and environmental studies in England also emphasize the interdisciplinary approach to the resolution of issues.

**Center for Family Business**

Susan C. Hanlon, D.B.A., Director

The Center for Family Business provides outreach activities 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 330-972-8201.

**Center for Family Studies**

Helen K. Cleminshaw, Ph.D., Director

The Center for Family Studies, established in 1979, was designed to stimulate and encourage 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 community, 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 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.

**Center for Organizational Research**

Dennis Doverspike, Ph.D., Director

The Center for Organizational Research is a business research and consulting center managed by the Industrial/Organizational Psychology Department at the University of Akron. The Industrial/Organizational Psychology Department at the University of Akron consistently ranks as one of the top ten programs in the nation (according to U.S. News & World Report). As such, the COR is in an excellent position to provide top quality consultation and research-based interventions to the business community.

The COR's mission is to provide top quality consultation and research-based interventions to the business community. The COR also serves the purpose of providing professional training and research opportunities for graduate and undergraduate students. The COR is able to provide a tailored approach to the client’s needs because of its smaller client base and research orientation. COR offers larger organizational access to solutions based on cutting-edge research from a nationally regarded academic program.
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. The Center houses The University of Akron survey research unit, with responsibility for external grant and contract research, research support for the University Urban Linkage program, sponsored research for faculty, and internal University surveys. Geographic scope of work for center projects extends from local jurisdictions through state, national and international projects. Most of the work conducted at the center is on behalf of government or nonprofit agencies or grant funded subcontracts for faculty researchers. Center professional staff are available for consultation in the development of grant proposals and budgets. The Center has responsibility for the administration of the Board of Regents Urban University Program (UUP) which links eight state universities to collaborate on the identification of significant urban problems and propose solutions designed to improve the urban regions of Ohio. The University of Akron Urban University Program, in addition to the collaborative mission of the Ohio UUP, encourages community-oriented research and policy analysis through Partnership Grant Program. The Center also houses a State Data Center under the aegis of the Ohio Department of Development to provide Census and other data to appropriate agencies and coordinate geographic information system activities with the Department of Geography and Planning.

Center for Public Service Research and Training
Peter J. Leahy, Ph.D., Director
The Center for Public Service Research and Training (CPSRT), newly established in 2002, is a division of the Institute for Health and Social Policy (IHSP), a multi-purpose research institute of the University of Akron. CPSRT evolved from the Center for Urban Studies, established at the University of Akron in 1967. CPSRT's mission is to assist the local and regional community in policy analysis and evaluation, applied research, professional service and the resolution of social, economic, and public management problems. CPSRT offers its services to governments of all levels, to community foundations, to human service agencies and to community organizations. Particular expertise is available in program evaluation and program improvement strategies, strategic program planning, strategic management, community needs assessment, community planning and the conceptualization and design of research projects.

CPSRT draws upon the full range of senior research associates, professional staff and related research centers available in the IHSP as well as upon faculty and doctoral students from the Department of Public Administration and Urban Studies. In tandem with the Center for Policy Studies (CPS), another division of the IHSP, CPSRT also offers clients a state of the art computer assisted telephone interviewing (CATI) facility, a state of the art focus group room and GIS mapping services. 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 workforce development in Northeastern Ohio. 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 local organizations and external institutions meet the needs of their international students. 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.uakron.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 Rita Fitzgerald Institute for Entrepreneurial Studies
Todd A. Finkle, Ph.D.
In 1996, a generous gift from William and Rita Fitzgerald created the Fitzgerald Institute for Entrepreneurial Studies in the College of Business Administration. The Institute was established to promote the principles of free enterprise and encourage entrepreneurial spirit and practices both within the University’s curriculum and throughout the business community.

The Fitzgerald Institute focuses on the development of curriculum appropriate for both new ventures and the entrepreneurial development and growth of existing businesses. The Institute provides the needed link between the University and the community of entrepreneurs critical to business development in the future. For information, contact the Institute, CBA 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 Global Business building, was established in February 1989 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

Background Information
The Institute of Polymer Science was established in 1967 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 Training Center for Fire and Hazardous Materials brings the University, government and industry into one comprehensive regional center to integrate existing educational programs, fire and hazardous materials training and other applications of fire and safety technology. The center coordinates seminars and workshops presented by the Federal Emergency Management Agency (FEMA), the National Fire Academy, the Division of State Fire Marshal, and other related organizations. Training in all phases of hazardous materials containment and fire prevention and control is provided under contract to various municipalities, industries and agencies. The programs are supported by the faculty of the Fire Protection Technology degree program 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 Schrank Hall North, with the Counseling Services in Room 152 and the Testing Services in Room 58. Phone numbers are: Counseling Services 330-972-7082, and Testing Service 330-972-7084. Visit our website at [http://www.uakron.edu/counseling](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. Areas of concern may include (but are not limited to) feelings of loneliness, relationship concerns, academic anxieties, decisions about future plans, self-esteem, and family problems.
ness, 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 assistance to the larger university community by providing programs and workshops for a wide variety of campus groups. 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
- From the moment students set foot on campus they have at their disposal a variety of career development opportunities through the Center for Career Management. Career development services are available to all majors and class levels. Students can attend career presentations and workshops focusing on career orientation, resume writing and cover letters, networking and interviewing techniques, and job search strategies. Students can also schedule individual career consultations with a career counselor or take advantage of daily walk-in consultations. Finally, students can access career-related books and periodicals, salary data, specific industry information, and current job opportunities.
- Career employment services for graduating students and alumni/ae include opportunities to participate in on-campus interviews with with representatives from local, regional, national and international organizations in a variety of industries. Registration with CCM’s online recruiting system is required prior to participation in interviews as well as search online job postings and to include a resume in the online resume books. In addition, the Center offers special employer mock interview workshops to students to assist in preparation for actual interviews. The Center for Career Management also sponsors, in collaboration with academic colleges, several career expos in the fall and spring semesters. Career expos allow students and alumni/ae the chance to network with hundreds of potential employers. For additional information, please call (330) 972-7747 or visit us online at www.uakron.edu/ccm.

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 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 330-972-5784 (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 flextime and half-day programs for children three to five years old and toilet trained. Full-day sessions are available year round for children 18 months to five years old.

A summer program is also offered for school-aged children. This program is offered 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 computer technology 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 and the Sizzling Zone. The Sizzling Zone offers both American and Italian cuisine.
- **The DocuZip Copy Center**, located on the first floor by the south entrance offers the following services: copying, including color, oversized 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/Film/Fax 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. Overtime-counter sales include tickets to campus functions, including sporting events, and to local shows. Film and film processing services are also available.
- **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 972-4836 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.

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 safety and crime prevention.

The University promotes a safe campus through prevention programs for its students and employees. The University as an institution recognizes that the use of 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 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 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://www2.uakron.edu/police/crimprev.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 ........................................6986
Fire .................................................................911
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.
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 (GSG). The government council consists of elected representatives from each of the graduate departments, an executive board of officers, and a faculty advisor.

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

Anyone wishing more information or anyone who wants to air a complaint, problem, or suggestion concerning graduate students may contact the Graduate School 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 $40. The fee for international students is $60.

All official transcripts 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, faculty, 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-
Deferred Admission may be granted if the applicant's record does not meet the minimum acceptable level of performance. Information and procedure may be obtained from the chair of the appropriate department.

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

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

- **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 without being admitted to the Graduate School. Graduate-level coursework cannot be taken by a student under the deferred admission status.

- **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. Graduation 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.

- **Special Work**: may be granted permission to take one or more graduate-level courses if all the following conditions are met.
  - senior standing (at least 90 credits completed);
  - overall average of 2.75 or better or lower 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 minimum number of graduate credits that may be taken by an undergraduate and applied later toward a graduate degree is 12.

- **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 grades. A written application should be submitted to the dean of the Graduate School for each course to be taken, and approval of the instructor, department chair and college dean shall be obtained. A guest is welcome to register for any course or seminar provided space is available. Normally, space and facilities for research cannot be provided for a postdoctoral guest but special requests will be considered. Requests should be submitted, in writing, to the dean of the Graduate School who will review such requests with the appropriate department and department chair.

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. A course for which a student wishes to register must be approved by the student's home institution. The student must be in good standing (GPA>3.0) and within the time limits for degree completion. The graduate program unit at the student's home institution will establish a graduate special topics or independent study course identification capable of being "tagged" by the home university with a title that will correspond to the course title at the host university and with the initials of that university; i.e. CSU, KSU, or YSU. Registration for such a course is controlled by the home department and will be permitted only upon receipt of an approved Cross Registration form. Cross Registration forms are available by contacting the Graduate School.

Financial Assistance
The University awards a number of graduate assistantships to qualified students. Assistantships are normally awarded for up to two years of master's study and up to four years of doctoral degree study. These assistantships provide stipends of $6,000 to $18,000 plus remission of tuition and fees and are available in all departments of 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. Tuition scholarships may be available for first-time graduate students on a limited basis in some departments.

Information concerning financial aid policies is available in the Graduate Assistant Handbook which can be obtained online at http://www.uakron.edu/grad/sch/handbook/.

International Students
The University of Akron welcomes international students and seeks to make their educational experience pleasant and meaningful. Each year, approximately 850 international students from 85 countries pursue studies and research at The University of Akron.

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

General Information
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 1996). 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 the degree. Grades of “D+,” “D” and “D-” are treated as “F” grades. No grades below “C-” may be counted toward a degree.

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

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<thead>
<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>A</td>
<td>4.0</td>
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<tr>
<td>A-</td>
<td>3.7</td>
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<tr>
<td>B+</td>
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<td>D-</td>
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<td>CR</td>
<td>0.0</td>
<td>Credit</td>
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<td>NC</td>
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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 – Withdrawal: Indicates that the student registered for the course but withdrew officially sometime after the second week of the term.

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

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

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

Academic Reassessment

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

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

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.

Costs, Financial Aid, and Medical Insurance

To cover tuition and living expenses for the 2003-2004 academic year, international graduate students holding F-1 visas will need approximately $22,400 for 12 months. Additional costs for J-1 visa holders and student’s dependents are indicated on the DCF.

Graduate students may request financial aid through fellowships and graduate scholarships. Prospective teaching assistants must also demonstrate proficiency in English to undertake graduate studies at The University of Akron.

Additional costs for J-1 visa holders and student’s dependents are indicated on the DCF. Graduate students holding F-1 visas will need approximately $22,400 for 12 months. To cover tuition and living expenses for the 2003-2004 academic year, 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.

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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.

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• Maintain a current graduate grade point average of at least 3.00 or better for the first 15 hours of re-enrollment credit

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

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

Repeating Courses

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

Audit Policy

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

Thesis and Dissertation Credits

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

Colloquia, Seminars and Workshops

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

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

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

Probation and Dismissal

Any student whose cumulative graduate grade-point average falls below 3.00 will be placed on probation and is no longer in good standing. In consultation with the college or department, as appropriate, the dean of the Graduate School will dismiss full-time students who do not return to good academic standing within two consecutive semesters (excluding summers) and part-time students who do not return to good academic standing within the attempting of 15 additional credits.

For the purpose of administration of the full-time and part-time provisions of this policy, full-time and part-time status are determined by the semester in which the student goes on probation. Full-time enrollment constitutes nine or more graduate credits; part-time is less than nine graduate credits.

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

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

Grades

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

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 219 of the Revised Code, and under the authority conferred upon the Ohio Board of Regents by Section 3333.31 of the Revised Code.

B. Definitions

For purposes of this rule:

1. A “resident of Ohio for all other legal purposes” shall mean any person who maintains a 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, and 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, “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.

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 immediately preceding the enrollment of such student in an institute of higher education.

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 domicile established domicile in the state of Ohio for reasons other than gaining the benefit of favorable tuition rates. Documentation of full-time employment and domicile shall include both of the following documents:

   a. A sworn statement from the employer or the employer’s representative on the letterhead of the employer or the employer’s representative certifying that parent or spouse of the student is employed full-time in Ohio.

   b. 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 and self-sustaining basis in Ohio and who is pursing 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.

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**Fees**

All fees reflect charges in 2003-2004 and are subject to change without notice.

<table>
<thead>
<tr>
<th>Application Fee (this fee is not refundable under any circumstances)</th>
<th>Domestic</th>
<th>$40.00</th>
<th>International</th>
<th>$60.00</th>
<th>Temporary Admission Fee</th>
<th>$30.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>(fees assessed in addition to application fee for “quick admit” application processing, pending acceptance decision from academic department)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Tuition Fees**

| Resident student per credit | $277.35 |
| CBA student per credit | $306.14 |
| Nonresident student per credit | $475.79 |
| Nonresident CBA student per credit | $504.58 |

(same fees apply when auditing classes)

| General Fee | Per credit hour $10.59 per credit |
| Maximum of | $12708 per semester |

**Administrative Fee**

| Graduate, transient students | $12.00 per term |

**Facilities Fee**

| Per credit hour | $9.50 |
| Maximum of | $114.00 per semester |

**Technology Fee**

| Per credit hour | $16.25 |

**Engineering Infrastructure Fee**

| Per credit hour (all Engineering courses) | $12.75 |

**International Executive MBA Program**

| All inclusive tuition, fees, travel, and program costs: |
| First Semester | $15,000.00 |
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 1-800-801-0566. Inquiries may be directed to the Office of Student Financial Aid, Spicer 119, 330-972-7032 or 1-800-621-3847.

Installment Payment Plan

This plan is designed to spread registration and University housing fees into as many as four installments (two during a summer term) depending on when the application is received. The payment plan will be available as an option for payment through the 15th day of the semester. An application fee of $26 is assessed for the installment payment plan (IPP). Charges subject to change without notice.

Semester applications are to be received in the office by the close of business on the billing due date. Application forms are included with the student fee invoice or may be obtained in the Installment Payment Office. The application fee only is required, along with your signed application to begin the plan. Additional funds may be added to the application fee to lessen future payments. Your processed financial aid will be used against your charges. Upon receipt of your application and application fee, a billing request for your first payment will be processed. The balance will be billed either in one, two, or three equal installments, depending on the semester and registration period. All past due obligations must be paid prior to participation in the payment plan. Monthly invoices will be sent to your listed mailing address indicating the amount due and the required payment date. However, it is the student responsibility to know when payments are due and to pay on time even though an invoice may not have been received.

Any course(s) added or dropped will adjust automatically to the payment plan. Your payment due will reflect the increased amount of any course added. Any credit received from a dropped course will be deducted from the amount you owe, depending on the period in which you withdraw, and subject to the withdrawal and refund policies of the University.

If additional installments are not received on or before their due date, a late charge is assessed at $20 per payment. Charges subject to change without notice.

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 failure or inability to attend class or in cases of withdrawal. The student assumes the risk of all changes in business or personal affairs.

Fees Subject to Refund

Certain fees are subject to refund.

- Instructional fee (tuition) and nonresident surcharge.
- General fee.
- Course materials and computing fee.
- Student parking fee (only if permit is returned).
- Student teaching fee.
- Laboratory breakage and late service deposit.
- Residence hall fees (note: subject to special policy).
- Technology fee.
- 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.
SECTION 3.
Academic Requirements

MASTER’S DEGREE REQUIREMENTS

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

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

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

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

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

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

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

Transfer Credits
Up to one-third of the total credits required for a master’s degree may be transferred from an accredited college or university. Departments and colleges may set more restrictive limits. All transfer credit must be at the “A” or “B” level (4.00 to 3.00) in graduate courses. The credits must be relevant to the student’s program as determined by the student’s academic department, and must fall within the six-year time limit to complete degree requirements.

Credits transferred may come from a prior degree. Up to one-third of the total credits required for a master’s degree may come from a prior or concurrent degree at The University of Akron. A University of Akron student who seeks to enroll in courses elsewhere for transfer credit here must receive prior approval.

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

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 must be submitted no later than May 15 for the January commencement and no later than September 15 for the May commencement. These forms are available in the office of the Dean of the Graduate School or in the academic department.

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. 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 is available in the Graduate School 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 that the candidate is enrolled for a minimum of 10 consecutive weeks of full-time study and for a minimum of six semester credits per five-week session. Individual programs may have additional residence requirements such as credits or courses to be completed, proper time to fulfill the residence requirement, and the extent to which a resident may hold outside employment.

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

*The doctoral program in engineering is an interdisciplinary program offered on a collegiate basis. In the descriptions of University doctoral degree requirements on the following pages, citations of department or departmental faculty should be interpreted as citations of college or collegiate faculty with specific reference to the doctoral program in engineering.
Plan C: In certain doctoral programs (counseling and guidance, elementary education, engineering, psychology, secondary education, urban studies and public affairs) the demonstration of competence in appropriate research skills may serve as a substitute for the foreign language requirements.

Transfer Credits

Up to 50 percent of the total credits above the baccalaureate required in a doctoral program may be transferred from accredited colleges or universities. Departments and colleges may set more restrictive limits. The credits must be relevant to the student’s academic program as determined by the student’s academic department and must fall within the 10-year limit to complete degree requirements if beyond the master’s degree. All credits transferred must be at the “A” or “B” level (4.00 to 3.00) in graduate courses. Credits transferred may come from a prior degree. No more than thirty semester credits may be transferred from a single master’s degree. Credits earned in prior or concurrent programs at The University of Akron shall be treated in the same manner as credits earned elsewhere. A University of Akron student who seeks to enroll in courses elsewhere for transfer credit must receive prior approval. A student seeking transfer credit must have full admission and be in good standing at The University of Akron and at the school at which the credits were earned. Transfer credit shall not be recorded until a student has completed 12 semester credits at The University of Akron with a grade-point average of 3.00 or better. Transfer credits from other institutions shall not be computed as part of a student’s University of Akron grade point average.

Language Requirements

There is no University-wide foreign language requirement for the Ph.D. The student is required to demonstrate one of the following skills depending upon the particular program.

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

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

- Plan C: In certain doctoral programs (counseling and guidance, elementary education, engineering, psychology, secondary education, urban studies and public affairs) the demonstration of competence in appropriate research skills may serve as a substitute for the foreign language requirements.
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 humanity—that loyal devotion to the heritage contained in those disciplines growing out of the ancient liberal arts which teach limitations and potentialities. The college seeks to provide an appropriate environment for students to acquire an ability to evaluate, integrate and understand the conditions of human existence, to understand themselves in the natural world and in a particular civilization or society. No course or combination of courses can ensure such understanding, there is no schooling that can guarantee wisdom. Therefore, the college requires the student to study ideas and experiences that are the subject matter of a variety of disciplines:
  - the nurture of civility—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, physics, 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 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 in 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 coursework work (200-level and above) and endorsement by the chair of the Physics Department.

Degree Requirements

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

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

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

Doctor of Philosophy in 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 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>Credit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Psychology core courses (600, 620, 630, 640, 650)</td>
</tr>
<tr>
<td>33</td>
<td>Counseling psychology core courses (707, 709, 710, 711, 712, 713, 714, 716, 717)</td>
</tr>
<tr>
<td>8</td>
<td>Practicum sequence (672 [2+2+2+2], 673 [2+2+2+2], 175 [4+4+4+4])</td>
</tr>
<tr>
<td>8</td>
<td>History, measurement, and developmental coursework (718, 727, 750)</td>
</tr>
<tr>
<td>6</td>
<td>Electives (minimum)</td>
</tr>
<tr>
<td>8</td>
<td>Statistics (601, 602)</td>
</tr>
<tr>
<td>8</td>
<td>A statistics sequence that may be substituted for the doctoral language requirement</td>
</tr>
<tr>
<td>1</td>
<td>Thesis credits (minimum)</td>
</tr>
<tr>
<td>12</td>
<td>Dissertation credits (minimum)</td>
</tr>
</tbody>
</table>

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

Doctor of Philosophy in History

The Doctor of Philosophy in History is granted primarily for high scholarly achievement in four fields of study selected by the student and for demonstrated ability to pursue independent research. Each student must:

- Fulfill admission requirements of the Graduate School.

The Graduate Committee of the History Department will consider an applicant for admission if a person has a Master’s degree from an accredited institution and demonstrates potential.

- The comprehensive written examination is prepared, administered and graded by program faculty. At least one faculty member from each department participates in the oral portion of the comprehensive examination.

- Dissertation – at least one faculty member from each department is required on the student’s dissertation committee.

- Internship – 2,000 hours postmaster’s over no more than two years. The internship must be approved in advance by the Collaborative Program Internship Committee.

- Students must maintain a 3.50 GPA in their content courses each year in the Department of Psychology.

Doctor of Philosophy in 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 final 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 advisory committee, depending upon the career plans of the student and upon 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 (8 credits) in the sociology major 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 must be selected from the predetermined group of courses (see Department of Sociology graduate student handbook).
• Complete a doctorate-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 offers a program leading to the Ph.D. in Urban Studies and Public Affairs (joint with Cleveland State University’s Levin School of Urban Studies). Students admitted to the program may take courses at either campus and all doctoral committees contain members from both universities. The program is designed to educate scholars interested in university or professional careers in the fields of public administration and urban affairs with particular emphases on public administration, urban policy, policy analysis and evaluation and planning.

**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 submitted 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 work. Generally, 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).

Applicants also will have successfully completed the following master’s-level prerequisites (or equivalents) before formal admission:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>3980:600</td>
<td>Basic Quantitative Research</td>
<td>3</td>
</tr>
<tr>
<td>3980:601</td>
<td>Advanced Research and Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>3980:611</td>
<td>Introduction to the Profession of Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>3350:630</td>
<td>Planning Theory</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>
</tbody>
</table>

An applicant may be required to appear 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 admission examination, either written or oral, or both. An applicant may be admitted to the doctoral program subject to completion of additional “bridge-up” coursework designed to address deficiencies in previous coursework. Bridge-up coursework will not count toward doctoral degree course requirements.

**Degree Requirements**

A minimum of 63 credits beyond the master’s degree is required, 51 hours of coursework, and 12 hours of dissertation.

Course work consists for 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

• 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. Students must register for 3980:795, Pro-Seminar, in the first semester after having achieved Advancement to Candidacy status. Students must also successfully defend their dissertations.
  - Other requirements:
    - Refer to the "Departmental Graduate Student Handbook" and the Ph.D. Coordinator for other requirements and guidelines. Complete general doctoral degree requirements of the Graduate School.

**MASTER’S DEGREES**

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

**Biology**

**Admission Requirements**

• 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.
• Submit scores for Graduate Record Examination (Aptitude and Advanced Biology Tests).
• Submit a letter of proposed area of specialization within biology.
• Non-active speakers of English must submit a TSE score of 220 or above (minimum score of 50 on TSE, revised 1996) to be considered for a graduate assistantship.
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:

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.

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 grade will be assigned. 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. The individual must also specialize in an area.

Required Courses for Both Options:

- 3250:602 Macroeconomic Analysis I 3
- 3250:681 Microeconomic Theory I 3
- 3250:620 Applications of Mathematical Models to Economics* 3
- 3250:626 Statistics for Econometrics* 3

*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:

- 3300:506 Chaucer†
- 3300:570 History of the English Language†
- 3300:670 Modern Linguistics†
- 3300:615 Shakespearean Drama†
- 3300:691 Bibliography and Literary Research

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

- British
  - Up to 1600
  - Up to 1865
  - 1660–1900
  - 1865–present
  - 1900–present
- American

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
- 3300:589 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

*Unless the student has passed a comparable course at the undergraduate level with a grade of "B" or better.

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
  - 3350:687 History of Geographic Thought
  - 3350:650, 651, 652 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, to include no more than 3 credits of independent study (3350:698).
- Core Requirements – 21 credits
  - 3350:505 Geographic Information Systems
  - 3350:581 Research Methods in Geography and Planning
  - 3350:583 Spatial Analysis
  - 3350:596 Field Research Methods
  - 3350:687 History of Geographic Thought
  - 3350:650, 651, 652 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
- 3350:595 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
- 3350:539 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
  - 3350:687 History of Geographic Thought
  - 3350:600, 601, or 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
  - 3350:549 Advanced Cartography
- 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)
  - 3350:581 Research Methods in Geography and Planning
  - 3350:583 Spatial Analysis
  - 3350:596 Field Research Methods
  - 3350:687 History of Geographic Thought
  - 3350:600, 601, 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
  - 3350:549 Advanced Cartography
- Environmental/Urban/Economic Electives (at least 9 credits)
  - 3350:516 Environmental Planning
  - 3350:520 Urban Geography
  - 3350:522 Transportation Systems Planning
  - 3350:528 Industrial and Commercial Site Location
  - 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
  - 3350:596 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
  - 3350:522 Land Use Planning Law
  - 3350:537 Planning Analysis and Projection Methods
  - 3350:538 Land Use Planning Methods
  - 3350:539 History of Urban Design and Planning
  - 3350:581 Research Methods in Geography and Planning
  - 3350:583 Spatial Analysis
  - 3350:630 Planning Theory
  - 3350:631 Facilities Planning
  - 3980:600, 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
  - 3350:522 Land Use Planning Law
  - 3350:537 Planning Analysis and Projection Methods
  - 3350:538 Land Use Planning Methods
  - 3350:539 History of Urban Design and Planning
  - 3350:581 Research Methods in Geography and Planning
  - 3350:583 Spatial Analysis
  - 3350:630 Planning Theory
  - 3350:631 Facilities Planning
  - 3350:699 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
  - 3350:544 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
  - 3350:533 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 credit) 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:
  - 3370:690 Seminar in Geology
  - 3370:699 Master’s Thesis
- 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; includ-
ing 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 prior to proceeding with graduate studies. A committee of engineering geology faculty will determine appropriate coursework on an individual basis.

<table>
<thead>
<tr>
<th>Required courses:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Geology Courses</td>
<td>18</td>
</tr>
<tr>
<td>Graduate Engineering Courses</td>
<td>8</td>
</tr>
</tbody>
</table>

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

**History**

**Master of Arts**
- Students applying for admission to the M.A. program must have a minimum undergraduate grade-point average of 3.0. The applicant’s average in history courses should be substantially higher.
- Applicants must also have completed at least 24 semester or 36 quarter hours in history courses at the undergraduate level. An application to the M.A. program consists of the following:
  - an application form;
  - a letter of intent, stating the applicant’s reasons for wishing to pursue graduate work and the fields of history which the applicant intends to study;
  - scores on the Graduate Record Examination, General Aptitude Test;
  - a writing sample, preferably a research paper from a history class;
  - three letters of recommendation, preferably from faculty who know the applicant well.
- Applicants whose native language is not English must also score at least 580 on the Test of English as a Spoken Language (TOEFL), at least 240 on the Test of Written English (TWE), and take the Test of Written English (TWE).

**Degree requirements include:**
- Satisfactory completion of a minimum of 30 credits of graduate study in history, of which only six may be in individual reading.
- Concentrated study of three fields, two of which must be chosen from the following:
  - Ancient America to 1877
  - Medieval United States Since 1877
  - Europe, Renaissance to 1760 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.
- 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>3650:625</td>
<td>Quantum Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>3650:641</td>
<td>Lagrangian Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>3650:661</td>
<td>Statistical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>3650:685</td>
<td>Solid-State Physics I</td>
<td>3</td>
</tr>
</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>3650:552</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 26.

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

**Political Science**

**Master of Arts**

**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
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).

Additional requirements:
- 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. 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 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


Admission

Admission is open to students who have completed a four-year undergraduate degree and who fulfill the admission requirements of the Graduate School. 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
    - 3700:690 Special Topics in Political Science (applied focus) 3
    - 3700:691 Seminar: Political Influence and Organizations 3
    - 3700:695 Internship in Government and Politics 3
    - 3700:696 Advanced Communication Studies: Communication in Political Campaigns 3
  - Three additional credits of topics in Master’s Research (3700:696) taken in the student’s third and fourth semesters. The student’s Faculty Advisory Committee must approve the topic and completed essay.
- Elective courses - 12 credits (6 credits must be at the 600-level) selected from the following courses:
  - 3700:630 American Political Parties 3
  - 3700:632 Politics and the Media 3
  - 3700:633 Political Behavior and Electoral Politics 3
  - 3700:635 Voter Contact and Elections 3
  - 3700:636 American Interest Groups 3
  - 3700:639 American Political Parties 3
  - 3700:640 Seminar in Comparative Politics 3
  - 3700:642 Seminar in National Politics 3
  - 3700:643 Seminar: Policy Agendas and Decisions 3
  - 3700:645 Special Topics in Political Science (applied focus) 3
  - 3700:646 Independent Research and Readings (applied focus) 3
  - 3900:614 Ethics and Public Service 3
  - 3700:650 Theories of Argument and Persuasion 3
  - 3700:651 Advanced Communication Studies: Communication in Political Campaigns 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 master’s degree’s requirements of the Graduate School.

Thesis Option

Completion of a minimum of credits of graduate work, including thesis, as follows:
- Applied Cognitive Aging program, 37 credits; Counseling program, 49 credits; and Industrial/Organizational program, 41 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, 49 credits; and Industrial/Organizational program, 39 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 of 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 may be granted for those with a GPA between 2.5 and 2.7, 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 may take up to 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.

- 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:

- 3980:600 Basic Quantitative Research 3
- 3980:601 Advanced Research and Statistical Methods 3
- 3980:602 History of Urban Development 3
- 3980:612 National Urban Policy 3

Choose two from the following:

- 3980:618 Citizen Participation 3
- 3980:621 Urban Society and Service Systems 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 specialization 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.

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.

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 required for admission will be based on the 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:

- 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 full admission will be made following those dates depending upon availability 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):
  - 3980:600 Basic Quantitative Research 3
  - 3980:601 Advanced Research and Statistical Methods 3
  - 3980:610 Legal Foundations of Public Administration 3
  - 3980:611 Introduction to the Profession of Public Administration 3
  - 3980:615 Public Organization Theory 3
  - 3980:616 Personnel Management in the Public Sector 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 Sector Management
  - Community Development
  - Non-Profit Administration
  - Public Health Administration
  - 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.

J.D./Master of Public Administration

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

Degree Requirements

Seventy-six credit hours 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 32 semester credits of which at least 21 must be at the 600 level or higher in sociology (excluding 3850:699, 3850:697 and 3850:698). 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 32 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 32 semester credits of which at least 21 must be at the 600 level or higher in sociology (excluding 3850:699, 3850:697, 3850:698 and 3850:696). 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
  - 3850:604 Research Design and Methods
  - 3850:706 Multivariate Techniques in Sociology
  - 3850:722 Early Sociological Thought
- Complete at least six hours of Master’s Research Paper (3850:696). 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
  - 3470:665 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
  - 3470:680 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 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 Seminar in Mathematics and 13-15 other approved elective graduate credit hours must be completed. 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 use 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
  - 3450:512 Abstract Algebra II 3
  - 3450:522 Advanced Calculus II 3
  - 3450:611 Topics in Algebra 3
  - 3450:621 Real Analysis 3
  - 3450:625 Analytic Function Theory 3
  - 3450:636 Advanced Combinatorics and Graph Theory 3
  - 3450:692 Seminar in Mathematics* 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
Completion of a placement process prior to the beginning of classes in the student’s first semester in the program. This process will consist of a review by a graduate faculty subcommittee of the student’s competency in Advanced Calculus I and II (3450:521,2) and of his or her background in at least one junior-level or higher course in engineering or physics. If the student fails any part of this review, then that course will be added to the required courses for the student and the total number of credits required for the degree will reflect this.
- Core:
  - 3450:510 Advanced Linear Algebra 3
  - 3450:621 Real Analysis 3
  - 3450:625 Analytic Function Theory 3
  - 3450:627 Advanced Numerical Analysis I, II 6
  - 3460:633.4 Methods of Applied Mathematics I, II 6
  - 3450:692 Seminar in Mathematics 1-3

Thesis Option (30-39 credits)
In addition to the placement review and core requirements, 3-6 credits of approved 500/600 level courses in mathematics (3450), statistics (3470), or computer science (3460), and 2-4 credits in 3450:699 Master’s Thesis must be completed. Any graduate-level course may be substituted as an elective provided that this is approved beforehand by the student’s advisory committee.

Nonthesis Option (33-42 credits)
In addition to the placement review and core requirements, 10 credits of approved 500/600 level courses in mathematics (3450), statistics (3470), or computer science (3460), must be completed. Any graduate-level course may be substituted as an elective provided that this is approved beforehand by the student’s advisory committee. Additionally, the student must successfully complete a Comprehensive Examination in the courses 3450:621, 625, 627, 633, and 634.

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, subject to the following conditions, for those graduate students who elect the interdisciplinary field of Engineering Applied Mathematics.

Admission 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 Requirements for the Doctor of Philosophy in Engineering, as given in the Graduate Bulletin (see page 37, College of Engineering), shall apply to all applicants for the Engineering Applied Mathematics Program.
College of Engineering

George Haritos, Ph.D., Dean
Subramaniam I. Hariharan, Ph.D., Interim Associate Dean, Research and Graduate Studies
Paul C. Lam, Ph.D., Associate Dean, Undergraduate Studies and Diversity Program

Mission of the College

The College of Engineering at the University is committed to excellence in undergraduate and graduate education. The College of Engineering was founded in 1914 and is the second oldest college at the University. The College embraces the departments of Biomedical Engineering, Chemical Engineering, Civil Engineering, Electrical and Computer Engineering, and Mechanical Engineering. The current research focus of the College includes: gas turbine technology, filtration technology, nanotechnology, lightweight automobile research, aero-propulsion technology, catalysis, industrial controls, computational mechanics, smart materials, composites and civil structures, and a variety of modeling and simulation issues of engineering problems. During the academic year 1989-90, the College adopted interdisciplinary procedures for the doctoral program offered by the College. The program is truly interdisciplinary in nature.

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

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

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

DOCTOR OF PHILOSOPHY IN ENGINEERING DEGREE

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

Admission Requirements

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

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

Applicants must submit official undergraduate transcripts, undergraduate grade point average, at least two letters of recommendation, and official results of the TOEFL, GRE. Personal statements or descriptions of post-baccalaureate experience that provide a rationale for the proposed graduate study may also be submitted.

The GRE requirements may be waived by the department for students holding degrees from ABET accredited programs. For those who took the exam under the old format, a minimum score of 1200 is expected on the combined analytical and quantitative portions of the GRE. Under the new format, a minimum score of 600 is expected on the quantitative portion of the GRE.

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

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

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

Applicants 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 credit 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 weaknesses.
- 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 disci-
plines for the interdisciplinary programs in Environmental Engineering, Materials Engineering, Mechanics, Systems Engineering, and Transport Processes. The objectives of the proposal were to allow doctoral students access to the infrastructure resources of the entire college and permit the interdisciplinary programs to adapt to the changing research and funding environment. Since the approval of the proposal, the interdisciplinary areas have expanded from the original five programs to ten interdisciplinary programs. These interdisciplinary programs are broadly defined as follows.

- **Environmental Engineering** includes the study of water and air pollution, environmental health, chemical disposal, waste management, noise control, resource engineering, and appropriate fields of urban planning.
- **Mechanics** includes the theoretical and experimental study of the stresses, strains, and endurance of structures, machines and various materials, mechanics of solids, fluids, solid, and composite materials.
- **Systems Engineering** include the scientific prediction, control, and evaluation of the performance of integrated operational systems, and interaction effects among the components of engineering systems. It includes system analysis and design, operations research, linear and dynamic programming.
- **Materials Engineering** studies the materials from the physical, chemical, and engineering standpoints. Its purpose is to develop a better understanding of the composition, properties, and performance of various materials, and to develop new materials, manufacturing methods, and applications.
- **Transport Processes** include the theoretical and experimental study of the transfer of mass, energy, and power, as related to engineering systems and processes.
- **Biomedical Engineering** studies the theoretical and experimental application of engineering principles to biomedical problems. Some typical areas of interest are signal and image processing, biomechanics, and biomaterials.
- **Polymer Engineering** combines fundamental engineering principles with the structure and theoretical properties of polymers to design and analyze polymer processes and equipment.
- **Engineering Applied Mathematics** applies advanced mathematics to technologically significant engineering problems.
- **Chemical Reactions and Process Engineering** studies chemical reactions, homogeneous chemical reactions, heterogeneous chemical reactions, and catalysis as applied to process engineering.
- **Microscale Physicochemical Engineering** studies small particles, surface science, agglomeration, and separation as applied to process engineering.

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

**COORDINATED AND JOINT PROGRAMS**

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

**Admission Requirements**

Applicants for the Engineering Applied Mathematics Program must have their graduate application and credentials evaluated by the College of Engineering Dean’s Office and the applied mathematics division of the Department of Theoretical and Applied Mathematics. The admission requirements for the Doctor of Philosophy in Engineering, as given in the Graduate Bulletin, shall apply to all applicants for the Engineering Applied Mathematics Program.

**Degree Requirements**

The applicable Degree Requirements for the Engineering Applied Mathematics Program are those given in the Graduate Bulletin under the Section Doctor of Philosophy in Engineering. These degree requirements include passing a Qualifying Examination, identifying a Dissertation Director, establishing an Interdisciplinary Doctoral Committee, completing a formal Plan of Study, satisfying the University’s language and residency requirement, passing a Candidacy Examination, presenting an acceptable Dissertation Proposal, writing a dissertation, and publicly and successfully (no “fail” votes) defending the dissertation before the Interdisciplinary Doctoral Committee.

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

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

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

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

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

The University of Akron and Youngstown State University are engaged in a coordinated program with the objective of facilitating graduate study by engineering students residing in proximity to Youngstown State University. This provides the opportunity and convenience of completing some of the requirements for the Doctor of Philosophy in Engineering at The University of Akron through joint counseling and enrollment at Youngstown State University.

**Admission Requirements**

When an engineering graduate student at Youngstown State University declares an interest in the joint doctoral program, the student shall prepare a letter of intent, with academic credentials, to the dean of engineering at Youngstown State University. The dean of engineering at Youngstown State University shall forward the letter of intent and academic credentials, together with a recommendation, to the dean of engineering at The University of Akron. The dean of engineering at The University of Akron shall have the graduate faculty in the applicant’s discipline evaluate the academic credentials and make a recommendation on the academic acceptability of the applicant. If the recommendation is favorable, the student shall be advised to apply to the Graduate School at The University of Akron for formal admission to the Doctoral Program in the College of Engineering at The University of Akron. The dean of Graduate Studies and Research at Youngstown State University shall be kept informed of the progress of the admission procedure. The applicant from Youngstown State University must satisfy the Admission Requirements for the Doctor of Philosophy in Engineering at The University of Akron.

**Degree Requirements**

The engineering student from Youngstown State University must satisfy the Degree Requirements for the Doctor of Philosophy in Engineering at The University of Akron subject to the following modifications.

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

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

**Joint program for the M.D. and Ph.D. in Engineering degree between the College of Engineering at The University of Akron and the Ohio/Poland/Ohio-Related Northeast 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 integrates knowledge and skills acquired by the student in each of the programs. Each individual coordinated degree program is tailormade 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 engineering or in engineering will be required to meet the Admission Requirements for the Doctor of Philosophy Degree in Engineering. Applicants will be required to have completed the following courses and to have taken the MCAT prior to admission into the coordinated M.D. and Doctor of Philosophy in Engineering program:

- M.D. Principles of Chemistry I and II
Complete a formal Plan of Study that is acceptable to the Advisory Committee. Identify a three-member Advisory Committee including a major advisor before department's academic requirements must all be satisfied for the master of science degree. The five-year BS/MS Chemical Engineering Program 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 Chemical Engineering**

Applicants with a bachelor's degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, and 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. 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>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>
</tbody>
</table>

**Nonthesis Option**

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
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</tr>
<tr>
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</tr>
</tbody>
</table>

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

**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, and 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. 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>
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</thead>
<tbody>
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</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

**Degree Requirements**

The University’s Academic Requirements (See Academic Requirements in this Graduate Bulletin), the following College of Engineering requirements and the department’s academic requirements must all be satisfied for the master of science degrees in the College of Engineering.

- Identify a three-member Advisory Committee including a major advisor before completion of 9 credit hours of coursework.
- Complete a formal Plan of Study that is acceptable to the Advisory Committee with a minimum of 24 credit hours of coursework of which no more than 6 credits are special topics courses. The formal Plan of Study may be revised upon approval of the Advisory Committee.

**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, and 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>
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**Nonthesis Option**

<table>
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<tr>
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</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
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</tbody>
</table>
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.

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**Master of Science in Mechanical Engineering**

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, and must select and complete undergraduate coursework from one of four undergraduate disciplines. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has full admission or provisional admission, and is enrolled for at least 9 graduate credits.

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

**Total 27**

Main areas of graduate study in mechanical engineering include systems and controls, engineering mechanics, and thermal-fluid sciences. Students in the department are encouraged to take at least one mechanical engineering course outside the main area of interest to develop some breadth in their graduate education.

**Thesis Option**

- Mechanical Engineering Courses* 15
- Approved Mathematics 3
- Approved Electives 6
- Master’s Thesis 6
- **Total 30**

**Nonthesis Option**

- Mechanical Engineering Courses* 15
- Approved Mathematics 3
- Approved Electives 12
- Engineering Report 2
- **Total 32**

---

**Master of Science in Engineering**

This program is intended for the student whose educational objectives cannot be met by the four departmental master of science programs or those who wish to specialize in biomedical engineering, polymer engineering, or engineering management.

**Admissions**

Except for students in biomedical engineering and polymer engineering, students should declare in writing to the Dean of Engineering of their intention to study toward the Master of Science in Engineering degree. Upon admission, the dean will appoint an advisory committee consisting of three faculty members who are selected from at least two different departments.

**Thesis Option**

- Engineering Courses 12
- Approved Mathematics or Science 3
- Approved Electives 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
- **3100:696 Physiology for Engineers and Lab** 5
- Approved Electives 15
- Master’s Thesis 6
- **Total 33**

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

**Polymer Engineering Specialization**

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

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

---

**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. The Engineering Management Report must be approved by the Advisory Committee, of which one member shall be from the College of Business Administration.

- Engineering Courses 21
- Management Courses 15
- Engineering Management Report 2
- **Total 38**

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

**Required Courses**

- **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.

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**Notes:**

*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 Business Programs, College of Business Administration.

**6200:601 is a prerequisite for 6400:602.
College of Education
Elizabeth J. Stroble, Ph.D., Dean
Robert K. Eley, Ed.D., Assistant Dean for Student Affairs
Charlene K. Reed, Ph.D., Assistant Dean for Administration and Strategic Initiatives

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/Admission Office. (330) 972-6970.

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 fulfilling the general requirements of the Graduate School, has met the following specific requirements:

1. Successful completion of all Departmental Admission Requirements.
2. Completion of the Miller Analogies Test or the Graduate Record Examination (GRE).
3. A minimum of 92 graduate credits including the doctoral dissertation. A student considered deficient in any area may be required to take additional courses.
4. Completion of a foundation studies program designed to prepare the student before specialization.
5. 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.)
6. Completion of a least six credits in cognate area.
7. Completion of a comprehensive written and oral examination.
8. 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.

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-12 teaching, elementary, middle, secondary, postsecondary, higher education, and other institutions or agencies that might have educational/learning programs. A qualified student can, through consultation with an advisor and within the expertise and resources of the department, design a specialization to meet his/her career objectives.

Program Description
The program is predicated on the belief that an effective instructor evolves from a well-planned program containing exposure in three basic areas:

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

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

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

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

Admission Requirements
Admission to the Curricular and Instructional Studies Ph.D. program is limited to a select number of students each 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:

- 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.
- Applicants who score less than 45 on the MAT (or 550 on the verbal portion of the GRE) but receive passing evaluations on the controlled writing assignment 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.
- 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.
- All doctoral applicants must take the MAT or the GRE. A MAT or GRE taken within the last five years will be accepted.

5. Intended area of specialization is compatible with departmental resources and goals.
6. 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 Procedures of the Doctoral Programs in Education by March 1. Admissions are only processed once a year.
2. Complete the Miller Analogies Test or Graduate Record Exam. A MAT or GRE taken within the last five years will be accepted.
3. Complete a writing sample offered in March.
4. Complete the “Agreement to Advise” form and secure faculty signatures by March 1. The major advisor must be from the Department of Curricular and Instructional Studies; the minor advisor must be from the College of Education.
5. If requested by the Department, interview with a committee of departmental Graduate Faculty. Candidates may also be judged on depth and breadth of knowledge, poise, thinking ability, ability to communicate verbally, relevant educational work experience, uniqueness, potential success in desired field, and motivation and commitment to a position of educational leadership.
6. In certain cases an applicant may be required to take course work on the graduate level at The University of Akron before a final decision on his/her application for admission is made.
7. Candidates must have at least three years of teaching experience. (This does not apply to postsecondary/technical adult education area candidates.)

**Additional Research Competency**

In addition to successfully completing the approved program of courses, the Ph.D. student must display competency in one of the following areas. Course work taken to develop the competency may not be applied to the total number of hours required in the Ph.D. program.

- **a. Foreign Language**
  
  A reading knowledge of one foreign language. The Department will work cooperatively with the Department of Modern Languages to determine that the student does in fact demonstrate the ability to read in a foreign language i.e., a language other than the student’s native language and excluding English.

- **b. Statistics/Research Methods**
  
  Students will successfully complete a minimum of 9 hours of additional advanced statistical/research methods courses approved by student’s advisor.

- **c. Professional Publication**
  
  The preparation of a research or position paper accepted for publication by a refereed professional journal. The student may serve as senior or co-author. The advisor must file a letter of approval of the published writing. This letter shall present the advisor’s review of the academic integrity of the published article in terms of adequacy in meeting this requirement. A letter of acceptance for publication shall be considered as published.

**Curricular and Instructional Studies Ph.D. Course Requirements**

| Social-Philosophical Foundations (15) |  |  |
| 5100:600 Philosophies of Education (or 602 or 604) | 3 |
| 5100:620 Psychology of Instruction for Teaching and Learning (or 624 or 5400:500) | 3 |
| 5100:701 History of Education in American Society (or 703) | 3 |
| 5100:705 Seminar in Social/Philosophical Foundations of Education | 3 |
| 5100:722 Teaching Behavior and Instruction (or 721 or 710) | 3 |

| Research Foundations (18) |  |  |
| 5100:640 Techniques of Research | 3 |
| 5100:740 Research Design | 3 |
| 5100:741 Data Collection Methods | 3 |
| 5100:742 Statistics in Education | 3 |
| 5100:801 Seminar I: Exploratory/Qualitative | 3 |
| 5100:801 Seminar: Empirical or Seminar II: Ethnographic/History or Case Study Research or Legal Research and Writing or an independent course | 3 |

| Curricular and Instructional Studies Core (15) |  |  |
| 5500:800 Professional Doctoral Seminar in Curricular and Instructional Studies | 3 |
| 5500:880 Seminar in Curricular and Instructional Studies | 3 |
| 5500:600 Concepts of Curriculum & Instruction | 3 |
| 5500:605 Seminar in Trends and Issues in Curriculum & Instruction | 3 |

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

| Area of Specialization: 18 credit hours |  |  |
| Cognate Area Outside of Education: 6 credit hours |  |  |
| Dissertation: 20 credit hours |  |  |
| Total Program: 92 credit hours |  |  |

Additional coursework taken to develop a competency area may not be applied to the total number of hours required in the Ph.D. program.

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**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: 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 application 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 completed and returned to the Graduate School.
- A minimum combined score on the Graduate Record Examination (GRE) General Test (verbal and quantitative sections) of 1100 is recommended. All students must also complete the GRE Psychology Subject Test and have these results reported to the 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>5100:648</td>
<td>Individual and Family Life-Span Development</td>
</tr>
<tr>
<td>5100:742</td>
<td>Statistics in Education</td>
</tr>
<tr>
<td>5100:763</td>
<td>Advanced Educational Statistics</td>
</tr>
<tr>
<td>5600:651</td>
<td>Techniques of Counseling</td>
</tr>
<tr>
<td>5600:675/676</td>
<td>Practicum in Counseling I/II</td>
</tr>
<tr>
<td>3750:610</td>
<td>Core I: Social Psychology</td>
</tr>
<tr>
<td>3750:620</td>
<td>Core II: Cognitive Psychology</td>
</tr>
<tr>
<td>3750:630</td>
<td>Core III: Individual Differences</td>
</tr>
<tr>
<td>3750:640</td>
<td>Core IV: Personality Psychology</td>
</tr>
<tr>
<td>3750:650</td>
<td>Core V: Social-Cognitive Psychology</td>
</tr>
<tr>
<td>3750:750</td>
<td>Advanced Psychological Test and Measures</td>
</tr>
<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum I</td>
</tr>
<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum II</td>
</tr>
<tr>
<td>5600:707</td>
<td>Supervision in Counseling Psychology</td>
</tr>
<tr>
<td>5600:709</td>
<td>Introduction to Counseling Psychology</td>
</tr>
<tr>
<td>5600:710</td>
<td>Theories of Counseling and Psychotherapy</td>
</tr>
<tr>
<td>5600:711</td>
<td>Vocational Behavior</td>
</tr>
<tr>
<td>5600:712</td>
<td>Principles and Practice of Intelligence Testing</td>
</tr>
<tr>
<td>5600:713</td>
<td>Professional, Ethical and Legal Issues in Counseling Psychology</td>
</tr>
<tr>
<td>5600:714</td>
<td>Objective Personality Evaluation</td>
</tr>
</tbody>
</table>

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**Graduate Studies**
The comprehensive written examination is prepared, administered, and graded by program faculty. At least one core Counseling Psychology faculty member from each department is required to participate in the oral portion of the comprehensive examination. At least one core Counseling Psychology faculty member from each department is required to participate on the student’s dissertation committee.

Internship sites must be approved by the Collaborative Program Internship Committee. Internships must include 2,000 post-master’s hours and be completed in less than two years.

Ph.D. in 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 the 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 (COAMFTE) 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>
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<tbody>
<tr>
<td>5100:705</td>
<td>Social-Philosophical Foundations</td>
<td>3</td>
</tr>
<tr>
<td>5100:639</td>
<td>Emerging Technologies for Instruction</td>
<td>3</td>
</tr>
<tr>
<td>5100:742</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:743</td>
<td>Advanced Educational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>5600:710</td>
<td>Research Design in Counseling I</td>
<td>3</td>
</tr>
<tr>
<td>5600:715</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>5600:707</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>5600:709</td>
<td>Supervision in Counseling Psychology I</td>
<td>4</td>
</tr>
<tr>
<td>5600:708</td>
<td>Counseling Psychology I</td>
<td>4</td>
</tr>
<tr>
<td>5600:710</td>
<td>Theories of Counseling and Psychotherapy</td>
<td>4</td>
</tr>
<tr>
<td>5600:869</td>
<td>System Theory in Family Therapy</td>
<td>3</td>
</tr>
<tr>
<td>5600:725</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>XXXX</td>
<td>Cognates (minimum of 3 credits taken outside of the College and dependent upon specific track)</td>
<td>6-10</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>5600:785</td>
<td>Internship Counselor Education</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>(minimum of 2 semesters/600 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>

Minimum Total Credit Hours Required 120

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:740</td>
<td>Research Design</td>
<td>3</td>
</tr>
<tr>
<td>5100:741</td>
<td>Data Collection Methods</td>
<td>3</td>
</tr>
<tr>
<td>5100:742</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:743</td>
<td>Advanced Educational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>5100:801</td>
<td>Research Seminar: Exploratory/Qualitative</td>
<td>3</td>
</tr>
<tr>
<td>5100:801</td>
<td>Research Seminar: Ethnographic/Historical</td>
<td>3</td>
</tr>
<tr>
<td>5100:801</td>
<td>Research Seminar: Case Study Research</td>
<td>3</td>
</tr>
<tr>
<td>5100:801</td>
<td>Research Seminar: Legal Research and Writing</td>
<td>3</td>
</tr>
<tr>
<td>5100:801</td>
<td>Research Seminar: Empirical Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

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>5170:706</td>
<td>Decision Making in Educational Leadership</td>
<td>3</td>
</tr>
<tr>
<td>5170:708</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>5170:726</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>5170:745</td>
<td>Seminar: Urban Issues</td>
<td>3</td>
</tr>
<tr>
<td>5170:746</td>
<td>Politics of Education</td>
<td>3</td>
</tr>
<tr>
<td>5170:710</td>
<td>Advanced School Law</td>
<td>5</td>
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</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>5170:840</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
MASTER’S DEGREE

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.*

5100:600 Philosophies of Education 3
5100:602 Comparative and International Education 3
5100:604 Topical Seminar in the Cultural Foundations of Education 3
5100:620 Psychology of Instruction for Teaching and Learning 3 or
5100:624 Seminar: Educational Psychology 3
5100:640 Techniques of Research 3

*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 e-mail 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.

• Foundations Courses (Select one course from each area)
  – Behavioral Foundations
    5100:620 Psychology of Instruction for Teaching and Learning 3
    or
    5100:624 Seminar: Educational Psychology 3
    or
    5600:648 Individual and Family Development Across the Lifespan 3
  – Humanistic Foundations
    5100:600 Philosophies of Education 3
    or
    5100:604 Topical Seminar in the Cultural Foundations of Education 3
    or
    5600:648 Individual and Family Development Across the Lifespan 3
  – Research
    5100:640 Techniques of Research 3
  Minimum Foundation Hours Required 9

• Required Departmental Courses
  5600:631 Elementary/Secondary School Counseling 3
  5600:647 Career Development and Counseling Across the Lifespan 3
  5600:645 Tests and Appraisal in Counseling 4
  5600:610 Counseling Skills for Teachers 3
  5600:663 Developmental Guidance and Emotional Education 3
  5600:695 Field Experience (MUST be taken before or concurrently with 663) 1
  5610:540 Developmental Characteristics of Exceptional Individuals 3
  or
  5610:604 Education and Management Strategies for Parents of Exceptional Individuals 3

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
    5600:648 Multicultural Counseling 3
  – Research
    5100:640 Techniques of Research 3
  Minimum Foundation Hours Required 9

• Required Counseling Department Courses
  – Professional Orientation
    5600:600 Seminar in Counseling 1
    5600:635 Community Counseling 3
    Subtotal 4
  – Counseling Theory
    5600:643 Counseling Theory & Philosophy* 3
    5600:647 Career Development and Counseling Across the Lifespan 3
    Subtotal 6
  – Appraisal
    5600:645 Tests and Appraisal in Counseling (prerequisite: 5600:640) 4
    Subtotal 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** (prerequisite 5600:653) 5
    Subtotal 12

Graduate Studies 43
Required Counseling Department Courses

• Specialized Studies
  5600:620 Issues in Sexuality for Counselors 3

• Clinical Counseling Component
  5600:720 Topical Seminar: Guidance and Counseling - Personality & Abnormal 3
  5600:714 Objective Personality Evaluation 4
  5600:720 Topical Seminar: Guidance and Counseling - DSM-IV 3
  5600:720 Topical Seminar: Guidance and Counseling - Treatment in Counseling 3
  Also, choose one of the following three courses:
  5600:655 Marriage and Family Therapy: Theory and Techniques 3
  5600:732 Addiction Counseling I: Theory and Assessment 3
  5600:734 Addiction Counseling II: Treatment Planning and Intervention Strategies 3

Minimum Semester Hours Required for Program 60

* Counseling Theory and Philosophy and Techniques of Counseling may be taken concurrently.
** Must sign up with Secretary one year in advance.
† Must sign up with Internship Coordinator no later than second week of term preceding internship.
‡ Practicum and Internship require closed class permission. You must request one from the Department prior to registering.

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
• Departmental supplemental application

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
• Departmental supplemental application

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

5600:683 Seminar in School Counseling 3
5600:695 Field Experience: Master’s 1
One of the following: 5600:660, 5600:640, or 5600:622  (3 credit hours)
One of the following: 5610:667 or 5620:559  (3 credit hours)

• Foundations (select one course from each area)
  – Behavioral Foundations
    5600:648 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
    5600:600 Seminar in Counseling** 1
    5600:655 Marriage and Family Therapy: Theories and Techniques 3
    5600:623 Marriage and Family Therapy Couns/Therapy Ethics & Prof Identity 3

  – Counseling Theory
    5600:667 Marital Theory (prerequisite 5600:655) 3
    5600:669 Systems Theory in Family Therapy (prerequisite 5600:655) 3
    5600:643 Counseling Theory and Philosophy 3
    5600:647 Career Development and Counseling Across the Life Span 3

Minimum Department Hours Required 35

– Internship
  5600:685 Internship in Counseling†‡ (prerequisite 5600:675) 6

Minimum Department Hours Required 35

• Specialized Studies (both required)
  5610:540 Developmental Characteristics of Exceptional Individuals 3
  5600:241 Counseling Youth At Risk 3

Minimum Department Hours Required 50

* Counseling Theory and Philosophy and Techniques of Counseling may be taken concurrently.
** Must sign up with Secretary one year in advance.
†‡ Must sign up with Internship Coordinator no later than second week of term preceding internship.
‡ Practicum and Internship require closed class permission. You must request one from the Department prior to registering.

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
    5100:640 Techniques of Research 3
    5100:741 Statistics in Education 3

Minimum Foundation Hours Required: 9

• Required Counseling Department Courses (all required)
  – Professional Orientation
    5600:600 Seminar in Counseling** 1
    5600:655 Marriage and Family Therapy: Theories and Techniques 3
    5600:623 Marriage and Family Therapy Couns/Therapy Ethics & Prof Identity 3

  – Counseling Theory
    5600:667 Marital Theory (prerequisite 5600:655) 3
    5600:669 Systems Theory in Family Therapy (prerequisite 5600:655) 3
    5600:643 Counseling Theory and Philosophy 3
    5600:647 Career Development and Counseling Across the Life Span 3

Minimum Department Hours Required 35

– Internship
  5600:685 Internship in Counseling (2 terms, prerequisite 5600:675)** 6

Minimum Department Hours Required 38

• Specialized Studies
  – Family Studies
    5600:720 Topical Seminar:Guidance & Counseling/DSM IV 3
    5600:720 Topical Seminar:Guidance & Counseling/Personality & Abnormal Behavior 3
    5600:755 Assessment and Treatment Issues in Marriage and Family Therapy 3
    7400:652 Family in Life-Span Perspective 3
    7400:605 Developmental Parent-Child Interactions 3
  – Sexuality (choose one)
    5600:620 Issues in Sexuality for Counselors 3
    7400:542 Human Sexuality 3
  – Human Development and Individual Differences (choose one)
    3750:520 Abnormal Psychology 4
    3750:530 Psychological Disorders of Children 4

Minimum Specialized Studies Required 13-16

Minimum Hours for Marriage and Family Therapy 62-63

** 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.
† Must sign up with Internship Coordinator no later than second week of term preceding internship.
‡ Practicum and Internship require closed class permission. You must request one from the Department prior to registering.
§ Must sign up with Secretary one year in advance.
**School Psychologist**

*(admissions temporarily suspended)*

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

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

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

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

- **Professional requirements:**
  - 3750:700 Survey of Projective Techniques 4
  - 3750:530 Psychological Disorders of Childhood 4
  - 3750:712 Principles and Practice of Individual Intelligence Testing 4
  - 5600:643 Counseling: Theory and Philosophy 3
  - 5620:600 Seminar: Role and Function of School Psychology 3
  - 5620:602 Behavioral Assessment 3
  - 5620:610 Educational Diagnosis for the School Psychologist 4
  - 5620:694 Research Project in Special Area 2-3
  - 5620:698 Master’s Problem 2-4
  - 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 Personality 4**
- 5610:543 Developmental Characteristics of Learning Disabled Individuals 3
- 5500:626 Reading Diagnosis for School Psychologists and Support Personnel 3
- 5610:540 Developmental Characteristics of Exceptional Individuals 3**
- 3750:520 Abnormal Psychology 3**
- 5620:603 Consultation Strategies for School Psychology 3
- 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
- 5620:695/696 Field Experience: Master’s 3
- 5700:631 Elementary School Administration 3
- 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 internship 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, 5500:576 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**:  
  - 5500:662 Children’s Literature in the Curriculum 3
  - or 5500:677 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

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

**Elementary Education with Licensure (M.S.)**

*(admissions temporarily suspended)*

This program is open to highly qualified students who hold the B.A. or B.S. degree in certain fields (see program advisor or department chair). All requirements for certification must be met including the field and clinical/diagnostic experience.
- 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
  - 5100:698 Field Experience: Master's (Section 001) 1

- Curricular and Instructional Studies – 11 credits:
  - 5500:617 Elementary and Secondary Licensure Seminar 3
  - 5500:630 Field Experience (Section 011) 1
  - 5500:575 Instructional Technology Applications 3
  - 5500:618 Advanced Instructional Techniques 3
  - 5500:695 Field Experience (Section 021) 1

- Field Experience (Student Teaching) – 11 credits:
  - 5550:695 Field Experience: Master's (Section 005) 5
  - 5550:695 Field Experience: Master's (Section 005) 5
  - 5550:695 Field Experience: Master's (Section 031) 1

  Total Program: 32 credits

- A minimum of 29 additional undergraduate credits will be required for licensure. A comprehensive exam is required. See Department of Curricular and Instructional Studies for complete list of requirements.

Secondary Education (M.A.)

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, mathematic, 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.
  - 5500:600 Concepts of Curriculum and Instruction 3
  - 5500:605 Seminar in Trends and Issues in Curriculum and Instruction 3
  - 5500:656 Seminar in Trends and Issues in one's concentration area in curriculum and instruction.

- Field Experience (Student Teaching) – 11 credits:
  - 5550:695 Field Experience: Master's (Section 005) 5
  - 5550:695 Field Experience: Master's (Section 005) 5
  - 5550:695 Field Experience: Master's (Section 031) 1

  Total Program: 32 credits

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 multi-subject 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. 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:

- Complete 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 Pathways 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
  - 5550:780 Seminar: Curricular/Instructional Studies (Reading in K-12 Programs (Multi-subject) 3
  - 5550:650 Field Experience: Master’s with Licensure 1
  - 5550:630 Field Experience: Master’s with Licensure 1
  - 5550:xxx Elective in curriculum or teaching practices approved by advisor 2

- A comprehensive examination is required.

  Total Program: 45 credits

(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. Additional credit is awarded for the experience connected to that particular portfolio entry. The portfolio must also be submitted for acceptance before student teaching and again prior to program completion.

Clinical and Field-Based Experiences

All teacher education 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 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 area test or tests, 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(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. It is designed to provide school personnel with an in-depth knowledge base and advanced skills needed to work effectively in inclusive schools and 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.

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, his/her advisor can assist in program planning for licensure.

- **Foundations core (9 credits):**
  - 5100:600 Philosophy of Education 3
  - 5100:620 Psychology of Instruction for Teaching and Learning 3
  - 5100:640 Techniques of Research 3

- **Special Education core: (21 credits)**
  - 5610:601 Seminar Special Education Curriculum Planning 3
  - 5610:602 Supervision of Instruction 3
  - 5610:604 Collaboration and Consultation Skills for Special Educators 3
  - 5610:605 Inclusion Models and Strategies 3
  - 5610:606 Research Applications in Special Education 3
  - 5610:611 Seminar: Legal Issues in Special Education 3
  - 5610:612 Seminar: Social/ethical Issues in Special Education 3

Total Program 30-33

- **Option: Student Master’s Paper (select one)**
  - 5610:694 Research Project in Special Area 3
  - 5610:698 Master’s Problem 3
  - 5610:699 Master’s Thesis 4-6

Graduate K-12 Technology Endorsement

This endorsement is only available to teachers or teacher candidates who have obtained or who are simultaneously getting an initial Ohio license/certificate (e.g., in early childhood, middle level, adolescent/young adult, special education, etc.) Individual school districts, not the State of Ohio or the University of Akron, determine the extent to which the endorsement is applicable to their needs and requirements. For further information on this endorsement contact the Department of Curricular and Instructional Studies.

Educational Foundations and Leadership

Educational Administration

The Department of Educational Foundations and Leadership offers programs leading to educational administrative specialization licenses granted by the Ohio Department of Education. Each of these specialist licensure programs consists of a general administration master’s degree and a post-master’s block of required courses.

**Administrative Specialist: Educational Research**

- **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
  - 5100:731 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 Superintendent 3
  - 5170:793 Advanced Educational Statistics 3
  - 5170:795/6 Internship 4
  - 5170:801 Research Seminar 3

Graduate and Supervision – 6:

- 5170:609 Principles of Curriculum Development 3

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 Principalsip 3
- 5170:795/6 Internship (fall and spring) 4

Administrative Specialists

The Department of Educational Foundations and Leadership offers programs leading to Educational Administrative Specialist licenses granted by the Ohio Department of Education.

For further information on these endorsement contact the Department of Curricular and Instructional Studies.
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 Superintendent 3
5170:795/6 Internship 4
6800:654 Industrial Relations 3

Administrative Specialist: Instructional Services (Curriculum, Instruction, and Professional Development)

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

Post-Master’s Requirements – 13 credits:
5170:609 Principles of Curriculum Development 3
5170:610 Principles of Educational Supervision 3
5170:613 Administration of Pupil Services 3
5170:795/6 Internship 4

Administrative Specialist: Pupil Personnel Administration

Foundation Studies – 12 credits:
5100:600 Philosophies of Education 3
or
5100:604 Topical Seminar in the Cultural Foundations of Education 3
or
5100:620 Psychology of Instruction for Teaching and Learning 3
or
5100:624 Seminar: Educational Psychology 3
5100:636 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
5170:613 Administration of Pupil Services 3
5170:707 The Superintendent 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

Administrative Specialist: School and Community Relations

Foundation Studies – 12 credits:
5100:600 Philosophies of Education 3
or
5100:604 Topical Seminar in the Cultural Foundations of Education 3
or
5100:620 Psychology of Instruction for Teaching and Learning 3
or
5100:624 Seminar: Educational Psychology 3
5100:636 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
5170:610 Principles of Educational Supervision 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

Superintendent Program

Both teaching and administrative experience is required for the superintendent licensure.

Foundation Studies – 12 credits.
5100:600 Philosophies of Education 3
or
5100:604 Topical Seminar in the Cultural Foundations of Education 3
or
5100:620 Psychology of Instruction for Teaching and Learning 3
or
5100:624 Seminar: Educational Psychology 3
5100:636 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 Superintendent 3
5170:795/6 Internship 4

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. Specialized 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
5190:620 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
5190:600 Advanced Administrative Colloquium in Higher Education 3
5190:601 Internship in Higher Education 2
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 3
5190:590 Workshop 3

Students must successfully complete a master’s comprehensive examination for the Educational Administration-Higher Education Option.
Graduate Studies 49

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)

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
  or
  5100:604 Topical Seminar in the Cultural Foundations of Education 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
- Electives (choose 9-15 hours from the following)
  5100:512 Design and Production of Instructional Materials 3
  5100:520 Introduction to Instructional Computing 3
  5100:530 Workshop: Instructional Technology (may be repeated for up to 6 credits) 3
  5100:652 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 Independent Study: Master’s
  5100:697 Master’s Problem 3
  5100:699 Master’s Thesis 4-6
  5100:702 Statistics in Education 3
  5100:709 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
  or
  5100:604 Topical Seminar in the Cultural Foundations of Education 3

- Electives (15-21 hours)
  5100:620 Psychology of Instruction for Teaching and Learning 3
  or
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

- Electives (15-21 hours)
  5100:600 Philosophies of Education 3
  or
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  or
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

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

- Electives (15 hours)
  5100:642 Topical Seminar in Measurement and Evaluation: Introduction to Psychometric Techniques 3
  5100:642 Topical Seminar in Measurement and Evaluation 3
  5100:699 Master’s Thesis 4-6
  5100:700 Research Design 3
  5100:702 Statistics in Education 3
  5100:703 Advanced Educational Statistics 3
  5100:798 Research Projects in Special Areas: Advanced Psychometric Techniques and Measurement 3
  5100:801 Research Seminar: Multiple Regression, Model Building Data Analysis Procedures 3
  5100:801 Research Seminar: Path Analysis, Multivariate Statistical Techniques 3

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 studies in education, history of education, philosophy of education, and sociology of education. Students collaborate with their advisers in selecting one or more of the above disciplines to create a graduate program tailored to their needs, interests, and professional aspirations. Students may be either encouraged or required to study with faculty in other departments or institutions to develop inter-disciplinary programs and perspectives.

Graduates of the program can earn a Master of Arts in Education degree in preparation for careers in both traditional and non-traditional educational settings and for further doctoral study in anthropology of education, comparative/international education, cultural studies in education, history of education, philosophy of education, and sociology of education. Graduates are more employable in positions that require in-depth understanding of the broader social contexts of educational policy.
Postsecondary Technical Education

The major objective of the postsecondary technical education program is to prepare the instructor and other educational personnel for postsecondary educational institutions, industry, and public and private agencies engaged in the education and training of technicians and middle-level workers.

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 for 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:
  - 5100:620 Introduction to Instructional Computing 3
  - 5100:650 Teaching in Business and Industry (or 5570:525) 3
  - 5400:604 Topical Seminar in Cultural Foundations 3
  - 5400:605 Postsecondary Learner 3
- Required Foundation Courses:
  - 5100:620 Professional Technical Education Courses – 16 credits:
    - 5400:601 Learning with Technology (prerequisite for all courses) 1
    - 5400:602 Workforce Education for Youth and Adults 3
    - 5400:603 Systematic Curriculum Design for Postsecondary Instruction 3
    - 5400:604 Systematic Instructional Design in Postsecondary Education 3
    - 5400:605 Advanced System Design: Needs Assessment and Evaluation 3
    - 5400:607 Internship in Postsecondary Education 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 to 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

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.

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 I can learn about teaching and what decisions do I face as a professional educator?” Students will be assigned an advisor with whom they should consult on a regular basis. In fact, advisor approval is required on certain course work.

- Required Foundation Courses:
  - 5100:600 Philosophies of Education 3
  - 5100:601 Topical Seminar in the Cultural Foundations of Education 3
  - 5100:602 Psychology of Instruction for Teaching and Learning 3
- 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
  - 5550:603 Tactics and Strategies in the Science of Teaching and Coaching 3
  - 5550:604 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 3
  - 5550:695 Field Experience: Master’s 2 (minimum)
  - 5550:697 Field Experience: Master’s 2 (minimum)
  - 5550:698 Master’s Problem 2 (minimum)
  - 5550:699 Master’s Thesis 2 (minimum)
- Total Program 33

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

Option: Exercise Physiology/Adult Fitness

This graduate program, requiring a minimum of 34 credits, is designed to prepare students for advanced study in exercise physiology and future employment in adult...
fitness, corporate fitness and cardiac rehabilitation programs. Special attention is also given to knowledge and practical skills necessary for students preparing for American College of Sports Medicine certifications.

- **Required Foundation Courses:**
  - 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:**
  - 5550:600 Biomechanics Applied to Sports and Physical Activity 4
  - 3100:569 Respiratory Physiology 3
  - 5550:501 Musculoskeletal Anatomy II 3
  - 3100:566 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
  - 3100:587 Sports Nutrition 3

- **Electives:** Select at least one (1) course from among the following and have advisor approval.
  - 5550:696 Field Experience: Master's 2
  - 5550:698 Master's Problem or Subtotal 2 (minimum)

- **Required Courses:**
  - 5550:501 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/20 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 and Subtotal 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
  - 3100:587 Sports Nutrition 3
  - Subtotal 24-27

- **At least two (2) credits from among the following:**
  - 5550:696 Field Experience: Master's or 3
  - 5550:698 Master's Problem or 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) 1-6
  - 5570:521 Comprehensive School Health 4
  - Total Program 35

**School Nurse License Program**

**Admission Requirements—Sequence 1**

- R.N. License
- B.S.N. Degree
- Admittance to Graduate School
- Admittance to College of Nursing (Graduate Studies)
- Admittance to College of Nursing (Special/Non-Degree status)
- Selected coursework in College of Education and College of Nursing
- Supervised School Nurse experience
- Course work distributed over the following areas:
  - Community health; family counseling; mental and emotional health, current topics in health education; methods of teaching/instructional design; learner and learning process; evaluation and measurement of learning; principles, comprehensive school health; advanced pediatric/adolescent assessment; advanced nursing research.

To satisfy the above requirements, an applicant must complete at least the following 12 graduate credits or their equivalents of College of Education core courses listed below:

- 5570:520 Community Health 2
- 5570:521 Comprehensive School Health 4
- 5570:523 Methods and Materials of Teaching Health Education 3
- 5100:742 Statistics in Education 3

- **Applicant must also complete 11-16 graduate credits of College of Nursing courses listed below:**
  - 8200:650 Advanced Pediatric/Adolescent Assessment 3
  - 8200:613 Nursing Inquiry I 3
  - 8200:593 School Nurse Practicum I 5
  - 8200:594 School Nurse Practicum II (required of all school nursing students) 5

- **Total Subtotal 12**

**Admission Requirements—Sequence 2**

- R.N. License
- B.S.N. Degree
- Admittance to Graduate School
- Admittance to College of Nursing (Graduate Studies)
- Admittance to College of Nursing (Special/Non-Degree status)
- 12 graduate credits of College of Education core courses listed below:

- 5570:520 Community Health 2
- 5570:521 Comprehensive School Health 4
- 5570:523 Methods and Materials of Teaching Health Education 3
- 5100:742 Statistics in Education 3

- **Applicant must also complete 11-16 graduate credits of College of Nursing courses listed below:**
  - 8200:650 Advanced Pediatric/Adolescent Assessment 3
  - 8200:613 Nursing Inquiry I 3
  - 8200:593 School Nurse Practicum I 5
  - 8200:594 School Nurse Practicum II (required of all school nursing students) 5

- **Total Subtotal 12**

**Admission Requirements—Sequence 3**

- Admittance to the College of Nursing MSN Program—Child and Adolescent Track
- Admittance to College of Education (Special/Non-Degree status)
- Completion of the MSN Program in the Child and Adolescent Track
- Plus 12 graduate credits of College of Education core courses:
  - 5570:520 Community Health 2
  - 5570:521 Comprehensive School Health 4
  - 5570:523 Methods and Materials of Teaching Health Education 3

- **Total 12**

**Master's degree plus licensure.**

* The school nurse practicum is contained in the MSN program in 8200:651 and 655 which fulfill the requirements of 8200:553 and 554.
MISSION STATEMENT

The MBA program is the principal graduate program of UAs College of Business Administration. The objective of the MBA program is to provide a diverse group of men and women with the skills, leadership, vision, and innovative spirit needed to rise to positions of organizational leadership in a global business environment characterized by intense competition and rapid rates of technological change. Graduates of UAs MBA program should possess:

1. Ability to present views and concepts clearly in writing;
2. Ability to read, critique, and judge the value of written work;
3. Ability to present views and concepts clearly through oral communication.

Critical thinking and creative and effective problem solving

7. Ability to solve diverse, structured and unstructured problems;
8. Ability to deal effectively with imposed pressures and deadlines.

The basics for most of these skills may be taught in prior bachelor degree programs and are taught in the foundation core courses. Experiences are provided to students throughout the program in a variety of ways to develop these skills. A student’s progress is to be documented and evaluated by self evaluation, peer evaluation, and faculty evaluation.

MASTER’S DEGREE

The College of Business Administration (CBA) offers graduate programs which lead to the degrees of Master of Business Administration, Master of Science in Management, Master of Taxation, and Master of Science in Accountancy. The University has offered programs of study in business since 1919, initially through the Department of Commerce and since 1963 through the College of Business Administration. In 1968, graduate studies in business were begun. Both the undergraduate and master’s programs are accredited by the Association to Advance Collegiate Schools of Business (AACSB).

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

ADMISSION

Policy

The applicant must meet one (1) of the following eligibility requirements which are in conformity with the Graduate School and the college’s accrediting agency (AACSB).

- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,000 or more points based upon the overall undergraduate grade-point average (GPAA=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, 1999, had an average GMAT of 592 and an average point index of 1224.

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 1228). 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 bulletins can be obtained from the Graduate Programs in Business Office or the Educational Testing Service, Box 966-R, Princeton, NJ 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.

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, marketing, quality management, 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, all 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
  6500:603 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
  6600:670 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, marketing, quality management, 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. 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:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:620</td>
<td>E-Business Foundations</td>
<td>3</td>
</tr>
<tr>
<td>6500:622</td>
<td>E-Business Technologies</td>
<td>3</td>
</tr>
</tbody>
</table>

  **Choose 6 credits from the following:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:658</td>
<td>E-Business Risks, Controls and Assurance Services</td>
<td>3</td>
</tr>
<tr>
<td>6400:685</td>
<td>E-Business Legal Issues</td>
<td>3</td>
</tr>
<tr>
<td>6400:686</td>
<td>E-Business Financial Strategy and Planning</td>
<td>3</td>
</tr>
<tr>
<td>6600:635</td>
<td>E-Business Marketing Strategies and Tactics</td>
<td>3</td>
</tr>
</tbody>
</table>

- **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:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6300:640</td>
<td>Financing the Entrepreneurial Venture</td>
<td>3</td>
</tr>
<tr>
<td>6300:670</td>
<td>Managing Entrepreneurial Growth</td>
<td>3</td>
</tr>
<tr>
<td>6500:608</td>
<td>Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>6500:663</td>
<td>Data Analysis for Managers</td>
<td>3</td>
</tr>
</tbody>
</table>

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)**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6400:631</td>
<td>Financial Markets and Institutions</td>
<td>3</td>
</tr>
<tr>
<td>6400:645</td>
<td>Investment Analysis</td>
<td>3</td>
</tr>
<tr>
<td>6400:678</td>
<td>Capital Budgeting</td>
<td>3</td>
</tr>
</tbody>
</table>

  **Choose 3 credits from the following:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6400:538</td>
<td>International Banking</td>
<td>3</td>
</tr>
<tr>
<td>6400:650</td>
<td>Techniques of Financial Modeling</td>
<td>3</td>
</tr>
<tr>
<td>6400:681</td>
<td>Multinational Corporate Finance</td>
<td>3</td>
</tr>
<tr>
<td>6400:690</td>
<td>Selected Topics in Finance</td>
<td>3</td>
</tr>
<tr>
<td>6400:691</td>
<td>International Markets and Investments</td>
<td>3</td>
</tr>
<tr>
<td>6400:697</td>
<td>Independent Study in Finance</td>
<td>3</td>
</tr>
<tr>
<td>6400:698</td>
<td>Independent Study: Business Law</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in Global Sales Management

  **Required (complete all 6 credits):**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6600:585</td>
<td>Global Sales Strategy</td>
<td>3</td>
</tr>
<tr>
<td>6800:665</td>
<td>Business Relationship Management</td>
<td>3</td>
</tr>
</tbody>
</table>

  **Electives (choose 6 credits from the following):**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:655</td>
<td>Management of International Operations</td>
<td>3</td>
</tr>
<tr>
<td>6600:575</td>
<td>Business Negotiations</td>
<td>3</td>
</tr>
<tr>
<td>6600:655</td>
<td>Marketing Communications</td>
<td>3</td>
</tr>
<tr>
<td>6600:670</td>
<td>Competitive Business Strategies</td>
<td>3</td>
</tr>
<tr>
<td>6800:630</td>
<td>International Marketing Policies</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in Health Care Management

  **Required:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:683</td>
<td>Health Services Systems Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:663</td>
<td>Data Analysis for Managers</td>
<td>3</td>
</tr>
</tbody>
</table>

  **Choose 6 credits from the following:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:582</td>
<td>Health Services Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:585</td>
<td>Special Topics in Health Services Operations</td>
<td>3</td>
</tr>
<tr>
<td>6500:686</td>
<td>Health Services Research Project</td>
<td>3</td>
</tr>
<tr>
<td>6500:688</td>
<td>Independent Study in Health Services Administration</td>
<td>3-12</td>
</tr>
<tr>
<td>3000:680</td>
<td>Interdisciplinary Seminar in Life-Span Development</td>
<td>3</td>
</tr>
<tr>
<td>3250:540</td>
<td>Special Topics: Economics (Medical)</td>
<td>3</td>
</tr>
<tr>
<td>3850:615</td>
<td>Epidemiologic Methods in Health Research</td>
<td>3</td>
</tr>
<tr>
<td>3850:656</td>
<td>Sociology of Health Care</td>
<td>3</td>
</tr>
<tr>
<td>3980:622</td>
<td>Urban Planning and Health Care</td>
<td>3</td>
</tr>
<tr>
<td>4800:630</td>
<td>Biomedical Computing</td>
<td>3</td>
</tr>
<tr>
<td>8200:632</td>
<td>Fiscal Management in Nursing Administration</td>
<td>3</td>
</tr>
<tr>
<td>8200:632</td>
<td>Fiscal Management in Nursing Administration</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in International Business

  **Required (choose one of the following courses):**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:604</td>
<td>Research and Quantitative Methods in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>6400:650</td>
<td>Techniques of Financial Modeling</td>
<td>3</td>
</tr>
<tr>
<td>6500:682</td>
<td>Applied Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>6500:663</td>
<td>Data Analysis for Managers</td>
<td>3</td>
</tr>
<tr>
<td>6600:640</td>
<td>Business Research Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

  **Plus any 9 credits in International Business:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6600:630</td>
<td>International Marketing Policies</td>
<td>3</td>
</tr>
<tr>
<td>6600:665</td>
<td>Multinational Corporations</td>
<td>3</td>
</tr>
<tr>
<td>6800:690</td>
<td>Seminar in International Business</td>
<td>3</td>
</tr>
<tr>
<td>6800:697</td>
<td>Independent Study in International Business</td>
<td>3</td>
</tr>
<tr>
<td>6200:690</td>
<td>International Accounting</td>
<td>3</td>
</tr>
<tr>
<td>6400:638</td>
<td>International Banking</td>
<td>3</td>
</tr>
<tr>
<td>6400:681</td>
<td>Multinational Corporate Finance</td>
<td>3</td>
</tr>
<tr>
<td>6500:691</td>
<td>International Markets and Investments</td>
<td>3</td>
</tr>
<tr>
<td>6500:655</td>
<td>Management of International Operations</td>
<td>3</td>
</tr>
<tr>
<td>6500:659</td>
<td>International Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:661</td>
<td>Comparative Systems of Employee and Labor Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3250:550</td>
<td>Comparative Economic Systems</td>
<td>3</td>
</tr>
</tbody>
</table>
Concentration in International Business for International Executives

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

- **Plus any 9 credits in International Business:**
  - 6800:630 International Marketing Policies
  - 6800:685 Multinational Corporations
  - 6800:690 Seminar in International Business
  - 6800:697 Independent Study in International Business
  - 6200:690 International Accounting
  - 6400:538 International Banking
  - 6400:681 Multinational Corporate Finance
  - 6400:691 International Markets and Investments
  - 6500:656 Management of International Operations
  - 6600:659 International Human Resource Management
  - 6600:661 Comparative Systems of Employee and Labor Relations

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

1. **Foreign Language Option:** demonstrate reading and conversational proficiency in a language other than English.
2. **Cross-Cultural Option:** select one course (3 credits) from the following courses:
   - 3250:350 Comparative Economic Systems
   - 3250:360 Economics of Developing Countries
   - 3250:630 International Monetary Economics
   - 3250:671 International Trade
   - 3350:538 World Metropolitan Areas
   - 3350:550 Development Planning
   - 3350:633 Comparative Planning
   - 3400:516 Modern India
   - 3400:573 Latin America: The Twentieth Century
   - 3400:575 Mexico
   - 3700:505 Politics in the Middle East
   - 3700:512 Global Environmental Politics

Any cross-cultural course approved by Graduate Program Director

Concentration in International Finance

This program prepares students for careers in international finance with emphasis in corporate banking or investment areas. With the globalization of business, international finance has emerged as a major program for students interested in international business operations.

- **Required (9 credits):**
  - 6400:681 Multinational Corporate Finance
  - 6400:691 International Markets and Investments
  - 6400:538 International Banking

- **Choose three credits from the following:**
  - 6400:631 Financial Markets and Institutions
  - 6400:645 Investment Analysis
  - 6400:650 Techniques of Financial Modeling
  - 6400:679 Capital Budgeting
  - 6400:690 Selected Topics in Finance
  - 6400:697 Independent Study in Finance

Concentration in Management

- **Required:**
  - 6500:662 Applied Operations Research

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

Concentration in Management of Technology and Innovation

This program focuses on enterprise-wide management of technology and innovation in organizations. Value is added by a holistic integration of intellectual capital, manufacturing agility, new product development, knowledge management, and other competencies.

- **Required:**
  - 6500:656 Management of International Operations

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:**
  - 6500:540 Product and Brand Management
  - 6600:575 Business Negotiations
  - 6600:630 Marketing of Services
  - 6600:635 E-Business: Electronic Marketing
  - 6600:655 Marketing Communications
  - 6600:665 Business Relationship Management

Concentration in Supply Chain Management

- **Required:**
  - 6500:675 Supply Chain Management

- **Choose 6 credits from the following:**
  - 6500:676 Management of Production and Operations
  - 6500:678 Project Management
  - 6500:679 Quality and Productivity Techniques
  - 6500:682 Systems Simulation
  - 6600:641 Business Database Systems

Master of Science in Accountancy

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 and Organizational Behavior
  - 6200:601 Financial Accounting
  - 6200:603 Business Systems with Processing Applications
  - 6200:604 Quantitative Decision Making
  - 6400:623 Legal Aspects of Business Transactions
  - 3250:600 Foundations of Economic Analysis

- **Recommended free elective (3 credits):**
  - Select one course from the following courses.
    - 6500:668 Entrepreneurship
    - 6600:575 Business Negotiations
    - 6500:640 Management Information Systems
    - 6500:650 Fundamentals of Human Resource Administration
    - 6500:678 Project Management

Professional Accounting (PA) Option

- **Required of MSA (PA) students without undergraduate degrees in Accounting:**
  - 6200:621 Corporate Accounting and Financial Reporting
Required Master of Taxation Courses:

- Study in the subject areas.
- The degree. Foundation courses may be waived for those who have had recent
- A minimum of 30 semester credits is required for
- stand many aspects of the tax structure. Through an integrated curriculum with
- The program provides a framework of conceptual, technical and professional knowl-
-atives and attorneys.
- The Master of Taxation Program is a professional degree designed to provide inten-
- 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 program will have completed prior course work in the following areas in their under-
- Accounting Information Systems Option
- Intermediate Accounting
- Accounting Information Systems Management (ISM) Option
- Required of MSA (PA) students with undergraduate degrees in Accounting:

Government and Business

Managerial Finance

Financial Accounting

Corporate Accounting and Financial Reporting I

Corporate Accounting and Financial Reporting II

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:

Applications Development for Financial Systems

Financial Data Communications and Enterprise Integration

Enterprise Resource Planning and Financial Systems

E-Business Risks, Controls, and Assurance Services

Assurance Services with Data Warehousing and Data Mining

E-Business Foundations

E-Business Technologies

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.

Master of Taxation

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 necessary to excel in identifying and solving 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:

  - Financial Accounting
  - Corporate Accounting and Financial Reporting I
  - Corporate Accounting and Financial Reporting II
  - Legal Aspects of Business Transactions
  - Taxation I
  - Taxation II

- Required Master of Taxation Courses:

  - Basic Tax Research
  - Corporate Taxation I
  - Taxation of Transactions in Property
  - Estate and Gift Taxation
  - Tax Accounting

- Electives: 19 credits of graduate taxation courses, selected from the list below:

  - Taxation of Partnerships
  - Corporate Taxation II
  - Tax Accounting

- 6200:640 Advanced Auditing 3
- 6200:641 Taxation of Partnerships 3
- 6200:642 Corporate Taxation II 3
- 6200:643 Tax Accounting 2

- 6200:622 Corporate Accounting and Financial Reporting II 3
- 6200:610 Process Analysis and Cost Management 3
- 6200:627 Survey of Federal Taxation 3
- 6200:620 Advanced Accounting 3
- 6200:631 Taxation II 3
- 6200:540 Auditing 3

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:

  - Accounting Information Systems (AIS) Option

The advanced program for undergraduate accounting majors consists of 30 hours of which 18 are required and 12 are electives.

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

Master of Science in Management

The Master of Science in Management program allows students to concentrate on their advanced study in one of the two areas: human resource management or information systems management. Because of the complex nature of these special-

- Accounting Information Systems Management (ISM) Option

ISM Required Concentration Courses (12 credits)

Business Database Systems

Analysis and Design of Business Systems

Management of Telecommunications

Advanced Management Information Systems

Systems Simulation

Knowledge Management and Business Intelligence

Process Redesign with Enterprise Resource Planning

Management of Organizational Transformation

Management of Technology

Project Management

- Detailed list follows:

  - Income Taxation of Decedents, Trusts, and Estates
  - Advanced Individual Taxation
  - Consolidated Tax Returns
  - Qualified Pension and Profit-Sharing Plans
  - Tax Practice and Procedure
  - State and Local Taxation
  - Estate Planning
  - United States Taxation and Transnational Operations
  - Tax Exempt Organizations
  - Business Planning
  - Independent Study in Taxation
  - Nonqualified Executive Compensation
  - Advanced Tax Research and Policy
  - Seminar in Taxation
  - Selected Topics in Taxation:

    - Limited Liability Companies
    - S Corporations
    - Mergers and Acquisitions
    - Partnership Tax Planning

- Total Required Taxation Courses: 30-48

- Foundation Core:

  - All are required unless waived at time of admission:

    - Foundations of Economic Analysis
    - Financial Accounting
    - Managerial Finance
    - Government and Business
    - Management and Organizational Behavior
    - Quantitative Decision Making
    - Computer Techniques for Management
    - Marketing Concepts

- Management Core Courses (12 credits):

  - Management Information Systems
  - Data Analysis for Managers
  - Organizational Behavior
  - Organizational Theory
  - Applied Operations Research
  - Operations Management

- 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)

        - Business Database Systems
        - Analysis and Design of Business Systems
        - Management of Telecommunications
        - Advanced Management Information Systems

      - ISM Restricted Electives (6 credits)

        - Business Applications Development
        - E-Business Foundations
        - E-Business Technologies
        - Systems Simulation
        - Knowledge Management and Business Intelligence
        - Process Redesign with Enterprise Resource Planning
        - Management of Organizational Transformation
        - Management of Technology
        - Project Management
Human Resource Option (HRM)

- HRM Required Concentration Courses (12 credits)
  - 6500:650 Fundamentals of Human Resource Administration 3
  - 6500:658 Strategic Human Resource Management 3
  - 6500:660 Employment Regulation 3
  - 6500:652 Organizational Behavior 3
  or
  - 6500:653 Organizational Theory 3

- HRM Restricted Electives (select 6 credits)
  - 6500:651 Management of Organizational Transformation 3
  - 6500:654 Labor Management Relations 3
  - 6500:655 Compensation Administration 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.S.M.). These combinations are open to the student preparing for a career in such areas as corporate law, tax accounting, human resource management, or legal practice in government. The amount of time required to complete a joint degree program is shorter than the time required to complete both programs independently. To pursue either one of these cooperative programs, the student must apply to and be accepted by both the School of Law and the Graduate School. The student should contact each school independently for information covering admission criteria and procedures for further information on School of Law admissions, write: Director of Admissions, School of Law, The University of Akron, Akron, OH 44325-2901. A baccalaureate degree is required.

Degree Requirements

A student is required to fulfill the requirements of the School of Law, 87 credits, which includes 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. To earn both degrees, a total of 97 credits is required. 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.

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 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 MBA Concentration Courses

Choices for Concentration Electives:

- 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
- 9200:675 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
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- 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
Philip G. Thomson, M.M., Assistant 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, 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:
  - Basic and Applied Acoustics in Audiology 4
  - Anatomy and Physiology of the Peripheral Auditory & Vestibular System 3
  - Acoustic Phonetics 3
  - Critical Analysis of Research in Audiology 2
  - Directed Observation in Audiology I 1
  - Auditory Disorders 2
  - Anatomy and Physiology Underlying Neuro-Otology 4
  - Psychoacoustics 3
  - Critical Analysis of Research in Audiology II 2
  - Directed Observation in Audiology II 1
  - Audiologic Assessment 3
  - Industrial and Community Noise 3
  - Clerkship I 1
  - Speech-Language Pathology for the Audiologist 4
  - Diagnosis of Auditory Disorders 3
  - Hearing Aid Technology 4
  - Gerontological Issues in Audiology 3
  - Clerkship II 1
  - Central Auditory Processing: Evaluation and Management 3

Required by all program options:
- Complete an oral examination covering the thesis or project report.

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 development; child life; clothing, textiles and interiors; family development; 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 a minimum total score of 1200 on the three parts of the GRE.
- Submission of a letter of personal career goals, sent to the director of graduate studies.

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 five 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 and evaluation of original research in an appropriately related area commensurate with the student’s background and area of pursuit. The project option involves the design, development, implementation, and evaluation of original and creative programs and/or resource materials. A written proposal for the thesis or project cannot be submitted until successful completion of the comprehensive examination.
- Apply for advancement to candidacy upon successful completion of 24 credits of graduate study, the written comprehensive examination, and an approved prospectus or proposal for a thesis or project.
- Pass an oral examination covering the thesis or project report.

Foundation Courses
- Required by all program options:
  - Orientation to Graduate Studies in Family and Consumer Sciences 1
  - Historical and Conceptual Bases of Family and Consumer Sciences 3
  - Research Methods in Family and Consumer Sciences 3
Child and Family Development Option

- **Core Courses:**
  - 400:602 Family in Lifespan Perspective 3
  - 400:605 Developmental Parent-Child Interactions 3
  - 400:610 Child Development Theories 3
  - 400:665 Development in Infancy and Early Childhood 3

- **Option Electives:**
  Select 9 credits from the following courses with approval of advisor:
  - 400:501 American Families in Poverty 3
  - 400:504 Adolescence in the Family Context 3
  - 400:506 Family Financial Management 3
  - 400:540 Family Crisis 3
  - 400:542 Human Sexuality 3
  - 400:546 Culture, Ethnicity, and the Family 3
  - 400:548 Before and After School Child Care 2
  - 400:590 Organization and Supervision of Child-Care Centers 3
  - 400:604 Parent Education 3
  - 400:603 Family Relationships in the Middle and Later Years 3
  - 400:688 Practicum in Family and Consumer Sciences 3

- **Cognate Electives:**
  Select 7 credits with approval of advisor from within the School of Family and Consumer Sciences OR from a cognate area outside the School OR from a combination of the two.

- **Thesis or Project (select one):**
  - 7400:694 Master’s Project 5
  - 7400:699 Master’s Thesis 5

Total 40

Child Life Option

- **Core Courses:**
  - 400:551 Child in the Hospital 4
  - 400:555 Practicum Experience in a Child Life Program 3
  - 400:584 Orientation to the Hospital Setting 2
  - 400:665 Child Life Internship 5

- **Option Electives:**
  Select 10 credits with approval of advisor from among the following (if a course has been taken at the undergraduate level, other courses must be selected):
  - 400:501 Family-Life Patterns in the Economically Deprived Home 2
  - 400:504 Adolescence in the Family Context 3
  - 400:542 Human Sexuality 3
  - 400:560 Organization and Supervision of Child-Care Centers 3
  - 400:585 Seminar in Family and Consumer Sciences (Child Life topic) 3
  - 400:590 Parent Education 3
  - 400:605 Developmental Parent-Child Interactions 3
  - 400:610 Child Development Theories 3
  - 400:616 Infant and Child Nutrition 2
  - 400:660 Programming for Child-Care Centers 2
  - 400:665 Development in Infancy and Early Childhood 3

- **Cognate Electives:**
  Select 6 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

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.

Clothing, Textiles and Interiors Option

- **Core Courses:**
  - 400:634 Material Culture Studies 3
  - 400:635 Theories of Fashion 3
  - 400:677 Social Psychology of Dress and the Near Environment 3

- **Options Electives:**
  - 400:518 History of Interior Design I 4
  - 400:519 History of Interior Design II 4
  - 400:523 Professional Image Analysis 3
  - 400:526 Advanced Textiles 3
  - 400:527 Global Issues in Textiles and Apparel 3
  - 400:535 Principles and Practices Interior Design 3
  - 400:536 Textile Conservation 3
  - 400:537 Historic Costume 3
  - 400:538 History of Fashion 3
  - 400:631 Problems in Design 3-6
  - 400:688 Practicum in Family and Consumer Sciences 3
  - 400:696 Individual Investigation in Family and Consumer Sciences 3-6

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.
- Have completed the general Graduate Record Examination within the five years preceding the application and achieved a minimum total score of 1200 on the three parts of the GRE.
- 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.
  - 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
  3400:680 Historical and Conceptual Bases of Family and Consumer Sciences 3
  3400:685 Research Methods in Family and Consumer Sciences 3

Core Courses:
- Advanced Human Nutrition I 3
- Advanced Human Nutrition II 3

Electives (9 to 12 credits required)
Select with the approval of advisor from among the following. At least 2 courses must be selected from Biology (3100) or Chemistry (3150). If a nutrition course has been taken at the undergraduate level, it may not be used at the graduate level.

- Cardiac Physiology 3
- Pharmacology 3
- Medical Physiology, Pathophysiology, and Pharmacology 3
- Research in the Biology of Aging 3
- Biochemistry I 3
- Biochemistry II 3
- Nutrition in the Life Cycle 3
- Cultural Dimensions of Foods 3
- Developments in Food Science 3
- Community Nutrition I – Lecture 3
- Community Nutrition II – Lecture 3
- Sports Nutrition 3
- Practical in Dietetics 3
- Professional Preparation for Dietetics 1
- Nutrition in Diminished Health 3
- Advanced Physiological Concepts in Health Care I 3
- Advanced Physiological Concepts in Health Care II 3

Cognate Electives (8 to 11 credits required)
Select with the approval of advisor from among the following or other courses that strengthen the student’s goals.

- Statistics for the Health Sciences 4
- Social Gerontology 3
- Techniques of Counseling 3
- Management and Organizational Behavior 3
- 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, some of which can be done at the undergraduate level.

Music
The degree Master of Music is offered by the School of Music with options in music education, performance, and 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.

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 Music History Survey: Music Since 1900 2
  7500:647 Master’s Chamber Recital 1
  7500:689 Master’s Thesis/Project 4
  7510:661 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.

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

- Additional music/education courses – select 23 credits with approval of music education and graduate advisors. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:516–518 Applied 8
  7510:612 Ensemble 2
  7500:516–518 Other music courses 8
  5100:516–518 Educational Foundations and Leadership 4
  5170:516–518 General Administration 4
  55–54–56 Curricular and Instructional Studies 4
  5500:780 Seminar in Curricular and Instructional Studies 1

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
  7500:590 Music Workshops 6
  7520:516–518 Applied 8
  7510:612 Ensemble 2
  7500:516–518 Other music courses 8
  5100:516–518 Educational Foundations and Leadership 4
  5170:516–518 General Administration 4
  55–54–56 Curricular and Instructional Studies 4
  5500:780 Seminar in Curricular and Instructional Studies 1

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

- Additional music/education courses – select 23 credits with approval of music education and graduate advisors. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:516–518 Applied 8
  7510:612 Ensemble 2
  7500:516–518 Other music courses 8
  5100:516–518 Educational Foundations and Leadership 4
  5170:516–518 General Administration 4
  55–54–56 Curricular and Instructional Studies 4
  5500:780 Seminar in Curricular and Instructional Studies 1

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
  7500:590 Music Workshops 6
  7520:516–518 Applied 8
  7510:612 Ensemble 2
  7500:516–518 Other music courses 8
  5100:516–518 Educational Foundations and Leadership 4
  5170:516–518 General Administration 4
  55–54–56 Curricular and Instructional Studies 4
  5500:780 Seminar in Curricular and Instructional Studies 1
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

- **Additional music/education courses – select 23 credits with approval of music education and graduate advisors.**

- **Non-Thesis Option – 34 credits**

- **Required Music Education Core Courses** – 9 credits
  - 7500:615 Advanced Problems in Music Education* 4

- **Additional music/education courses – select 25 credits with approval of music education and graduate advisors.**

**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

- **Additional music/education courses – select 23 credits with approval of music education and graduate advisors.**

- **Non-Thesis Option – 34 credits**

- **Required Music Education Core Courses** – 9 credits
  - 7500:615 Advanced Problems in Music Education* 4

- **Additional music/education courses – select 25 credits with approval of music education and graduate advisors.**
Select one of the following as appropriate to major instrument:

**Major required courses – 25 credits:**

- **Music Software Survey and Use**
- **Instructional Programming in Music for the Microcomputer**
- **Musical Styles and Analysis IV (20th century)**
- **Computer Studio Design**
- **Electronic Music**
- **Music History Survey: Classic and Romantic**
- **Master’s Thesis/Project**
- **Composition (electronic music)**
- **Graduate Research in Communication**

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

Degree Total: 33 credits.

### Performance Option in Accompanying

- **Music core courses – Eight credits (to be selected):**
  - **Advanced Conducting: Instrumental**
  - **Advanced Conducting: Choral**
  - **Musical Styles and Analysis I (Chant through Palestrina)**
  - **Musical Styles and Analysis II (Baroque through early Beethoven)**
  - **Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss)**
  - **Musical Styles and Analysis IV (20th Century)**
  - **Music History Survey: Middle Ages and Renaissance**
  - **Music History Survey: Baroque**
  - **Music History Survey: Classic and Romantic**
  - **Music History Survey: Music Since 1900**

- **Major required courses – 23-26 credits:***
  - **600.562 Repertoire and Pedagogy: Organ**
  - **Teaching and Literature: Piano and Harpsichord**
  - **Advanced Accompanying I**
  - **Advanced Accompanying II**
  - **Advanced Accompanying III**
  - **Advanced Accompanying IV**
  - **Advanced Song Literature**
  - **Graduate Recital (to be completed in a minimum of two performance media)**
  - **Keyboard Ensemble (participation in two ensembles required)**
  - **Small Ensemble - Mixed**
  - **Applied Music (piano, organ and/or harpsichord)**

### Additional music courses – two to three credits.

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

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

- **Additional music courses – two credits (suggested minimum).**

### Electives – four credits.

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

### Performance Option in Voice

- **Music core courses: eight credits (to be selected):**
  - **Advanced Conducting: Instrumental**
  - **Advanced Conducting: Choral**
  - **Musical Styles and Analysis I (Chant through Palestrina)**
  - **Musical Styles and Analysis II (Baroque through early Beethoven)**
  - **Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss)**
  - **Music History Survey: Middle Ages and Renaissance**
  - **Music History Survey: Baroque**
  - **Music History Survey: Classic and Romantic**
  - **Music History Survey: Music Since 1900**

- **Major required courses – 20-22 credits:**
  - **Musical Styles and Analysis IV (20th Century)**
  - **Vocal Pedagogy**
  - **Advanced Song Literature**
  - **Graduate Recital**
  - **Ensemble (participation in two ensembles required)**
  - **Applied Voice**

- **Additional music courses – two credits (suggested minimum).**

### 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):**
  - **Advanced Conducting: Instrumental**
  - **Advanced Conducting: Choral**
  - **Musical Styles and Analysis I (Chant through Palestrina)**
  - **Musical Styles and Analysis II (Baroque through early Beethoven)**
  - **Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss)**
  - **Music History Survey: Middle Ages and Renaissance**
  - **Music History Survey: Baroque**
  - **Music History Survey: Classic and Romantic**
  - **Music History Survey: Music Since 1900**

- **Major required courses – 18-21 credits:**
  - **Musical Styles and Analysis IV (20th Century)**
  - **Vocal Pedagogy**
  - **Advanced Problems in Music**
  - **Graduate Recital**
  - **Keyboard Ensemble (participation in two ensembles required)**
  - **Applied Music (piano, organ and/or harpsichord)**

- **Additional music courses – three to 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 Winds, String Percussion

- **Music core courses: eight credits to be selected:**
  - **Advanced Conducting: Instrumental**
  - **Advanced Conducting: Choral**
  - **Musical Styles and Analysis I (Chant through Palestrina)**
  - **Musical Styles and Analysis II (Baroque through early Beethoven)**
  - **Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss)**
  - **Music History Survey: Middle Ages and Renaissance**
  - **Music History Survey: Baroque**
  - **Music History Survey: Classic and Romantic**
  - **Music History Survey: Music Since 1900**

- **Major required courses – 16-18 credits:**
  - **Musical Styles and Analysis IV (20th Century)**
  - **Ensemble (participation in two ensembles required)**
  - **Applied Music (select appropriate instrument)**

- **Select one of the following as appropriate to major instrument:***
  - **Teaching and Literature: Brass Instruments**
  - **Teaching and Literature: Woodwind Instruments**
  - **Teaching and Literature: Percussion Instruments**
  - **Teaching and Literature: String Instruments**
  - **Graduate Recital**

- **Additional music courses – six credits.**

#### Graduate-level (music) workshops, 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.
Complete 36 credits, distributed as follows:

**Program 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:
    - 7800:600 Introduction to Graduate Study in Communication 3
    - 7800:603 Empirical Research in Communication 3
Speech-Language Pathology and Audiology

The School of Speech-Language Pathology and Audiology offers a Master of Arts degree in Speech-Language Pathology and Audiology. The program 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

- Complete requirements for admission to Graduate School
- Hold and undergraduate major in speech-language pathology or complete undergraduate work before the application can be considered
- Submit three letters of recommendation and the Graduate Record Examination (GRE) test results
- Declare intent to major in speech-language pathology

Applications for admission are accepted and considered only once per year. Applications for admission should be received by February 15.

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 36 credits, two of which may be thesis credits for students electing the thesis option. Students in the non-thesis option also will write comprehensive examinations during their final semester. Academic requirements within the school include:

For speech-language pathology majors:

- 7700:540 Augmentative Communication 3
- 7700:580 Early Intervention for Preschoolers 2
- 7700:686 Developmental Disabilities 2
- 7700:611 Research Methods in Communicative Disorders I 3
- 7700:620 Articulation 2
- 7700:623 Support Systems for Indiv and Families with Communicative Disorders 2
- 7700:624 Neurogenic Speech and Language Disorders 3
- 7700:626 Voice and Cleft Palate 3
- 7700:627 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
- 7700:650 Advanced Clinical Practicum: Speech-Language Pathology 4-6
- 7700:695 Externship: Speech Pathology and Audiology (student must register twice)

Completion of 5610:693 Student Teaching in Speech Pathology may be substituted for one 7700:695 registration. The speech-language pathology student must take 4 credits in audiology. It is recommended that the speech-language pathology major elect 7700:639 Advanced Clinical Testing to fulfill this requirement.

- The following limitations on work toward the degree may be exceeded only with the approval of two-thirds of the school’s graduate faculty:
  - no more than 4 credits of workshop courses
  - no more than 6 credits of directed study course work (including 7700:697)
  - no more than 6 credits taken in disciplines other than speech-language pathology and audiology

- 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 educational perspective that views human diversity as desirable and enriching to society.

The Joint MSW Program offers:

- Preparation for the advanced practice of social work
- A degree program accredited by the Council on Social Work Education
- Part-time study
- Evening/weekend courses
- Regional field placements
- Advanced standing program for qualifying students with a BSW

Admission Requirements:

The Joint MSW Program is committed to diversity in the student body. An applicant for admission as a degree candidate in social work (either full-time, part-time, or advanced standing) must fulfill the general admission requirements of both the Graduate School and the MSW Program prior to admission. The applicant must therefore complete application forms for both the Graduate School and the MSW Program. It is the applicant’s responsibility to make sure that all required application materials have been received. Applications for full-time, part-time, and advanced standing close on February 28. All application materials must be received by this date. Full-time and part-time admissions are available only for the fall semester.

The applicant must submit the following to the Graduate School:

- Graduate application form accompanied by an application fee for first-time applicants
- An official transcript from each college or university attended (must include content 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 professional objectives
  c) his/her views regarding diversity in society
  d) a situation in which he/she was the recipient/provider of help, emotionally, socially, or economically, and if/how this situation impacted the desire to pursue an advanced degree in social work

- A recent resume which highlights social work or human service experience
- Three letters of reference/recommendation forms (including one from immediate supervisor, if employed)
- A completed Application Checklist

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 application for admission.
- Well-balanced liberal arts curriculum
- Interview with a member of the faculty may also be required

Admission to the master’s degree program is on a selective basis and is determined by the academic preparation and personal qualifications of the applicant. Intellectual maturity, emotional stability, motivation, and the capacity to work with people are essential qualifications.

Openings for admission are limited, and competition is considerable. Individuals who have the strongest qualifications in terms of the MSW Program’s admission criteria are selected for admission. Students admitted to the MSW Program must register for courses the same calendar year they are accepted. Admission cannot be deferred until the next year. Students may 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 schedule of classes changes.

Transfer Students

An applicant who wishes to transfer from another MSW program must follow the same admission process and meet the same admission requirements as other degree candidates. A formal written request for transfer must be made at the time of application for admission. A maximum of 20 graduate credit hours may be transferred from another program accredited by the Council of Social Work. The credits must fall within the five-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
  - 7750:607 Advanced Practice with Small Systems I 3
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:674 Community, Economic Systems and Social Policy Analysis 3
  - 7750:675 Program Evaluation 3
- Spring Semester
  - 7750:604 Advanced Field Practicum 3
  - 7750:608 Advanced Practice with Small Systems II 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
  - 7750:650 Advanced Field Practicum 3
- Spring Semester (Second Year)
  - 7750:623 Fundamentals of Research II 3
  - 7750:650 Advanced Field Practicum 3

**Concentrations (Direct Practice):**
- Fall Semester (Third Year)
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:663 Psychopathology and Social Work 3
- Spring Semester (Third Year)
  - 7750:664 Direct Practice Research 3
  - One elective 3

**Fall Semester (Fourth Year)**
- 7750:607 Advanced Practice with Small Systems I 3
- 7750:603 Advanced Field Practicum 3
- One elective 3

**Spring Semester (Fourth Year)**
- 7750:608 Advanced Practice with Small Systems II 3
- 7750:604 Advanced Field Practicum 3
- One elective 3

**Concentrations (Macro Practice):**
- Fall Semester (Third Year)
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:663 Psychopathology and Social Work 3
  - 7750:607 Advanced Practice with Small Systems I 3
  - 7750:603 Advanced Field Practicum 3
- Spring Semester (Third Year)
  - 7750:675 Program Evaluation 3
  - One elective 3

**Fall Semester (Fourth Year)**
- 7750:673 Community Organization and Planning 3
- 7750:603 Advanced Field Practicum 3
- One elective 3

**Spring Semester (Fourth Year)**
- 7750:672 Strategies of Community Organization 3
- 7750:671 Social Work Administration 3
- 7750:604 Advanced Field Practicum 3

**Advanced Standing Program**

**Direct Practice Concentration**
- Summer Semester
  - 7750:650 Advanced Standing Integrative Seminar 6
- Fall Semester
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:663 Psychopathology and Social Work 3
  - 7750:607 Advanced Practice with Small Systems I 3
  - 7750:603 Advanced Field Practicum 3
  - One elective 3
- Spring Semester
  - 7750:664 Direct Practice Research 3
  - 7750:608 Advanced Practice with Small Systems II 3
  - 7750:604 Advanced Field Practicum 3
  - Two electives 6

**Macro Practice Concentration**
- Summer Semester
  - 7750:650 Advanced Standing Integrative Seminar 6
- Fall Semester
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:673 Community Organization and Planning 3
  - 7750:674 Community, Economic Systems and Policy Analysis 3
  - 7750:603 Advanced Field Practicum 3
  - One elective 3
- Spring Semester
  - 7750:671 Social Work Administration 3
  - 7750:672 Strategies of Community Organization 3
  - 7750:604 Advanced Field Practicum 3
  - One elective 3

**Testing Out Policy**

In order to avoid duplication and redundancy of course content during the foundation year, the MSW Program allows students the opportunity to test out of the following courses:

- 7750:631 Human Behavior and Social Environment: Small Social Systems 3
- 7750:646 Social Welfare Policy 3
- 7750:622 Fundamentals of Research I 3

Students wishing to test out of one or more of the above courses must notify the MSW Program Director at least three weeks prior to the start of the semester in which the course is normally taught. The proficiency exam must be taken prior to classes starting in that semester. There are no fees or penalties associated with taking these exams, however, each exam may be taken only once.

Additional information about the MSW Program may be obtained from the School of Social Work.
College of Nursing

Cynthia F. Capers, R.N., Ph.D., Dean
Kathleen Ross-Aaalmolni, R.N., Ph.D., Director, Nursing Education
Christine A. Wynd, R.N., Ph.D., Director, Joint Ph.D. in Nursing Program

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 focus of professional nursing is individuals, families and communities.

The Individual is seen as a complex whole whose existence involves patterns, dynamic change, transformation and interdependence. The individual interrelates within the environment in biological, psychological, social, spiritual, cultural and other dimensions. The individual is unique and universal. The individual is a thinking, feeling, interacting, evolving, creating, valuing being. Families are individuals dynamically connected with each other over time in traditional and nontraditional family configurations. Communities are groups of people with one or more common characteristics who are in relationship to one another and may or may not interact. Health is comparative, dynamic, multidimensional and has personal meaning. It includes disease, nondisease and quality of life. People have the right to participate in decisions affecting and affecting personal health. Environment includes all living and nonliving dimensions with which the individual, family and community have interrelationships. The dynamic environmental interrelations define and establish rules for health and modes of action. Nursing is an art and a science. The discipline of nursing is concerned with individuals, families and communities.

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 nurses scholars. This purpose will be realized through: the development and testing of theories and models of nursing science and nursing practice, the consideration of the social, political, legal, and economic implications of health care policies and practices, and the dissemination of knowledge. Graduates will be characterized by their leadership and their ability to conduct and apply research, to integrate and extend knowledge through teaching, and to develop and implement health care policy. Interdisciplinary collaboration and community outreach will be emphasized throughout the program.

Admission, Progression, and Graduation
Students may apply to the joint program through the Graduate Colleges or the Colleges of Nursing at either Kent State University or The University of Akron. Candidates must meet the following criteria:
- Evidence of successful completion of a master’s degree in nursing at an accredited program with a minimum grade point average of 3.0 on a 4.0 scale.
- 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 or more 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 theory development as well as courses in selected domains of nursing knowledge related to student interest and faculty expertise. Research methods, designs, and statistics examines approaches to both qualitative and quantitative research. Students must select at least one advanced research methods course to promote their research agenda: i.e., program evaluation, advanced qualitative or quantitative methods, or grantsmanship. Cognates will be chosen from courses outside nursing which support the student’s research interest. Health care policy courses focus on health care and nursing issues. These four components culminate into the fifth component, the dissertation, which follows the successful completion of the qualifying examination. The course work in each of these five components follows.

Structure and content of nursing knowledge:

Five required courses (15 credits)

- 8200:810 History and Philosophy of Nursing Science 3
- 8200:815 Theory Construction and Development in Nursing 3
- 8200:820 Introduction to Nursing Knowledge Domains 3
- 8200:840 Nursing Science Seminar I 3
- 8200:850 Nursing Science Seminar II 3

Research methods, designs, and statistics:

Three required methods/designs courses (9 credits)

- 8200:825 Quantitative Research Methods 3
- 8200:830 Qualitative Research Methods 3
- 8200:845 Advanced Methods for Research (1 advanced nursing research methods course selected with the approval of the student’s academic advisor) 3

Two required statistics courses (6 credits)

- 8200:827 Advanced Health Care Statistics I 3
- 8200:837 Advanced Health Care Statistics II 3

Cognates:

Three required courses (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
- 8200:896 Individual Investigation in Nursing 1-3
- 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

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 a research agenda: i.e., program evaluation, advanced qualitative or quantitative methods, or grantsmanship. Cognates will be chosen from courses outside nursing which support the student’s research interest.

- Oral defense. When the dissertation is completed a meeting will be scheduled for the student’s defense of the dissertation. The candidate is expected to respond to substantive and methodological questions related to the dissertation.

- Dissertation committee. A four person doctoral dissertation committee will guide and approve the acceptability of the dissertation. The Chair must be a member of the JPDN faculty, as must be two committee members. The remaining member must be selected from outside the program. Other qualifications of members will be consistent with the student’s area of research and with the requirements for doctoral committees as stated in the policies and general catalogs of both universities.

Innovative Curriculum Pathways to the Joint Ph.D. in Nursing Program for BSN Graduates and for Students Enrolled in MSN Option

The Innovative Pathways into the Joint Ph.D. in Nursing Program (JPDN) is an accelerated program that allows individuals with a BSN and students enrolled in the RN-MSN program direct admission into the JPDN program. Acceleration is accomplished by restructuring MSN and Ph.D. curricula to recognize the mastery of specific content, thereby facilitating graduate study. There are two pathways: one for BSN graduates and one for RN-option students. Since existing acceleration pathways differ at The University of Akron and Kent State University, individuals applying for admission to this program must apply for admission through the Graduate School of The University of Akron.

BSN Graduates:

BSN students within one semester of graduation and professional nurses with a BSN degree may apply in December prior to the fall in which admission is desired. Admission criteria include:

- Enrollment in an accredited BSN program within one semester of graduation or hold the BSN degree.
- Provide evidence of successful completion (or the potential to complete the BSN by the following fall semester) of a baccalaureate degree program in nursing at an accredited school with a minimum grade point average of 3.0 on a 4.0 scale.
- Provide evidence of current licensure, or eligibility for licensure, by the Ohio Board of Nursing.
- Provide evidence of acceptable scores on the Graduate Record Examination.
- Submit a statement about nursing career interests and goals.
- Give a sample of written work. This may include, for example, a scientific term paper, a research paper, an honor’s project, a professional report, or a published article.
- Submit three (3) letters of recommendation from professors or other professionals who can adequately evaluate previous work and potential for success in the Ph.D. program. One of the three letters must be from a Doctoral Faculty Council member who has worked closely with the student.
- Satisfactorily complete a personal interview with a Doctoral Faculty Council member.
- Register for full-time study during the fall semester after acceptance into the Ph.D. program, or otherwise the acceptance is void.
- Enroll in full-time study for four calendar years for students who are entering directly from the BSN program or full-time study for two academic years plus two calendar years for post-BSN applicants.

Students receive a maximum of 12 credit hours of by-passed credit for master’s level courses after successfully completing 12 credit hours of doctoral level courses. Bypass credit is given in accordance with applicable University of Akron policy.

Upon successful completion of 8200:815, 8200:825, 8200:830, and 8200:835, students receive a maximum of 12 hours of by-passed credit for master’s level courses.
Internship: Students entering directly from the BSN program will be required to complete two 10-week internships with the Co-op program (paid positions).

- Internship in generalist practice during Summer Session I
- Internship in advanced nursing practice during Summer Session II

**MSN-Option Students**

Currently enrolled RN-option students at The University of Akron may apply for admission following completion of the RN-option bridge courses. Admission criteria include:

- Enrollment in The University of Akron RN-option program.
- Minimum grade point average of 3.0 on a 4.0 scale for all previous coursework.
- Provide evidence of current licensure, or eligibility for licensure, by the Ohio Board of Nursing.
- Provide evidence of current malpractice insurance.
- Provide evidence of acceptable scores on the Graduate Record Examination.
- Submit three (3) letters of recommendation from professors or other professionals who can adequately evaluate previous work and potential for success for 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.
- Submit a statement about nursing career interest and goals.
- Give a sample of written work. This may include, for example, a scientific term paper, a research paper, an honor’s project, a professional report, or a published article.
- Include a 500-word essay describing professional goals.
- Interview prior to admission to the program.
- Current state of Ohio license to practice nursing and evidence of malpractice insurance.
- Prerequisite course requirements: Undergraduate Statistics, Nursing Research, Basic Health Assessment and Computer Skills. Graduate Level Statistics.

Applicants who are certified nurse practitioners will be evaluated and have their program planned on an individual basis.

**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 graduate 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: 8200:613, Nursing Inquiry I and 8200:699 Master’s Thesis or 8200:618 Nursing Inquiry II.

**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:

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<tr>
<td>8200:608</td>
<td>Pathophysiological Concepts of Nursing Care I</td>
<td>3</td>
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<tr>
<td>8200:603</td>
<td>Theoretical Basis for Nursing</td>
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<tr>
<td>8200:605</td>
<td>Computer Applications in Nursing</td>
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<td>8200:607</td>
<td>Policy Issues in Nursing</td>
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<td>Nursing Inquiry</td>
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<td>8200:618</td>
<td>Nursing Inquiry II</td>
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<tr>
<td>8200:699</td>
<td>Master’s Thesis</td>
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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.

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<tr>
<td>8200:561</td>
<td>Advanced Physiological Concepts in Health Care I</td>
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<tr>
<td>8200:562</td>
<td>Advanced Physiological Concepts in Health Care II</td>
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<tr>
<td>8200:637</td>
<td>Nurse Anesthesia Residency I</td>
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<tr>
<td>8200:640</td>
<td>Scientific Components of Nurse Anesthesia</td>
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<td>8200:641</td>
<td>Pharmacology for Nurse Anesthesia I</td>
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<tr>
<td>8200:642</td>
<td>Introduction to Nurse Anesthesia</td>
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<tr>
<td>8200:643</td>
<td>Principles of Anesthesia I</td>
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<tr>
<td>8200:644</td>
<td>Pharmacology for Nurse Anesthesia II</td>
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The University of Akron 2003-2004

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
- Current certification/recertification 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 Computer Applications 2
- 8200:613 Inquiry I 3
- 8200:618 Inquiry II 4

**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
- or 8200:xxx Elective 3

**Portfolio 7**

**Total 36**

**MASTER OF PUBLIC HEALTH**

The Northeastern Ohio Universities Master of Public Health (NEOUMPH) program provides opportunities for graduate studies 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, Northeastern 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 academicians, 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.

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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, PO. 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: NEOUMPH Admissions Committee, Division of Community Health Sciences, NEOUCOM, 4209 State Route, PO. Box 95, Rootstown, Ohio 44272-0095. 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 statistics 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) 972-8299, or e-mail at publish@neoucom.edu. The Program Co-Director on The University of Akron campus may be reached at (330) 972-8299.

**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.

- 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

A “grant” project, capstone project, portfolio, and exit presentation is required of each student.

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**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 analy-
sis 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 multidis-
ciplinary training.

ADMISSION REQUIREMENTS

Admissions to the graduate program in the college are competitive. The depart-
mental 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 undergradu-
ate 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 recommen-
dation from a teacher or supervisor that the candidate is able to handle indepen-
dent 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.

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 Scien-
tce 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 avail-
able for dissertation research. Students may be admitted directly to the Ph.D. pro-
gram 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 stu-
dent working toward the Doctor of Philosophy in Polymer Science must meet the
following requirements:

- Complete a course of study prescribed by the student’s advisory committee
  based on the committee’s judgment of the student’s background and on the result
  of any special examinations it might impose. This course will consist of a mini-
  mum of, but usually more than, 36 credits in graduate courses, or their equiva-
  lent, 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 Scien-
tce of Polymer Engineering seminars do not apply toward the degree. At least
  18 credits of graduate coursework and all dissertation credits must be completed
  at the University.

- There is a university minimum residence time requiring one year, although grad-
  uate students starting with a B.S. or B.A. typically spend 4 years in residence.

- Completion of 18 credits among the following core courses (2 credits each) in
  polymer science:
  - 9871:601 Polymer Concepts
  - 9871:602 Synthesis and Chemical Behavior of Polymers
  - 9871:704 Condensation Polymerization
  - 9871:705 Free Radical Reactions in Polymer Science
  - 9871:706 Ionic and Monomer Insertion Reactions

- 4 credits of polymer chemistry courses:
  - 9871:674 Polymer Structure and Characterization
  - 9871:675 Polymer Thermodynamics

- 4 credits of polymer physical property courses:
  - 9871:631 Physical Properties of Polymers I
  - 9871:632 Physical Properties of Polymers II

- 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

- Completion of 18 credits of elective courses appropriate to each student’s area
  of interest.

- Pass eight cumulative examinations which are given at monthly intervals during
  the academic year. The candidate is urged to begin these examinations early in
  the graduate program.

- Complete 9871:6078 Polymer Science Seminar I and II.

- At least one admittance to the department. Credits for participation in either polymer science or polymer engi-
  neering seminars do not apply toward the degree.

- Present a public/departamental seminar on the completed research.

- Pass an oral examination upon completion of a research dissertation.

- Demonstrate competency in computer programming.

- Pass the general requirements for the Doctor of Philosophy degree.

- Satisfy the foreign language requirement for the doctoral degree by meeting the
  requirements of Plan A, B, or C as specified by the student’s advisory committee.

- Appropriate research skills for Plan C are to be specified by the department on
  the basis of the student’s area of specialization and intended research. These skills
  include proficiency in computer programming language, special mathematical
  methods, applied statistical analysis, and special literature search techniques.

Doctor of Philosophy in Polymer Engineering

The Department of Polymer Engineering administers a graduate program in which
students, with primarily engineering backgrounds, are guided through a course of
study and research under the supervision of a faculty member. Students may be
admitted directly to the Ph.D. program upon screening of their qualifications and
recommendation by the department chair and dean.

Students in Polymer Engineering will earn the degree of Doctor of Philosophy in
Polymer Engineering. Requirements in the interdisciplinary field of Polymer Engi-
neering for that degree are as follows:

- Take a Basic Engineering examination after the first Fall semester of study. The
  exam will cover basic undergraduate topics.

- Successfully complete a qualifying examination within three semesters after
  admission into the program. The examination shall cover graduate courses that
  the student has completed and basic undergraduate topics.

- Develop a plan of study approved by the student’s advisor and the Department
  Chair.

- 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.

- A student receiving a Master of Science degree from The University of Akron in
  Polymer Engineering may use all lecture course credits toward the 36 lecture
  course credit requirement.

- A student entering with a master’s degree or graduate credits from another insti-
  tution may be given 18 credit hours toward the lecture course requirement.

- All doctoral students must complete the Polymer Engineering core requirements
  for the Master of Science degree.

- 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

- Doctor of Philosophy in Polymer Engineering
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  2
9841:651  Polymer Engineering Laboratory  3
9841:661  Polymerization Reactor Engineering  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 currently employed in polymer and related industries.

- **Mathematics electives:**
  3450:  Approved Mathematics  3

- **Technical electives:**
  3400:xxx:  Approved Mathematics  3
c 4300:681  Advanced Engineering Materials  3
c 4600:622  Continuum Mechanics  3
c 9871:613  Polymer Science Laboratory  3
c 9871:674  Polymer Structure and Characterization  2
c 9871:676  Polymer Thermodynamics  2

**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 skills/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; 674 Polymer Structure and Characterization; 701 Polymer Technology.
- Completion of 12 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.

The academic program requires the completion of 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

Total  12

**Polymer engineering elective:**
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  2
9841:651  Polymer Engineering Laboratory  3
9841:661  Polymerization Reactor Engineering  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 currently employed in polymer and related industries.

**Mathematics elective:**
3450:  Approved Mathematics  3

**Technical electives:**
3400:xxx:  Approved Mathematics  3
c 4300:681  Advanced Engineering Materials  3
c 4600:622  Continuum Mechanics  3
c 9871:613  Polymer Science Laboratory  3
c 9871:634  Polymer Structure and Characterization  2
c 9871:675  Polymer Thermodynamics  2

**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.**

**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 indicating the area of concentration will be awarded when the student completes requirements for a degree unless the program specifies that it is free-standing and does not require participation in a degree program.

ACUTE CARE NURSE PRACTITIONER – POST-MASTER’S

The Post-Master’s Acute Care Nurse Practitioner certificate program prepares acute care nurse practitioners to provide advanced practice nursing care to acutely and/or critically ill adults. The program requires one calendar year of intense study including advanced clinical practice and theory. The program is built upon a core of advanced assessment, pathophysiology, and pharmacology. Acute Care Nurse Practitioners are prepared to conduct comprehensive physical assessments, appraise health risks and promote health behaviors, order and interpret diagnostic tests, diagnose and manage commonly occurring health problems and diseases. The program consists of 16 credits of graduate level course work and 525 hours of clinical practice.

Admission Criteria

Hold an MSN degree from a professionally accredited nursing program.

Minimum of a 3.0 GPA on a 4.0 scale for the master’s degree program.

Recent acute/critical care experience (within the past three years).

A 300 word essay describing professional goals.

Completion of the following prerequisite courses: graduate level pharmacology, pathophysiology, and advanced assessment.

Completion of an interview with the selection committee.

Advanced Cardiac Life Support (ACLS) Certification.

Program of Study

8200:691 Acute Care Nurse Practitioner I 4
8200:692 Clinical Management II 3
8200:693 Acute Care Nurse Practitioner II 4
8200:695 Acute Care Nurse Practitioner III 4
8200:696 Clinical Reasoning I 1
Total 16

ADDITIONAL 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).

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 an 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

8200:627 Adult/Gerontological Health Nursing NP I Practicum 2
8200:628 Adult/Gerontological Health Nursing NP II Practicum 2
8200:629 Adult/Gerontological Health Nursing NP III Practicum 2
8200:623 Adult/Gerontological Health Practicum NP 3
8200:690 Clinical Management I 3
8200:692 Clinical Management II 3
8200:694 Clinical Management III 3
Total 18

ADVANCED CERTIFICATE IN FAMILY CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT

The University of Akron has a long history of the interdisciplinary study of conflict, because understanding the nature of conflict is the first step toward reducing conflict and violence at home, in our communities, workplaces, and schools. This graduate certificate, jointly administered by the departments of Political Science and Sociology, will build on that tradition to enhance the capacity of students to effectively work toward reducing the harms associated with family conflict and violence.

Required Core Courses:

Conflict Analysis Core Courses
3700:622 Seminar in Alternatives to Violence at Home and Abroad 3
3850:555 Family Violence 3

Skill Development Core Courses
7400:595:008 Seminar: General Mediation Training 3
7400:595:007 Seminar: Divorce Mediation Training 3

Elective Courses: (choose two)***
3850:523 Sociology of Women 3
3850:528 Victim in Society 3
3700:690 Special Topics (conflict related) 1-3
9200:638** Family Law 3
9200:696** Alternative Dispute Resolution 3

** Law School classes are offered on a space available basis and require the permission of the 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 Seminar: General Mediation Training 3
- 3700:585 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):

3700:502 Politics and the Media 3
3700:540 Survey Research Methods 3
3700:572 Campaign Finance 3
3700:573 Voter Contact and Elections 3
3700:574 Political Opinion, Behavior and Electoral Policies 3
3700:575 American Interest Groups 3
3700:576 American Political Parties 3
3700:630 Seminar in National Politics 3
3880:614 Ethics and Public Service 3

ADDITIONAL 3 CREDITS FROM ABOVE OR FROM APPROVED COURSES FROM POLITICAL SCIENCE, COMMUNICATION OR OTHER DEPARTMENTS. STUDENTS MUST MAINTAIN AT LEAST A 3.0 AVERAGE IN THEIR COURSE WORK FOR THE CERTIFICATE.

Certificate

Political science majors will, upon completion of the program, be awarded a Master’s degree in Political Science with a Certificate in Applied Politics. Majors in other disciplines will have the Certificate noted on their permanent record.

BEHAVIORAL HEALTH NURSE PRACTITIONER – POST-MSN

**Requirements**

The Post-MSN Behavioral Health Nurse Practitioner certificate program is designed for those nurses who hold the Master’s degree in Psychiatric Mental Health Nursing and are seeking preparation for the role of the psychiatric nurse practitioner. Upon completion of the 16 credit program, the students are eligible to sit for the psychiatric nurse practitioner certification examination.

**Admission**

Admission criteria include the following:
1. A GPA of 3.0 or better from the master’s degree program.
2. Completion of a minimum of 500 clinical hours for eligibility to sit for certification.

**Program**

The program consists of five courses for a total of 16 credit hours. Students must complete a minimum of 500 clinical hours for eligibility to sit for certification.

**Required Courses**

- 8200:630 Pathophysiological Concepts 3
- 8200:610 Advanced Adult/Gerontological Assessment 3
- 8200:612 Advanced Clinical Pharmacology 3
- 8200:662 Clinical Psychopharmacology 3
- 8200:663 Behavioral Health Nursing Internship (required) 14

Total 16

CASE MANAGEMENT FOR CHILDREN AND FAMILIES

Helen K. Cleminshaw, Ph.D., Coordinator

**Program**

This certificate program is a special course of study which can be added to any graduate degree program. It may also be completed by a non-degree graduate student with special permission from the director of the Center for Family Studies. This certificate represents a concentration in theoretical and practical knowledge in collaborative cross-systems case management for children and families in the context of community-based services. This course of study promotes collaboration among disciplines and services.

**Admission**

To participate in the program the student should:
1. Be formally admitted to The University of Akron as a post-baccalaureate, graduate or non-degree graduate student.
2. Make written application to the program and receive written notification of admission from The Center for Family Studies.

**Requirements**

- Core: Students should successfully complete all three of the core courses listed below.

8400:561 Case Management for Children and Families I 3
8400:562 Case Management for Children and Families II 3
8400:563 Practicum in Cross-Systems Case Management for Children and Families 3
Electives:

Students must successfully complete six credits of coursework selected from the various departmental courses listed below.

- Family and Consumer Sciences
  - 7400:501 Family-Life Patterns in the Economically Deprived Home 2
  - 7400:504 Adolescence in the Family Context 3
  - 7400:540 Family Crisis 3
  - 7400:546 Culture, Ethnicity and the Family 3
  - 7400:602 Family in Life-Span Perspective 3
  - 7400:607 Family Dynamics 3
  - 7400:610 Child Development Theories 3
  - 7400:651 Family and Consumer Law 3
  - 7400:665 Development in Infancy and Early Childhood 3

- Home-Based Intervention
  - 1820:603 Home-Based Intervention Theory 3
  - 1820:604 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 600 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 or linguistics may be substituted as optional courses with the permission of the director.

**Required Courses:**

- 3300:676 Theory and Teaching of Basic Composition 3
- 3300:673 Theories of Composition 3
- 3300:674 Research Methodologies in Composition 3

**Optional Courses:**

- 3300:570 History of English Language 3
- 3300:571 U.S. Dialects: Black and White 3
- 3300:589 Seminar in English: Grammatical Structures of Modern English 3
- 3300:575 Theory of Rhetoric 3
- 3300:589 Seminar in English: Sociolinguistic 3
- 3300:670 Modern Linguistics 3
- 3300:689 Seminar in English: Stylistics 3
- 3300:689 Seminar in English: Contextual Linguistics 3

**DIVORCE MEDIATION**

**Helen Clemishaw, 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
- 7400:540 Family Crisis 3
- 7400:590 Family and Divorce 2
- 7400:602 Family in Life-Span Perspective 2
- 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 significant contribution in the field of education and training. The graduate curriculum provides its students with exposure to a wide range of distance learning technologies, while still ensuring the basic competencies required of all practitioners. In this way, the program directly addresses the rapidly accelerating changes in distance learning technologies.

Admission

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

Requirements (16 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:629</td>
<td>e-Learning Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>5100:630</td>
<td>Topical Seminar: Advanced Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>5100:631</td>
<td>Instructional Design</td>
<td>3</td>
</tr>
<tr>
<td>5100:632</td>
<td>Web-based Learning Systems</td>
<td>3</td>
</tr>
<tr>
<td>5100:639</td>
<td>Strategies for Online Instruction</td>
<td>3</td>
</tr>
<tr>
<td>5100:696</td>
<td>Technology Project</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></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:

- 4300:523 Chemistry for Environmental Engineers 3
- 4300:526 Environmental Engineering Design 3
- 4300:527 Water Quality Modeling and Management 3
- 4300:623 Physical/Chemical Treatment Processes 3
- 4300:624 Biological Wastewater Treatment Processes 3
- 4300:631 Soil Remediation 3

ENVIRONMENTAL STUDIES

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 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):

- 3010:501 Seminar in Environmental Studies (may be repeated as an elective) 2

Electives (minimum of 14 credits):

- 3010:501 Seminar in Environmental Studies 2
- 3010:590 Workshop in Environmental Studies 14
- 3100:521 Tropical Field Biology 4
- 3100:525 Freshwater Ecology Field and Laboratory Studies 3
- 3100:526 Wetland Ecology 4
- 3100:560 Environmental Physiology 3
- 3350:506 Geographic Information Systems 3
- 3350:507 Advanced Geographic Information Systems 3
- 3350:547 Remote Sensing 3
- 3350:549 Advanced Remote Sensing 3
- 3350:595 Soil and Water Field Studies 3
- 3370:570 Geochemistry 3
- 3370:574 Groundwater Hydrology 3
- 3370:661 Geologic Record of Past Global Change 3
- 3370:674 Advanced Groundwater Hydrology 3
- 3370:678 Urban Geology 3
- 3400:571 American Environmental History 3
- 3470:581 Applied Statistics I 4
- 3700:512 Global Environmental Politics 3
- 3850:686 Population 3
- 4200:563 Pollution Control 3
- 4200:750 Advanced Pollution Control 3
- 4300:523 Chemistry for Environmental Engineers 3
- 4300:526 Environmental Engineering Design 3
- 4300:527 Water Quality Modeling and Management 3
- 4300:528 Hazardous and Solid Wastes 3
- 4300:620 Sanitary Engineering Problems 2
- 4300:621 Environmental Engineering Principles 4
- 4300:631 Soil Remediation 3
- 4300:731 Bioremediation 3
- 9200:661 Environmental Law 3

GEOGRAPHIC INFORMATION SCIENCES

Program

The geographic information sciences (GISc) 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 GISc 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 GISc and cartography.

Eighteen (18) credits are required to complete this course. These include the four core courses:

- 3350:505 Geographic Information Systems 3
- 3350:507 Advanced Geographic Information Systems 3
- 3350:540 Principles of Cartography 3
- 3350:547 Remote Sensing 3

The remaining 6 credits shall come from the list of electives:

- 3350:542 Thematic Cartography 3
- 3350:544 Applications in Cartography and Geographic Information Systems 3
- 3350:548 Advanced Cartography 3
- 3350:549 Advanced Remote Sensing 3

GEOTECHNICAL ENGINEERING

This certificate program provides practicing professionals an opportunity to expand their knowledge base in geotechnical engineering. It is designed for people who cannot make the full time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

Admission Criteria

This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

Program of Study

Civil Engineering students may earn a Geotechnical Engineering Certificate by completing a total of 15 credit hours.
GLOBAL SALES MANAGEMENT

Scott Widmier, Ph.D., Coordinator

Program
The Global Sales Management Certificate is a special course of study which prepares an individual for a career in managing a global sales force. The program takes into account the complexities of culture as far as doing business in foreign countries.

Admission
To participate in the program, the student must be formally admitted to The University of Akron as a graduate or non-degree graduate student, and complete at least 15 credits. Students should visit the Director of Graduate Studies in Business Administration to request that notation of the certificate be included on the student’s transcript as soon as the course of study is completed. Students admitted to the Global Sales Management Certificate Program may enroll only in those courses required for completion of the certificate.

Requirements (complete all 6 credits):
- 6600:585 Global Sales Strategy 3
- 6600:665 Business Relationship Management 3

Electives (complete at least 9 credits):
- 3250:561 Principles of International Economics 3
- 3250:671 International Trade 3
- 6500:600 Management and Organizational Behavior 3
- 6500:652 Organizational Behavior 3
- 6500:656 Management of International Operations 3
- 6600:575 Business Negotiations 3
- 6600:600 Marketing Concepts 3
- 6600:655 Marketing Communications 3
- 6800:606 International Business Environments 3
- 6800:630 International Marketing Policies 3
- 7600:645 Intercultural Communication Theory 3

HIGHER EDUCATION

Requirements*
This certificate program in higher education requires a minimum of 18 credits. The program of studies has been designed to serve the practicing or prospective college or university administrator or instructor.

Admission
All applicants to the program should have previously earned a bachelor’s degree. Special admission for concurrent 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:
- 5100:703 Seminar: History and Philosophy of Higher Education 3
- 5180:500 Introduction to the Study of Higher Education 3
- 5180:600 Advanced Administrative Colloquium in Higher Education 3
- 5180:601 Internship in Higher Education 3
- 5180:602 Internship in Higher Education Seminar 3
- Total 10

Options:
A student may select all three courses listed as “A” or 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)
- 5180:515 Administration in Higher Education (A) 3
- 5180:525 Topical Seminar: Higher Education 3
- 5180:626 Organization and Policy Development in Higher Education (B) 3

Student Services in Higher Education (II)
- 5180:525 Topical Seminar in Higher Education 3
- 5180:526 Student Services in Higher Education (A) 3
- 5180:527 The American College Student (B) 3

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, NEOLCOM.

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: 22 credits.

Core:

- 3006:680 Interdisciplinary Seminar in Life-Span Development and Gerontology 3
- 3850:672 Psychology of Adulthood and Aging 2
- 3850:678 Social Gerontology 3

Electives:**

- 3006:686 Retirement Specialist 2
- 3006:690 Workshop – Women: Middle and Later Years 2
- 3750:620 Psychology Core II: Developmental, Perceptual, Cognitive 2
- 3850:615 Epidemiologic Methods in Health Research 3
- 3850:678 Social Gerontology 3
- 5400:500 Postsecondary Learner 3
- 6500:580 Introduction to Health Care Management 3
- 6500:683 Health Services Systems Management (with permission) 3
- 7000:601 Family Relationships in Middle and Later Years 3
- 7700:624 Neuropsychic Speech and Language Disorders 3

- 7600:645 Intercultural Communication Theory 3

*Increase in credit hours from 18 to 22 pending Ohio Board of Regents approval.

**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.
**Program Planning, Curriculum and Instruction in Higher Education (III)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5190:530</td>
<td>Higher Education Curriculum and Program Planning (A)</td>
<td>3</td>
</tr>
<tr>
<td>5190:635</td>
<td>Instructional Strategies and Techniques for the College Instructor (B)</td>
<td>3</td>
</tr>
</tbody>
</table>

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 Cleminshaw, Ph.D., Coordinator**

**Program**

This certificate program is a special course of study along with undergraduate and graduate degree programs in various departments and colleges throughout the University. Undergraduate students will earn the certificate upon graduation in their degree program. Individuals who already hold undergraduate or graduate degrees may also pursue the certificate. Students with an undergraduate degree who do not seek a graduate degree may pursue the certificate in the postbaccalaureate program. Students who already hold a graduate degree may be admitted to the program as non-degree graduate students. Students pursuing graduate degrees will receive their graduate certificate upon completion of the requirements for their graduate degree. The program represents a concentration in current theoretical knowledge and practice in home-based intervention. It adds another dimension to the knowledge and skills a student is able to offer in the many professions that relate to services to at-risk children and their families. This course of study coordinates multidisciplinary training of personnel in home-based intervention and helps to meet the need for trained professionals in home-based intervention.

The undergraduate and graduate curriculum committees of the Center for Family Studies will oversee the certificate program and certify through the Director of the Certificate Programs in Home-Based Intervention that all requirements for the certificate have been completed.

**Admission**

To participate in the program at the graduate level, the student should:

- Be formally admitted to The University of Akron Graduate School.
- Make written application to the program countersigned by student’s major academic advisor (if applicable).
- Have an interview with the Director of the Certificate Programs in Home-Based Intervention.
- Receive written notification for admission from the Director of the Certificate Programs in Home-Based Intervention.
- Consult with the Director of the Certificate Programs in Home-Based Intervention to formulate a program of study.

All students enrolled in the home-based certificate programs will enroll in the core course in Home-Based Intervention. Students enrolled in the undergraduate and postbaccalaureate program will enroll in the courses at the undergraduate level. Students admitted to the Graduate School as degree seeking or non-degree graduate student.

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.

**Requirements**

**Core Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820:503</td>
<td>Home-Based Intervention Theory</td>
<td>3</td>
</tr>
<tr>
<td>1820:504</td>
<td>Home-Based Intervention Techniques and Practice</td>
<td>3</td>
</tr>
<tr>
<td>1820:505</td>
<td>Home-Based Intervention Internship</td>
<td>3-5</td>
</tr>
</tbody>
</table>

**Eligibility Courses:**

Students must have completed at least 9 credits of coursework in the following areas:

**Theoretical Frameworks:**

- Systems Theory
  - 3850:620 General Systems Theory 3
  - 3850:643 Theories and Philosophy of Counseling 3
  - 5600:655 Marriage and Family Therapy: Theory and Techniques 3
  - 3850:607 Family Dynamics 3
- Developmental Theory
  - 3850:512 Socialization: Child to Adult 3
  - 3400:602 Family in Life-Span Perspective 3
  - 3400:605 Developmental Parent-Child Interactions 3
  - 3400:610 Child Development Theories 3
- Therapeutic Theory
  - 5600:651 Techniques in Counseling 3
  - 5600:667 Marital Therapy 3
  - 5600:669 Systems Theory in Family Therapy 3

**Elective Courses (9 credits):**

Select one course from three different disciplines. (Must be outside student’s major degree area.)

**Specific Skill Areas:**

- **Psychology**
  - 3750:530 Psychological Disorders of Children 4
  - 3750:704 Theories of Personality 3
- **Sociology**
  - 3850:550 Sociology of Mental Illness 3
  - 3850:688 Human Ecology 3
  - 3850:753 Family and Health (Special Topics) 1-3
- **Counseling**
  - 5600:550 Counseling Problems Related to Life-Threatening Illness and Death 3
  - 5600:620 Issues in Sexuality for Counselors 3
- **Special Education**
  - 5610:540 Developmental Characteristics of Exceptional Individuals 3
  - 5610:600 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 Family-Life Patterns in the Economically Deprived Homes 2
  - 7400:504 Adolescence in the Family Context 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
  - 7750:552 Social Work and Mental Health 3
  - 7750:554 Social Work in Juvenile Justice 3

**MANAGEMENT OF TECHNOLOGY AND INNOVATION**

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

In an increasingly global economy integrated with technology, the innovative enterprises with effective and efficient management of technology and innovation will gain competitive advantage over their rivals. To respond to these needs of our potential employers, this certificate program in Management of Technology and Innovation was developed by the College of Business Administration with the cooperation of the College of Polymer Science and Polymer Engineering and the guidance of the members of the Advancement Councils of the two colleges. This graduate certificate program offers courses in Management of Technology and other innovation-related business disciplines, including marketing, finance, entrepreneurship, and more. This certificate program will prepare the learners to innovatively manage a technology-driven enterprise.

To participate in the program the student should:

- Be formally admitted to The University of Akron as a graduate or non-degree graduate student.

Students admitted to the Management of Technology and Innovation Certificate Program may enroll only in those courses required for completion of the certificate.

**Required Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:665</td>
<td>Management of Technology</td>
<td>3</td>
</tr>
<tr>
<td>6500:669</td>
<td>Polymer Management Decisions</td>
<td>3</td>
</tr>
<tr>
<td>6600:600</td>
<td>Marketing Concepts</td>
<td>3</td>
</tr>
<tr>
<td>6200:601</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
</tbody>
</table>

**Recommended Electives:**

From these courses, select any six credits for which you have the proper prerequisites.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:610</td>
<td>Process Analysis and Cost Management</td>
<td>3</td>
</tr>
<tr>
<td>6400:602</td>
<td>Managerial Finance</td>
<td>3</td>
</tr>
<tr>
<td>6500:608</td>
<td>Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>6500:600</td>
<td>Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>6500:602</td>
<td>Computer Techniques for Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:650</td>
<td>Fundamentals of Human Resource Administration</td>
<td>3</td>
</tr>
<tr>
<td>6500:540</td>
<td>Product and Brand Management</td>
<td>3</td>
</tr>
<tr>
<td>6600:575</td>
<td>Business Negotiation</td>
<td>3</td>
</tr>
<tr>
<td>6800:656</td>
<td>Management of International Operations</td>
<td>3</td>
</tr>
</tbody>
</table>
MID-CAREERS PROGRAM IN URBAN STUDIES

Requirements
The program will require the completion of 16 graduate credits in a single area or in several areas in the urban field. Upon the completion of the program, a certificate will be granted.

Admission
A student must satisfy the requirements for entrance in graduate programs or have a bachelor’s degree and the equivalent of five years experience in a professional, administrative or leadership position, in which case the student shall be admitted as a non-degree student. A student may wish to pursue additional electives. However, a student admitted to this program will be limited to 20 credits. If the student wishes to pursue more than 20 credits, the student must be admitted to the M.A. program in urban studies.

Program
The Mid-Careers Certificate Program in Urban Studies will require the successful completion of a plan of study which must include a minimum of 16 credits of work in existing courses offered by the Department of Public Administration and Urban Studies. The core program and areas of study are listed below. Electives will be chosen in consultation with the advisor from the approved list of courses. Courses offered by other departments will be accepted if they are urban related and will specifically contribute to the student's objectives.

Core:
- 3980:600 Basic Analytical Research 3
- 3980:601 Advanced Research and Statistical Methods 3

Options:

**Geography/Urban Planning**
- 3350:630 Planning Theory 3
- 3350:600,1,2 Seminar: Urban Planning Design 3
- 3350:600,1,2 Seminar: Planning Theory and Innovation 3
- Elective(s) 4

**Public Administration**
- 3980:611 Introduction to the Profession of Public Administration 3
- 3980:640 Fiscal Analysis 3
- 3980:643 Introduction to Public Policy 3
- Elective(s) 4

**Urban Research Methods**
- 3980:670 Research for Futures Planning 3
- 3980:673 Computer Applications in Public Organizations 3
- Elective(s) 4

**Urban Service Systems**
- 3980:620 Social Services Planning 3
- 3980:621 Urban Society and Service Systems 3
- 3980:671 Program Evaluation in Urban Studies 3
- Elective(s) 4

**Urban Studies**
- 3980:602 History of Urban Development 3
- Elective(s) 10

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 must successfully complete all three courses listed below.
- 4600:442/542 Industrial Automatic Control 3
- 4600:444/544 Robot, Design, Control and Application 3
- 4600:670 Integrated Flexible Manufacturing Systems 3

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. Students 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
- 5500:575 Instructional Technology Applications 3
- 7100:590 Workshop in Art* 3
- 7500:553 Music Software Survey and Use 3
- 7500:590 Workshops in Music Technology* 3
- 7600:516 New Media Writing 3
- 7600:517 New Media Production 3
- 7600:568 Nonlinear Editing 3
- 7600:590 Workshops in Communication* 3

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

NURSE ANESTHESIA - POST MSN

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):

- 8200:637 Residency I (Pediatrics and Obstetrics) 4
- 8200:646 Residency II (Cardiac, Thoracic, Cardiovascular, and Neurology) 4
- 8200:648 Residency III (Hepatic, Renal, Endocrine, Head & Neck, Trauma, and Burns/Pain Management) 4
- 8200:647 Professional Role Seminar 2
- 8200:649 Residency IV (Senior Seminar) 4

Total 18

* Undergraduate students must obtain permission to take this course.
The certificate in Nursing Education allows for advanced role specialization in nursing education. Four sequential courses for a total of 12 credit hours comprise the certificate requirements. The certificate program is open to all current master’s and doctoral students in the College of Nursing, post-baccalaureate students, post-MSN students, post-doctoral and faculty currently teaching in nursing programs. Formal admission to The University of Akron is required as either a post-baccalaureate student, graduate student or non-degree graduate student. The awarding of this certificate is not contingent upon a degree completion program.

For information concerning admission to the certificate program, please contact the College of Nursing, Graduate Program, (330) 972-7555.

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

**NURSING EDUCATION**

**Sociology**

**Nursing**

**Social Work**

**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 postbaccalaureate, graduate or non-degree graduate student.
- Make written application to the program and receive written notification of admission from the coordinator of the program.

**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.
  - 3400:596 Parent Education 3
  - 3400:605 Developmental Parent-Child Interactions 3
  - 3400:594 Practicum in Parent and Family Education 3

- **Electives:**
  - Students must successfully complete six credits of coursework selected from among the various departmental courses listed below. These credits shall be chosen from departments outside the student's discipline.
  - Family and Consumer Sciences
    - 3400:501 American Families in Poverty 3
    - 3400:504 Adolescence in the Family Context 3
    - 3400:540 Family Crisis 3
    - 3620:546 Culture, Ethnicity and the Family 3
  - Social Work
    - 7750:555 The Black Family 3
    - 7750:686 Social Work Practice: Family and Children 3
  - Nursing
    - 8200:651 Child and Adolescent Health Nursing I 5
  - Psychology
    - 3750:530 Psychological Disorders of Children 4
    - 3750:726 Child Psychology 4
    - 3750:737 Psychology of Learning Disabilities 4
  - Sociology
    - 3850:512 Socialization Child to Adult 3
    - 3850:677 Family Analysis 3
  - Educational Foundations
    - 5100:648 Individual and Family Development Across the Lifespan 3
    - 5100:721 Learning Processes 3
  - Educational Guidance and Counseling
    - 5600:646 Multicultural Counseling 3
    - 5600:648 Individual and Family Development Across the Lifespan 3
    - 5600:655 Marriage and Family Therapy: Theories and Techniques 3
    - 5600:667 Marital Therapy 3
    - 5600:669 Systems Theory in Family Therapy 3

**INTERDISCIPLINARY AND CERTIFICATE PROGRAMS**

**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 or 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. 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 spaces 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.

**Requirements**

Minimum: 19 Credits

- 5400:500 Postsecondary Learner 3
- 5400:501 Learning with Technology 1
- 5400:520 Postsecondary Instructional Technology 3
- 5400:530 Systematic Curriculum Design for Postsecondary Education 3
- 5400:535 Systematic Instructional Design in Postsecondary Education 3
- 5400:600 Survey of Postsecondary Institutions 3
- 5400:690 Internship in Postsecondary Education 3

The Internship is the last course taken. This course can not be taken until all other certificate requirements. The certificate program is open to all current master's and any department or the University. Individuals who already hold undergraduate or graduate degrees.

For their 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.

**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 pur-
suing a graduate degree in other departments at the University may be admitted 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
  3250:606 Public Finance
  3250:665 Seminar on Economic Planning
- Political Science (choose one)
  3700:541 The Policy Process
  3700:542 Methods of Policy Analysis
  3700:668 Seminar in Public Policy Agendas and Decisions
  3700:670 Seminar in the Administrative Process
- Sociology (choose one)
  3850:613 Sociology of Program Evaluation and Program Improvement
  3850:679 Political Sociology

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: 3250:697/597: readings 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 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 enrolls, 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 course work 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 at the conclusion of the year elect one of its members as chairperson.

Upon the recommendation of the chair of the department of the student’s major, students shall normally enroll in the core courses at the undergraduate level. Undergraduate students enrolled in the core courses at the undergraduate level, students must complete the requirements for the core courses at the graduate level before they can apply to complete the requirements for the graduate certificate.

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 accumulate 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300:551</td>
<td>Computer Methods of Structural Analysis</td>
<td>3</td>
</tr>
<tr>
<td>4300:554</td>
<td>Advanced Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>4300:605</td>
<td>Structural Stability</td>
<td>3</td>
</tr>
<tr>
<td>4300:684</td>
<td>Advanced Reinforced Concrete Design</td>
<td>3</td>
</tr>
<tr>
<td>4300:685</td>
<td>Advanced Steel Design</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:573</td>
<td>Seminar in Teaching ESL: Theory and Method</td>
<td>3</td>
</tr>
<tr>
<td>3300:589</td>
<td>Seminar in English: Grammatical Structures of English</td>
<td>3</td>
</tr>
<tr>
<td>5500:570</td>
<td>Multicultural Education in the U.S.**</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>3300:589</td>
<td>Seminar in English: Sociolinguistics*</td>
</tr>
<tr>
<td>5500:543</td>
<td>Techniques for Teaching ESL in the Bilingual Classroom</td>
<td>4</td>
</tr>
</tbody>
</table>

†The awarding of this certificate is not contingent upon completion of a degree program. Undergraduate certificate programs require a 2.00 grade-point average; graduate certificate programs require a 3.00 grade-point average.
*Choice to be decided in consultation with the program director.

TECHNICAL AND SKILLS TRAINING
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 level. 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 towards 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 availability. 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 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

<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>5400:515</td>
<td>Training in Business and Industry</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>5400:690</td>
<td>Internship in Postsecondary Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:520</td>
<td>Introduction to Instructional Computing</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.

**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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300:564</td>
<td>Highway Design</td>
<td>3</td>
</tr>
<tr>
<td>4300:565</td>
<td>Pavement Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4300:566</td>
<td>Traffic Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

and two of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300:663</td>
<td>Advanced Transportation Engineering I</td>
<td>3</td>
</tr>
<tr>
<td>4300:664</td>
<td>Advanced Transportation Engineering II</td>
<td>3</td>
</tr>
<tr>
<td>4300:665</td>
<td>Traffic Detection and Data Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 15

**WOMEN’S STUDIES**

Dr. E. Sue Wamsley, *Interim Director*

For information, contact Women’s Studies, located in the Polksy Building 315B, (330) 972-7008.

Interdisciplinary and specialized, the Women’s Studies graduate program fosters a critical approach to knowledge about women. By focusing on cultural practices that have largely excluded and devalued differences in gender, sexual orientation, ethnicity, race, and class, Women’s Studies prepares students to appreciate and act in a pluralistic world. The Women’s Studies graduate certificate integrates scholarship and research on women and gender from literature, psychology, history, sociology, and communication. Students are challenged to explore diverse viewpoints and discover the partial and often self-interested emphases of our society’s most powerful institutions – family, church, academia, business, and government.

**Admission**

Hold a Bachelor’s Degree with a minimum 2.75 grade point average.

**Requirements (required 5-7)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840:580</td>
<td>Feminist Theory</td>
<td>3</td>
</tr>
<tr>
<td>1840:590</td>
<td>Workshop: Women’s Studies Lecture Series</td>
<td>3</td>
</tr>
<tr>
<td>1840:593</td>
<td>Individual Studies on Women</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Electives**

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840:595</td>
<td>Special Topics in Women’s Studies: Women, Minorities and Media</td>
<td>3</td>
</tr>
<tr>
<td>1840:596</td>
<td>Special Topics in Women’s Studies: Women, Poverty and Welfare</td>
<td>3</td>
</tr>
<tr>
<td>1840:597</td>
<td>Special Topics in Women’s Studies: Women as Survivors</td>
<td>3</td>
</tr>
<tr>
<td>1840:598</td>
<td>Special Topics in Women’s Studies: Worlds of Women</td>
<td>3</td>
</tr>
<tr>
<td>3200:550</td>
<td>Selected Topics in Ancient Culture: Women and Gender in Classical Antiquity</td>
<td>3</td>
</tr>
<tr>
<td>1840:599</td>
<td>Internship in Women’s Studies</td>
<td>3</td>
</tr>
<tr>
<td>3300:589</td>
<td>Seminar in English: Twentieth Century Women Writers</td>
<td>3</td>
</tr>
<tr>
<td>3300:599</td>
<td>Seminar in English: Women and Film</td>
<td>3</td>
</tr>
<tr>
<td>3400:500</td>
<td>Women in Revolutionary China</td>
<td>3</td>
</tr>
<tr>
<td>3750:574</td>
<td>Psychology of Women</td>
<td>4</td>
</tr>
<tr>
<td>3850:533</td>
<td>Sociology of Women</td>
<td>3</td>
</tr>
<tr>
<td>7100:501</td>
<td>Special Topics in History of Art: Women in Art</td>
<td>3</td>
</tr>
<tr>
<td>8000:508</td>
<td>Women, Minorities and News</td>
<td>3</td>
</tr>
<tr>
<td>7750:511</td>
<td>Women’s Issues in Social Work Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

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

Course Numbering Index*

Interdisciplinary Programs

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>Divorce Mediation</td>
</tr>
<tr>
<td>1820</td>
<td>Home-Based Intervention Therapy</td>
</tr>
<tr>
<td>1840</td>
<td>Women's Studies</td>
</tr>
<tr>
<td>1850</td>
<td>Human Development and Gerontology</td>
</tr>
<tr>
<td>1870</td>
<td>Environmental Studies</td>
</tr>
<tr>
<td>3000</td>
<td>Cooperative Education</td>
</tr>
<tr>
<td>3006</td>
<td>Institute for Lifespan Development and Gerontology</td>
</tr>
<tr>
<td>3010</td>
<td>Environmental Studies</td>
</tr>
</tbody>
</table>

Buchtel College of Arts and Sciences

<table>
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<th>Course Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>3100</td>
<td>Biology</td>
</tr>
<tr>
<td>3110</td>
<td>Biology/NEOUCOM</td>
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<tr>
<td>3150</td>
<td>Chemistry</td>
</tr>
<tr>
<td>3200</td>
<td>Classics</td>
</tr>
<tr>
<td>3220</td>
<td>Anthropology</td>
</tr>
<tr>
<td>3240</td>
<td>Archaeology</td>
</tr>
<tr>
<td>3250</td>
<td>Economics</td>
</tr>
<tr>
<td>3300</td>
<td>English</td>
</tr>
<tr>
<td>3350</td>
<td>Geography and Planning</td>
</tr>
<tr>
<td>3370</td>
<td>Geology</td>
</tr>
<tr>
<td>3400</td>
<td>History</td>
</tr>
<tr>
<td>3450</td>
<td>Mathematics</td>
</tr>
<tr>
<td>3460</td>
<td>Computer Science</td>
</tr>
<tr>
<td>3470</td>
<td>Statistics</td>
</tr>
<tr>
<td>3980</td>
<td>Public Administration</td>
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</table>

College of Engineering

<table>
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<th>Description</th>
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<tbody>
<tr>
<td>4100</td>
<td>General Engineering</td>
</tr>
<tr>
<td>4200</td>
<td>Chemical Engineering</td>
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<tr>
<td>4300</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>4600</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>4800</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>5550</td>
<td>Physical Education</td>
</tr>
<tr>
<td>5560</td>
<td>Outdoor Education</td>
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<tr>
<td>5570</td>
<td>Health Education</td>
</tr>
<tr>
<td>6000</td>
<td>Educational Guidance</td>
</tr>
<tr>
<td>5610</td>
<td>Special Education</td>
</tr>
<tr>
<td>5620</td>
<td>School Psychology</td>
</tr>
<tr>
<td>5800</td>
<td>Special Educational Programs</td>
</tr>
<tr>
<td>6500</td>
<td>Management</td>
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<td>6600</td>
<td>Marketing</td>
</tr>
<tr>
<td>6700</td>
<td>Professional</td>
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<tr>
<td>6800</td>
<td>International Business</td>
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College of Education

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<tr>
<td>5100</td>
<td>Educational Foundations and Leadership</td>
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<tr>
<td>5170</td>
<td>General Administration</td>
</tr>
<tr>
<td>5190</td>
<td>Higher Education Administration</td>
</tr>
<tr>
<td>5400</td>
<td>Postsecondary Technical Education</td>
</tr>
<tr>
<td>5500</td>
<td>Curricular and Instructional Studies</td>
</tr>
<tr>
<td>7100</td>
<td>Art</td>
</tr>
<tr>
<td>7400</td>
<td>Family and Consumer Sciences</td>
</tr>
<tr>
<td>7500</td>
<td>Music</td>
</tr>
<tr>
<td>7510</td>
<td>Musical Organizations</td>
</tr>
<tr>
<td>7520</td>
<td>Applied Music</td>
</tr>
<tr>
<td>7600</td>
<td>Communication</td>
</tr>
<tr>
<td>8200</td>
<td>Nursing</td>
</tr>
<tr>
<td>9841</td>
<td>Polymer Engineering</td>
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</table>

College of Polymer Science and Polymer Engineering

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>9871</td>
<td>Polymer Science</td>
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</table>

College of Business Administration

<table>
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<tr>
<th>Course Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>6200</td>
<td>Accountancy</td>
</tr>
<tr>
<td>6300</td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td>6400</td>
<td>Finance</td>
</tr>
</tbody>
</table>

College of Fine and Applied Arts

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Description</th>
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<tr>
<td>7700</td>
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<td>7750</td>
<td>Social Work</td>
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College of Nursing

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College of Business Administration

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Interdisciplinary Programs

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HOME-BASED INTERVENTION THERAPY

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<td>Home-Based Intervention Techniques and Practice</td>
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<td>Home-Based Intervention Internship</td>
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WOMEN'S STUDIES

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<td>Special Topics in Women's Studies</td>
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<td>Internship in Women's Studies</td>
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COOPERATIVE EDUCATION

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INSTITUTE FOR LIFE-SPAN DEVELOPMENT & GERONTOLOGY

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ENVIRONMENTAL STUDIES

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<td>Workshop in Environmental Studies</td>
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<td>595</td>
<td>Field/Lab Studies in Environmental 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:

3000: 507 Middle English Literature

In the above example, the first four digits of the number (3000) indicate the college and department. In the case, 3000 represents the Buchtel College of Arts and Sciences, 30 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
561.2 HUMAN PHYSIOLOGY 4 credits each
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 3 credits
Prerequisites: 202 or 437/473/475. Study of biochemical 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 4 credits
Lecture focuses 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 4 credits
Prerequisite: 12 or permission of instructor. An introduction to the comparative morphology of major vertebrates. The laboratory consists of dissections of representative vertebrates.

568 ADVANCED PHYSIOLOGY OF REPRODUCTION 2 credits
Prerequisites: 202 or 437/473/475. Study of the physiological mechanisms of reproduction throughout the animal kingdom with special emphasis upon mammalian endocrinological control. Controversial issues in the field will be examined and current research presented.

569 RESPIRATORY PHYSIOLOGY 3 credits
Prerequisites: 202 or 437/473/475. Study of mechanisms determining gas exchange including mechanics, ventilation, blood flow, diffusion, and control mechanisms. Emphasis is given to normal human lung function. (Clinical aspects are not considered in detail.)

570 LAB ANIMAL REGULATIONS 1 credit
Required of anyone working with animals, and covers government regulations, care of animals and a lab to teach basic animal handling and measurement techniques.

571 PHYSIOLOGICAL GENETICS 4 credits
Prerequisites: 211 or equivalent. 202 or 437/475. The integrative study of how genetics and physiology influence complex systems from molecular to behavioral in plants and animals. Laboratory.

572 BIOLOGICAL MECHANISMS OF STRESS 3 credits
Prerequisites: 202 or 437/473/475. Study of mechanisms from molecular to behavioral of how stress influences body systems and signals. The latest research and experimental issues are discussed.

573 COMPARATIVE ANIMAL PHYSIOLOGY 3 credits
Prerequisite: 12. 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: 12. Corequisite: 437/475/473/Laboratory experiments in animal physiology: respiration, circulation, metabolism, osmoregulation. Presentation of results in scientific format and as oral reports.

580 MOLECULAR BIOLOGY 4 credits
Prerequisites: 211, 311. Fundamentals of molecular biology, including recombinant DNA technology, applications in biotechnology, medicine, and genetic engineering. Mechanisms of gene regulation.

581 ADVANCED GENETICS 3 credits
Prerequisite: 211. Nature of the gene; genetic codes; hereditary determinants; mutation and genes in population. Lecture and seminar.

582 NEUROBIOLOGY 3 credits
Prerequisite: 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.

592 WORKSHOP IN BIOLOGY 1-3 credits
May be repeated. Prerequisite: permission of instructor. Group studies of special topics in biology. May not be used to meet undergraduate or graduate major requirements in biology. May be used for elective credit only.

5928 BIOLOGICAL PROBLEMS 1-2 credits each
Prerequisite: permission. Honors-level work, usually consisting of laboratory investigations. A maximum of 4 credits may apply toward the major degree requirements.

625 BASIC DNA TECHNIQUES 3 credits
Prerequisite: admission to M.S.N. program, or 361. DNA techniques including extraction of DNA, cleavage of DNA and cloning. Laboratory.

660 ENVIRONMENTAL PHYSIOLOGY 3 credits
Prerequisites: 501, 502. Study of physiological reactions of healthy mammals to natural changes or extremes of physical environment.

670 MEDICAL PHYSIOLOGY, PATHOPHYSIOLOGY, AND PHARMACOLOGY 3 credits
Prerequisite: Admission to M.S.N. program, or 361/360, 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 2 credits
Prerequisite: 311. Structure and functional organization of cells at ultrastructural level. Three lecture hours a week.

688 PRINCIPLES OF TRANSMISSION ELECTRON MICROSCOPY 3 credits
Prerequisite: 311 or 681 or equivalent. Modern cytological methods using transmission electron microscopy. Portals to demonstrate proficiency in fixation techniques, use of Ultramicrotome, light and electron microscopes and darkroom techniques.

689 PRINCIPLES OF SCANNING ELECTRON MICROSCOPY 3 credits
Prerequisite: 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 sputter-coating apparatus and the efficient use of the scanning electron microscope.

695 SPECIAL TOPICS: BIOLOGY 1-3 credits
May be repeated. Prerequisite: permission. Special courses offered once or only occasionally in areas where no formal course exists.

698 BIOLOGY COLLOQUIUM 1 credit each
May be repeated. Prerequisite: permission. Attendance at all departmental seminars and presentation of seminar based on original research. Required of all thesis option students who shall present their thesis research.

699 MASTER’S THESIS 16 credits
May be repeated. A minimum of six credits is required for thesis option student.
631 HUMAN GROSS ANATOMY II 3 credits
Prerequisite: Graduate standing and permission. An intensive survey of human macromor-
phology.

695 SPECIAL TOPICS: BIOLOGY/NEUROCON 1-6 credits
Prerequisite: permission of instructor. Advanced topics in medical education covering areas not otherwise available. May be repeated with a change in topic.

CHEMISTRY 3150:

501 BIOCHEMISTRY LECTURE I 3 credits
Prerequisite: 264. Biochemistry of amino acids, carbohydrates, lipids, and nucleic acids: struc-
ture and function; reactions. Emphasis given to catalysis; kinetics and regulation. Cop-
4. Introduces the properties of biologically active compounds and their biological effects.

603 BIOCHEMISTRY LECTURE III 3 credits
Prerequisite: 501 and 502. DNA, RNA, and protein metabolism. Translation and transcription.
Gene function and expression.

610 BASIC QUANTUM CHEMISTRY 3 credits
Prerequisites: 314 or permission of instructor. Quantum mechanics with applications to molec-
ular systems. Includes angular momentum, molecular Hamiltonians, variation and perturbation methods and molecular orbital theories.

611 SPECTROSCOPY 3 credits
Prerequisite: 610 or permission of instructor. Interaction of light with matter, linear and nonlinear
spectroscopies. Rotational, vibrational and electronic spectroscopy. Radiolysis. Trans-
itions and photochemistry.

619 TRANSITION-METAL ORGANO METALS 3 credits
Prerequisite: 472 or equivalent. The organometallic chemistry of the transition metal ele-
ments. Topics covered include synthesis, characterization methods, structure, bonding, reac-
tivity, and application.

620 MAIN GROUP ORGANO METALS 3 credits
Prerequisite: 472 or equivalent. The organometallic chemistry of main group elements. Topics
covered include synthesis, characterization methods, structure, bonding, reactivity, and appli-
cations.

621 ADVANCED PREPARATIONS 1-2 credits
Prerequisite: permission. Methods for preparing and purifying organic and inorganic com-
ounds. Laboratory.

625 CHEMISTRY SEMINAR 1 credit
Lectures on current research topics in chemistry by invited speakers.

629 PHYSICAL INORGANIC CHEMISTRY 3 credits
Prerequisites: 314, 472, or permission. Detailed treatment of chemistry of transition elements.
Group theoretical applications, ligand field theory, kinetics and mechanism, magnetism, elec-
tronic spectra, molecular orbital theory.

630 THEORETICAL INORGANIC CHEMISTRY 3 credits
Prerequisite: 472, or permission. Detailed treatment of chemistry of transition ele-
ments. Group theoretical applications, ligand field theory, kinetics and mechanism, electronic
spectra, molecular orbital theory.

635 THERMODYNAMICS AND STATISTICAL THERMODYNAMICS 3 credits
Prerequisites: 314 and 472, or permission. Rigorous treatment of laws of thermo-
dynamics and their applications to selected chemical systems. Fundamentals of statistical
thermodynamics and applications to systems in chemical equilibrium.

636 CHEMICAL KINETICS 3 credits
Prerequisite: 472 or permission of the instructor. Phenomenological kinetics, experimental
methods of investigation and analysis of reaction systems. Theoretical treatments of reaction rates.

639 DESCRIPTIVE INORGANIC CHEMISTRY 3 credits
Prerequisite: Undergraduate inorganic chemistry. The synthesis, characterization, struc-
ture, bonding, and reactivity of inorganic compounds. Emphasis is placed on applications and
examples from the recent literature.

640 CHEMICAL SEPARATIONS 3 credits
Prerequisites: 423 or 424 or equivalent. General theory, instrumentation and application of
methods of separation. Emphasis on modern chromatographic techniques and recent advances.

641 SPECTRAL METHODS 3 credits
Prerequisites: 423 and 424 or equivalent. Theory and application of instrumental measure-
ments. Interpretation of data.

645 X-RAY CRYSTALLOGRAPHY 3 credits
Prerequisite: permission. The theoretical and practical aspects of single crystal x-ray crystal-
lography are discussed. Topics covered include diffraction, space groups, structure solution and
refinement.

670 SPECTROSCOPIC IDENTIFICATION OF ORGANIC COMPOUNDS 3 credits
Prerequisites: 263, 264 or permission of instructor. Determination of the structures of organ-
ic compounds by spectroscopic analysis: IR, UV, NMR, GC/MS, mass spectrometry.

683 MECHANISTIC AND SYNTHETIC ORGANIC CHEMISTRY I 3 credits
Prerequisites: 263, 264 or permission of instructor. Introduction to the structural and mecha-
nistic aspects of organic reactions: HMO calculations, acids and bases, equilibrium, kinetics,
and reactivity of intermediates, reaction mechanisms.

684 MECHANISTIC AND SYNTHETIC ORGANIC CHEMISTRY II 3 credits
Prerequisite: 683 or permission of instructor. Synthetic organic chemistry from a mechanistic
perspective: nucleophilic and electrophilic substitution and addition reactions, carbon-chem-
istry, functional group manipulations, oxidations, reductions, cyclization reactions.

699 MASTER’S THESIS 1-6 credits
For properly qualified candidates for master’s degree. Supervised original research in analyti-
cal, inorganic, organic, physical or biochemistry.

710 SPECIAL TOPICS: ANALYTICAL CHEMISTRY 1-3 credits
Prerequisite: permission. Topics in advanced analytical chemistry. Electro-
analysis, activation analysis, atomic absorption spectrometry, mass spectrometry, liquid-liquid,
liquid-solid and gas chromatography, ion exchange, thermodynamic methods, 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 ele-
ments, 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 nat-
ural products, heterocyclic compounds, photochemistry.

713 SPECIAL TOPICS: PHYSICAL CHEMISTRY 1-3 credits
May be repeated. Prerequisite: permission. Subject from modern physical chemistry.

715 SPECIAL TOPICS: BIOCHEMISTRY 1-3 credits
May be repeated. Prerequisite: permission. Recent developments in areas of biochemistry.

720 ADVANCED BIOCHEMICAL TECHNIQUES 3 credits
Prerequisites: 402/502. An advanced lecture course on physical techniques in biochemistry.
Includes optical and hydrodynamic methods; radioanalytical techniques, scattering and mag-
etic resonance spectroscopy.

722 ENZYMATIC REACTIONS 3 credits
Prerequisites: 402, 402/502 or permission. Mechanisms of enzyme catalyzed reactions, general
aspects and specific examples for phosphoryl, asparyl, glycosyl transfers, eliminations, reduc-
tion/oxidation, isomerisations and rearrangements. Chemistry of cofactors.

724 BIOINORGANIC CHEMISTRY 3 credits
Prerequisites: 402 and 402/502. Survey of the structure and properties of metal ion com-
plexes with amino acids, nucleotides, metabolites and macromolecules, metal ion metabo-
lism in medicine.

726 ADVANCED METABOLISM 3 credits
Prerequisites: 402 and 402/502. Study of advanced pathways in carbohydrate, lipid and pro-
tein metabolism with emphasis placed on metabolic dysfunction.

740 PHYSICAL ORGANIC CHEMISTRY 3 credits
Prerequisites: 463, 684 or permission of instructor. An advanced treatment of the theory and
mechanisms of organic chemistry; FMO theory, molecular mechanics, molecular strain, kinet-
ics, thermodynamics, acid-base functions, linear free energy relationships.

750 ADVANCED SYNTHETIC ORGANIC CHEMISTRY 3 credits
Prerequisites: 463, 684 or permission of instructor. An advanced treatment of organic func-
tional group manipulations in the context of the total synthesis of natural products.

899 DOCTORAL DISSERTATION 1-6 credits
Open to qualified student accepted as a candidate for Doctor of Philosophy in Chemistry. Super-
vised 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 ASSYRILOGY 3 credits
Prerequisite: 402. May be repeated for credit with another cuneiform language. Prerequisite: permission of instructor. The Akkadian language.

505 WORKSHOP IN CLASSICS 1-3 credits
Prerequisite: permission. Methods for preparing and purifying organic and inorganic com-

506 THE ANTHROPOLOGY OF FOOD 3 credits
Prerequisite: 150 or permission. Examination of functional and causal relationships between

507 CULTURE AND MEDICINE 3 credits
Prerequisite: 150 or permission. Examination of functional and causal relationships between
culture and individual cognition and behavior. Lecture.

509 THE ANTHROPOLOGY OF FOOD 3 credits
Prerequisite: 150 or permission. Examination of functional and causal relationships between

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.

512 THE ANTHROPOLOGY OF FOOD 3 credits
Prerequisite: 150 or permission. Examination of functional and causal relationships between

515 CULTURE AND PERSONALITY 3 credits
Prerequisite: 150 or permission. Examination of functional and causal relationships between

516 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.

517 SPECIAL TOPICS: ANTHROPOLOGY 3 credits
Prerequisite: 150 or permission. Designed to meet needs of students who are interested 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 on a regular basis.

594 WORKSHOP IN ANTHROPOLOGY 1-3 credits
Prerequisite: permission. 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.

611 SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS 3 credits
Prerequisite: 150 or permission. Seminar in the development of anthropological theories and
methods. Prerequisite: permission of instructor. Research in student’s chosen field of interest. Regular conferences with instructor. Preparation of a research paper.

ARCHAEOLOGY 3240:

510 SUBSURFACE GEOPHYSICAL SURVEYING IN ARCHAEOLOGY 3 credits
Prerequisites: 252 or 257/101 or 257/310. Advanced instruction principles of subsurface
geophysical survey techniques in archaeology. Emphasizes gravimetry and electric resistivi-
ty techniques. Includes both laboratory and fieldwork.
### ECONOMICS

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<td>587</td>
<td>Urban Economics: Theory and Policy</td>
<td>3</td>
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<tr>
<td>561</td>
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<td>3</td>
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### ENGLISH

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<td>530</td>
<td>Victorian Poetry and Prose</td>
<td>3</td>
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<td>537</td>
<td>The Arthurian Legend</td>
<td>3</td>
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<td>536</td>
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**Graduate Courses**

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570 HISTORY OF ENGLISH LANGUAGE  
Prerequisites: 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; dialects; origins; correctness.  
3 credits

571 U.S. DIACLECTS: BLACK AND WHITE  
Prerequisites: 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

572 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  
Prerequisites: 111 and 112 or their equivalents, or permission of the instructor. Theoretical issues in pedagogical design and language acquisition as relevant to learning of a second language. Elaboration of principles for the teaching of English as a second language based on research in linguistics, psychology and second language pedagogy.  
3 credits

575 THEORY OF RHETORIC  
Prerequisites: 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

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 English and American literature and language.  
3 credits

590 WORKSHOP IN ENGLISH  
Prerequisites: 111 and 112 or their equivalents, or permission of the instructor. (May be repeated with different topics.) Group studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English; for elective credit only.  
3 credits

600 TEACHING COLLEGE COMPOSITION PRACTICUM  
Prerequisite: teaching assistantship. Orientation and weekly analysis of teaching rationale and practical interaction with teaching assistants in the Department of English.  
3 credits

615 SHAKESPEAREAN DRAMA  
Prerequisites: Concentrated study of several Shakespeare plays with emphasis on historical, critical and dramatic documents pertinent to development of Shakespeare's art.  
3 credits

616 SHAKESPEAREAN CORPORATION IN ENGLISH DRAMA  
Prerequisites: 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  
Prerequisites: 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

620 AUTOBIOGRAPHY AS LITERATURE  
This seminar 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. Attention will also be given to the art and craft of writing autobiography.  
3 credits

627 KEATS AND HIS CONTEMPORARIES  
Prerequisites: 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 pieces and plays. Secondary attention will be given to his literary criticism, travel pieces and plays.  
3 credits

645 POE AND HAWTHORNE  
Prerequisites: Substantial readings from each author: tales, novels, essays, letters, poetry. Also, representative literary criticism about each author.  
3 credits

665 LITERARY CRITICISM  
Prerequisites: 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  
Prerequisites: Introduction to the methodology of methods and results of modern grammatical research. Focus on semantics, phonology and dialects. Goals include understanding of language variation and background preparation for linguistic studies of literature.  
3 credits

673 THEORIES OF COMPOSITION  
Prerequisites: Study of composition theories and research, with attention to their implications for writing and writing instruction. Particular focus on such topics as composing processes, invention, form, style, modes of writing, language varieties and evaluation of writing. Class sessions include discussion of readings and presentations.  
3 credits

679 RESEARCH METHODS IN COMPOSITION  
Prerequisites: 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

698 SATIRE  
Prerequisites: 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

699 THEORY AND TEACHING OF BASIC COMPOSITION  
Prerequisites: Review of current research and exploration of specific instructional methods for teaching basic composition.  
3 credits

700 SCHOLARLY WRITING  
Prerequisites: Study 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

861 SEMINAR IN SATIRE  
Prerequisites: A study of satire from the middle ages through the late 20th Century, with particular attention to techniques of satiric attack, modes of comedy and irony and literary criticism.  
3 credits

868 SEMINAR IN ENGLISH  
May be repeated with change of topic. Special topics within the general field of literature and language, usually focusing on major figures or themes.  
3 credits

971 BIBLIOGRAPHY AND LITERARY RESEARCH  
Prerequisites: Research topics, critical problems in literary scholarship, abstracting of scholarly material and bibliographic sources for literary research. Bibliographic exercises done, models of literary scholarship read.  
3 credits

985 INDIVIDUAL READING IN ENGLISH  
Prerequisites: Individual study under guidance of professor who directs and coordinates student's reading program.  
1-3 credits

986 MASTER'S THESIS  
Prerequisites: Original work in the field of literature and language and completion of graduate student's required thesis.  
1-4 credits

GEOGRAPHY AND PLANNING 3350:

505 GEOGRAPHIC INFORMATION SYSTEMS  
Prerequisites: 540 or permission. Introduction to the principles and concepts underlying geographic information systems (GIS) and their application in professional practice and academic research. Laboratory.  
3 credits

507 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS  
Prerequisites: 505. Advanced instruction in the theory and application of geographic information systems (GIS) including hands-on experience with both raster and vector GIS. Laboratory.  
3 credits

515 ENVIRONMENTAL PLANNING  
Prerequisites: Scientific and technical principles for decision-making in planning, with emphasis on soils, land use, and water quality issues. Data sources and methods of site evaluation.  
3 credits

520 URBAN GEOGRAPHY  
Prerequisites: 100 or 3650-100 or 3250-100 or permission of instructor. Spatial structure of urban systems, interaction between cities, internal structure of cities. Perspectives on urban change; contemporary urban geographic problems; urban and regional planning issues.  
3 credits

522 TRANSPORTATION SYSTEMS PLANNING  
Prerequisites: 320 or permission. Study and analysis of transportation systems from a geodeographic perspective. Emphasis on transportation problems and issues, elements of transportation planning.  
3 credits

528 INDUSTRIAL AND COMMERCIAL SITE LOCATION  
Prerequisites: 320 or permission. Relationship between land, resources, population, transportation and industrial and commercial location process.  
3 credits

532 LAND USE PLANNING LAW  
Prerequisites: Permission. Acquaint student with past and present approaches to land use control in the United States and examine the political, economic, social and legal forces which have shaped existing land use law.  
3 credits

533 PRACTICAL APPROACHES TO PLANNING  
Prerequisites: 330 or permission. Role of geographic investigation in city, regional and resource planning.  
3 credits

536 URBAN LAND USE ANALYSIS  
Prerequisites: 330 or permission. Land use classification systems and their spatial variation in urban areas. Land use data sets collected by student under field work and analyzed to identify the associations and structure of subregions.  
3 credits

537 PLANNING ANALYSIS AND PROJECTION METHODS  
Prerequisites: Introduction to the primary analytic techniques for small-area demographic and economic analysis and projection.  
3 credits

538 LAND USE PLANNING METHODS  
Prerequisites: 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  
Prerequisites: Origins of human settlements and planning from the perspective of urban design and related sociocultural trends. Experience in "reading" settlements as visual landscapes.  
3 credits

540 PRINCIPLES OF CARTOGRAPHY  
Prerequisites: Theoretical and practical applications of cartographic principles used to design and produce maps for research reports, public presentations, publication, and other professional uses.  
3 credits

547 REMOTE SENSING  
Prerequisites: 340 or permission. Principles and techniques of thematic mapping. Stress maps as communication tools. Examines principal thematic mapping techniques and means of presenting quantitative and qualitative data.  
3 credits

548 APPLICATIONS IN CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS  
Prerequisites: 340 or 540 and 445 or 505. Application of analytic and presentation techniques from cartography and geographic information systems to practical problems in geography and planning and laboratory.  
3 credits

549 REMOTE SENSING  
Prerequisites: 340 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.  
3 credits

554 CARTOGRAPHY  
Prerequisites: 305 or permission. Advanced study of cartographic principles with an emphasis on the use of color for map design and production. (Laboratory).  
3 credits

555 ADVANCED REMOTE SENSING  
Prerequisites: 340 or 447/547 or permission. Current research in remote sensing. Application of study of human cultural and biophysical environment. Practice in planning, design, execution and interpretation of remote sensing studies. (Laboratory).  
3 credits

555 DEVELOPMENT PLANNING  
A study of planning concepts and techniques for developing countries, including growth and development, planning agencies, regional inequities and alternative approaches.  
3 credits

571 MEDICAL GEOGRAPHY AND HEALTH PLANNING  
Prerequisites: Spatial analysis of diseases; their socioeconomic correlates; diffusion pattern of infectious diseases with particular reference to North America; health-planning processes and spatial analysis of healthcare delivery systems. (Laboratory).  
3 credits

581 RESEARCH METHODS IN GEOGRAPHY AND PLANNING  
Prerequisites: 12 credits in geography and planning, Investigation of library and archive resources. Emphasis on development of professional writing skills.  
3 credits

583 SPATIAL ANALYSIS  
Prerequisites: 481/581 or permission. Analysis of mapped statistical surfaces. Principles for use of map as model for statistical evidence, prediction, hypothesis testing.  
3 credits

589 SPECIAL TOPICS IN GEOGRAPHY  
(May be repeated) Selected topics of interest in geography.  
1-3 credits

590 WORKSHOP IN GEOGRAPHY  
(May be repeated for a total of 3 credits) Group studies of special topics in geography.  
1-3 credits
595 SOIL AND WATER FIELD STUDIES 3 credits
Prerequisite: 301 or permission. Properties, origins and uses of major soil and water regime landforms. Emphasis on relationships between soil and the hydrological cycle, urbanization, sub- urbanization and agriculture. Field trips required.

596 FIELD RESEARCH METHODS 3 credits
Prerequisite: 481/581 or permission. Field work enabling student to become competent in col- lecting, organizing and analysis of data while carrying out field research projects.

600.12 SEMINAR 3 credits
Optional orientation to various graduate courses. (May be repeated for a maximum of six credits each Prerequisite: permission. Investigative analysis of selected topics in particular fields of geography. Specialization indicated by section number and portion of title.

630 PLANNING THEORY 3 credits
Introduction to the political, institutional and ethical foundations and procedural theories of urban and regional planning.

631 FACILITIES PLANNING 3 credits
Planning of systems and facilities for urban planning.

633 COMPARATIVE PLANNING 3 credits
A survey of national, regional and local planning implementation measures in use in the devel- oped world. Particular attention will be given to the planning experiences of European nations and the impact on American planning theory and practice.

680 ADVANCED SPATIAL ANALYSIS 3 credits
Prerequisite: 456/563 or permission. Advanced concepts and methodologies in geographic research. Emphasis on quantitative revolution in geographic analysis including multiple regression procedures as factor, discriminant and economical analysis, and multidimensional scaling.

685 PLANNING INTERNSHIP 3 credits
Prerequisites: 304, 305, 306, 307, 404, 405. Individual experience in supervised planning agencies. Admittance by written performance in professional planning work. (May be repeated but only 3 credits may be applied to total credit hours needed for degree requirements.) Credit/Non-Credit.

697 HISTORY OF GEOGRAPHIC THOUGHT 1 credit
(Will be repeated for a maximum of four credits.) Lecture series on topics of interest in geo- graphy and planning, by academic and non-academic professionals for both faculty and stu- dents. May not satisfy degree requirements. Credit/Non-Credit.

699 INDIVIDUAL READING AND RESEARCH 1-12 credits
(Will be repeated for a maximum of 6 credits) Prerequisite: permission of instructor. Intensive investigation of selected topics under guidance of faculty member.

699 THESIS RESEARCH 16 credits
Independent and original work toward a thesis.

GEOL OGY 3370:

505 ARCHAEOLOGICAL GEOLOGY 3 credits (includes lab)
Prerequisites: 100 or by permission of instructor. Provides background in geologic principles and techniques relevant to archaeologists. Topics include stratigraphy, absolute dating, dating techniques, zoonarcheology, taphonomy, and remote sensing. Required lab.

510 ROCKS AND MINERALS 3 credits
Prerequisites: 100, 102, 210 or permission, recommended: 350. Examination of physiographic provinces of North America emphasizing structure, tectonic setting, stratigraphy and processes responsible for landform in each province. Laboratory.

511 GLACIAL GEOLOGY 3 credits
Prerequisite: 210 or permission. Causes and effects of Pleistocene expansion of polar ice sheets and glacial deposition and world climate changes.

521 COASTAL GEOLOGY 3 credits
Prerequisite: 101 or permission. Study of the origins and evolution of coasts and island deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features.

525 PRINCIPLES OF SEDIMENTARY BASIN ANALYSIS 3 credits
Prerequisites or corequisites: 324 and 360, or permission. Primary study of depositional processes and facies, including both local and global stratigraphic cycles, and sedimentation and plate tectonics.

532 OPTICAL MINERALOLOGY-INTRODUCTORY PETROGRAPHY 3 credits
Prerequisites: 230 and 231 or equivalent. Optical techniques for identification, characterization, and classification of minerals and rocks using the petrographic microscope. Laboratory.

533 ADVANCED PETROGRAPHY 3 credits
Prerequisite: 532. Petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and mineral assemblages using thin section. Laboratory.

535 PETROLEUM GEOLOGY 3 credits
Prerequisite: 350 or permission; recommended: 324. Natural occurrences of petroleum. Char- acteristics of source, origin, entrapment and exploration methods. Laboratory.

536 COAL GEOLOGY 3 credits
Prerequisites: 100, 102; recommended: 324. Origin, composition and occurrence of coal with emphasis on depositional environments, coalification processes, exploration, evaluation and exploitation. Laboratory.

537 ECONOMIC GEOLOGY 3 credits
Prerequisites: 231 and 350. Study of metallic and nonmetallic mineral deposits emphasizing genesis and exploration. Laboratory.

541 FUNDAMENTALS OF GEOPHYSICS 3 credits
Prerequisites: 3450:223 or permission and 3650:292. Fundamental concepts in solid earth geophysics, planerics, physics, geometry, and geomagnetism. Contributions of geophysics to recent major developments in geoscience.

544 ENVIRONMENTAL MAGNETISM 3 credits
Prerequisite: 101 or permission of instructor. Introduction to the theory and methods of envi- ronmental magnetism and the application of environmental magnetism to interpreting sedi- mentary deposits.

546 EXPLORATION GEOPHYSICS 3 credits
Prerequisites: 3450:223, 3650:292 or permission. Basic principles and techniques of geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical methods and application to geological problems. Laboratory.

549 BOREHOLE GEOPHYSICS 3 credits
Prerequisite: permission of instructor. Basic principles and techniques of geophysical well log-ging, and emphasis on electrical, radioactive and acoustic techniques and their quantitative evalu- ation. Applications in oil, gas and groundwater exploration. Laboratory.

550 ADVANCED STRUCTURAL GEOLOGY 3 credits
Prerequisite: 350 or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory.

562 ADVANCED PALEONTOLOGY 3 credits
Prerequisite: 380 and 360 lab. Provides advanced training in paleontological subjects. Topics will include paleoenvironmental analysis, biostatigraphic correlation, fossil preservation, diver- sification and extinction patterns and geosynclinal signals of fossils.

563 MICROPALEONTOLOGY 3 credits
Prerequisites: 100, 230, 231, 350:151, 152, 153, or permission. Application of chemical princi- ples to the study of geological and biological microorganisms. Laboratory.

570 GEOCHEMISTRY 3 credits
Prerequisites: 100, 230, 231, 350:151, 152, 153, or permission. Application of chemical princi- ples to the study of the hydrologic and carbon cycles, modern sedimentary environ- ments, and the interpretation of sedimentary rocks.

574 GROUNDWATER HYDROLOGY 3 credits
Prerequisites: 100, 101, 151, occurrence, regime and utilization of groundwater. Qualitative and quantitative presentation of geological and geophysical aspects of groundwater hydrology. Laboratory.

581 ANALYTICAL METHODS IN GEOLOGY 2 credits
Prerequisites: 100, 230, 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.

584 GEOSCIENCE INFORMATION ACQUISITION AND MANAGEMENT 2 credits
Prerequisite: must be a Geology Department student and senior major in geology, or have completed department major requirements in geology. May be for either credit only.

585 INTEGRATIVE READING IN GEOLOGY 1-4 credits
Prerequisite: permission of graduate advisor required. (May be repeated for a total of 8 cred- its; credits may not be applied to degree requirements.) Directed reading to fit individual student programs. Credit/Non-credit.

590 WORKSHOP 1-3 credits
(May be repeated) Group studies of special topics in geology. May not be used to meet under- graduate or major requirements in geology. May be for elective credit only.

593 GEOLOGY FIELD CAMP I 1 credits
Prerequisites: 101 and permission of instructor. Introduction to collection and inter- pretation of field data and construction of geological maps.

594 GEOLOGY FIELD CAMP II 1 credits
Prerequisites: 231, 350, 485:683 or permission of instructor. Advanced techniques and meth- ods of field geology necessary for detailed geological maps and interpretation.

601 ROCKS AND MINERALS 4 credits
Prerequisites: 100 and permission. Intensive course integrating crystallography, mineralogy and petrology for the science teacher and graduate student from disciplines other than geol- ogy. Laboratory.

604 NUCLEAR GEOLOGY 3 credits
Prerequisite: 100. Origin, occurrence, regimen and utilization of groundwater. Qualitative and quantitative presentation of geological and geophysical aspects of groundwater hydrology. Laboratory.

605 GLOBAL TECTONICS 3 credits
Prerequisites: 100, 483/583 or permission. Advanced concepts and methodologies in geographic research. Emphasis on quantitative revolution in geographic analysis including multiple regression procedures as factor, discriminant and economical analysis, and multidimensional scaling.

610 GEOLOGIC RECORD OF PAST GLOBAL CHANGE 3 credits
Prerequisite: equivalent of baccalaureate degree in geology or permission of instructor. Study of the geologic record of past global climate and environmental change from geochemical, paleoecological, palynological, sedimentological and other geological evidence.

619 ADVANCED GROUNDWATER HYDROLOGY 3 credits
Prerequisite: 474A/574. Study of water table and artesian aquifers under steady and nonsteady state conditions. Collection and analysis of data and field data with regard to theory. Water well and well field design. Laboratory and field work.

620 SEMINAR IN GEOLOGY 2 credits
(May be repeated for a total of six credits) Selected topics with reference material from origi- nal sources.

644 SELECTED TOPICS IN GEOLOGY 1-3 credits
(May be repeated for a total of eight credits) Prerequisite: permission. Topics not regularly offered as formal courses, generally of classic current interest. Entails lectures, readings, discussions and/or guided laboratory work.

660 GEOLOGY TEACHING PRACTICUM 2 credits
Course work, graduate assistant position. Training and experience in college teaching of geology under supervision of experienced faculty. May be repeated for a maximum of 8 credits. Credit/Non-credit may not be used to meet degree requirements. Credit/Non-credit.

695 ADVANCED FIELD STUDIES 1-3 credits
(May be repeated for a total of four credits) Prerequisite: permission of instructor. Field trip course emphasizing phases of geology not readily studied in Ohio. Includes pretrip preparation, field observations and data gathering, post-trip examination and/or written report. Student will bear trip expenses.

696 GEOLOGY COLOQUIUM 1 credit
Lecture on current topics in geological sciences and thesis proposals and defenses by gradu- ate students. May be repeated. Does not satisfy degree requirements.

698 GRADUATE RESEARCH PROBLEMS 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.

699 MASTER'S THESIS 16 credits
Independent and original investigation. Must be successfully completed, report written and defended before a committee.

HISTORY 3400:

500 WOMEN IN REVOLUTIONARY CHINA 3 credits
Prerequisites: 3400:300, 385 or 1100:330, or permission of instructor. A study of the changes in women's lives in China during the late imperial (1644-1911), and socialist (1949-1989) periods.
501 JAPAN AND THE PACIFIC WAR, 1895-1945 3 credits
The rise of Japanese militarism; Japan’s drive to create an empire in East and Southeast Asia, 1895-1945, and its role in the Pacific War, 1937-1945.

504 STUDIES IN ROMAN HISTORY 3 credits
Prerequisite: completion of 6 hours of History courses at the 200 or 300 level. Concentrated investigation of selected topics such as imperialism in middle and late Republic, the age of Augustus, or the fall of western Empire.

516 MODERN INDIA 3 credits
History of the Indian subcontinent from c. 1500 with emphasis on Indian society and culture, British colonialism, and the emergence of Indian nationalism.

524 THE RENAISSANCE 3 credits
The age of transition from the Middle Ages to modern times (1350-1600). Special emphasis on intellectual trends, the development of humanism, and the fine arts.

525 THE REFORMATION 3 credits
Europe in 16th Century; its religious, cultural, political and diplomatic development, with special emphasis on Protestantism and Catholic Counter-Reformation.

529 EUROPE IN THE FRENCH REVOLUTIONARY ERA, 1789-1915 3 credits
Development of Revolution; Napoleon’s regime and satellite states.

538 NAZI GERMANY 3 credits
This course covers the social, economic, and political history of Germany from World War I to 1945 with emphasis on the Third Reich.

540 TUDOR AND STUART BRITAIN, 1485-1714 3 credits
An examination of the development of, and influences between the British kingdoms in the early modern period with emphasis on culture, politics, and religion.

543 CHURCHILL’S ENGLAND 3 credits
An examination of the changes that Britain experienced during the life of Winston Churchill, 1874-1965, with emphasis on the social, political, and cultural developments.

551 COLONIAL AMERICAN HISTORY 3 credits
This course covers the history of colonial America from the first European contact in the Americas in 1492 to the onset of the American Revolution.

552 THE AMERICAN REVOLUTIONARY ERA: POLITICAL, MILITARY, AND CONSTITUTIONAL ASPECTS 3 credits
The struggle for the rights of the Englishmen and independence; the impact of war on American society and the creation of republican institutions.

553 AGE OF JEFFERSON AND JACKSON, 1800-1850 3 credits
The evolution of the republic in its formative stages from Jefferson through Jackson to the Com- monplace of 1850. Emphasis upon political, social, intellectual and Constitutional developments.

554 THE CIVIL WAR AND RECONSTRUCTION, 1860-1877 3 credits
Sectionalism, slavery and the causes of the Civil War, wartime activities of the Union and Confederacy, leading personalities, problems of reconstruction and the new Union.

555 THE ORIGINS OF MODERN AMERICA, 1877-1917 3 credits
United States from Reconstruction Era to World War I (1877-1917); emphasis on political processes to the rise of an industrialized urbanized society, the popular and progressive movements.

556 AMERICA IN WORLD WARS AND DEPRESSION, 1917-1945 3 credits
World War I and Versailles; the 1920s, the Great Depression and the New Deal; World War II.

557 THE UNITED STATES SINCE 1945 3 credits
Nuclear age, cold war, foreign policy and domestic affairs to present. Social, political, constitutional, diplomatic, cultural and economic changes since 1945.

561 THE UNITED STATES AS A WORLD POWER 3 credits
This course analyzes the emergence and functioning of the United States as a world power, with particular emphasis on the twentieth century.

563 U.S. CONSTITUTIONAL HISTORY SINCE 1870 3 credits
This course will examine the evolution of constitutional government as well as civil liberties and individual rights from the Civil War to the present.

565 AMERICAN ECONOMY SINCE 1900 3 credits
Survey of economic developments since 1900; topics include agriculture, business and labor. Special emphasis on role of business and evolution of monetary and fiscal policy.

567 HISTORY OF AMERICAN POP CULTURE 3 credits
Historical analysis of mass cultural phenomena and the social experiences associated with mass消费 technologies that transformed modern American life in the nineteenth and twentieth centuries.

570 OHIO HISTORY 3 credits
Political, social, economic and intellectual history of Ohio, with special emphasis on Ohio’s relationship to Old Northwest and to the nation.

571 AMERICAN ENVIRONMENTAL HISTORY 3 credits
Utilization, conservation of natural resources from beginnings of American society to present; combination of economic, technological history of extensive treatment of public policy, environmental issues.

572 LATIN AMERICA: ORIGINS OF NATIONALITY 3 credits
Pre-Columbian civilization, discovery and conquests; colonialism, struggle for independence and formation of new societies.

573 LATIN AMERICA: THE TWENTIETH CENTURY 3 credits
Politics, revolution, political ideology, and contemporary problems.

575 MEXICO 3 credits
History of Mexico from Indian civilizations to present with emphasis on relations with United States, social and political ramifications of the 20th Century Mexican revolution.

576 CENTRAL AMERICA AND THE CARIBBEAN 3 credits
Selected aspects of the histories of Central American and Caribbean countries with emphasis on peasant and populist movements, political reform, social revolution, economic and social development, and relations with the United States.

582 WAR AND WESTERN CIVILIZATION 3 credits
War and society in Europe, America and beyond from ancient world to present with special emphasis on period since 1450.

584 HISTORY MUSEUMS AND ARCHIVES 3 credits
This course will focus on the work of history museums, historical societies and historic house museums, and archives.

585 HISTORY, COMMUNITIES, AND MEMORY 3 credits
Course examines the intersections between the work of academic historians and the public in areas such as local history, monuments, oral history, film, and the internet.

587 SCIENCE AND TECHNOLOGY IN U.S. HISTORY 3 credits
This course examines the development of science and technology in U.S. history and its resulting social, economic, and political effects.

593 SPECIAL STUDIES IN HISTORY 3 credits
Includes experimental and interdisciplinary studies, as well as those subjects that are not listed in recent catalog. Prerequisite: Graduate Study. See departmental office for information on particular offerings.

594 WORKSHOP IN HISTORY 1-3 credits
Research for Doctor of Philosophy dissertation. May be repeated, but only one credit may apply toward the Ph.D. in history.

610 GRADUATE READING SEMINAR: COMPARATIVE STUDIES IN WORLD CIVILIZATION 3 credits
Prerequisite: completion of 6 credits in History of Eastern Europe, Asia, South East, Middle East, Africa, and the Americas. Emphasis on key themes: kingship, empire, colonialism, nationalism.

611 GRADUATE WRITING SEMINAR: COMPARATIVE STUDIES IN WORLD CIVILIZATION 3 credits
Research and writing on selected topics on world civilizations: East, South, Middle East, Africa, and the Americas.

622 RESEARCH SEMINAR IN ANCIENT HISTORY 4 credits
Study of historical literature, sources of materials and major interpretations of ancient history, especially Greek and Roman periods.

623 RESEARCH SEMINAR IN ANCIENT HISTORY 4 credits
Prerequisite: 622, research and writing in selected topics of ancient history, particularly Greek and Roman era.

625 RESEARCH SEMINAR IN MEDIEVAL HISTORY 4 credits
Study of historical literature, sources of materials and major interpretations of medieval European history.

626 WRITING SEMINAR IN MEDIEVAL HISTORY 4 credits
May be repeated, but no more than six credits may count toward the M.A. degree in history.

631 RESEARCH SEMINAR IN MODERN EUROPEAN HISTORY TO 1815 4 credits
Study of historical literature, sources of materials, major interpretations of early modern European history to 1815.

632 WRITING SEMINAR IN MODERN EUROPEAN HISTORY TO 1815 4 credits
Prerequisite: 631, research and writing in selected topics of early modern European history, especially 18th Century history since early 18th Century.

634 RESEARCH SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815 4 credits
Study of historical literature, sources of materials and major interpretations of modern European history since early 19th Century.

635 WRITING SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815 4 credits
Prerequisite: 634, research and writing in selected topics of modern European History, occasionally including social, economic and intellectual subjects.

651 RESEARCH SEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE 4 credits
Study of historical literature, sources of materials and major interpretations of English and British imperial history.

652 WRITING SEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE 4 credits
Prerequisite: 651, research and writing in selected topics of English and British imperial history.

666 READING SEMINAR IN AMERICAN HISTORY TO 1817 4 credits
Study of historical literature, source of materials and major interpretations of American colonial and United States history to Civil War.

667 WRITING SEMINAR IN AMERICAN HISTORY TO 1817 4 credits
Prerequisite: 666, research and writing in selected topics of American history from colonial period to Civil War.

669 READING SEMINAR IN AMERICAN HISTORY SINCE 1817 4 credits
Study of historical literature, sources of materials and major interpretations of United States history since Civil War.

670 WRITING SEMINAR IN AMERICAN HISTORY SINCE 1817 4 credits
Prerequisite: 669, research and writing in selected topics of United States history since Civil War.

677 RESEARCH SEMINAR IN LATIN AMERICAN HISTORY 4 credits
Prerequisite: two courses in Latin American studies or permission of instructor. Study of historical literature, sources of materials and major interpretations of Latin American History.

678 WRITING SEMINAR IN LATIN AMERICAN HISTORY 4 credits
Prerequisite: 677, research and writing in selected topics in social, cultural, diplomatic, intellectual and political history of Latin America.

680 RESEARCH SEMINAR: CHINA 4 credits
Study of Chinese texts, secondary literature, and major interpretations of the history of China.

681 WRITING SEMINAR: CHINA 4 credits
Preparation of research paper, including a bibliographic essay surveying scholarship on the topic, research and analysis of primary sources, and writing.

689 HISTORIOGRAPHY 3 credits
Study of historians, historical writings and interpretations through the ages. Required for master’s degree if candidate has not had equivalent undergraduate or graduate course elsewhere.

690 HISTORY TEACHING PRACTICUM 3 credits
Prerequisite: graduate assistantship. Required of all graduate assistants each fall semester. Training and experience in college teaching of history under the supervision of an experienced faculty member. Credits may not be used to meet degree requirements.

694 THESIS RESEARCH 1-6 credits
Research for Master of Arts degree thesis.

698 INDIVIDUAL READING FOR M.A. STUDENT 1-15 credits
Prerequisite: 669, research and writing in selected topics of American history. May be repeated, but no more than six credits may count toward the M.A. degree in history.

699 MASTER’S THESIS 1-6 credits
Prerequisite: 694, writing of Master of Arts degree thesis.

792 INDIVIDUAL READING FOR PH.D. STUDENT 1-15 credits
Prerequisite: 666, research and writing in selected topics of American history. May be repeated, but no more than six credits may count toward the Ph.D. in history. Direct- ed reading to fit individual student programs. Written permission of the instructor required.

898 DISSERTATION RESEARCH 1-6 credits
Research for Doctor of Philosophy degree dissertation.

899 DOCTORAL DISSERTATION 1-6 credits
Prerequisite: 898, writing of Doctor of Philosophy degree dissertation.
1. **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 connective between classical theory and the maximality principle.

2. **ADVANCED PARTIAL DIFFERENTIAL EQUATIONS** 3 credits
   Prerequisites: 422/522 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.

3. **METHODS OF APPLIED MATHEMATICS I AND II** 3 credits each
   Prerequisites: 222/322 or 424/524 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.

4. **OPTIMIZATION** 3 credits
   Prerequisite: 422/522 or permission. Unconstrained and constrained optimization theory and methods in applied problems.

5. **ADVANCED COMBINATORICS AND GRAPH THEORY** 3 credits
   Prerequisites: 335. Theory and techniques of combinatorics as applied to network problems and graph theoretic problems.

6. **THEORY AND APPLICATION OF WAVELIFTS** 3 credits
   Prerequisites: 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.

7. **ADVANCED TOPICS IN MATHEMATICS** 1-3 credits
   (May be repeated for a total of six credits) Prerequisite: permission of advisor. Seminar-type discussion on topics in mathematics leading to supervised research project. No more than 2 credits apply to major requirements.

8. **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.

9. **PRACTICUM IN MATHEMATICS AND STATISTICS** 1-3 credits
   (May be repeated) Prerequisites: permission of instructor to serve as a teaching assistant or permission. Training and experience in college teaching of mathematics and statistics. May not be used to meet degree requirements.

10. **INDIVIDUAL READING** 1-2 credits
    (May be repeated) Prerequisite: permission of instructor. Study of an advanced topic in mathematics.

11. **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.

12. **MASTER'S THESIS** 2 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.

13. **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 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 requirements).

   **508 WINDOWS PROGRAMMING** 3 credits
   Prerequisites: 208 or 316 or 428 or permission. Windows operating systems, integrated development environment, event-driven programming, graphical user interface design, using object libraries, component object model, object linking and embedding, client-server programming.

   **518 INTRODUCTION TO DISCRETE STRUCTURES** 3 credits
   Prerequisite: permission. Introduction to algebraic structures of particular use in computer science. Topics include algorithms and flow chart language, graphs and digraphs, trees, and algorithmic complexity. (May not be used to meet computer science master's degree requirements).

   **519 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING** 3 credits
   Prerequisite: 316. Object-oriented design, analysis, and programming using different development models. Comparison with other programming paradigms.

   **526 OPERATING SYSTEMS** 3 credits
   Prerequisites: 308 and 316, or 501 or equivalent. Introduction to various types of operating systems, multiprocessor systems, multiprocessing systems and interworking systems; storage management; process and resource control; deadlock problems. Course is independent of any particular operating system. (May not be used to meet computer science master's degree requirements).
529 UNIX SYSTEM PROGRAMMING
Prerequisites: 316 and knowledge of C. An overview of the UNIX operating system. Shell program construction, process management, storage management, scheduling algorithms, resource protection, and system security. 2 credits

530 THEORY OF PROGRAMMING LANGUAGES
Prerequisite: 316. Advanced concepts underlying programming languages and their applications. Formal definitions of programming languages, nondeterminism, semantics, alternative programming paradigms including functional programming. (May not be used to meet computer science master’s degree requirements) 3 credits

535 ANALYSIS OF ALGORITHMS
Prerequisites: 316 and 418/518. Design and analysis of efficient algorithms for random access machine. Introduction to time and space complexity of pattern classification algorithms. 3 credits

540 COMPILER DESIGN
Prerequisites: 307 and 316. Techniques used in writing and modifying compilers including translation, loading, execution, symbol tables and storage allocation; compilation of simple expressions and statements; compilation of a compiler handling lexical scan, symbol; use code generation, error diagnostics and code optimization. Use of compiler writing language. Topic may require a project involving compiler writing. 3 credits

555 COMMUNICATIONS AND COMPUTER NETWORKS
Prerequisites: 316 or 401/501. ISO-OSI, TCP/IP. SNA data switching, protocols, flow and error control, routing, topology, Network trends, network taxonomies, and socket-based programming. 3 credits

557 COMPUTER GRAPHICS
Prerequisites: Completion of 316 with a grade of C- or better and knowledge of C. Topics in vector and raster graphics, interactive graphics languages, scan conversion, clipping, geometric transformation, projection, shading, animation, and virtual reality. 2 credits

560 ARTIFICIAL INTELLIGENCE AND HEURISTIC PROGRAMMING
Prerequisite: 316. Study of various programs which have displayed some intelligent behavior. Exploration of level at which computers can display intelligence. 3 credits

565 COMPUTER ORGANIZATION
Prerequisite: 210, 216, 316 and 418/518. 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. Topic may not be used to meet computer science master’s degree requirements) 3 credits

567 MICROPROCESSOR PROGRAMMING AND INTERFACING
Prerequisites: 308, 316. Detailed study of a particular microprocessor architecture and instruction set with standard interface components. Real-time programming concepts. 3 credits

570 AUTOMATA, COMPUTABILITY AND FORMAL LANGUAGES
Prerequisite: 418/518. Presentation of theory of formal languages and their relation to automata. Topics include description of languages; regular context-free and context-free grammars; finite state, pushdown and linearly bounded automata; Turing machines; closure properties; computational complexity, stack automata and decidability. 3 credits

575 DATA BASE MANAGEMENT
Prerequisite: 316. Fundamentals of database organization, data manipulations and representation. Data integrity, privacy. 3 credits

577 INTRODUCTION TO PARALLEL PROCESSING
Prerequisites: 316 and knowledge of C. Commercial processors: past and present. Parallel languages, models of parallel computation. Emphasis on parallel algorithm design and performance optimization. A brief survey of parallel computer systems. 3 credits

580 INTRODUCTION TO SOFTWARE ENGINEERING AND FORMAL METHODS
Prerequisite: 316. Introduction to formal software specification and validation. Introduction of methodologies and tools of design, testing, development, validation, and maintenance. 3 credits

585 TOPICS IN COMPUTER SCIENCE
(May be repeated for a total of six credits) Prerequisite: permission of instructor. Selected topics in computer science at an advanced level. (Department consent required for application to computer science master’s degree requirements) 1-3 credits

591 WORKSHOP IN COMPUTER SCIENCE
Group studies of special topics in computer science. Topic may not be used to meet computer science master’s degree requirements) 1-3 credits

597 INDIVIDUAL READING IN COMPUTER SCIENCE
(May be repeated) Prerequisite: 316. Study of selected topics of interest. Current trends in computer science under the supervision of an experienced faculty member. May not be used to meet degree requirements. Credit/No credit. 1-3 credits

625 ADVANCED OPERATING SYSTEMS
Prerequisite: 426/526 or equivalent. Advanced topics in operating system design: synchronization, transmission, performance evaluation, security and distributed operating systems. 3 credits

630 ADVANCED THEORY OF PROGRAMMING LANGUAGES
Prerequisites: 430/530 and 419/519, or equivalent. In-depth study of various issues in the design and implementation of programming languages, such as formal type systems, operational formal semantics, and verification. 3 credits

635 ADVANCED ALGORITHMS AND COMPLEXITY THEORY
Prerequisite: 430/525 or equivalent. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theory, complexity hierarchies, NP-complete and intractable problems, approximation techniques. 3 credits

640 ADVANCED COMPILER DESIGN AND CONSTRUCTION
Prerequisite: 440/540. Advanced compiler construction. Continuation of compilation, compiler writing tool environments, code optimization, implementation of advanced language features. Major programming project required. 3 credits

655 COMPUTER NETWORKS AND DISTRIBUTED PROCESSING
Prerequisites: 465/565 and 455/555. Interconnection technologies, protocol layering models, datastream and stream transport services, client-server paradigm, principles and protocols of interconnected networks operating as unified systems, and TCP/IP technology. 3 credits

657 ADVANCED COMPUTER GRAPHICS
Prerequisites: 457/552. Knowledge of C and UNIX. Topics include 3D viewing and projections, image manipulation, 3D transformations, color shading, clipping and animation via raster files, fractal mapping, surface rendering, and solid modeling. 3 credits

660 VISUALIZATION
Prerequisites: 467 or 567 or permission of instructor. Visualization pipeline, data representation in visualization, visualization algorithms, object-oriented visualization, scientific visualization, volume visualization, visualization applications and research topics. 2 credits

665 ADVANCED COMPUTER ARCHITECTURE
Prerequisite: 465/565 or equivalent. Fundamentals of computer architecture and design, with emphasis on VLSI architecture. Studies of pipeline, vector, RISC, and multiprocessor architectures. 3 credits

670 ADVANCED AUTOMATA AND COMPUTABILITY
Prerequisite: 470/570 or equivalent. An in-depth study of concepts related to computability. Topics may include nondeterministic automata, recursive function theory, the Chomsky hierarchy, Turing machines and uncountability. 3 credits

675 ADVANCED DATABASE MANAGEMENT
Prerequisite: 476/576 or equivalent. Relational database theory, including formal language, query processing and optimization techniques; relational, techniques including recovery, concurrency, security, and integrity; current trends in database technology. 3 credits

677 PARALLEL PROCESSING
Prerequisite: 477/577. Advanced computer architectures, theories of parallel computing, system resource optimization, efficient programming languages and application requirements of cost-effective computer systems. Classical results and practical insights into implementing parallel algorithms on actual parallel machines. 3 credits

680 SOFTWARE ENGINEERING
Prerequisites: 307 and 316. Introduction to current techniques and methodologies used in software design, development, validation, and maintenance. 3 credits

689 ADVANCED TOPICS IN COMPUTER SCIENCE
1-3 credits (May be repeated) Prerequisite: permission of instructor. At most, six credits may be applied to degree requirements. Selected topics in computer science at an advanced level. (Department consent required for application to computer science master’s degree requirements) 1-3 credits

692 SEMINAR IN COMPUTER SCIENCE
1-6 credits (May be repeated) Prerequisite: permission of advisor. Seminar type discussions on topics in computer science. No more than two credits apply to major requirements. 1-6 credits

695 PRACTICUM-COMPUTER SCIENCE
1-3 credits (May be repeated) 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. 1-3 credits

698 MASTER’S RESEARCH
(May 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. 1-6 credits

699 MASTER’S THESIS
(May be repeated) Prerequisite: permission. (May 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 presentation of a faculty-supervised thesis. 1-6 credits

STATISTICS 3470:

550 PROBABILITY
Prerequisite: 3450:221. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes. 3 credits

591,2 THEORETICAL STATISTICS I AND II
Prerequisite: 3450:222. 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. 4 credits

560 STATISTICAL METHODS
Prerequisite: Applications 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. 4 credits

561 APPLIED STATISTICS I
Prerequisite: 3450:222 or 260 or equivalent. Applications of statistical theory to natural and physical sciences and engineering, including probability distributions, expectation, sampling distributions, hypothesis testing (parametric and nonparametric), and simple linear regression and correlation. 3 credits

562 APPLIED STATISTICS II
Prerequisite: 461/561 or equivalent. Applications of the techniques of regression and multifactor analysis of variance. 3 credits

565 DESIGN OF SAMPLE SURVEYS
Prerequisite: 481/561 or equivalent. Design and analysis of frequently used sample survey techniques. 3 credits

596 RELIABILITY MODELS
Prerequisite: 481/561. Selected topics in reliability modeling including parametric and nonparametric models, competing modes of failure, censored data and accelerated life models. 3 credits

571 ACTUARIAL SCIENCE I
Prerequisite: 551 or 651 or equivalent. Study of various statistical, financial, and mathematical methods used to determine insurance premiums related to contingent risks based on individual risk model frameworks. 3 credits

572 ACTUARIAL SCIENCE II
Prerequisite: 475/571. Continuation of Actuarial Science I. Study of multiple life functions, multiple decrement models, valuation theory for pension plans, insurance models including expenses, nonforfeiture benefits and dividends. 3 credits

573 FOUNDATIONS OF STATISTICAL QUALITY CONTROL
Prerequisite: 461/561 or equivalent. Use provides a solid foundation in the theory and applications of statistical techniques widely used in industry. 3 credits

580 STATISTICAL DATA MANAGEMENT
Prerequisite: 469/561 or equivalent. Students learn data organization and structures, design of statistical databases, statistical software analysis, importing and exporting of data between software packages, and managing data analysis. 3 credits

589 TOPICS IN STATISTICS
1-3 credits (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. 1-3 credits

591 WORKSHOP IN STATISTICS
1-3 credits (May be repeated with change of topic) Group studies of special topics in statistics. May not be used to meet undergraduate or graduate major requirements in mathematics and statistics. May be used for elective credit only. 1-3 credits

595 STATISTICAL CONSULTING
Prerequisites: 469/5690 or permission. Students will be assigned to work with an instructor on current projects in the Center for Statistical Consulting. May be repeated for a total of 4 credits; however, only 2 credits will count toward major requirements. Does not count for elective credit for math science department majors. 1-3 credits
Graduate Courses

MODERN LANGUAGES

590 WORKSHOP
Prerequisite: permission of instructor. (May be repeated for a maximum of eight credits) Group studies of special topics in modern languages.

LATIN

592 LATIN READING AND RESEARCH
3 credits
Prerequisite: Permission of instructor. General Latin epic, prose composition or philology. Murismatics or certain other archaeological topics may be offered. May be repeated for credit with change of subject.

FRENCH

502 ADVANCED FRENCH GRAMMAR
3 credits
Prerequisite: 302 or equivalent. Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonology.

507 FRENCH LITERATURE OF THE MIDDLE AGES AND THE RENAISSANCE
4 credits
Prerequisite: 305 or 306 or equivalent. Reading and discussion of selected Medieval and Renaissance literary works. Conducted in French.

511 17TH CENTURY FRENCH LITERATURE
4 credits
Prerequisite: 305 or 306 or equivalent. Reading and discussion of selected works in poetry, drama and novels. Conducted in French.

513 FRENCH CINEMA
3 credits
Prerequisites: 301 or 302 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
4 credits
Prerequisite: 305 or 306 or equivalent. Reading and discussion of selected authors: emphasis on the Philosophes. Conducted on the Continent.

519 19TH CENTURY FRENCH LITERATURE
4 credits
Prerequisite: 305 or 306 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
1-4 credits
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
4 credits
Prerequisite: 305 or 306 or equivalent. Reading and discussion of the most representative works of period. Conducted in French.

560 SELECTED THEMES IN FRENCH LITERATURE
3 credits
May be repeated. Conducted in French. Prerequisite: 305 and 306 or equivalent. Reading and discussion of literary works selected according to an important theme.

5928 INDIVIDUAL READING IN FRENCH
1-4 credits
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.)

5929 INDIVIDUAL READING AND RESEARCH IN FRENCH
1-4 credits each
Prerequisites: 202 and permission of Department Chair. Independent study and research in specific areas. Considerable reading and writing required.

GERMAN

522 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS, CULTURE, AND LITERATURE
1-4 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
1-4 credits
Prerequisites: 301 and graduate standing. Individual reading in German, offered at the graduate level. (May be repeated for a total of eight credits.)

597 INDIVIDUAL READING IN ITALIAN
1-4 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.

ITALIAN

597 INDIVIDUAL READING IN ITALIAN
1-4 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

505 SPANISH LINGUISTICS; PHONOLOGY
4 credits
Prerequisite: 302 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: 302 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
Prerequisite: 407 or equivalent. Reading of Don Quijote as the first modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.

511 SPAIN DURING THE BAROQUE PERIOD
4 credits
Prerequisite: 407 or equivalent. A comparative study of the different cultural manifestations during the 17th century in Spain. Conducted in Spanish.

512 CERVANTES: DON QUIJOTE
4 credits
Prerequisite: 407 or equivalent. Reading and analysis of Don Quijote as the first modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.

513 THE DON JUAN MYTH IN SPANISH CULTURE
4 credits
Prerequisite: 407 and equivalent permission of instructor. Study of the evolution of the Don Juan myth from its origins to its latest versions in the 20th century.

514 CULTURAL POLITICS IN THE RIVER PLATE
4 credits
Prerequisite: 407 and equivalent permission of instructor. This course will examine the military dictatorships of the seventies and eighties in Argentina and Uruguay by looking at these regimes affect culture.

ENGINEERING APPLIED MATHEMATICS

3490:

790 ADVANCED SEMINAR IN APPLIED MATHEMATICS
1-4 credits
Prerequisite: Permission of instructor. (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.

889 PRELIMINARY RESEARCH
1-15 credits
Prerequisite: Permission. (May be repeated.) Completion of qualifying examination and report to Student Advisory Committee. Preliminary investigation of Ph.D. dissertation topic.

899 DOCTORAL DISSERTATION
1-15 credits
Prerequisite: Permission. (May be repeated.) Completion of Candidacy examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>515 THE AGE OF REASON AND THE ROMANTIC REBELLION IN SPAIN</td>
<td>3</td>
<td>Prerequisite: 407 or 408 or permission. 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.</td>
</tr>
<tr>
<td>516 REPRESENTING REALITY IN 19TH CENTURY SPAIN</td>
<td>4</td>
<td>Prerequisite: 407 or 408 or permission. A comparative study of the major literary and artistic movements in Spain from Realism to Modernism. Conducted in Spanish.</td>
</tr>
<tr>
<td>518 20TH CENTURY SPAIN: THE AVANT-GARDE IN LITERATURE AND ART</td>
<td>4</td>
<td>Prerequisite: 407 or 408 or permission of instructor. A comparative study of the major literary and artistic movements in Spain which illustrate the primary cultural changes of the century. Conducted in Spanish.</td>
</tr>
<tr>
<td>519 THE SPANISH CIVIL WAR AND ITS CULTURAL IMPACT</td>
<td>4</td>
<td>Prerequisite: 300 or permission of instructor. Study of the impact of the Civil War on Spanish culture.</td>
</tr>
<tr>
<td>522 SPECIAL TOPICS IN SPECIALIZED LANGUAGE SKILLS OR CULTURE OR LITERATURE</td>
<td>1-4</td>
<td>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.</td>
</tr>
<tr>
<td>523 SPANISH-AMERICAN LITERATURE BEFORE 1900</td>
<td>4</td>
<td>Prerequisite: 407 or 408 or permission. Reading of representative Spanish-American literature from the discovery to 1900. Oral and written reports. Conducted in Spanish.</td>
</tr>
<tr>
<td>528 RACE AND ETHNICITY: INDIGENOUS CULTURES IN 20TH CENTURY SPANISH-AMERICA</td>
<td>4</td>
<td>Prerequisite: 407 or 408 or permission. 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.</td>
</tr>
<tr>
<td>529 20TH CENTURY SPANISH-AMERICAN NOVEL</td>
<td>4</td>
<td>Prerequisite: 407 or 408 or permission of instructor. Reading and discussion of representative contemporary Latin American novels. Conducted in Spanish.</td>
</tr>
<tr>
<td>530 LATINO CULTURES IN THE USA</td>
<td>4</td>
<td>Prerequisite: 407 and 408 or permission of instructor. Inquiry into the Latino experience of displacement and marginality through the analysis of cultural manifestations in the USA. Conducted in Spanish.</td>
</tr>
<tr>
<td>533 WOMEN IN 20TH CENTURY HISPANIC LITERATURE</td>
<td>4</td>
<td>Prerequisite: 407 or 408 or permission. Reading and analysis of selected works from the 20th Century that depict women in Hispanic countries. Methodologies of feminist criticism will be studied. Conducted in Spanish.</td>
</tr>
<tr>
<td>534 HISpanic CULTURE: SPAIN</td>
<td>4</td>
<td>Prerequisite: 302 or permission. Study of society, customs, history, art, music, etc. of Spain, from a Hispanic perspective. Conducted in Spanish.</td>
</tr>
<tr>
<td>535 HISpanic CULTURE: SOUTH America</td>
<td>4</td>
<td>Prerequisite: 302 or permission. Study of society, customs, history, art, music, etc. of South America, from a Hispanic perspective. Conducted in Spanish.</td>
</tr>
<tr>
<td>616 ELECTROMAGNETIC THEORY II</td>
<td>3</td>
<td>Prerequisite: 606. Electricity and magnetism at surfaces, including corrosion, catalysis, adhesion, and tribology.</td>
</tr>
<tr>
<td>617 PHENOMENOLOGY: MODERN SPANISH LITERATURE</td>
<td>3</td>
<td>Prerequisite: 606. Study of society, history, and culture of Mexico, Central America, and the Hispanic Caribbean, from a Hispanic perspective. Conducted in Spanish.</td>
</tr>
<tr>
<td>618 SPANISH TEACHING PRACTICUM</td>
<td>2</td>
<td>Prerequisite: 606 or permission. Orientation and practice of particular aspects of teaching Spanish language and culture. Student teaching experiences are periodically recorded and evaluated. These credits may not be applied toward degree requirements.</td>
</tr>
<tr>
<td>619 INTRODUCTION TO SOLID-STATE PHYSICS</td>
<td>1-4</td>
<td>(May be repeated.) Prerequisite: permission. Further investigations of various selected topics, procedures, techniques, materials or apparatus of current interest in physics.</td>
</tr>
<tr>
<td>511 PLATO</td>
<td>3</td>
<td>Prerequisite: 211 or permission of instructor. Detailed study of the original development and Platonic Theory of Forms and the related theories of knowledge, ethics, and politics.</td>
</tr>
<tr>
<td>514 AQUINAS</td>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>515 AUGUSTINE</td>
<td>3</td>
<td>Prerequisite: one course in philosophy or permission of instructor. An in depth examination of the philosophy of St. Augustine covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.</td>
</tr>
<tr>
<td>520 20TH CENTURY ANALYTIC PHILOSOPHY</td>
<td>3</td>
<td>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, Fyle and Austin.</td>
</tr>
<tr>
<td>519 BRITISH EMPIRICRION</td>
<td>3</td>
<td>Prerequisite: one introductory course and 21 or permission of instructor. Intensive analysis of selected major writings of Locke, Berkeley and Hume.</td>
</tr>
<tr>
<td>522 CONTINENTAL RATIONALISM</td>
<td>3</td>
<td>Prerequisite: one introductory course and 21 or permission of instructor. Intensive analysis of selected major writings of Descartes, Spinoza and Leibnitz.</td>
</tr>
<tr>
<td>524 EXISTENTIALISM</td>
<td>3</td>
<td>Prerequisite: one introductory course in philosophy, 314, or permission of instructor. Indepth inquiry into the thought of Kierkegaard, Jaspers, Heidegger, Sartre, Tillich and other existentialists with their concern for the human condition.</td>
</tr>
<tr>
<td>526 PHENOMENOLOGY</td>
<td>3</td>
<td>Prerequisite: one introductory course in philosophy, 314, or permission of instructor. Indepth inquiry into methodology of Husserl and Heidegger and their influence upon Western European and American thought.</td>
</tr>
<tr>
<td>532 ARISTOTLE</td>
<td>3</td>
<td>Prerequisite: 211 or permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of mankind and ethics.</td>
</tr>
<tr>
<td>534 KANT</td>
<td>3</td>
<td>Prerequisite: 313 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.</td>
</tr>
<tr>
<td>652 THEORY OF KNOWLEDGE</td>
<td>3</td>
<td>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 knowledge to knowledge.</td>
</tr>
<tr>
<td>564 PHILOSOPHY OF SCIENCE</td>
<td>3</td>
<td>Prerequisite: 101, or permission of instructor. Nature of scientific inquiry, types of explanations, laws and causality, the fallacy of reduction and the rationality of language.</td>
</tr>
<tr>
<td>571 METAPHYSICS</td>
<td>3</td>
<td>Prerequisite: one course in philosophy or permission of instructor. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.</td>
</tr>
<tr>
<td>580 SEMINAR</td>
<td>3</td>
<td>(May be repeated) Prerequisite: permission of instructor.</td>
</tr>
<tr>
<td>581 PHILOSOPHY OF LANGUAGE</td>
<td>3</td>
<td>Prerequisite: 101 and 170 or permission of instructor. Contemporary philosophies about language and its relation to reality and human thinking. Includes discussion of viewpoints of linguists such as Chomsky.</td>
</tr>
<tr>
<td>585 ADVANCED LABORATORY</td>
<td>3</td>
<td>Prerequisite: 323 or permission of instructor. Experimental techniques applicable to research-type projects in contemporary physics. Fourier optics, coherence theory, and quantum optics.</td>
</tr>
<tr>
<td>587 ELECTROMAGNETISM I</td>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>588 SELECTED TOPICS: PHYSICS</td>
<td>1-4</td>
<td>(May be repeated) Prerequisite: permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics.</td>
</tr>
<tr>
<td>590 WORKSHOP</td>
<td>1-4</td>
<td>(May be repeated) Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member.</td>
</tr>
<tr>
<td>597 INDEPENDENT STUDY</td>
<td>1-4</td>
<td>(May be repeated) Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member.</td>
</tr>
<tr>
<td>598 PHYSICS COLLOQUIUM</td>
<td>1</td>
<td>Lectures on current research topics in physics by invited speakers. May be repeated, but only one credit counts toward M.S. degree. Creative writing of a colloquium paper.</td>
</tr>
<tr>
<td>605 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS I</td>
<td>3</td>
<td>Prerequisite: permission. Review of FORTRAN and basic topics in computer science. Numerical solutions to physics problems, including Newton's and Schrodinger's equations. Treatment and reduction of experimental data. Plotting, simulation.</td>
</tr>
<tr>
<td>606 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS II</td>
<td>3</td>
<td>Prerequisite: 605 or permission. Data reduction, Calculus plotting, comparison of theoretical models with data, linear and nonlinear least squares curve-fitting. May accommodate scientific problems of individual interest.</td>
</tr>
<tr>
<td>610 SURFACE PHYSICS</td>
<td>3</td>
<td>Prerequisite: 470. An interdisciplinary course stressing the fundamentals and applications of physics at surfaces, including corrosion, catalysis, adhesion, and tribology.</td>
</tr>
<tr>
<td>615 ELECTROMAGNETIC THEORY I</td>
<td>3</td>
<td>Prerequisite: 437/537 or permission of instructor. Electrodynamics and magnetostatics at advanced level for graduate students, boundary value problems, dielectrics, multiple expansions, time-varying fields, Maxwell's equations and electromagnetic waves, reflection, refraction, wave guides and cavities.</td>
</tr>
<tr>
<td>616 ELECTROMAGNETIC THEORY II</td>
<td>3</td>
<td>Prerequisite: 695. Scattering and diffraction, plasma physics, special theory of relativity, dynamics of relativistic particles in fields, collisions of charged particles, radiation from moving charges, bremsstrahlung, multiple fields.</td>
</tr>
</tbody>
</table>
561 THE SUPREME COURT AND CONSTITUTIONAL LAW 3 credits
Prerequisite: 100 or permission. Interpretation of the Constitution by the Supreme Court with emphasis on federal judicial, legislative and executive power; separation of powers; and federalism.

562 THE SUPREME COURT AND CIVIL LIBERTIES 3 credits
Prerequisite: 100 or permission. Interpretation of the Constitution by the Supreme Court with emphasis on freedom of speech and press, freedom of religion, criminal rights and right to privacy.

570 CAMPAIGN MANAGEMENT I 3 credits

571 CAMPAIGN MANAGEMENT II 3 credits
Prerequisite: 470/570. The second course in campaign management. Focus is on timing, coalition building, candidate positioning, event planning, internal organization, and other elements of campaign strategy.

572 CAMPAIGN FINANCE 3 credits
Prerequisite: permission. Reading and research in financial decision making in political campaigns.

573 VOTER CONTACT AND ELECTIONS 3 credits
Prerequisite: permission. Theoretical and practical approaches to gaining votes in all types of political campaigns.

574 POLITICAL OPINION, BEHAVIOR AND ELECTORAL POLITICS 3 credits
Prerequisite: 100 or 201 or permission. Advanced analysis of psychological, cultural and group processes of opinion formation and change. Attention given to the effect of opinion change on electoral outcomes.

575 AMERICAN INTEREST GROUPS 3 credits
Prerequisite: six credits of political science or permission. Reading and research on the development, structure and function of interest groups in the United States.

576 AMERICAN POLITICAL PARTIES 3 credits
Prerequisite: six credits of political science or permission. Reading and research on the development, structure and function of parties in the United States.

580 POLICY PROBLEMS 3 credits
(May be repeated for a total of six credits) Prerequisite: 380 or permission. Intensive study of selected problems in public policy.

581 THE POLITICS OF POLICING 3 credits
Prerequisite: 100. Analysis of various political dimensions underlying the study of politics and policing in the context of police reform, crime, and the community.

582 CURRENT ISSUES (C J TOPIC) 3 credits
Prerequisite: 100. Study and critical analysis of current issues, programs, and policies relating to political science and criminal justice at the federal or state level.

583 CONSTITUTIONAL PROBLEMS IN CRIMINAL JUSTICE 3 credits
Prerequisite: 100. Analyzes Supreme Court policy-making regarding problems of criminal justice, including search and seizure, self-incrimination, right to counsel, jury selection, and post-appeal prisoner rights.

590 WORKSHOP IN POLITICAL SCIENCE (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: permission. 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, including 440 (or a satisfactory equivalent) or permission of instructor. Focus on the analysis of political theory and the methodology underlying the development and evaluation of hypothesis.
697 INDEPENDENT RESEARCH AND READINGS
(May be repeated, but no more than six credits toward the master's degree in political science)
Prerequisite: permission. 1-4 credits
699 MASTER'S THESIS
2 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 measurement instruments in industry, government and education. Includes attitude and achievement tests, rating scales, attitude and opinion analysis.

520 ABNORMAL PSYCHOLOGY
4 credits
Prerequisite: admission to the Graduate School. Survey of syndromes, etiology, diagnosis 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, etiologies 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 PSYCHOLOGY OF SMALL GROUP BEHAVIOR
4 credits
Prerequisite: admission to the Graduate School. Intensive investigation of factors affecting behavior and performance in small groups including effects of personality, social structures, task, situation and social variables.

550 COGNITIVE DEVELOPMENT
4 credits
Prerequisite: admission to the Graduate School. Theory and research on life-span changes in cognitive processes including concept formation/categorization, 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 systematic viewpoints in 19th and 20th Centuries.

560.2 PSYCHOLOGICAL RESEARCH USING QUANTITATIVE AND COMPUTER METHODS I and II
4 credits each
Prerequisite: admission to the Graduate School. Sequential prerequisite: graduate standing 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, statistical controls, threats to validity, hypotheses testing, psychological measurement, error, robustness and power.

610 CORE 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 and social psychological factors affecting superficial behavior.

620 CORE II: COGNITIVE PSYCHOLOGY
2 credits
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of theories, concepts, empirical phenomena, and methodologies in human cognitive psychology. Topics include attention, cognitive capacity, learning, memory, categorization, skill acquisition/expertise, and training effects.

630 CORE III: INDIVIDUAL DIFFERENCES
2 credits
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of topics related to individual differences in personality and behavior and of literature on between- and within-group cultural variables influencing personality development and assessment.

640 CORE IV: BIOPSYCHOLOGY
2 credits
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of nervous system structure/function including neurotransmitter, neuron physiology, and synaptic transmission. Also overlaps biochemical bases of learning, memory, consciousness, intelligence, psychopharmacology, behavior and genetics.

650 CORE V: SOCIAL-COGNITIVE PSYCHOLOGY
2 credits
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of theories related to understanding of social behavior and the issues of how people understand their social experiences. Topics include: person perception, attribute, social categorization, social inference.

660 ADVANCED SURVEY OF INDUSTRIAL PSYCHOLOGY
2 credits
Prerequisite: admission to the Graduate School. Providing a survey of the field of Industrial Psychology (Personnel Psychology) including an emphasis on testing and measurement, job analysis, performance evaluation, selection, and training.

672 COUNSELING PRACTICUM I
2 credits
Prerequisite: graduate standing in psychology and permission of instructor. Introduction to and development of the therapeutic skills and intervention techniques via individual, small group, and laboratory exercises, and case conference evaluations of actual clinical work samples. (May be repeated for a total of 8 credits.) Credit/No Credit.

673 COUNSELING PRACTICUM II
4 credits
Prerequisite: admission to the Graduate School and permission of instructor. Application of therapeutic skills and intervention techniques to work with clients in the Psychology Department Counseling Clinic, including small group supervision of clinical work. (May be repeated for a total of 4 credits.) Credit/No Credit.

674 PERSONNEL PRACTICUM
1-4 credits
Prerequisite: permission of area chair. Graduate coursework taken at one of the University of Akron campuses.

675 APPLIED COGNITIVE AGING PSYCHOLOGY
1-4 credits
Prerequisite: 660 in graduate standing in psychology, 1-4 credits of graduate psychology and permission of the instructor. Supervised field experience in applied cognitive aging psychology to provide the student with the opportunity to apply skills and knowledge acquired in the academic setting and to obtain knowledge about community programs and agencies which focus on developmental processes.

680 EXTERNAL SPECIAL TOPICS
1-4 credits
May be repeated for a maximum of 16 credits. Prerequisites: permission of area chair. Graduates may apply toward a UA degree either as a required or elective course.

699 MASTER'S THESIS
1-4 credits
May be repeated. Prerequisite: permission of the instructor. Research analysis of data and preparation of thesis for master's degree.

700 SURVEY OF PROJECTIVE TECHNIQUES
4 credits
Prerequisites: 630, 640 in graduate standing in psychology. Introduction to projective techniques. Research design, administration, scoring and interpretation. Rorschach; and survey of other contemporary projective instruments.

701 PSYCHODYNAMICS
4 credits
Prerequisite: 700. Application of psychological testing to problems of diagnosis and evaluation. Practical experience in administration, scoring and interpretation. Integration of projective data with other assessment techniques in variety of settings.

707 SUPERVISION IN COUNSELING PSYCHOLOGY I
4 credits
Prerequisite: doctoral standing or permission of instructor. Instruction in supervision. Training in the use of principles in supervision. Development of supervision skills. Supervised work in counseling and applied research.

709 INTRODUCTION TO COUNSELING PSYCHOLOGY
2 credits
Prerequisite: graduate standing in the Collaborative Program in Counseling Psychology. Introduction to and historical foundations of the counseling psychology discipline. Emphasis on an emphasis on contemporary research and research literature in the field.

710 THEORIES OF COUNSELING AND PSYCHOTHERAPY
4 credits
Prerequisite: 630 or permission of the instructor. Major systems of individual counseling explored with a focus on a framework: behavioral, cognitive, humanistic, and other. Includes research, contemporary problems and ethics.

711 VOCATIONAL BEHAVIOR
4 credits
Prerequisite: 630 or permission of instructor. Topics and research on vocational behavior and counseling. Includes theories on these topics: applied work in vocational counseling and supervised.

712 PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING
4 credits
Prerequisites: 630 or graduate standing in school psychology, and instructor's permission. History, principles and methodology of individual intelligence testing, supervised practice in administration, scoring and interpretation of individual intelligence tests for children and adults.

713 PROFESSIONAL, ETHICAL AND LEGAL ISSUES IN COUNSELING PSYCHOLOGY
4 credits
Prerequisite: doctoral standing or permission of the instructor. Examination of major issues in the field such as the counselor as a professional and as a person, and issues and problems related to counseling.

714 OBJECTIVE PERSONALITY EVALUATION
4 credits
Prerequisites: completion of 630 or 400/500, and 420/520, and 5600/645. Study of the development, administration, and interpretation of objective instruments for personality assessment (MMPI, CPI, MBTI, RIF, 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
Prerequisites: 630; one semester of practicum work. Critical examination and application of research and theory in counseling psychology. Topics include: focusing on race/ethnicity, biculturalism, sexual orientation, age, disability, and spirituality.

718 HISTORY AND SYSTEMS IN PSYCHOLOGY
2 credits
Prerequisites: 630. Philosophy of 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
Prerequisites: 630, graduate standing in psychology, or permission of the instructor. Topics include: development, aging with emphasis on life-span methodology and research design including age-related changes in intelligence, personality, sensation, perception, learning, 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. Topics include: perception, learning, motivation, attention, and problem solving in adulthood and their effects on areas such as environmental design, mobility, independence, neuropsychological assessment, and skilled performance.

731 APPLIED COGNITIVE AGING PSYCHOLOGY: INFORMATION PROCESSING
4 credits
Prerequisites: 722 graduate standing in psychology, or permission of instructor. Topics include: perception, learning, motivation, attention, and problem solving in adulthood and their effects on areas 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. Topics include: perception, learning, motivation, attention, and problem solving in adulthood and their effects on areas such as environmental design, mobility, independence, neuropsychological assessment, and skilled performance.

733 APPLIED COGNITIVE AGING PSYCHOLOGY: RESEARCH
4 credits
Prerequisites: 722 graduate standing in psychology, or permission of instructor. Topics include: intensive reading in selected content area, design and conduct of a complete research study. (May be repeated.)

735 APPLIED COGNITIVE AGING PSYCHOLOGY: NEUROPSYCHOLOGY
4 credits
Prerequisites: 722 graduate standing in psychology, or permission of instructor. Topics include: intensive reading in selected content area, design and conduct of a complete research study. (May be repeated.)

738 APPLIED DEVELOPMENTAL PSYCHOLOGY
4 credits
Prerequisites: 722 graduate standing in psychology, or permission of instructor. Examination of methodological issues, evaluation, child abuse, early intervention, day care, kibbutzim, social networks, subcultural variations, and hospice/dying.
521 RACIAL AND ETHNIC RELATIONS
Prerequisite: 100 or permission. Analysis of structure and dynamics of race and ethnic relations with a focus on emphasizing both historical and contemporary issues. Lecture
3 credits

523 SOCIOLOGY OF WOMEN
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. 3 credits

525 SOCIOLOGY OF URBAN LIFE
Prerequisite: 100 or permission. Emergence and development of urban society. Examination of urban social structure from a functionalist perspective and the role of socio-economic factors. Emphasis on various life styles of urban subcultures. Lecture/discussion.
3 credits

528 THE VICTIM IN SOCIETY
Prerequisite: 100 or permission of instructor. Study of the nature, causes, and consequences of victimization with special focus on crime victimization.
3 credits

530 JUVENTILE DELINQUENCY
Prerequisite: 100 or permission. Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/discussion.
3 credits

531 CORRECTIONS
Prerequisite: 330 or 430. Theories, beliefs and practices of community and institutional corrections systems, including trend in current social research. Course taken prior to 3 credit hour Field Placement in Corrections (3850-471).
3 credits

533 SOCIOLOGY OF DEVIANT BEHAVIOR
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.
3 credits

541 SOCIOLOGY OF LAW
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.
3 credits

544 SOCIAL ISSUES IN AGING
Prerequisite: 100 or permission. A look into the major issues and problems facing older persons. Special attention is given to the current needs of the elderly as well as an examination of current societal policy and programs to meet these needs.
3 credits

550 SOCIOLOGY OF MENTAL ILLNESS
Prerequisite: 100 or permission. An introduction to 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.
3 credits

555 FAMILY VIOLENCE
Prerequisite: 100. Family violence with a focus on child abuse, spousal/partner abuse, and elder abuse. Theories, methodologies, and strategies to end family violence are examined.
3 credits

560 SOCIOLOGICAL THEORY
Prerequisite: 100 or permission. An overview and examination of theoretical issues in sociology, through the study of both classical and contemporary theoretical work.
3 credits

601 PROSEMERN IN SOCIOLOGY
Prerequisite: teaching/research assistant or permission. Introduction to professional aspects of the discipline. Seminar in sociology and major areas of study/research in the field. Seminar.
Credit/Noncredit

602 FAMILY AND SOCIETY
Examines the interplay of family and society. Seminar on both independent/dependent variable and impact of family policies is discussed.
3 credits

604 RESEARCH DESIGN AND METHODS
Intensive analysis of problems in research design, i.e., those encountered in thesis preparation. (Same as KSU 672431) Seminar.
3 credits

613 SOCIOLOGY OF PROGRAM EVALUATION AND PROGRAM IMPROVEMENT
Prerequisite: Permission. Program evaluation as it occurs in different social programs. Topics includes history evaluation, value assumptions, political dimensions, ethical issues, social change, and perspectives of experimentation and alternative use for program development. Seminar.
3 credits

615 EPIDEMIOLOGIC METHODS IN HEALTH RESEARCH
Prerequisite: permission. Designed to introduce the student to methods of developing and understanding information concerning the distribution of illness and injury in society and evaluation of interventions to reduce the burden.
3 credits

625 SOCIOLOGY OF SENTIMENTS AND EMOTIONS
Prerequisite: permission. A sociological perspective is employed to analyze and understand the production, distribution and utilization of socially created sentiments and emotions. (Same as KSU 672435) Seminar.
3 credits

631 SOCIAL PSYCHOLOGY
Intensive examination of social psychological theory and research, both classic and contemporary. Provides student with background and working knowledge of social psychological research. (Same as KSU 724381) Seminar.
3 credits

634 PERSONALITY AND SOCIAL SYSTEMS
Examination of contemporary theory and research on linkages between personality and society. Some applications in studies of modernization, social class and occupations and sex roles. (Same as KSU 724332) Seminar.
3 credits

639 SOCIOLOGY OF GENDER
Prerequisite: permission. Examination of theories and research on gender origins, characteristics and changes. Emphasizes recent empirical research on gender role patterns and processes in various industrial societies.
3 credits

645 SOCIAL ORGANIZATION
General survey of major theories, concepts and problems pertaining to creation, alteration and transformation of social systems, and emphasizing societal behavior in different social settings. (Same as KSU 724340) Seminar.
3 credits

646 SOCIAL INEQUALITIES
Prerequisite: permission. Organizations as social systems; their effect on individuals, problems of professionals in bureaucracies. (Same as KSU 724348) Seminar.
3 credits

648 COMPLEX ORGANIZATIONS
Prerequisite: permission. Examination of work as behavioral phenomenon in human societies; contrasts with nonwork and leisure; significance of occupations, professional and work types in organization of work. (Same as KSU 724352) Seminar.
3 credits

651 SEMINAR IN RACE RELATIONS
Prerequisite: permission. Analysis of the structure and dynamics of race and ethnic relations with attention given to both class and contemporary issues. (Same as KSU 724378) Seminar.
3 credits

SOCIOLOGY 3850:

510 SOCIAL STRUCTURES AND PERSONALITY
Prerequisite: 100 or permission. Internal and external relationships between position in society, personality traits. Characteristic personality. Presented as both result and determinant of social structure and process. Lecture.
3 credits

511 SOCIALIZATION: CHILD TO ADULT
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.
3 credits

512 SOCIALIZATION: CHILD TO ADULT
Prerequisite: 100 or permission. Theoretical and empirical analyses of process by which young child, adolescent and adult learn social and cultural requirements necessary to function in new roles, changing roles and society in general.
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656 SOCIOMETRY OF HEALTH CARE  
Prerequisite: permission of instructor. A general study of the field of medical sociology with special emphasis on analysis of health and health care in the contemporary urban United States. (Same as KSU 7223).

657 URBAN HEALTH CARE  
Prerequisite: permission. Relationships between urban social structures and processes and the planning and functioning of health-care delivery systems in urbanized nations. Seminar.

663 DEVIANCE  
Prerequisite: permission. Examination of nature and types of deviance. Problems and issues in theory and research. (Same as KSU 7206).

664 SOCIOLOGY OF CRIMINAL BEHAVIOR  
Prerequisite: permission. Analysis of relationship of crime and delinquency to social structure and social processes. Seminar.

665 JUVENILE DELINQUENCY: THEORY AND RESEARCH  
Prerequisite: permission. Analysis of theories of delinquency, ecological, class structural, sub-cultural and social class perspectives. Seminar.

666 SOCIOLOGY OF CORRECTIONS  
Prerequisite: permission. Analysis of corrections as social system; its formal structure and informal dynamics. Analysis of present state of corrections research. Seminar.

671 FAMILY LIFE AND INSTITUTIONS  
Prerequisite: permission. Analysis and evaluation of sociological theory and research in the family. Concentration on techniques of theory construction and research design in sociological study of the family. (Same as KSU 7245).

678 SOCIAL GERONTOLOGY  
Prerequisite: permission. Impact of aging upon individuals and society. Reactions of individuals to aging. Seminar. (Same as KSU 7207).

679 POLITICAL SOCIOLOGY  
Description, analysis and interpretation of political behavior through application of sociological concepts and methods. Seminar. (Same as KSU 7254).

681 CROSS CULTURAL PERSPECTIVES IN AGING  
Prerequisite: permission. A comparison of aging in various cultures and societies around the world. Seminar.

686 POPULATION  
Analysis of basic population theory and methods. Trends and differentials in fertility, mortality, migration and selected social demographic variables also considered. (Same as KSU 7266).

687 SOCIAL CHANGE  
Advanced seminar in theories of social change. (Same as KSU 72320).

696 MASTER'S RESEARCH PAPER  
(May be repeated for a maximum of six credits.) Prerequisite: permission. Supervised writing of a paper for Master's Research Paper Option.

697 READING IN CONTEMPORARY SOCIOLOGICAL LITERATURE  
Prerequisite: permission. Seven credits of sociology and permission of advisor, instructor and chair of department. Intensive reading and interpretation of written material in student's chosen field of interest. Regular conferences with instructor.

698 DIRECTED RESEARCH  
(May be repeated) Prerequisite: permission. Empirical research to be conducted by the student under graduate faculty supervision.

699 MASTER'S THESIS  
(May be repeated for a minimum of six credits) Prerequisite: permission. Supervised thesis writing.

700 COLLEGE TEACHING OF SOCIOLOGY  
Prerequisite: teaching assistant or permission. Training and experience in college teaching of sociology. Approved for credit toward the Ph.D. degree. Not approved as credit toward the M.A. degree. (Same as KSU 6729).

706 MULTIVARIATE TECHNIQUES IN SOCIOLOGY  
Prerequisites: 603 and 604, or permission; a sociology graduate student only. Methodological problems using advanced multivariate techniques in analysis of sociological data. Topics include nonparametrical analysis of data; the multivariate permutation test; multiple regression and correlation; discriminant function analysis; factor analysis; path analysis; and structural equation models. (Same as KSU 7227).

707 MEASUREMENT IN SOCIOLOGY  
Prerequisite: 606 or permission. Theory and methods of measurement reliability and validity in social data. Topics include estimating reliability and validity, scale and item design, alternative measurement strategies, measurement models. Seminar.

708 ADVANCED DATA ANALYSIS  
Prerequisite: 706 or permission. Critical examination of data analysis techniques having particular relevance to research problems in sociology. (Same as KSU 7228).

709 SOCIAL SAMPLING  
Prerequisites: 603, 604 or permission. Theory and methods of sampling in sociology. Topics include sample design, sampling efficiency, nonresponse, mortality in longitudinal designs, urban, organizational, and survey sampling, stratified and cluster sampling.

711 SURVEY RESEARCH METHODS  
Prerequisites: 603 and 604, or permission. In-depth study of design and administration of social surveys. (Same as KSU 7230).

712 EXPERIMENTAL AND QUASI-EXPERIMENTAL RESEARCH IN SOCIOLOGY  
Prerequisites: 603, 604 or permission. Application of experimental and quasi-experimental methods in sociological research with special attention given to appropriate designs, statistical analyses and empirical literature. Seminar.

714 QUALITATIVE METHODOLOGY  
Prerequisite: 603 or 604 or permission. Theory building and theory testing through the application of such techniques as participant-observation, open-ended interviewing, content analysis, historiography (diaries, records from churches, schools, social agencies, and contemporary sources); and qualitative statistical analysis. Seminar.

721 SPECIAL TOPICS IN SOCIOLOGICAL THEORY  
Open course to cover content area not readily subsumable under other headings. Content of course to be determined by instructor. (Same as KSU 7298).

722 EARLY SOCIOLOGICAL THOUGHT  
Prerequisite: 617 or permission. Two to four major sociological thinkers prior to 1930 examined in depth. Specific persons considered will be chosen by instructor but will be announced well in advance of beginning of class. (Same as KSU 7298).

723 CONTEMPORARY SOCIOLOGICAL THOUGHT  
Prerequisite: 722 or permission. Intensive, critical analysis of current scholarship in a broad range of contemporary sociological theories. Virtually all required reading will be from primary sources. (Same as KSU 7205).

726 STRATIFICATION AND HEALTH  
Race, social class, and gender differences in physical and mental health status, helping behaviors, and health care. Race, class, and gender stratification of health care workers. (Same as KSU 7228).

727 SOCIOLOGY OF OCCUPATIONS, PROFESSIONS AND HEALTH CARE  
Sociological examination of the organization of work in the health care field with emphasis on careers, professions, organizations, and health care delivery. (Same as KSU 7237).

728 SOCIOLOGY OF MENTAL HEALTH AND MENTAL DISORDERS  
Sociological examination of the social processes that affect mental health, that frame cultural ideas of normality and illness, and that define clinical pathology. (Same as KSU 7229).

747 URBAN SOCIOLOGY  
Analysis of theories of urban process and review of major contributions to empirical analysis of urban life. (Same as KSU 7258).

753 SPECIAL TOPICS IN SOCIAL ORGANIZATION  
Open course to cover content area not readily subsumable under other headings. Content of course to be determined by instructor. (Same as KSU 7298).

767 SPECIAL TOPICS IN DEVIANC AND DISORGANIZATION  
Designed to meet needs of student with interest in selected topics in deviance and disorganization. (Same as KSU 7279).

778 INVESTIGATIVE RESEARCH  
Prerequisites: one semester of graduate work, permission of instructor, advisor and chair of department. Readings and/or research supervised by member of graduate faculty. Seminar. (Same as KSU 7298).

899 DOCTORAL DISSERTATION  
(Must be repeated for a minimum of 30 credits) Dissertation. (Same as KSU 8218).

PUBLIC ADMINISTRATION AND URBAN STUDIES 3980:

590 WORKSHOP  
May be repeated Group studies of special topics in urban studies. May not be used to meet graduate major requirements in urban studies. May be used for elective credit only.

600 BASIC QUANTITATIVE RESEARCH  
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  
Prerequisite: 600. Extends study of social science to include more advanced research designs and multivariate statistical techniques.

602 HISTORY OF URBAN DEVELOPMENT  
Examination of major literature on processes of urbanization in United States and selected facets of urban institutional development.

610 LEGAL FOUNDATIONS OF PUBLIC ADMINISTRATION  
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  
Prerequisite: permission. Introduction to the theory and practice of the field of public administration. Foundation course for later MPA study.

612 NATIONAL URBAN POLICY  
Prerequisite: permission. Major federal policies that relate to urban problems examined in regard to policy-making processes, implementation and impact.

613 INTERGOVERNMENTAL MANAGEMENT  
Prerequisite: permission. Examines the field of intergovernmental relations as it applies to urban administration and management.

614 ETHICS AND PUBLIC SERVICE  
Prerequisite: permission. Examination of the ethical problems and implications of decisions and policies made by those whose actions impact on the broad public. Case studies of decision-making in both the public (government) and private (business and the professions) spheres, are studied in relation to classical literature in ethical theory.

615 PUBLIC ORGANIZATION THEORY  
Prerequisites: 611 and 630 or equivalent. Examines the development of public organizational theory and the current status of theoretical developments in the field of public administration.

616 PERSONNEL MANAGEMENT IN THE PUBLIC SECTOR  
Prerequisites: 616, 630 and 664 or equivalent. Topics include personnel issues and principles for public sector personnel administration, including personnel recruitment, selection, training, motivation, supervision, evaluation, labor relations and affirmative action.

617 LEADERSHIP AND DECISION-MAKING  
Examines the context of public organizational management including relevant organizational theories, strategic management and planning public sector leadership.

618 CITIZEN PARTICIPATION  
The fundamental theory, background, techniques, and issues of citizen participation in urban policy-making.

619 COMMUNITY ORGANIZING  
Prerequisite: permission. The course will examine the evolution and influence of neighborhood communities and “grass roots” organizations on public policy making in urban areas.

620 SOCIAL SERVICES PLANNING  
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  
Prerequisites: permission. Analysis of social bases of urban society, hierarchical, social problems, relationships to planning, public services.

622 HEALTH PLANNING AND PUBLIC POLICY  
Basic knowledge of the health service delivery system is provided for planners and administrators in the public sector.

623 PUBLIC WORKS ADMINISTRATION  
Prerequisite: permission. Examines the building, maintenance and management of public works.

624 EMERGENCY MANAGEMENT POLICY IMPLEMENTATION AND ANALYSIS  
Prerequisite: permission. Examines the implementation of emergency management policy at federal, state, and local levels. Analyzes current policy initiatives in this emerging field.

625 STRATEGIC PERSPECTIVES IN EMERGENCY MANAGEMENT  
Prerequisite: permission. Public administration responsibilities in emergency management. Examines the broader context 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 for 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: current professional practice and theoretical issues in public budgeting and management of capital and operating budgets.

643 INTRODUCTION TO PUBLIC POLICY 3 credits
Prerequisite: permission. Introduction to models of public policy formulation; identification of major policy issues; and the analysis of policy implementation and policy impact.

644 PUBLIC SECTOR FUND MANAGEMENT 3 credits
Prerequisite: 640, 642. Provides an overview of theoretical approaches for recording and reporting data related to public projects or programs and reviews methods for investing project funds.

650 COMPARATIVE URBAN SYSTEMS 3 credits
Prerequisite: permission. Conceptual schemes and methodology for comparative urban analy- 
sis among a number of major cities selected from each continent.

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 PUBLIC PROJECT DESIGN AND MANAGEMENT 3 credits
Prerequisites: 600, 642. Provides an in-depth theoretical overview of the public project cycle including needs-assessment approaches to design and management. Examines frameworks for implementa- tion, monitoring and analysis of project impact.

662 FUNDRAISING AND RESOURCE MANAGEMENT 3 credits
Prerequisite: permission. Examines alternative methods of fundraising and unique resource management challenges and opportunities of non-profit organizations.

663 NON-PROFIT MANAGEMENT 3 credits
Prerequisite: permission. This course will provide students with a broad understanding of the organizational, financial, legal and management concerns of leadership, resources and development, aspects of vol- unteerism, 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 informa- tion as an organizational asset.

670 RESEARCH FOR FUTURES PLANNING 3 credits
Prerequisites: 600 and 602 and completion of eight credits of core curriculum in urban stud- ies. An overview of the techniques associated with the field of futures research and their appli- cation to long-term urban planning.

671 PROGRAM EVALUATION IN URBAN STUDIES 3 credits
Prerequisite: 600 or equivalent. Major considerations appropriate for conducting evaluations of a wide variety of 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
Prerequisites: 600 and 602. Introduction to microcomputer applications in the public sector, including data entry, statistical analysis, report writing, graphical representation and spreadsheets.

674 ANALYTICAL TECHNIQUES FOR PUBLIC ADMINISTRATORS 3 credits
Prerequisite: 600. Public sector applications of quantitative methods, including decision analy- sis, queueing theory, mathematical programming, and simulation.

675 ADVANCED TECHNIQUES IN POLICY ANALYSIS 3 credits
Prerequisites: 600, 602. Advanced public sector application of techniques for analyzing public policy proposals including decision analysis and simulations.

680 SELECTED TOPICS IN URBAN STUDIES 1-3 credits each
Prerequisite: permission. Selected topics in specific areas of urban planning, in various develop- mental 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: 16 credits of urban studies core plus quantitative methods. Urban research methods applied to specific urban research area. Comprehensive paper required.

695 INTERNSHIP 1-3 credits
Prerequisite: supervised work experience for “pre-service” students participating in policy planning and administration in public and non-profit organizations.

697 INDIVIDUAL STUDIES 1-3 credits
May be repeated for a total of four credits. Directed individual readings or research on specific area or topic.

699 MASTER’S THESIS 1-9 credits
Prerequisite: permission. Supervised thesis writing. (May be repeated for a total of nine credits; however, only six credits apply toward degree. Replaces two courses in specialization.)

700 ADVANCED RESEARCH METHODS I 3 credits
Prerequisite: Master’s level statistics or permission. Introduction to statistical techniques and methodologies in doctoral and postdoctoral research. Emphasis on conceptual and mathe- matical interrelationships.

701 ADVANCED RESEARCH METHODS II 3 credits
Prerequisite: permission. Completion of 700 or equivalent. 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.

703 URBAN THEORY I 3 credits
Prerequisite: 702. Review of major professional traditions examining urban problems; for students entering the doctoral program in urban studies (first in two-course sequence).

704 PUBLIC BUREAUCRACY 3 credits
Prerequisite: permission. Analysis of bureaucratic operations in the implementation of public pol- icy, including special attributes of human service organizations and the democratic theory debate.

705 ECONOMICS OF URBAN POLICY 3 credits
Prerequisite: master’s level knowledge of microeconomics and microeconomics or special per- mission. Use of research tools of economic analysis in seminar format to examine options avail- able 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 imple- mentation 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 administrative processes within public organizations, fed- eral, state and local in the United States, emphasis on urban community.

710 QUALITATIVE RESEARCH METHODS 3 credits
Prerequisites: 700 and 701. Critical examination of Social Science Research methodologies such as content analysis. Open-ended survey techniques and other means of creating non- statistically generated data.

711 SEMINAR IN PUBLIC ADMINISTRATION 3 credits
Prerequisite: permission. In depth review and critique of major intellectual traditions, concepts and theories underlying urban and regional planning in the United States.

714 SEMINAR IN POLICY ANALYSIS AND EVALUATION 3 credits
Prerequisite: permission. In depth review and critique of major intellectual traditions, concepts and theories underlying urban and regional planning in the United States.

715 SEMINAR IN URBAN AND REGIONAL PLANNING 3 credits
Prerequisite: permission. In depth review and critique of major intellectual traditions, concepts and theories underlying urban and regional planning in the United States.

720 COMPARATIVE PLANNING STRATEGIES 3 credits
Prerequisite: 716 or permission. Review and analysis of alternative planning theories, institu- tions, and implementation strategies in a variety of national settings.

730 ETHICS IN GOVERNMENT 3 credits
Prerequisite: permission. This course will explore the differences between individual and collective responsibility, private and public morality and the nexus between democratic and moral development.

731 THEORIES OF PUBLIC BUDGETING AND FINANCE 3 credits
Prerequisite: permission. Examination of the organizational behavior and administrative theo- ries that support modern public personnel systems.

732 GOVERNANCE AND ADMINISTRATION 3 credits
Prerequisite: permission. Intensive study of a particular approved field within urban studies and perspectives. Credit/noncredit.

733 THEORIES OF PUBLIC SECTOR HUMAN RESOURCE MANAGEMENT 3 credits
Prerequisite: permission. Examination of the organizational behavior and administrative theo- ries that support modern public personnel systems.

734 CONCEPTUAL AND LEGAL FOUNDATIONS OF PUBLIC ADMINISTRATION 3 credits
Prerequisite: permission. Examination of the organizational behavior and administrative theo- ries that support modern public personnel systems.

735 COMPARATIVE ADMINISTRATION 3 credits
Prerequisite: permission. Examination of the various theories of organizational leadership and their application in public organizations and evaluation in the United States.

736 LEADING PUBLIC ORGANIZATIONS 3 credits
Prerequisite: permission. Examination of the various theories of organizational leadership and their application in public organizations and evaluation in the United States.

740 SURVEY/RESEARCH METHODS IN THE PUBLIC SECCTOR 3 credits
Prerequisite: permission. Examination of the techniques and methods used by public organi- zations to enhance civic engagement. Critiques of methodologies based upon information needs and citizens surveyed.

788 URBAN POLICY STUDIES 1-4 credits
Prerequisite: permission. Examination of the techniques and methods used by public organi- zations to enhance civic engagement. Critiques of methodologies based upon information needs and citizens surveyed.

799 URBAN TUTORIAL 3 credits
Prerequisite: permission. Intensive study of a particular approved field within urban studies and public affairs under supervision of tutor. (May be repeated once.)

899 DOCTORAL DISSERTATION 1-6 credits
Prerequisite: Advancement to Candidacy and 799. Open to properly qualified student accept- ed as candidate for Doctor of Philosophy degree. Student must register for at least one credit eac h semester until dissertation is accepted. Minimum of 12 credits required. (May be repeated.) Credit/noncredit.

521 FUNDAMENTALS OF MULTIPHASE TRANSPORT PHENOMENA 3 credits
Prerequisites: 521 or equivalent and permission. Major topics to be covered include entrance 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, 353. This course is intended for a student holding a BS in a discipline other than engineering. Response of simple and chemical processes and design of appropriate control systems.

541 PROCESS DESIGN I 3 credits
Prerequisites: 330, 351, 353. Application of chemical engineering fundamentals to the design of a multi-unit process. Emphasis is on use of process simulators. Advanced equipment design, oral, written communication skills, teamwork.

561 SOLIDS PROCESSING 3 credits
Prerequisites: 321 and 353 or permission. Comprehensive problems in sedimentation, neutralization, drying and other operations involving mechanics of particulate solids in liquid and gas contact.

563 POLLUTION CONTROL 3 credits
Prerequisites: 353 or permission. Air and water pollution sources and problems. Engineering aspects and methodology.

566 DIGITALIZED DATA AND SIMULATION 3 credits
Prerequisites: 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 electrochemical processes and to the design of electrochemical reactors. Topics include electrochemical thermodynamics, cell polarizations, Faraday’s laws, 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 bioprocesses, 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 analogues.

605 CHEMICAL REACTION ENGINEERING 3 credits
Prerequisite: 330 or permission. Kinetics of homogeneous and heterogeneous systems. Reactor design for ideal and non-ideal systems.

610 CLASSICAL THERMODYNAMICS 3 credits
Prerequisite: 225. Discussion of laws of thermodynamics and their application. Predication and control of thermodynamic data. Phase and reaction equilibria.

611 SURFACE SCIENCE IN CHEMICAL ENGINEERING 3 credits
Prerequisite: permission of instructor. This course emphasizes the basics of surface science (surface energy, wetting, adsorption), surface characterization techniques (contact angle, ellipsometry, XPS), and surface engineering methods (SAMS, soft-lithography).

615 PHYSICAL PROPERTIES OF STRUCTURAL BIOPOLYMERS 3 credits
Prerequisite: permission of instructor. Examination of the physical properties of biological tissues from a material science perspective leading to a rational design of biomaterials.

630 CHEMICAL PROCESSES DYNAMICS 3 credits
Prerequisite: 600. Development and solutions of mathematical models for chemical processes including models based on transport phenomena principles, population balance methods and systems analysis.

631 CHEMICAL ENGINEERING ANALYSIS 3 credits
Prerequisites: 322, 225, 330. Mathematical analysis of problems in transport processes, chemical kinetics and control systems. Solution techniques for these problems and their practical significances are stressed. Heuristic proofs will be given for necessary theory developments.

632 NONLINEAR DYNAMICS AND CHAOS 3 credits
Prerequisites: 340, 345, 350. Description and analysis of the complex behavior exhibited by nonlinear systems. Equations 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 engineering. Surfactant materials engineering dispersive systems, interfacial forces, surface tension, interfacial thermodynamics, colloid applications, biomaterials applications and characterization techniques.

634 POLYMERIC SURFACTANT SCIENCE 3 credits
Prerequisite: 610. The basics of surfactant science, the chemical engineering application of surfactants including use in polymerization media, separations, emulsions, microemulsions, and rheology modifier.

635 ADVANCED POLYMOR ENGINEERING 3 credits
Prerequisites: 322 or 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer technology.

640 ADVANCED PLANT DESIGN 3 credits
Prerequisite: permission. Topical treatment of process and equipment design, scale-up, optimization, process synthesis, process economics, Case problems.

674 RENEWABLE RESOURCES FOR ENVIRONMENTALLY BENIGN CHE PRODUCTION 3 credits
Prerequisite: permission of instructor. Focus is on chemical and biochemical processing technologies for the preparation of fuels, polymers, materials, and specialty chemicals from renewable resources.

680 HETEROGENEOUS CATALYSIS 3 credits
Prerequisite: 330, 351, 353. Kinetics and mechanisms of heterogeneous and homogeneous catalytic reactions; characterization and design of heterogeneous catalysts.

696 TOPICS IN CHEMICAL ENGINEERING 3 credits
(May be repeated for a total of 15 credits.) Prerequisite: permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthesis fuel processing, bioengineering, simulation and heat mass transfer phenomena and new separation techniques.

697 CHEMICAL ENGINEERING REPORT 3 credits
Prerequisite: permission of advisor. A relevant problem in chemical engineering is studied. Research course for students electing non-thesis option. Final report must be approved by advisor and advisory committee.

699 MASTER'S THESIS 3 credits
(6 credits permitted to a maximum of six credits.) For properly qualified candidate for master's degree. Supervised original research in specific area of chemical engineering selected on basis of availability of staff and facilities.

701 ADVANCED TRANSPORT PHENOMENA 3 credits
Prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multicomponent reactive transport and multiphase transport. Illustrative practical examples presented.

702 MULTIPHASE TRANSPORT PHENOMENA 3 credits
Prerequisite: 600. General transport theorem, kinematics, Cauchy’s lemma and the jump boundary conditions are developed followed by the theory of volume averaging. The phase equations are then volume averaged to obtain the multiphase equations of change. The significance for 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.

711 ADVANCED CHEMICAL ENGINEERING THERMODYNAMICS 3 credits
Prerequisite: 610. Advanced topics in thermodynamics, including phase and reaction equilibria at high pressures, phase equilibria for multiphase systems, reaction equilibria in multiphase systems, thermodynamics of surfaces, thermodynamics of systems under stress, non-equilibrium thermodynamics and current topics from literature.

715 MOMENTUM TRANSPORT 3 credits
Prerequisite: 600. Discussion of potential flow, boundary layer formation and turbulent flow phenomena for Newtonian fluids and Newtontian viscometrics. Development of non-Newtonian constitutive equations. Special and general flows of various constitutive models.

720 ENERGY TRANSPORT 3 credits
Prerequisite: 600. Conduction, natural and forced convection, and radiation heat transfer starting with equations of continuity, motion and energy.

721 TOPICS IN ENERGY TRANSPORT 3 credits
Prerequisites: 720. Advanced analytical and graphical methods for solving complex heat transfer problems found in chemical engineering.

725 MASS TRANSFER 3 credits
Prerequisite: 600. Theory of mass transfer with applications to adsorption, distillation, distillation and heterogeneous catalysis.

730 PROCESS CONTROL 3 credits
Prerequisite: 630. Introduction to modern control theory of chemical processes including cascade control, multivariable control and data sampled control.

736 POLYMER ENGINEERING TECHNOLOGIES 3 credits
Prerequisite: permission. Selected topics of current interest in polymer engineering, such as modeling of reactors or processes, multiphase materials, multiphase flow, artificial fiber engineering, etc.

738 CHEMICAL PROCESSING OF ADVANCED MATERIALS 3 credits
Prerequisite: 605. Advanced materials such as ceramics, optical materials, sensors, catalysts; application of reaction engineering to solid-gel processing, ceramic processing, modified chemical vapor deposition.

742 ADVANCED CATALYST DESIGN 3 credits
Prerequisite: 605. Development of catalysis theory and its application to the design of practical catalysts.

750 ADVANCED POLLUTION CONTROL 3 credits
Prerequisite: 460 or permission. Analysis of current environmental research in analytical instrumentation, air and water, pollution control, hazardous waste treatment, and nuclear waste disposal.

750 ADVANCED BIOTHREATS AND BIOTRANSFORMATIONS 3 credits
Prerequisites: 310-401/501 or permission of instructor. Focus includes: (a) high performance enzymes via chemical modification, recombinant technology, evolution, extremophiles; (b) application of reaction engineering to solid-gel processing, ceramic processing, modified chemical vapor deposition.

786 M INERALS AND SOILS TECHNOLOGY 1-15 credits
(May be repeated for a total of 15 credits.) Prerequisite: permission of instructor. Advanced projects, readings and other studies in various areas of chemical engineering intended for students seeking a Ph.D. in engineering.

789 PRELIMINARY RESEARCH (May be repeated for a total of 15 credits.) Prerequisite: permission of department chair. Advanced projects, readings and other studies in various areas of chemical engineering intended for students seeking a Ph.D. in engineering.

794 ADVANCED RESEARCH TECHNIQUES FOR ENGINEERING 3 credits
(May be repeated for a total of 15 credits.) Prerequisite: permission of department chair. Advanced projects, readings and other studies in various areas of chemical engineering intended for students seeking a Ph.D. in engineering.

799 DOCTORAL DISSERTATION 1-15 credits
(May be taken more than once.) Prerequisite: approval of research proposal by the Interdisciplinary Doctoral Committee. Original research by the doctoral student.

CIVIL ENGINEERING 4300:

514 DESIGN OF EARTH STRUCTURES 2 credits
Prerequisite: 314 or permission. Design of earth structures: dams, highway fills, cofferdams, etc. Embankment construction techniques, quality control, evaluation, instrumentation, foundation soil stabilization, seepage analysis and control. Design problem. Graduate students will perform more advanced analysis and design.

518 SOIL AND ROCK EXPLORELATION 3 credits
Prerequisite: 314 or permission. Site exploration criteria and planning. Conventional borings, samplings and in situ testing methods. Theory and application of geophysics and geophysical methods including seismic, electrical resistivity, gravity, magnetic and radioactive measurements. Air photo interpretation.

521 GEOMORPHOTOMOGRAPHY FOR ENVIRONMENTAL ENGINEERS 3 credits (2 lecture – 1 lab)
Prerequisite: One year of college chemistry, General, physical, organic, biochemistry, and soils chemistry concepts applied to environmental engineering. Concepts are used in water and wastewater laboratory.

526 ENVIRONMENTAL ENGINEERING DESIGN 3 credits
Prerequisite: 323. An introduction to the physical, chemical and biological processes utilized in the treatment of water and wastewater. Design parameters emphasized.

527 WATER QUALITY MODELING AND MANAGEMENT 3 credits
Prerequisite: 322. Analysis and simulation of the physical, chemical and biochemical processes affecting water quality. Development of management strategies based upon the application of water quality modeling techniques to environmental systems.
557 WIRELESS COMMUNICATIONS
Prerequisite: 549. Theory and analysis of wireless communication systems, wireless propagation, multiple access, modulation, multipath channel characterization, diversity, cellular, and PCS services and standards.

561 OPTICAL ELECTRONS AND PHOTONIC DEVICES
Lightwave engineering, photonic principles and optical electronic device technology.

565 PROGRAMMABLE LOGIC
Prerequisite: 263. Electronic circuit considerations in logic circuits, methods of sequential, threshold logic analysis, synthesis, development of computer arithmetic elements; memory, storage, devices.

570 MICROPROCESSOR INTERFACING
Microprocessor structure, bus interface. Digital controller devices and their relationship to both the microcomputer and physical environment.

572 CONTROL SYSTEMS II
Prerequisite: 371. 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
Prerequisite: 332. Elements of power electronics circuits. Rectifiers, converters, inverters analysis and design.

584 POWER ELECTRONICS LABORATORY AND DESIGN PROJECT
Prerequisite: 460/563 or equivalent. Experiments on different types of power electronic converters, AC/DC, DC/AC, DC/DC, and AC/DC. Design project to include design, simulation, building, and testing of a power electronic circuit.

585 ELECTRIC MOTOR DRIVES
Prerequisite: 361. Application of electric machines, choice of motor for particular drive. Application of power semiconductor circuits in electric machinery.

598 TOPICS IN ELECTRICAL ENGINEERING
May be taken more than once. Prerequisite: permission of department chair. Special topics in electrical engineering.

600 ADVANCED MICROCOMPUTER SYSTEMS
Prerequisite: 369 or permission. Discussion of multiprocessor, numerical data processors, multitasking, system bus architecture, 16-bit and 32-bit microprocessor architectures, multi-level protection and virtual memory, as supported by commercial microprocessor.

631 CIRCUIT ANALYSIS
Prerequisite: graduate standing. Operational methods, time domain analysis, state equations and matrix methods applied in circuit analysis. Realization and synthesis of driving point impedance and transmission functions.

641 RANDOM SIGNAL ANALYSIS
Prerequisite: 447. Analysis, interpretation and smoothing of engineering data through application of statistical and probability methods.

642 HANDLING SYSTEM ENGINEERING
Prerequisite: 561. Engineering principles of imaging systems, analysis, design, and evaluation of imaging systems, processing techniques, and applications.

643 INFORMATION THEORY AND CODING
Prerequisite: 641 or permission. Information theory, channels, entropy, mutual information, source coding theorem and channel coding theorem. Channel coding theorem for waveform channels. Introduction to rate-distortion theory.

646 DIGITAL SIGNAL PROCESSING
Prerequisite: 333. Relations between continuous- and discrete-time Fourier expansions. Sampling, aliasing, sampling rate conversion. Operator concepts in signal processing, all-pass systems, FFT digital filter design.

652 DIGITAL SPECTRAL ANALYSIS AND SIGNAL MODELING
Prerequisite: 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.

676 OPTICAL NETWORK ARCHITECTURE
Prerequisite: 548. Principles of optical network architecture, analysis, design, control, and fault management.

679 STATISTICAL COMMUNICATION THEORY
Prerequisite: 641 or permission. Fundamentals of statistical and probability methods.

680 ELECTROMAGNETIC THEORY I

681 ELECTROMAGNETIC THEORY II
Prerequisite: 650 or permission of course instructor. Scattering, TEM waves; guided wave theory; transmission lines; closed-boundary guides and cavities, modal orthogonality and completeness, Green's function, excitation and coupling, open-boundary waveguides.

682 COMPUTATIONAL ELECTROMAGNETICS
Prerequisite: 650 or permission of instructor. Analytical and numerical techniques for electromagnetic fields, conformal mapping, finite difference method, finite element method, and the method of moments.

685 ADVANCED ANTENNA THEORY AND DESIGN
Prerequisite: 460/563 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.

686 DESIGN OF DIGITAL SYSTEMS
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.

687 TOPICS IN ELECTRONICS
Prerequisite: permission of department chair. Discussions of recent advances in electronics.

688 EXPERIMENTAL CIRCUIT DESIGN
Prerequisite: 353, 360, or equivalent. Develops physical and analytical descriptions of solid-state electronic devices leading to equations and models of (Shockley and PN) diodes and related bipolar and lateral transistor.

689 DISCRETE CONTROL SYSTEMS
Prerequisite: 472/572 or permission. Theory, techniques for design of discrete control systems. Transform technique, stability analysis, frequency response. Optimization. Digital computer control.
3 credits

673 NONLINEAR CONTROL
Corequisite: 674 or instructor permission. Designed to provide students with qualitative insight into nonlinear systems as well as techniques for controlling such systems. Topics include describing functions, Popov and circle criteria, jump resonances, subharmonics, phase plane, conservative systems, Lyapunov theory, bifurcation of attractors, and routes to chaos.

674 CONTROL SYSTEM THEORY
Course: 671 or instructor permission. Advance modern control theory for linear systems. Controllability, observability, minimal realizations of multivariate systems, stability, state vari- able feedback design, estimation, and an introduction to optimal control.

675 SYSTEM SIMULATION
Prerequisite: 472 or permission of the instructor. This course is designed to provide the con- trol theory and feedback system designer with tools necessary to simulate continuous systems on a digital computer. Topics include linear multistep methods, nonlinear methods, stiff systems, optimisation, parallel computing and simulations languages.

676 RANDOM PROCESS ANALYSIS
Prerequisite: 674. Analysis and design of control systems with stochastically defined inputs. Introduction to estimation filters.

677 OPTIMAL CONTROL I
Prerequisite: 674. Formulation of optimal control problem; application of variational calculus, maximum principle and optimality principle to control problems. Computational techniques in optimization.

678 DYNAMICS AND CONTROL OF POWER ELECTRONIC CIRCUITS
Prerequisites: 480/583 or equivalent. Averaged and sampled-data models for rectifiers and DC/DC converters. Small-signal models about the cyclic steady-state. Feedback con- trols using classical and modern approaches.

681 POWER SYSTEM ANALYSIS
Prerequisite: 480. Short circuit and load flow analysis of power systems with emphasis on computer solution. Transformer machine analysis.

682 POWER SYSTEM STABILITY
Prerequisite: 681 Steady state and transient stability of power systems with emphasis on computer solution.

683 ECONOMICS OF POWER SYSTEMS
Prerequisite: 681. Analysis and operation of power system for economic dispatching using a computer.

684 PROTECTIVE RELAYING
Prerequisite: 480. Principles and application of relays as applied to protection of power systems.

685 SURGE PROTECTION
Prerequisite: 480. Phenomena of lightning 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
Prerequisites: graduate status in Electrical Engineering. Voltage and mechanical differential equations of electric machines, analytical and numerical methods for solution of a system of machine differential equations.

687 POWER ELECTRONICS II
Prerequisite: 483/583 or equivalent. Effects of the nonidealities of the power circuit compo- nents, rectifiers, base and gate drives, thyristor commutation circuits, heat transfer and thermal issues. Analysis and design of advanced power circuits.

688 CONTROL OF ELECTRIC MACHINES
Prerequisites: graduate student in Electrical Engineering. Elements of control circuits for elec- tric drives, techniques for torque/speed control of electric machines.

689 POWER SEMICONDUCTOR DEVICES
Prerequisite: graduate status in Electrical Engineering. Structure and physics of power semicon- ductor devices: diodes, Bipolar junction transistors, MOSFETs, Thyristors, Power MOSS- Bipolar devices (IGT/MCT). Emphasis on the issues that characterize these devices from the low power semiconductor devices.

693 SPECIAL PROBLEMS
(May be taken more than once) Prerequisite: permission of department chair. For a qualified graduate student. Supervised research or investigation in student's major field. Credit depends upon nature and extent of project.

694 ADVANCED SEMINAR
(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.

696 COMPUTER ARCHITECTURE

697 PARALLEL COMPUTER ARCHITECTURE
Prerequisite: 606 or equivalent. This course provides an introduction to parallel computer architec- tures and parallel processing based on a single instruction, message-passing, or shared memory.

699 COMPUTER ALGORITHMS I
Prerequisites: 400/500 and 450/550. Organization of scientific and engineering problems for computer solutions. Analysis of error and convergence properties of algorithms.

699 COMPUTER ALGORITHMS II
Prerequisite: 605 or permission. Data structures and algorithm design for minimum execution time and memory requirements.

702 ADVANCED KNOWLEDGE ENGINEERING
Prerequisite: 691. Advanced study of knowledge acquisition and expert system project management.

703 FRAME-BASED EXPERT SYSTEM DESIGN
Prerequisite: 441, 641, or equivalent. Introduction to the design and development of frame- based expert systems.

704 VLSI DESIGN AND AUTOMATION

705 SPECIAL PROBLEMS
(May be taken more than once) Prerequisite: permission of department chair. For a qualified graduate student. Supervised research or investigation in student's major field. Credit depends upon nature and extent of project.

706 ADVANCED SEMINAR
(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.

500 THERMAL SYSTEM COMPONENTS
Prerequisites: 301, 311. Performance analysis and design of basic components of thermal energy exchange and conversion systems. Components studied include heat exchangers, pumps, compressors, turbines and turbo-expansion engines.

501 HEATING AND AIR CONDITIONING
Prerequisite: 301 or permission; corequisite: 315 or permission. Thermodynamics of gas mix- tures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling, and humidity.

502 COMPRESSIBLE FLUID MECHANICS

503 FUNDAMENTALS OF FLIGHT
Prerequisite: 311. Introduction to basic aerodynamics, airplane performance, stability and control, aeronautics and propulsion. Design considerations are emphasized.

504 INTRODUCTION TO AERODYNAMICS
Prerequisites: 311. Introduction of aerodynamic concepts; conformal transformations, theory of thin airfoils, 2-dimensional airfoil theory, wings of finite span, lifting line theories, lumped-vor- tex, vortex/altitude, and panel methods.

505 INTRODUCTION TO AEROSPACE PROPULSION
Prerequisite: 311. Introduction to propulsion systems currently used in aerospace fields; propulsion principles for turbomachinery, chemical rockets, and electrical rocket propulsion.

506 ENERGY CONVERSION
Prerequisite: 301 or permission; corequisite: 315 or permission. Topics from field of internal combustion engines, cycle analysis, modern combustion systems.

507 HEAT TRANSFER PROCESSES
Prerequisites: 315 or permission. Analysis, design of extended surfaces. Natural convection and mixed convection, combined modes of heat transfer with phase changes.

508 EXPERIMENTAL STRESS ANALYSIS
Prerequisite: 396 or permission. Experimental methods of determining stress or strain; brittle lacquer, strain gages, photoelasticity, full field thermal techniques.

509 MACHINE DYNAMICS
Prerequisite: 301 or permission. Static and dynamic forces in machines, products of inertia, dynamic stability, vibrations, flywheels, damping of rotating, reciprocating, cyclic plane motion. Com- puter simulation of transient mechanism dynamics, other topics in advanced dynamics.

510 FUNDAMENTALS OF MECHANICAL VIBRATIONS
Prerequisites: 203 or permission and 3450/350. Undamped and forced vibra- tions of systems having one or two degrees of freedom.
627 ADVANCED MATERIALS AND MANUFACTURING PROCESSES
Prerequisites: 380. Manufacturing processes for advanced materials; classification; technologi- cal aspects of bulk deformation; powder forming, molding, powder metal- lurgy, rapid solidification; economic aspects, technical activity.

628 MECHANICAL BEHAVIOR OF MATERIALS
Prerequisite: 380 or permission. Mechanical behavior of engineering materials; metallurgy of deformation; dislocation theory and deformation; strengthening mechanisms; thermome- chanical processing; mechanical testing.

629 NONLINEAR ENGINEERING PROBLEMS

630 VIBRATIONS OF DISCRETE SYSTEMS
Prerequisite: 436/561 or equivalent. Study of vibrations of multidisciplinary freedom systems including free and forced vibrations, damped and transient response, normal mode vibrations and eigenfracture methods. Application to fatigue design and shock design.

631 KINEMATIC DESIGN

632 RELIABILITY IN DESIGN

633 COMPUTERIZED MODAL ANALYSIS OF STRUCTURES
Prerequisite: 630 or equivalent. Modal analysis theory and measurement techniques, digital sig- nal processing concepts, structural dynamics theory, modal parameter estimation with "hands- on" experience in the application of modal measurement methods in vibration analysis.

634 ADVANCED DYNAMICS OF ROTATING MACHINERY
Prerequisite: 430/462 or equivalent. Dynamic modeling and simulation of complex flowbear- ings systems. Steady state, transient and stable analysis with inertia, gyroscopic, imbalance, rotor tilt, disk-shear and oil film-sub interaction effects.

635 STRESS WAVES IN SOLIDS AND FLUIDS

642 SYSTEM ANALYSIS AND CONTROL DESIGN
Prerequisite: 440 or equivalent. Uniform methods of modeling and response analysis, contro- lability and observability, stability theory and analysis of linear and nonlinear engineering processes. Design of feedback controls for optimum performance of multivariable real-time control applications.

643 DISTRIBUTED PROCESS CONTROL DESIGN AND APPLICATIONS
Prerequisite: 440 or equivalent. Digital and continuous control algorithms. Process control function implementation. Self-learning, diagnostics, intelligent control systems. Case studies and experiments from various engineering disciplines.

645 PROCESS IDENTIFICATION AND COMPUTER CONTROL
Prerequisite: 440 or equivalent or by permission. Obtaining mathematical models of process- ing from noisy observations. Methods of digital control design. Case studies on computerized control concepts.

646 EXPERT SYSTEMS IN CONTROLS AND MANUFACTURING
Prerequisite: 440/564 or equivalent. Expert system generation. Sensorn methodolgies for process control, computer integrated flexible manufacturing and robotics.

647 NEURAL AND FUZZY CONTROL SYSTEMS
Prerequisite: 440/540 or permission of instructor. Analysis and design of intelligent control sys- tems. Neural networks and fuzzy sets for process identification and controller design. Appli- cations and case studies in industry.

650 THERMOFLUID SCIENCES
3 credits

656 THERMODYNAMICS
3 credits
Prerequisites: 301 or equivalent. Extension and generalization of basic laws of thermodynam- ics with application to a variety of physical and biological systems. Introduction to irreversible processes, the third law and statistical thermodynamics.

660 FINITE ELEMENT ANALYSIS I
3 credits
Prerequisite: 622. Introductory development of finite element method as applied to various top- ics from continuum mechanics. Areas covered include plane and axisymmetric and 3-D stress analy- ses; conduction; fluid mechanics; transient problems and geometric and material nonlinearity.

661 FAILURE ANALYSIS OF MECHANICAL SYSTEMS
3 credits
Prerequisites: 380 or equivalent, 608 or equivalent, or permission. Fundamental theories of composite constructions. Techniques of testing, methods and devices for fluid flow quantization and temperature measure- ments. Laboratory work with hands-on experience.

668 COMPUTERIZED NUMERICAL CONTROL
3 credits
Prerequisite: 360 or permission. Development and method of solution of optimization prob- lems in mechanical engineering. The use of dynamic programming and operational research methods in optimization, including computer utilization and applications.

670 INTEGRATED FLEXIBLE CELLULAR MANUFACTURING SYSTEM- ANALYSIS AND DESIGN
3 credits
Prerequisite: 463/563 or equivalent or by permission. Team-based collaborative design with a web-based solid modeling library, feature-based manufacturing analysis, and process planning and simulations of flexible cellular manufacturing systems. Applications in industry.

673 DISTRIBUTED PROCESS CONTROL DESIGN AND APPLICATIONS
3 credits
Prerequisite: 440 or equivalent. Digital and continuous control algorithms. Process control function implementation. Self-learning, diagnostics, intelligent control systems. Case studies and experiments from various engineering disciplines.

675 FUNDAMENTALS OF CRYSTALLIZATION AND SOLIDIFICATION
3 credits
Prerequisites: 380 or equivalent, 608 or equivalent, or permission. Fundamental theories of crystal nucleation and growth, interface stability and morphology, microstructure forma- tion, and microsegregation. Applications in casting, welding, laser processing, and single crys- tal growth.

685 EXPERIMENTAL MATERIALS
3 credits
Prerequisite: 622. Elastic and viscoelastic theory of wire rope is derived from thick rod theory. Applications are discussed with respect to wire mechanics, bioengineering and lamine com- posite constructions.

696 INTEGRATED FLEXIBLE CELLULAR MANUFACTURING SYSTEMS
Prerequisite: 463/563 or equivalent or by permission. The analysis of integrated computerized manufacturing systems, design of automated manufacturing components and simulations of flexible cellular manufacturing systems.
BIOMEDICAL ENGINEERING 4800:

522 PHYSIOLOGICAL CONTROL SYSTEMS
Prerequisites: 3100:360 and 3450:335. The basic techniques employed in control theory, system analysis, and model identification as they apply to physiological systems.

530 DESIGN OF MEDICAL IMAGING SYSTEMS
Prerequisites: 3100:2500, 3450:335, 3450:352, 3450:362, 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.

535 IMAGE SCIENCE
Prerequisites: 3100:202, 3650:292, 4400:343, or by permission of the instructor. Principles of image science, image performance parameters and image assessment techniques of medical imaging systems, with emphasis on digital radiography, tomographic imaging, ultrasound and magnetic resonance.

537 PHYSICS OF MEDICAL IMAGING
Prerequisites: 3100:202, 3650:292, 4400:392, 4800:305. Physical principles of medical imaging modalities with emphasis on the properties, general mechanisms and interaction of radiation with matter, physics of the image formation and optimization.

560 EXPERIMENTAL TECHNIQUES IN BIOMECHANICS
Prerequisites: 3150:163, 3450:335, 3650:292, 4800:203; or by permission. Principles of testing and measuring devices and techniques for both fluid and solid mechanics studies. Laboratory for demonstration and hands-on experience.

600 BIOMEDICAL ENGINEERING COLLOQUIUM
May be repeated for a maximum of 16 credits The Biomedical Engineering Colloquium is a seminar series designed to introduce students to current topics in biomedical engineering research, design, and business.

601 BIOMEDICAL INSTRUMENTATION
Prerequisites: 3150:361, 562; or 4400:232 or 4400:320. Clinical instrumentation to measure and display physiologic and anatomic parameters. Basic concepts of instrumentation including design, criteria and optimization analysis. Practical experience gained through the use of instrumented mammalian models.

611 BIOMETRY
Statistics and experimental design topics for the biomedical and biomedical engineering disciplines including distributions, hypothesis testing and estimation, ANOVA, probit analysis and nonparametrics statistics.

620 NEURAL NETWORKS
Examination of highly parallel, distributed architectures for computing that are, to varying degrees, derived from structures observed in biological nervous systems. After an overview of how real neurons operate, the course will examine both lalassal and modern neural computing architectures. Comparisons will be made with traditional serial machines and applications for which neural networks seem most promising will be examined.

621 SENSORY SYSTEMS ANALYSIS
Prerequisite: 4400:371, or by permission. Study of various sensory modalities from a systems engineering perspective. Techniques from linear and nonlinear systems analysis are applied to aspects of vision, hearing, touch, and position sensing in humans. Comparisons are made with artificial emulations of these senses.

623 PROCESSING OF BIOMEDICAL SIGNALS
Prerequisites: Biomedical graduate standing or permission of the College of Engineering 661 or equivalent. Concepts for the analysis of biological continuous signals and joint processes including discriminant and multichannel component analysis, histograms, correlograms and data displays.

624 IMAGE PROCESSING FOR BIOMEDICAL DATA
Prerequisite: Image sampling, quantization, and transforms. Enhancements including smoothing and sharpening, Restoration using inverse and Wiener filters. Edge detection and thresholding with region growing for segmentation.

630 BIOMEDICAL COMPUTING
Prerequisite: 4400:206 or equivalent. Computer applications in health care, clinical laboratories, AMHIT, medical records, D.A.Q., D.A.Q. covers patient monitoring, peripheral and interfaces, diagnostic algorithms, automated EEG, ECG systems.

632 DIAGNOSTIC IMAGING TECHNIQUES
Advanced diagnostic imaging techniques as applied to Digital Radiography, Computed Tomography (CT), nuclear medicine, ultrasound imaging, magnetic resonance imaging (MRI), microwaves and optical confocal microscopy.

636 BIOMEDICAL OPTICS
Prerequisite: Application of light principles and optical fibers on the engineering design and development of instrumentation, techniques, and applications for medical diagnostic imaging, and treatment of disease.

635 MEDICAL IMAGING DEVICES
Prerequisite: Imaging modalities including X-ray, magnetic resonance, and sound. The formation of images. Specific devices including computer tomography, magnetic resonance, ultrasound, gamma cameras and PET.

635 BIOMEDICAL NANO TECHNOLOGY
Prerequisite: Viscous flow techniques. Engineering principles of nanotechnology as applied to the design of instrumentation, systems and techniques, aimed to explore biodevices and biomaterials at the microscopic level, at one billionth of a meter.

640 SPINE MECHANICS
Prerequisites: 390:561 or equivalent; 4300:406 or equivalent; or permission. Physical properties and functional biomechanics of the spine. Kinematics and kinetics of the human spine. Biomechanics of scoliosis, trauma, instability, pain, and orthotics. Mechanics and design of surgical implants.

641 SOFT CONNECTIVE TISSUE BIOMECHANICS
Prerequisites: 390:561 or equivalent; 4300:407 or equivalent; or permission. Physical properties and functional biomechanics of ligament, tendon, joint capsule insertion, myodystrophic junction, articular cartilage and meniscus. The mechanics of injury, repair, and replacement for accelerated repair and improved function.

642 HARD CONNECTIVE TISSUE BIOMECHANICS
Prerequisites: 390:561 or equivalent; 4300:407 or equivalent; or permission. Physical properties and functional biomechanics of bone. The biology and mechanics of fracture and fracture healing. Mechanics of external and internal fixators. Total joint implants and reconstruction techniques.

645 MUSCLE MECHANICS AND OPTIMIZATION
Prerequisite: Graduate standing in the College of Engineering or by permission. Human body joint kinetics, muscle mechanics and modeling. The principles of optimization as applied to muscle forces, along with muscle anatomy and physiology.

645 MECHANICS IN PHYSIOLOGY AND MEDICINE
Prerequisites: 4600:390 and 4300:202 or equivalent. Blood rheology, mechanics of microcirculation, finite deformation of soft tissues, mechanics of blood and lymph circulation, cilia, kinematics and kinematics of orthopedic joints. Clinical applications.

647 KINEMATICS OF THE HUMAN BODY
Prerequisites: 4600:321 or equivalent, graduate standing in the College of Engineering or by permission. Analytical methods used to model and quantify human body motion. Three-dimensional kinematics, joint coordinate systems, functional anatomy, segment center of mass and joint centers.

650 CAROTID DYNAMICS
Prerequisites: 3100:561, 562, or equivalent. Physical principles of flow in the carotid circulation. Prerequisites: 562 or equivalent. Cardiovascular disease conditions, instrumentation techniques (both invasive and noninvasive) used for diagnosis. Direct interaction with active clinical laboratories.

652 CARDIOVASCULAR THERAPEUTIC TECHNIQUES
Prerequisite: 651. Cardiovascular therapeutic devices and procedures for correction of congenital defects, valve failure, heart and arterial bypass grafting and less-invasive catheter-based
653 TRANSPORT PHENOMENA IN BIOLOGY AND MEDICINE 3 credits
Prerequisites: 4200/321, 322 or 4600/390, 315 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 4 credits
Coursework: biomaterials laboratory Material use in biological applications. Effect of physiological environment and sterilization on materials. Controlled and uncontrolled degradation. Effect of materials on soft tissue, hard tissue and blood. Laboratory experiments using materials designed for biomedical use and demonstrations of biomedical materials interactions.

663 ARTIFICIAL ORGANS 3 credits
Prerequisites: graduate standing in the College of Engineering or permission of instructor. Study of the rationale for the prospective of research aspects required for the design and variety of artificial organs, with emphasis on the artificial 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, neuromuscular, and immune system, 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 contraindications, optimization techniques, government regulations, and legal liability.

697 SPECIAL TOPICS IN BIOMEDICAL ENGINEERING (May be repeated) Specialized areas of study as defined by the instructor.

698 MASTER’S RESEARCH 16 credits
Prerequisites: Permission of advisor. (May be repeated.) Research on a suitable topic in biomedicine culminating in a master’s thesis.

699 MASTER’S THESIS 16 credits
Prerequisites: permission of advisor. (May be repeated) Supervised research in the specific area of biomedical engineering.

730 FABRICATION AND DESIGN OF MICROSENSORS 3 credits
Sensors principles, fabrication and engineering design of microsensors for diagnostic, monitoring, and analytical biomedical 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 1-15 credits
(May be repeated) Prerequisite: Approval of the dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.

899 DOCTORAL DISSERTATION 1-15 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.

740 RESEARCH DESIGN 3 credits
Prerequisite: 740. Emphasis on selecting, developing, and administering common data collection methods in education and social science research including standardized tests, inventories, questionnaires, focus groups, and content analysis.

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630 TOPICAL SEMINAR IN COMPUTER-BASED EDUCATION 3 credits
(May be repeated for a total of six credits) Prerequisite: 420/520. Advanced topics related to development, implementation, research and evaluation in C.B.E. Student involvement emphasized, required. Knowledge of programming language recommended.

631 INSTRUCTIONAL DESIGN 3 credits
The theory and practice of Instructional Design (ID) involves a systematic approach to the design, development, evaluation, and implementation of effective instructional systems.

632 WEB-BASED LEARNING SYSTEMS 3 credits
The purpose of this course is to help students become proficient in the design and development of web-based learning systems for training and education.

633 HYPERMEDIA 3 credits
The purpose of this course is to introduce students to a variety of Hypermedia tools (both web-based and CD-ROM). Students will also be introduced to a variety of authoring paradigms.

634 VISUAL LITERACY 3 credits
This course will combine a basic understanding of design principles and concepts with research findings on the use of visuals in the learning process.

635 EMERGING TECHNOLOGIES FOR INSTRUCTION 3 credits
This course examines emerging technologies (hardware, software, systems) that support teaching/learning, and methods for assessing the utility of any technology used for instructional purposes.

636 TOPICAL SEMINAR IN EDUCATIONAL TECHNOLOGY 3 credits
Topics for this course vary from year to year. Current trends and practices in educational technology: computer authoring software, tools and processes for instructional video production, presentation systems.

637 PHILOSOPHIES OF EDUCATIONAL TECHNOLOGY 3 credits
Introduction to students to the many philosophies of educational technologies and the manner in which information technology especially influences our pedagogy.

638 INTEGRATING AND IMPLEMENTING TECHNOLOGY 3 credits
This course is designed to equip teachers with tools, resources, and strategies to support the integration and implementation of effective use of technology in the classroom.

639 STRATEGIES FOR ON-LINE LEARNING 3 credits
This course will prepare instructors to make the transition from teaching in a physical classroom to facilitating learning in an increasingly virtual classroom.

640 TECHNIQUES OF RESEARCH 3 credits
Research methods and techniques commonly used in education and behavioral sciences; preparation of research reports. Includes library, historical, survey and experimental research and data analysis.

642 TOPICAL SEMINAR IN MEASUREMENT AND EVALUATION 3 credits
(May be repeated for a total of six credits) Topics of current interest and need will be emphasized. The student will develop extended competence with contemporary measurement and evaluation techniques.

646 MULTICULTURAL COUNSELING 3 credits
Prerequisites: 5800/584 or permission of instructor. An introduction to multicultural counseling theories and research necessary to work with culturally diverse people.

647 INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN 3 credits
An exploration of individual and family development. Emphasis will be placed on understanding the relationship between the individual and his/her family.

695 FIELD EXPERIENCE: MASTER’S 1-3 credits
Prerequisites: permission of department chair and instructor. Area determined in accordance with student’s program and program goals.

696 MASTER’S TECHNOLOGY PROJECT 2-9 credits
Prerequisites: permission of advisor. Prepare and test a technology learning package that includes any combination of text, graphics, sound, color, motion, and the provision for interaction by the target students.

697 INDEPENDENT STUDY 1-10 credits
(May be repeated for a total of six credits) Prerequisites: permission of department chair and instructor. Specific area of study determined in accordance with student’s program and professional goals.

698 MASTER’S PROBLEM 2-4 credits
Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with problems in educational research.

699 MASTER’S THESIS 4-6 credits
Prerequisites: permission of department chair and instructor. In-depth study of research problem within humanistic and behavioral foundation.

701 HISTORY OF EDUCATION IN AMERICAN SOCIETY 3 credits
Prerequisites: 4200:321, 322 or 4600:310, 315 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.

703 SEMINAR: HISTORY AND PHILOSOPHY OF HIGHER EDUCATION 3 credits
Prerequisite: permission of advisor. History and philosophy related to genesis and development of higher education in the Western world, with special emphasis given to higher education’s development in United States and other countries.

705 SEMINAR: SOCIAL-PHILOSOPHICAL FOUNDATIONS OF EDUCATION 3 credits
(May be repeated for a total of six credits) Prerequisite: 600 or equivalent. Inquiry into select ed sociological, economic, and philosophic factors affecting educational development in the United States and other countries.

710 ADULT LEARNING, DEVELOPMENT, AND MOTIVATION 3 credits
Emerging theories of intelligence; theories of adult learning; stage theories of adult cognitive, conceptual and moral development; life cycle development; adult life transitions.

721 LEARNING PROCESSES 3 credits
Study of principles underlying classroom learning processes with particular emphasis on teaching as means of modifying pupil behavior; cognitive, motor, social and affective development.

723 TEACHER BEHAVIOR AND INSTRUCTION 3 credits
Prerequisite: 600. Intensive survey of theoretical and empirical literature involving teacher behavior and perceptions of instruction. A student reports on theory, empirical research and applications in areas of individual differences.

740 RESEARCH DESIGN 3 credits
Prerequisites: 420/520. Advanced topics related to design and data collection methods, and ethical and legal issues.

741 DATA COLLECTION METHODS 3 credits
Prerequisites: 420/520. Emphasis on selecting, developing, and administering common data collection methods in education and social science research including standardized tests, inventories, questionnaires, focus groups, and content analysis.

EDUCATIONAL FOUNDATIONS AND LEADERSHIP 5100:

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
Prerequisites: graduate standing in instructional technologies in educational and business settings. Segments of the course are offered in an online format.

590,1,2 WORKSHOP Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

600 PHILOSOPHIES OF EDUCATION 3 credits
Examination of basic philosophical problems underlying broad educational questions, with particular emphasis on modern society and education.

602 COMPARATIVE AND INTERNATIONAL EDUCATION 3 credits
Comparative study of selected national school systems with reference to forces that shape them and their philosophies. Different theoretical approaches used in study of comparative education are also investigated.

604 TOPICAL SEMINAR IN THE CULTURAL FOUNDATIONS OF EDUCATION 3 credits
(May be repeated for a total of six credits) Issues and subjects related to study of educational institutions, theories and/or ideas. Different topics will be offered from section to section.

614 PLANNING FOR TECHNOLOGY 3 credits
Prerequisites: 420 or permission of instructor. Emphasizes the process of planning for the use of technology in the school. Includes plans for faculty support and alternative arrangements of computer set up.

629 PSYCHOLOGY OF INSTRUCTION FOR TEACHING AND LEARNING 3 credits
Prerequisites: 1020/11 or equivalent. Current theories and research in the areas of cognition and learning, development, and motivation that underlay approaches to teaching in any context.

629 FUNDAMENTAL IN-LEARNING 1 credit
The purpose of this course is to explore the philosophy of e-learning will be explored through examination of associated trends and issues. Establishment of a learning community will be addressed in the face-to-face component. E-learning course/curriculum overviews will be discussed.
742 STATISTICS IN EDUCATION 3 credits
Statistical methods and techniques used in educational measurement and in educational evaluation; emphasis on hypothesis testing.

743 ADVANCED EDUCATIONAL STATISTICS 3 credits
Prerequisite: 341. Emphasis on interpreting advanced statistics in education and in the social sciences.

798 RESEARCH PROJECT IN SPECIAL AREAS 1/2 credits
Prerequisite: permission of department chair and instructor. Critical and in-depth study of specific problem in educational foundations.

801 RESEARCH SEMINAR 3 credits
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 3 credits
(Hours limited to 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:

591, 3 WORKSHOP 1/2 credits
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

601 PRINCIPLES OF EDUCATIONAL ADMINISTRATION 3 credits
Prerequisite: 510.6040. A perspective of educational leadership and the context in which it operates, with emphasis on the processes, tasks, roles and relationships involved. Field based research required.

602 MANAGEMENT OF PHYSICAL RESOURCES 3 credits
A comprehensive view of the principles, practices, and new dimensions involved in the planning and management of educational facilities.

603 MANAGEMENT OF HUMAN RESOURCES 3 credits
An orientation to the major dimensions of the personnel function.

604 SCHOOL/COMMUNITY RELATIONS 3 credits
Prerequisites: 601 and 510.6040. An analysis of the principles, practices, and methods that facilitate the interaction between the school’s internal and external publics. Field based research required.

605 EVALUATION IN EDUCATIONAL ORGANIZATIONS 3 credits
Prerequisites: 601 and 510.6040. An examination of the general concepts, models, practical applications and considerations involved in the evaluation of educational organizations.

607 SCHOOL LAW 3 credits
Prerequisites: 601 and 510.6040. An examination of the legal principles underlying the administration of the school in the United States as reflected in statutory provisions, court decisions and administrative orders. Field based research required.

608 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.

609 PRINCIPLES OF CURRICULUM DEVELOPMENT 3 credits
Prerequisites: 601 and 510.6040. This course is intended to help the student develop the performance competencies necessary to engage in curriculum decision making.

610 PRINCIPLES OF CURRICULAR SUPERVISION 3 credits
Prerequisites: 601 and 510.6040. An introduction to the school function that improves instructional planning and development of college-level courses.

613 ADMINISTRATION OF PUPIL SERVICES 3 credits
Prerequisites: 601 and 510.6040. 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.

620 THE PRINCIPALSCHIP 3 credits
An examination of leadership as it relates to the development and maintenance of a school climate that contributes to teaching and learning.

697 INDEPENDENT STUDY 1/2 credits
Prerequisites: permission of advisor for the independent study. Area of study determined by student’s needs. (May be repeated for a total of six credits.)

704 ADVANCED PRINCIPLES OF CURRICULAR ADMINISTRATION 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 frequently assessed and the process adopted by educational institutions.

705 DECISION MAKING IN EDUCATIONAL ADMINISTRATION 3 credits
Decision making is portrayed as a central function of the educational administrator with a unit presentation of the theoretical, practical and research practice of decision making.

707 THE SUPERINTENDENCY 3 credits
An orientation to the superintendent’s role and an examination of the strategies for dealing with the major relational and functional aspects of the superintendency.

708 ECONOMICS IN EDUCATION 3 credits
Issues related to the changing marketplace of public, private schooling and higher education institutions as they relate to an urban environment.

709 ADVANCED PRINCIPLES OF CURRICULAR 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.

710 ADVANCED SCHOOL LAW 3 credits
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.

716 ADVANCED EVALUATION OF EDUCATIONAL ORGANIZATIONS 3 credits
An evaluation course to help educational leaders plan and assess educational priorities and outcomes.

720 TOPICAL SEMINAR: EDUCATIONAL ADMINISTRATION 1/2 credits
(Open only to graduate students.) Prerequisite: permission of instructor. Specialized study in selected areas of concern to students, practicing administrators in public, private educational institutions, organizations.

730 RESIDENCY SEMINAR 3 credits
An independent research in administration and educational administration theory.

731 RESIDENCY SEMINAR 3 credits
Prerequisite: 601. Focus on recent research in administration and educational administration theory.

742 PUBLIC AND MEDIA RELATIONS IN EDUCATIONAL ORGANIZATIONS 3 credits
A course in educational public relations intended to help educational leaders facilitate the development of common perceptions about school issues with multiple constituencies.

743 THEORIES OF EDUCATIONAL SUPERVISION 3 credits
Extends 610, including supervisory models, staff development, and the organizational environment and its impact on educational supervision.

745 SEMINAR: URBAN EDUCATIONAL ISSUES 3 credits
A study of the linkages between educational organizations and their social contexts, particularly as they relate to educational change. Research project required.

746 POLITICS OF EDUCATION 3 credits
Emphasis given to recent efforts to bring about reform at all levels of the educational enterprise and to conceptual and research perspectives and findings.

795, 6 INTERNSHIP IN EDUCATIONAL ADMINISTRATION 3-6 credits
Students are required to successfully complete a two-semester internship in a school district chosen by the student and his/her advisor.

897 INDEPENDENT STUDY 3 credits
Prerequisites: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in education. (May be repeated for a total of six credits.)

999 DOCTORAL DISSERTATION 3-6 credits
Prerequisite: permission of advisor. Specific research problem that requires student to apply research skills and techniques to the problem being studied.

HIGHER EDUCATION ADMINISTRATION 5190:

500 INTRODUCTION TO THE STUDY OF HIGHER EDUCATION 3 credits
Introductory examination of roles, functions, issues, trends, and topics of institutions of higher education.

515 ADMINISTRATION IN HIGHER EDUCATION 3 credits
In-depth study of administrative roles, functions, knowledge and skills requirements, and administrative behavior. Trends in administrative theory and application also explored.

521 LAW AND HIGHER EDUCATION 3 credits
Legal aspects of higher education, sources of law and authority presented; impact on, interaction with, and implications of the administration of higher education discussed.

526 INTERNSHIP IN ACADEMIC ADMINISTRATION 3 credits
May be repeated. Practical experience in an academic administration setting.

528 STAFF SERVICES AND HIGHER EDUCATION 3 credits
Examination of issues related to the delivery and evaluation of student services in higher education.

527 THE AMERICAN COLLEGE STUDENT 3 credits
Introduction to the sociopsychological literature concerning the impact of college on students and student development theory.

530 HIGHER EDUCATION CURRICULUM AND PROGRAM PLANNING 3 credits
Study of curriculum planning at the college and university level, factors influencing curriculum design, theories and practices of curricular change and innovation also explored.

590 WORKSHOP 3 credits
May be repeated for a total of six credits. Emphasizes the development and demonstration of leadership behavior appropriate to the college or university setting.

600 ADVANCED ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION 3 credits
May be repeated. Prerequisite: permission. Examination of contemporary and future perspectives and issues related to the administration of Higher Education Institutions, including those that pose particular concern to students.

601 INTERNSHIP IN HIGHER EDUCATION 1/2 credits
Prerequisite: permission; corequisite: 600. Intensive work experience in operations of an institution of higher education, related to student’s own program of studies and professional goals.

602 INTERNSHIP IN HIGHER EDUCATION SEMINAR 1 credit
May be repeated for a total of six credits. Prerequisites: permission; corequisite: 601. To be taken in conjunction with internship for synthesis of problems encountered in internship experience and to provide the opportunity to share ideas and experiences from various areas of higher education internship placement.

603 FINANCE AND HIGHER EDUCATION 3 credits
Facilitates student’s understanding of how American Higher Education is financed, identifies financial methodologies used, and political and economic impacts and processes involved.

626 ORGANIZATION AND POLICY DEVELOPMENT IN HIGHER EDUCATION 3 credits
Familiarizes student with the policymaking process as it related to higher education. Theoretical approaches explored, internal and external policy actors identified, and implementation issues examined.

635 INSTRUCTIONAL STRATEGIES AND TECHNIQUES FOR THE COLLEGE INSTRUCTOR 3 credits
Selected topics in instructional theory, techniques and strategies which are appropriate to instructional planning and development of college-level courses.

645 INDEPENDENT STUDY IN HIGHER EDUCATION 1/2 credits
Selected areas of independent investigation in an area of higher education as determined by the advisor and student in relation to student’s academic needs and career goals.

POSTSECONDARY TECHNICAL EDUCATION 5400:

500 POSTSECONDARY LEARNER 3 credits
Describes characteristics of the postsecondary learner; studies issues, factors, and strategies pertinent to successful facilitation of learning in a variety of postsecondary learning environments. Delivered in web-based format.

501 LEARNING WITH TECHNOLOGY 3 credits
An overview of information and communication technologies used and applied in workplace education and training by practitioners/learners for learning, research, and evaluation. Delivered in web-based format.

505 WORKPLACE EDUCATION FOR YOUTH AND ADULTS 3 credits
Prerequisite: 501 or permission of instructor. History and operations of current workplace education for youth and adults. Includes study of social, economic, and political influences that stimulate growth and expansion of workplace education.

515 TRAINING IN BUSINESS AND INDUSTRY 3 credits
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 supervision positions.
520 POSTSECONDARY INSTRUCTIONAL TECHNOLOGY 3 credits
Experiences in using, developing, and evaluating instructional technology and media used in workforce development settings. Delivered in web-based format.

530 SYSTEMATIC CURRICULUM DESIGN FOR POSTSECONDARY INSTRUCTION 3 credits
Prerequisites: 501 and 500:520 or permission of instructor. Development of postsecondary courses using systematic instructional design principles and instructional technologies. Delivered in web-based format.

535 SYSTEMATIC INSTRUCTIONAL DESIGN IN POSTSECONDARY EDUCATION 3 credits
Prerequisites: 501, 530, 500:520, admission to program, or permission of instructor. Best practice instructional standards for postsecondary institutions. Emphasis on instructional design and learner outcome assessments. Delivered in web-based format.

541 EDUCATIONAL GERONTOLOGY SEMINAR 3 credits
Designs and prepares for field of gerontology or preparing for a specialization in educational gerontology, including person responsible for development and implementation of courses, seminars, occupational training programs and workshops for older people.

586 SPECIAL TOPICS: WORKSHOP 1-3 credits
May be repeated for a maximum of 6 credits with a change in topic. Prerequisite: permission of the instructor. Group study of special topics of critical, contemporary concern in workforce education/training.

590, 591, 592 WORKSHOP 1-3 credits each
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of custom units.

594 EDUCATIONAL INSTITUTES 1-4 credits
Special courses designed as in-service upgrading programs, frequently provided with the support of educational institutions.

600 SURVEY OF POSTSECONDARY INSTITUTIONS 3 credits
Prerequisite: 501 or permission of instructor. Introduces students to the nature, purpose, philosophy of postsecondary institutions. Includes an examination of two-year colleges, technical schools, proprietary schools, and other higher education institutions offering courses at the postsecondary level. Delivered in web-based format.

605 ADVANCED SYSTEM DESIGN: NEEDS ASSESSMENT AND EVALUATION 3 credits
Prerequisites: 501, 530, 535, and 541:520. Analysis of the institutional design of workforce education and training and supporting research in effective performance-based program design, evaluation, and outcome processes.

620 POSTSECONDARY TEACHER LEADERSHIP 3 credits
Prerequisites: 501, 530, 535, or permission of instructor. An examination of the role of supervisor of secondary education in the design, facilitation and evaluation of postsecondary institutions, professional development, as well as related leadership and management issues.

660 POSTSECONDARY DISTANCE LEARNING 3 credits
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.

661 CURRENT ISSUES IN HIGHER EDUCATION 3 credits
May be repeated with change in topic. 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.

690 INTERNSHIP IN POSTSECONDARY EDUCATION 3 credits
Prerequisites: advisor and supervisor permission and completion of all required Technical Education coursework. Teaching or curriculum development under supervision from the University and the learning organization. Includes a seminar and portfolio development.

695 FIELD EXPERIENCE: MASTER’S 1-6 credits (30-90 field hour)
Prerequisites: permission of advisor and supervisor of field experience. On-the-job educational experience related to student’s program of studies. Credit/noncredit.

696 INDEPENDENT STUDY 3 credits
(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.

698 MASTER’S PROBLEM 3 credits
(May be repeated for a total of six credits.) Prerequisite: permission of advisor. An in-depth study of a specific or curricular problem in workforce education or training. Student must be able to demonstrate critical, analytical, and problem-solving skills.

699 MASTER’S THESIS 3 credits
(May be repeated for a total of six credits.) Prerequisite: permission of advisor. Opportunity to conduct research on a problem in workforce education or training. Student must be able to demonstrate needed analytical, evaluation, and basic research skills. Credit/noncredit.

CURRICULAR AND INSTRUCTIONAL STUDIES 5500:

522 CONTENT AREA LITERACY 3 credits
Examines instructional strategies for constructing meaning in content subjects such as, science, social studies, mathematics using print and electronic texts.

524 TEACHING READ TO CULTURALLY DIVERSE LEARNERS 3 credits
Prerequisite: 500:337 or permission of instructor. Knowledge, skills and attitudes to employ effective methods of teaching reading to diverse populations. Learners whose language patterns are nonstandard.

525 PRINCIPLES OF BILINGUAL/MULTICULTURAL EDUCATION 3 credits
An introduction to the interaction of the linguistic, cultural, and sociolinguistic bases of bilingual/multicultural education. Legislation, court decisions, program implementation included.

541 TEACHING LANGUAGE LITERACY TO SECOND LANGUAGE LEARNERS 3 credits
Prerequisites: permission of instructor. Course applies methodologies for teaching reading, language arts in the bilingual/multicultural classroom. The bilingual student’s native language and culture are stressed.

542 TEACHING MATHEMATICS, SOCIAL STUDIES AND SCIENCE TO BILINGUAL STUDENTS 3 credits
Prerequisites: elementary education majors, 5500:333, 336, 338; secondary education majors, 5500:331; science majors in the bilingual/multicultural classroom. Course applies methodologies for teaching mathematics, science, social studies in the bilingual/multicultural classroom. The bilingual student’s native language and culture are stressed.

543 TECHNIQUES FOR TEACHING ENGLISH AS A SECOND LANGUAGE IN THE BILINGUAL CLASSROOM 3 credits
Prerequisites: permission of instructor. Course includes teaching language skills to Limited English Proficient students in grades K-12, administration of language assessment tests, selection and evaluation of instructional materials.

565 VOCATIONAL BUSINESS EDUCATION 2 credits
Prerequisite: senior status or permission. Principles of program construction, organization, implementation, evaluation, improvement, and development of program guides for both intensive and cooperative vocational business education.

570 MULTICULTURAL EDUCATION IN UNITED STATES 3 credits
Inquiry into multicultural dimensions of American education. Comparisons of urban, suburban, and rural schools are made in a web-based format.

571 CHARACTERISTICS OF CULTURALLY DIVERSE POPULATIONS 3 credits
Characteristics of culturally diverse populations with focus on youth in low-income areas. Emphasis on cultural, social, economic and educational considerations and their implications.

572 PREPARATION FOR TEACHING CULTURALLY DIVERSE POPULATIONS 3 credits
Prerequisite: 500:520 or instructor permission. Focus on developing learner competency in the use of instructional technologies to enhance both the instructor’s personal and professional productivity.

590, 591, 592 WORKSHOP 1-3 credits each
Workshop for educators to improve teaching skills in a specific area of the curriculum. (May be repeated for a maximum of 6 credits.)

594 EDUCATIONAL INSTITUTES 1-4 credits
Special courses designed as in-service upgrading programs. Frequently provided with the support of national foundations.

600 CONCEPTS OF CURRICULUM AND INSTRUCTION 3 credits
A study of the underlying research and theory of curriculum and instruction with special attention to educational decision in the metropolis setting.

605 SEMINAR IN TRENDS AND ISSUES IN CURRICULUM AND INSTRUCTION 3 credits
Prerequisite: 500: 600. A study of recent research and theory in curriculum and instruction with special attention to applications to educational decision making.

610 EDUCATION AND THE YOUNG CHILD 3 credits
Current trends in education with emphasis on young children from birth through five years.

615 PHILOSOPHY AND ORGANIZATION OF MIDDLE SCHOOLS 3 credits
Philosophy, theory, research, and exemplary organizational, assessment, and evaluation components of middle level education.

616 MIDDLE SCHOOL CURRICULUM AND INSTRUCTION 3 credits
Theories, research, and exemplary practices focusing on middle school curriculum and instruction.

617 ELEMENTARY AND SECONDARY LICENSURE SEMINAR 3 credits
Prerequisites: admission to teacher education and the Master’s with Licensure Program. This course should be taken at the beginning of the Master’s with Licensure program as an introduction to curriculum and the programmatic aspects of teaching.

618 ADVANCED INSTRUCTIONAL TECHNIQUES 3 credits
Prerequisite: 617. Methods of teaching a particular area of the middle and secondary school curriculum for students in the Master’s with Licensure program.

619 INSTRUCTIONAL AND MANAGEMENT PRACTICES 3 credits
Prerequisites: 617 and admission to teacher education and the Master’s with Licensure Program; composite 600. Students learn to use teaching models and management strategies to become effective in instructors. Also included are educational issues that relate to effective instruction, management, and interaction.

620 LITERATURE FOR YOUNG CHILDREN 2 credits
Literature for children ages two through six examined in depth in terms of value and purpose; methods and techniques for presenting it to children; variety and quality of books available.

621 ADVANCED INSTRUCTIONAL TECHNIQUES: MODERN LANGUAGES P/B 3 credits
Prerequisite: 617. For permission of instructor. Focus is on theories of language acquisition, models of instruction suited to teaching foreign languages and cultures in the elementary school P/B, and strategies that promote appropriate levels of language competence and proficiency for young learners.

622 CHILDREN’S LITERATURE IN THE CURRICULUM 3 credits
Examination of literary genre with emphasis on methods and techniques for presenting literature to children in preschool, elementary, and middle grades.

625 CONTEMPORARY ISSUES IN LITERACY INSTRUCTION 3 credits
Course explores current research in reading and writing as constructive processes of meaning-making.

627 SPECIAL TOPICS IN LITERACY EDUCATION 3 credits
(May be repeated for a maximum of nine credits.) In-depth examination of current critical and controversial topics in the field of reading.

628 LITERACY ASSESSMENT PRACTICUM 3 credits
Prerequisite: permission of instructor. Laboratory experience within classroom, small group and individuals. A student diagnosces, implements interventions, and follows prescriptive reading improvement. (May be repeated for a maximum of 6 credits.)

629 READING PROGRAMS IN SECONDARY SCHOOLS 3 credits
For all subjects not taught with and without previous study in the teaching of reading. Materials, class organization and procedures for developing reading improvement programs, for all secondary school and college students.

635 SEMINAR IN TEACHING FOREIGN LANGUAGES 3 credits
For all subjects not taught with and without previous study in the teaching of reading. Materials, class organization and procedures for developing reading improvement programs, for all secondary school and college students.

645 THEORY AND PRACTICE IN ELEMENTARY SCHOOL MATHEMATICS 3 credits
A critical analysis of contemporary science curriculum and instructional methods for the young learner with particular attention to constructivism and national standards.

651 SECONDARY SCIENCE CURRICULUM AND INSTRUCTION 3 credits
A critical analysis of the theoretical bases of science curriculum and instructional methods in science for early adolescent and adolescent learners.

669 FIELD EXPERIENCE: COLLOQUIUM 1 credit
Prerequisite: admission to student teaching. Corequisite: 694. In-service instructional experience in the 7-12 classroom to apply theory and research to practice.

693 FIELD EXPERIENCE: MASTER’S WITH LICENSURE 1-3 credits
Prerequisite: admission to student teaching. In-service instructional experience in the 7-12 classroom to apply theory and research to practice. (May be repeated for a maximum of 6 credits.)
590,1,2 WORKSHOP Practical, intensive, and concentrated involvement with current curricular practices in areas of interest and professional development.

560 BIOMECHANICS APPLIED TO SPORT AND PHYSICAL ACTIVITY T raining future professionals in an integrated approach to qualitative diagnosis of motor skills for a variety of professional settings. Required clinical/field experiences.

561 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 evaluation.

562 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.

563 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.

564 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.

565 APPLICATION OF MOTOR ACTIVITY AND EXERCISE Functions of body systems and physiological effects of exercise. Laboratory experiences, lectures, discussions.

566 STATISTICS: QUANTITATIVE AND QUALITATIVE METHODS 3 credits

Prerequisite: 300:660. Research methodology, statistics application and interpretation, use of computers and appropriate software as they relate to various disciplines in the area of physical activity.

569 MOTIVATIONAL ASPECTS OF PHYSICAL ACTIVITY 3 credits

Analysis of factors influencing motivation of motor performance with emphasis on competitive sport, audience effects, aggression.

601 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

Prerequisite: Permission of advisor. In-depth research investigation. Student must demonstrate critical and analytical skills in dealing with a problem in physical education.

680 SPECIAL TOPICS IN HEALTH AND PHYSICAL EDUCATION 2-4 credits

Prerequisite: Permission of advisor. In-depth study of special topics in health and physical education and sports medicine.

695 FIELD EXPERIENCE: MASTER’S Prerequisites: Permission of advisor. Participation in a work experience related to physical education. The experience may not be part of current position. Documentation of project required.

696 MASTER’S PROBLEM 1-3 credits

Prerequisite: Permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in physical education.

699 MASTER’S THESIS 1-6 credits

Prerequisite: Permission of advisor. In-depth investigation of a particular area of concentration in education. (May be repeated.)

697 INDEPENDENT STUDY 2-6 credits

Prerequisite: Permission of advisor and department chair. In-depth study of a research problem pertinent to student’s area of concentration in education. (May be repeated.)

698 MASTER’S PROBLEM 2-4 credits

Prerequisite: Permission of advisor. In-depth analysis of current practices or problems related to physical education. Documentation of the study required.

699 MASTER’S PROJECTS 1-6 credits

Prerequisite: Permission of advisor and department chair. In-depth analysis of a research problem in curriculum and instruction. (May be repeated.)

611 RESEARCH AND ANALYSIS OF EFFECTIVE TEACHING IN PHYSICAL EDUCATION 3 credits

Prerequisite: Permission of advisor. In-depth research investigation. Student must demonstrate critical and analytical skills in dealing with a problem in physical education.

612 COMPUTER ASSISTED DESIGN 3 credits

Prerequisite: 310:200, 201, 202 and 550:250. Designed to address the upper portions of the musculoskeletal system in comprehensive detail. Includes articulations, synovial, histology, neuro- logical integration with lab and practical experiences.

512 COMPUTER ASSISTED DESIGN 3 credits

Prerequisite: 310:200, 201, 202 and 550:250. Designed to address the upper portions of the musculoskeletal system in comprehensive detail. Includes articulations, synovial, histology, neuro- logical 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

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.

524 SPORT LEADERSHIP 3 credits

This course will be designed to introduce the students to current issues related to leadership, management, and supervision. Course will also examine current sport leadership research as well as the fundamental governance structure of amateur and professional sport organizations.

536 FOUNDATIONS AND ELEMENTS OF ADAPTED PHYSICAL EDUCATION 3 credits

Principles, components, and strategies necessary in providing motor activities for handicapped students vis-à-vis application of a neo-developmental model and alternative methods. Three hour lecture.

540 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.

541 ADVANCED ATHLETIC INJURY MANAGEMENT UPPER EXTREMITY 4 credits

Prerequisites: 300:200, 201, 202 and 550:250. The course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical knowledge relevant to the upper extremity.

542 PRACTICUM IN TEACHING AND PHYSICAL EDUCATION 3 credits

Prerequisites: 310:200, 201, 202 and 550:250. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical knowledge relevant to the upper extremity.

551 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

552 PRACTICUM IN OUTDOOR EDUCATION 3 credits

Prerequisites: 310:200, 201, 202 and 550:250. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

553 ASSESSMENT AND EVALUATION IN PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

554 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

555 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

556 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

557 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

558 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

559 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.

560 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)

Prerequisite: Permission of advisor. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathways of the upper extremity.
HEALTH EDUCATION 5570:  6 credits
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 COMMERCIAL SOCIAL WELFARE  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 instructor. Planning, organization, use of instructional resources and delivery of health education content and teaching processes (pre-K-12).

560 PRACTICUM IN HEALTH EDUCATION  2 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:  3 credits
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.

560 WORKSHOP  1 credit
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

600 SEMINAR IN COUNSELING  1 credit
Prerequisite: 653 or 651 permission. The study and practice of selected counseling techniques that can be applied by teachers in working with students, parents and colleagues.

610 COUNSELING SKILLS FOR TEACHERS  3 credits
Prerequisite: 651 or 653 permission. The study and practice of selected counseling techniques that can be applied by teachers in working with students, parents and colleagues.

610 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.

620 INTRODUCTION TO PLAY THERAPY  1 credit
Prerequisite: permission. An introduction to play therapy from a child-centered perspective. Students will develop competencies in child-centered play therapy.

623 MARRIAGE AND FAMILY COUNSELING/ETHICS AND PROFESSIONAL IDENTITY  3 credits
Prerequisite: admission to Marriage and Family Counseling/Therapy track. An introduction to marriage and family counseling/therapy as a distinct profession and about it corresponding ethical codes.

631 ELEMENTARY/SECONDARY SCHOOL COUNSELING  3 credits
Introduction to school counseling; examination of counseling skills in daily practice.

635 COMMUNITY COUNSELING  3 credits
Overview of community and college counseling services; their evaluation, philosophy, organization and administration.

642 COUNSELING YOUTH ADOLESCENTS  3 credits
Prerequisite: graduate student in counseling or related field. The examination of the physical, cognitive, emotional, and social developmental processes of the adolescent as these affect learning and performance in a diverse population will be addressed.

644 COUNSELING THEORY AND PHILOSOPHY  3 credits
Examination of major counseling theories and systems: humanistic and existential theories, psychoanalytic and technical and dimensional differences.

697 INDEPENDENT STUDY  1-10 credits
Prerequisites: permission of advisor and department chair. Placement in selected setting for purposes of acquiring experiences and/or demonstration skills related to student’s counseling program.

698 FIELD EXPERIENCE: MASTER’S  1-3 credits
Prerequisites: permission of advisor and department chair. Specific area of investigation determined in accordance with student needs.

702 ADVANCED COUNSELING PRACTICUM  4 credits
May be repeated for a total of 12 credits. Prerequisite: 675, 720, 710. Supervised counseling experience in selected settings.

708 SUPERVISION IN COUNSELING PSYCHOLOGY I, II  4 credits each
Prerequisite: doctoral residency or permission. Instruction and experience in supervising graduate student in counseling.

709 INTRODUCTION TO COUNSELING PSYCHOLOGY  2 credits
Prerequisite: standing in the Collaborative Program in Counseling Psychology. Introductory historical foundations of and recent developments in counseling psychology, with an emphasis on contemporary research literature in the field.

710 THEORIES OF COUNSELING AND PSYCHOTHERAPY  4 credits
Prerequisite: 650 or 653 or department permission. An examination of theories and concepts of major systems of counseling and psychotherapy.

711 VOCATIONAL BEHAVIOR  4 credits
Prerequisite: 650 or 653 or permission. Study of vocational behavior and vocational counseling. Topics include major theories on vocational behavior, empirical research on these theories, applied work in vocational counseling and applied research.

712 PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING  4 credits
Prerequisites: 630 or standing in school psychology, and instructor’s permission. History, principles and methodology of intelligence testing, supervised practice in administration, scoring and interpretation of individual intelligence tests for children and adults.

713 PROFESSIONAL, ETHICAL AND LEGAL ISSUES IN COUNSELING PSYCHOLOGY  4 credits
Prerequisites: 630 or permission of instructor. Examines ethical and legal issues in the counseling and psychotherapy process.

714 OBJECTIVE PERSONALITY EVALUATION  4 credits
Prerequisite: 7160 or 7162 or permission of instructor. Study of research designs, evaluation procedures, and the use of objective instruments (MMPI, CPI, MBTI, 16PF and selected additional inventories).

715 ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY  4 credits
Prerequisite: doctoral residency or permission. Study of research on these theories, applied work in vocational counseling and applied research.

716 RESEARCH DESIGN IN COUNSELING I  3 credits
Prerequisite: doctoral residency or permission. Study of research designs, evaluation procedures, and the review of current research on these theories.

716 RESEARCH DESIGN IN COUNSELING II  3 credits
Prerequisite: doctoral residency or permission. This course is designed for doctoral students utilizing the qualitative approach for conducting research. Theory, methods, and design of qualitative inquiry are reviewed.

717 ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY  4 credits
Prerequisites: 7160 or 7162. An examination of the counseling process in diverse cultures. A critical analysis and application of research and theory in counseling diverse populations, focusing on race/ethnicity, sex/gender, sexual orientation, age, disability, and spirituality.

718 RESEARCH AND SYSTEMS IN PSYCHOLOGY  2 credits
Prerequisite: 7160. Philosophical and scientific antecedents of psychology and details of the development of systematic viewpoints in the 19th and 20th centuries.

720 TOPICAL SEMINAR: GUIDANCE AND COUNSELING  4 credits
Prerequisite: permission of instructor. A topical study with a variety of discussion, input. Staffing will be by department faculty and other professionals in counseling and related fields.

722 INTRODUCTION TO PLAY THERAPY  3 credits
Prerequisites: 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.

725 PROFESSIONAL AND LEGAL ISSUES IN COUNSELOR EDUCATION  4 credits
Prerequisite: 650 or admission to the Collaborative Program in Counseling Psychology. Study of legal issues and ethical issues in the counseling field and doctoral student identity development.

732 ADDICTION COUNSELING I: THEORY AND ASSESSMENT  3 credits
Prerequisite: admission into the Substance Abuse Counseling Program. To be taken in the first fall term upon admission. Professional and ethical issues in the counseling field and doctoral student identity development.

733 ADDICTION COUNSELING I: THEORY AND ASSESSMENT  3 credits
Prerequisite: admission into the Substance Abuse Counseling Program. To be taken in the first fall term upon admission. Professional and ethical issues in the counseling field and doctoral student identity development.
Graduate Courses

561 SPECIAL EDUCATION PROGRAMMING: EARLY CHILDHOOD MODERATE/INTENSIVE 3 credits
Prerequisites: Admission to the Early Childhood Education Teacher Preparation Program, 440/540, 450/550, and 7400:265, or permission of the instructor. Developmental patterns of young children with moderate/intensive needs (ages 3-8) and developmentally appropriate practices in programming and adaptations.

562 ASSESSMENT IN SPECIAL EDUCATION 3 credits
Prerequisites: 440/540. Preparing to select, administer and interpret formal and informal assessment procedures and use resulting data in planning educational programs for exceptional individuals.

564 ASSESSMENT AND EVALUATION IN EARLY CHILDHOOD SPECIAL EDUCATION 3 credits
Prerequisites: 440/540 and 7400:265. The assessment of children (three to eight) and their families who are at risk for disabilities or currently in special education.

567 MANAGEMENT STRATEGIES IN SPECIAL EDUCATION 3 credits
Prerequisites: 5600:210/211/220/350, 5610:440, and one of the following: 5610:441, 443, 445, 446. Content emphasizing the development of application strategies with a variety of behavior management models for the assessment of behaviors with exceptional individuals.

568 ADVANCED BEHAVIOR MANAGEMENT 3 credits
Prerequisites: 467/567. Advanced techniques for remediating problematic behavior, establishing effective repertoires and evaluating research relevant to classroom management will be covered. Behavioral theory will be stressed.

570 CLINICAL PRACTICUM IN SPECIAL EDUCATION 3 credits
Prerequisites: Teacher education experience and permission of the instructor and 403 and 488, or 487. Provides a pre-student teaching experience for students in the areas of assessment, program planning, instructional planning and presentation, classroom management, adaptations, and collaboration with parents and other educational professionals.

579 SEMINAR: INVITATIONAL STUDIES IN SPECIAL EDUCATION 1-2 credits
May be repeated for a total of four credits. Topic study with a varied array of disciplinary inputs. Staffing will be invited members of allied and contributing professions active in management of exception children.

601 SEMINAR SPECIAL EDUCATION CURRICULUM PLANNING 3 credits
Prerequisite: 440/540. Study of curriculum planning techniques unique to special education classes and services. Appropriate curriculum objectives for selected areas of instruction as well as effective organizational programs examined.

602 INSTRUCTIONAL PRACTICE IN SPECIAL EDUCATION 3 credits
Prerequisites: 467/567. Certification in an area of special education. Study of administration of supervisory practices unique to special education classes and services.

604 COLLABORATION AND CONSULTATION SKILLS FOR SPECIAL EDUCATORS 3 credits
Prerequisites: permission to graduate program in special education or permission of the instructor. Advanced consideration of the roles and responsibilities of parents, professionals and individuals with disabilities in the development and implementation of educational interventions and related issues.

605 INCLUSION MODELS AND STRATEGIES 3 credits
Prerequisites: permission to graduate program in special education. History, theory, philosophy, legislative mandates, models, strategies, curriculum modifications, methods/materials adaptations which support the inclusion of students with disabilities. Emphasis on collaboration and learning.

606 RESEARCH APPLICATIONS IN SPECIAL EDUCATION 3 credits
Prerequisites: admission to graduate program in special education and 5000:640. An examination of quantitative and qualitative research/methodology and its application to the field of special education. Applied research is an essential component of the course.

611 SEMINAR: LEGAL ISSUES IN SPECIAL EDUCATION 3 credits
Prerequisites: admission to graduate program in special education and 5100:720. Examination of legal considerations related to special education and personnel practices unique to special education classes and services.

612 SEMINAR: SOCIAL/ETHICAL ISSUES IN SPECIAL EDUCATION 3 credits
Prerequisites: admission to graduate program in special education, 611, or permission of the instructor. Special education designed to study, examine and reflect upon the social and ethical aspects of historical and current trends, issues and practices.

615 STUDENT TEACHING SEMINAR 1 credit
Prerequisites: 5000:245 and 5000:286 or permission of advisor. Taken concurrently with Student Teaching. Review and discussion of issues raised during teaching experience.

616 STUDENT TEACHING: SPECIAL EDUCATION 6 credits
Prerequisite: Permission of advisor. Directed teaching under supervision of a special education teacher and a University supervisor.

617 STUDENT TEACHING: SPEECH LANGUAGE PATHOLOGY 6 credits
Prerequisite: Permission of advisor. Directed teaching under supervision of a special teacher and a University supervisor.

619 RESEARCH PROJECT IN SPECIAL AREA (SCHOLARLY PAPER) 3 credits
Prerequisite: Cursing knowledge in master's program. An in-depth study of an identified topic in a scholarly paper.

625 FIELD EXPERIENCE: MASTER’S 1-4 credits
May be repeated for a total of eight credits. Designed to provide on-the-job experience in a field setting.

626 INDEPENDENT STUDY 1-3 credits
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.

627 MASTER’S PROBLEM 2-4 credits
Prerequisite: permission of advisor. In-depth study of a research problem in education. Students must be able to demonstrate critical and analytical skills in dealing with a problem in special education.

628 MASTER’S THESIS 4-6 credits
Thorough study and analysis in depth of an educational problem, field projects in special areas; synthesis of existing knowledge in relationship to a specific topic.

School Psychology 5620:

600 SEMINAR: ROLE AND FUNCTION OF THE SCHOOL PSYCHOLOGIST 3 credits
Prerequisite: permission of instructor. Seminar on role and function of school psychologist. The course, tailored to meet individual needs of trainees, is a consideration of professional standards of school psychology practice.

601 COGNITIVE FUNCTION MODELS FOR PRESCRIPTIVE EDUCATIONAL PLANNING 3 credits
Prerequisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.
3 credits

602 BEHAVIORAL ASSESSMENT
Prerequisite: permission of instructor. Overview of behavioral theory and its application focusing on the special role of the school psychologist as an agent of behavior change.

603 CONSULTATION STRATEGIES IN SCHOOL PSYCHOLOGY
Prerequisite: permission of instructor. A consideration of pertinent roles in the practice of school psychology as related to consultant process and with school and agency personnel, parents and children.

606 APPLICATIONS DEVELOPMENT FOR FINANCIAL SYSTEMS
Prerequisites: 601 and 6500:605. Analysis, design and development of financial and control applications, using object-oriented languages, integrated development environments (IDE), and object analysis and design methodology.

607 FINANCIAL DATA COMMUNICATIONS AND ENTERPRISE INTEGRATION
Prerequisites: 6200:601, 6500:605 and 6500:622. In-depth study of contemporary methodologies, technologies, and standards used to integrate business processes and systems, including XML and XBRL.

610 PROCESS ANALYSIS AND COST MANAGEMENT

615 ENTERPRISE RESOURCE PLANNING AND FINANCIAL SYSTEMS
Prerequisite: 601. Detailed examination of issues related to acquisition, implementation and use of financial modules in enterprise resource planning applications, with emphasis on risk assessment and mitigation.

621 CORPORATE ACCOUNTING AND FINANCIAL REPORTING I
Prerequisite: 601. An examination of generally accepted accounting principles in theory and application, as well as financial statement preparation.

622 CORPORATE ACCOUNTING AND FINANCIAL REPORTING II
Prerequisite: 621. A continuation of 620:6201 which examines generally accepted accounting principles in theory and practice, as well as financial statement preparation.

628 BASIC TAX RESEARCH
Prerequisites: completion of M.Tax foundation courses. Designed to develop basic research competence involving federal income, estate, and gift taxes.

631 CORPORATE TAXATION I
Prerequisite: completion of M.Tax foundation courses. Detailed examination of tax problems of corporations and their shareholders. Formation, distribution, redemption, liquidation and penalty taxes covered.

632 TAXATION OF TRANSACTIONS IN PROPERTY
Prerequisite: completion of M.Tax foundation courses. Explores federal tax implications of sales and exchanges and other dispositions of property.

633 ESTATE AND GIFT TAXATION
Prerequisite: completion of M.Tax foundation courses. Examines federal estate tax law and tax consequences of testamentary and lifetime transfers.

637 ADVANCED ACCOUNTING THEORY
Prerequisite: 6200:621 and 622 or equivalent. Examination of accounting concepts and standards through critical analysis of articles on current trends in profession. Discussion and outside research stressed.

640 ADVANCED AUDITING
Prerequisites: 440/540. Conceptual foundations and current research on professional and internal auditing. Includes government regulation and litigation, statistics, computer systems as well as current and prospective developments in auditing.

641 TAXATION OF PARTNERSHIPS
Prerequisite: completion of M.Tax foundation courses. Examines intensively provisions of subchapter K and S of Internal Revenue Code and uses of partnerships for tax planning.

642 CORPORATE TAXATION II
Prerequisite: 631. Continuation of subchapter C on Internal Revenue Code with major focus on corporate reorganization.

643 TAX ACCOUNTING
Prerequisite: completion of M.Tax foundation courses. Attention focused on timing of income and expenses for individuals businesses and its relation to tax planning.

644 INCOME TAXATION OF DECEDENTS, ESTATES AND TRUSTS
Prerequisite: 631. An in-depth examination of the decedent’s last income tax return along with the analysis of income taxation of trusts and estates and their creators, fiduciaries and beneficiaries.

645 ADVANCED INDIVIDUAL TAXATION
Prerequisite: 450/650. In-depth study of some of the more involved areas of individual income taxation.

646 CONSOLIDATED TAX RETURNS
Prerequisite: completion of M.Tax foundation courses. Intensive study of tax provisions concerning use of consolidated tax returns.

647 QUALIFIED PENSIONS AND PROFIT SHARING
Prerequisites: completion of M.Tax foundation courses. Nature, purpose and operation of various forms of deferred compensation examined with much emphasis on pension and profit-sharing plans.

648 TAX PRACTICE AND PROCEDURE
Prerequisite: completion of M.Tax foundation courses. In-depth study of administration and procedures of Internal Revenue Service and responsibilities of tax practitioner.

649 STATE AND LOCAL TAXATION
Prerequisite: 631. Examines common types of taxes imposed by state and local governments and includes taxation of multistate businesses.

650 ESTATE PLANNING
Prerequisite: 631. Considers entire process of planning the estate with due regard for disposition of property, tax minimization, liquidity requirements and administrative costs.

651 UNITED STATES TAXATION AND TRANSNATIONAL OPERATIONS
Prerequisite: completion of M.Tax foundation courses. Examines United States taxation of foreign income of domestic corporations, citizens and residents, as well as United States income of nonresident aliens and foreign corporations.

652 TAX EXEMPT ORGANIZATIONS
Prerequisite: completion of M.Tax foundation courses. Analysis of tax aspect of taxexempt organizations, including nature of and limitations of its exemption.

653 INDEPENDENT STUDY IN TAXATION
Prerequisite: permission of instructor. An intensive study of a special topic or limited number of topics not otherwise offered in curriculum. (May be repeated for a total of six credits.)

655 ADVANCED INFORMATION SYSTEMS
Prerequisites: 601 or equivalent and 6500:221. Advanced study of information systems theory, elements, principles, design and implementation. Practical data processing and networking applications to control flow of information.

656 E-BUSINESS RISKS, CONTROLS, AND ASSURANCE SERVICES
Prerequisite: 6500:620. An examination of the unique risks, controls, and assurance services resulting from and related to the e-business environment.
697 INDEPENDENT STUDY IN FINANCE 3 credits
Prerequisites: 601, 655, 659, and 6500:605. Application of data warehousing, data mining, and intelligent agent concepts and tools to developing and designing systems for assurance services, fraud and error detection, and risk mitigation.

660 INFORMATION SYSTEMS AUDIT AND CONTROL PROJECT 3 credits
Prerequisites: 540, 655, and 659. Comprehensive, hands-on information systems audit and control project approved by the instructor.

670 CORPORATE PERFORMANCE EVALUATION AND CONTROL SYSTEMS 3 credits
Prerequisite: 600. 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.

680 INTERNATIONAL ACCOUNTING 3 credits
Prerequisite: 630. Examination of accounting theory and practice from international perspectives with emphasis on multinational investment, business and auditing activities and reporting problems.

683 SELECTED TOPICS IN TAXATION 1-3 credits (May be repeated for a total of six credits.) Prerequisites: completion of M.Tax foundation courses. Provides study in current issues in taxation that are not covered in current courses.

695 GRADUATE INTERNSHIP IN ACCOUNTING 3 credits
Prerequisites: 608, 621, 610, and 655. This course provides an opportunity for graduate accounting students to apply classroom instruction to practice problems in a professional working environment.

697 INDEPENDENT STUDY IN ACCOUNTING 1-3 credits
Focus on special topics of study and research in accounting on an independent basis. Prerequisite: 602 or equivalent.

ENTREPRENEURSHIP 6300:

640 FINANCING THE ENTREPRENEURIAL VENTURE 3 credits
Prerequisite: 6000:508. Exploration of financing, legal, taxation, and insurance issues involved with entrepreneurial ventures.

670 MANAGING ENTREPRENEURIAL GROWTH 3 credits
Prerequisites: 6500:508 and 6500:640. Interdisciplinary capstone course focusing on problems and opportunities associated with the management of entrepreneurial growth in existing entrepreneurial ventures. Includes a field project.

FINANCE 6400:

538 INTERNATIONAL BANKING 3 credits
Prerequisite: 371 or 652. Examination of recent trends in the expansion of international banking activities and associated revenue maximizing strategies.

602 MANAGERIAL FINANCE 3 credits
Prerequisite: 602:600 or equivalent. Emphasis on decision making related to goal of firm; specifically, the investment decision, the capital structure decision, and the dividend decision.

623 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.

561 FINANCIAL MARKETS AND INSTITUTIONS 3 credits
Prerequisite: 602 or equivalent. A study of major financial markets and financial institutions with an emphasis on the decision making processes within a rapidly changing, but regulated operating environment.

645 INVESTMENT ANALYSIS 3 credits
Prerequisite: 602 or equivalent. Study of the economic and market forces that influence security prices. Techniques of analysis used in evaluating limited income and equity securities.

580 TECHNIQUES OF FINANCIAL MODELING 3 credits
Prerequisites: 6250:650 and 6400:602. Current techniques and methods of financial analysis are examined, including the use of financial models for short and long run profitability decision making.

595 GOVERNMENT AND BUSINESS 3 credits
Public policy with regard to business institutions and issues are considered from an economic, legal, political, and philosophical perspective.

647 STRATEGIC FINANCIAL DECISION MAKING 3 credits
Prerequisite: 602. Examines the role of financial decision makers as strategic consultants to other business units/functions with integrative risk management as a unifying theme.

667 CAPITAL BUDGETING 3 credits
Prerequisite: 622 or equivalent. Attempt to integrate various theories of capital budgeting into a comprehensive conceptual scheme. Theoretical concepts and practical applications blended for better understanding of capital problems.

681 MULTINATIONAL CORPORATE FINANCE 3 credits
Prerequisite: 602 or equivalent. Financial policies and practices of companies involved in multinational operations. Consideration of management of working capital and permanent assets, return on investment and capital budgeting for the global firm.

685 E-BUSINESS: LEGAL ISSUES 3 credits
Study of the application of law to emerging e-commerce form of business with concentration on emerging legal and policy issues.

686 E-BUSINESS: STRATEGIC PLANNING AND STRATEGY 3 credits
Prerequisite: minimum of six credits of E-business foundation courses. Study of finance issues relating to analysis, evaluation, 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 financial issues and areas not covered in current finance graduate courses.

691 INTERNATIONAL MARKETS AND INVESTMENTS 3 credits
Prerequisite: 602 or equivalent. A study of international financial markets with an emphasis on international investments and risks in a rapidly changing global economy.

697 INDEPENDENT STUDY IN FINANCE 1-3 credits (May be repeated for a total of six credits) Focus on special topics of study and research in 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
Prerequisite: upper college or graduate standing Students who are required to take 301 or 600 or have completed 301 or 600 or equivalent are ineligible to take this course for credit. Introduction to the role of managers in hospitals and health systems, and how organizations successfully manage the creation, sharing, transfer, and exploitation of their human resources. For those registered for graduate credit, a major research paper is required.

582 HEALTH SERVICES OPERATIONS MANAGEMENT 3 credits
Prerequisite: 580 or equivalent. Study of the design and management of operations and services in health care organizations.

585 SPECIAL TOPICS IN HEALTH SERVICES ADMINISTRATION 1-3 credits
Prerequisites: permission of instructor. Special topics in health services administration, may include health services management focusing on historical and/or contemporary managerial organizational and/or political issues as they relate to healthcare organizations and healthcare systems. Separate topics may be repeated for a maximum of six credits. For those registered for graduate credit, a major research paper is required.

580 MANAGING BUSINESS AND ORGANIZATIONAL BEHAVIOR 3 credits
Course examines management principles, concepts, functions and process, as well as human behavior in organizations.

601 QUANTITATIVE DECISION MAKING 3 credits
Prerequisite: MATH 134 or equivalent. Applies quantitative techniques to business decision making. Topics covered include probability estimation and hypothesis testing, simple and multiple regression and correlation analyses, analysis of variance and nonparametric statistics.

602 COMPUTER TOOLS FOR MANAGEMENT 3 credits
Introduction to the use of integrated spreadsheet software, database management software and the analysis and design of management information systems.

605 BUSINESS APPLICATIONS DEVELOPMENT 3 credits
The analysis and automation of standard business processes with examples from diverse business functions. Students will integrate these applications for business decision making.

606 ENTREPRENEURSHIP 3 credits
Prerequisites: upper college or graduate standing and 301 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.

620 E-BUSINESS FOUNDATIONS 3 credits
Prerequisite: 602 or equivalent. Provides an understanding of the foundation of Electronic Business focusing on business and application issues.

622 E-BUSINESS TECHNOLOGIES 3 credits
Prerequisite: 602 or 620 or 621. 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.

629 E-BUSINESS PROJECT 1-3 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.

640 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, outsourcing, emerging technologies, and enabling business strategy.

641 BUSINESS DATABASE SYSTEMS 3 credits
Prerequisite: 602. Introduction to issues underlying the analysis, design, implementation, and management of business databases.

642 SYSTEMS SIMULATION 3 credits
Prerequisites: 602, 652. Manufacturing or service sector systems are analyzed and modeled on a computer. Experimentation with designs, statistical significance of results, model validation and verification will be discussed.

643 ANALYSIS AND DESIGN OF BUSINESS SYSTEMS 3 credits
Prerequisite: 602. A hands-on treatment of the methods used to develop different types of business information systems.

644 KNOWLEDGE MANAGEMENT AND BUSINESS INTELLIGENCE 3 credits
Prerequisite: 602 or equivalent. Examines issues, strategies, and tactics for managing information systems within organizations, including IS architecture, databases, development, outsourcing, emerging technologies, and enabling business strategy.

645 ADVANCED MANAGEMENT INFORMATION SYSTEMS 3 credits
Prerequisite: 602. Examines challenges for difficult and cross-cultural IS problems such as business-technology alignment, metrics, mergers, legacy systems, ERP, IS project failure, global sourcing, and international e-business.

646 PROCESS REDESIGN WITH ENTERPRISE RESOURCE PLANNING 3 credits
 topics 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. Focuses on the structure, design and overall effectiveness of a business organization from a macro perspective.

654 INDUSTRIAL RELATIONS 3 credits
Prerequisite: 600. Study of rights and duties of management in dealing with labor and economic consequences of union and management policies and practices.

655 COMPENSATION ADMINISTRATION 3 credits
Prerequisite: 602. A comprehensive approach to the identification and resolution of pay and benefit problems facing business organization in their internal and external labor markets.

Graduate Courses
656 MANAGEMENT OF INTERNATIONAL OPERATIONS 3 credits
Prerequisite: 600 or equivalent. Deals with institutional environment of international business; parameters of the international business system which hold the system together and which individual business people cannot materially alter.

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 HUMAN RESOURCES MANAGEMENT 3 credits
Prerequisite: 600 or equivalent. Emphasis on strategic human resource practices and systems for business organizations. Focus on emerging and new models, analysis of variance, multivariate models, and modeling of people and organizations.

660 INTERNATIONAL HUMAN RESOURCE MANAGEMENT 3 credits
Prerequisite: 600. A survey course focused on the identification, analysis, and resolutions of human resource problems in business firms with global operations.

661 EMPLOYMENT REGULATION 3 credits
Prerequisite: 600 or equivalent. A broad overview of the federal legislation regulating the business firm's human resource management function.

662 COMPARATIVE SYSTEMS OF EMPLOYEE AND LABOR 3 credits
Prerequisite: 600. A cross-cultural survey examining how industrial relations systems and employment practices across national boundaries impact upon the employment relationship of business firms with global operations.

663 APPLIED INDUSTRIAL STATISTICS 3 credits
Prerequisite: 601 or equivalent. Applications of multiple regression including demonstrating the role of independent variables and use of computerized analysis of regression models. Use of statistical software in regression analysis.

664 DATA ANALYSIS FOR MANAGERS 3 credits
Prerequisite: 601 or equivalent. Survey of basic techniques of operations research. Stresses applications to functional area of business.

665 POLYMERIC MANUFACTURING 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.

666 MANAGEMENT OF OPERATIONS 3 credits
Prerequisite: 600, 602, or equivalent. An overview of the issues directly related to the management of operations at the strategic, tactical, and operational levels of the organization.

667 QUALITY AND PRODUCTIVITY TECHNIQUES 3 credits
Prerequisite: 600. Introduction to techniques for improving productivity and quality, including statistical process control (SPC), material requirements planning (MRP), just-in-time (JIT) inventory control and management of the program.

668 SUPPLY CHAIN MANAGEMENT 3 credits
Prerequisite: 600. Focuses on the integration of activities and information/material flows across multiple organizations that comprise the supply chain, and the relationships among those organizations.

669 MANAGEMENT OF PRODUCTION AND OPERATIONS 3 credits
Prerequisite: 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.

670 PROJECT MANAGEMENT 3 credits
Prerequisite: 600, 601, 602. 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.

673 HEALTH SERVICES SYSTEMS MANAGEMENT 3 credits
Prerequisite: 600 or 602 or equivalent or permission of instructor. Study of health services organizations, comparative delivery systems, the roles of third-party payors and government policies and initiatives in health care. Seminar format; major research paper required.

674 HEALTH SERVICES RESEARCH PROJECT 3 credits
Prerequisite: 683 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.

682 INDEPENDENT STUDY IN HEALTH SERVICES ADMINISTRATION 1-3 credits
Prerequisite: 560 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.

688 SELECTED TOPICS IN MANAGEMENT 1-3 credits
Prerequisite: 600 or equivalent. May be repeated for a total of six credit hours. Topics in management will vary from semester to semester.

690 BUSINESS STRATEGY AND POLICY: DOMESTIC AND INTERNATIONAL 3 credits
Prerequisite: To be final course in M.B.A. program. An examination of the strategic and tactical decisions made by a business firm operating in global and international markets. Focuses on the international environment, alliances, and mergers.

693 INDEPENDENT STUDY IN MARKETING 1-3 credits
Prerequisite: 600. May be repeated for a total of six credits. Focus on special topics of study and research in marketing on an independent basis.

MARKETING 660:

540 PRODUCT AND BRAND MANAGEMENT 3 credits
Prerequisite: 600. Applied investigation into the management of new product development, product life cycle management, product mix strategies, brand positioning, brand image, and brand equity.

575 BUSINESS NEGOTIATIONS 3 credits
Examines business negotiation principles and practices, and builds skills in the process of negotiating business transactions.

580 GLOBAL SALES STRATEGY 3 credits
Examines the concepts and complexities of selling on a global basis. Covers international aspects of selling, sales management, and negotiations.

600 MARKETING CONCEPTS 3 credits
Introductory course examining buyer behavior, environmental influences, target marketing, product development, distribution, promotion, and pricing for business firms and nonprofit organizations within a global context.

620 STRATEGIC MARKETING MANAGEMENT 3 credits
Prerequisite: 600 or equivalent. Managerial assessments of opportunities, threats, are explored as are the development and management of appropriate strategic marketing plans and their tactical implementation.

630 MARKETING OF SERVICES 3 credits
Prerequisite: 600 or permission of instructor. Examines marketing strategies within the service industry. Focuses on both profit (e.g., transportation, financial) and nonprofit (e.g., educational, non-profit) organizations. Product support services are also covered.

635 E-BUSINESS: ELECTRONIC MARKETING STRATEGIES AND TACTICS 3 credits
Prerequisites: 600 and 650:620. Covers the impact of electronic technology on marketing strategy and tactics. Investigations include: vendor/dealer relations, website traffic designs, database applications, and web appraisal metrics.

640 BUSINESS RESEARCH METHODS 3 credits
Prerequisites: 600:601 and 602. Covers the scientific methods as well as the gathering and analysis of information to identify opportunities and solve problems within a business organization.

645 INNOVATIVE MARKETING STRATEGIES 3 credits
Prerequisite: 600. A review of contemporary business issues and their impact on innovative marketing practices. Simulations, cases, and field projects support structured class dialogues on emerging strategic business and marketing themes.

655 MARKETING COMMUNICATIONS 3 credits
Prerequisite: 600. The total range of marketing communication tools are examined individually and in the context of planning, developing, and implementing a strategic and integrated communications program.

665 BUSINESS RELATIONSHIP MANAGEMENT 3 credits
Prerequisite: 600. Examines the mix of business relationships that must be managed by the sales and marketing manager. In addition to customer relationship management, this course explores the need to build and sustain relationships with suppliers, partners, shareholders, and others who are important stakeholders.

670 COMPETITIVE BUSINESS STRATEGY 3 credits
Prerequisite: 600. Investigation of competitive business strategy from an industry perspective. The course presents a framework which can be used to understand and develop competitive strategies.

697 INDEPENDENT STUDY IN MARKETING 1-3 credits
Prerequisite: 600. May be repeated for a total of six credits. Focus on special topics of study and research in marketing on an independent basis.

PROFESSIONAL 6700:

690 PROFESSIONAL RESPONSIBILITY 1 credit
Prerequisite: Nine graduate credits. Seminar on the professional responsibilities of business men and women to make them and the business organization in which they work more responsible decision makers.

692 INTERNATIONAL BUSINESS 1 credit
Prerequisite: Nine graduate credits. Enhances understanding of global business issues, present relevant trends and updates, facilitates cross-cultural interaction, and explores applied practices of international business.

694 APPLIED BUSINESS DOCUMENTATION AND CONTACT 1 credit
Course designed to offer a practicum approach to the skills and strategies for handling specialized documents, contact protocols, and business presentations.

695 INTERNSHIP IN BUSINESS 1-3 credits
Prerequisite: permission of instructor. On-the-job experience with cooperating private and public sector organizations. Individual assignments made by supervising faculty member. Per credit reports and research papers required.

696 SPECIAL TOPICS IN PROFESSIONAL DEVELOPMENT 1 credit
Seminars and current issues in the MBA Program Professional Core. May be repeated with a change of subject, not to exceed 4 credits.

699 COLLOQUIUM IN BUSINESS 1-3 credits
Prerequisite: permission of graduate director. Study of business administration through a seminar of several lectures in business research and practice. A broad range of topics in business research and issues will be discussed by guests, faculty and graduate students. May be repeated, but will not satisfy degree requirements.

INTERNATIONAL BUSINESS 6800:

605 INTERNATIONAL BUSINESS ENVIRONMENTS 3 credits
Prerequisite: all MBA foundation courses. This course is designed to offer a practicum approach to the skills and strategies for handling specialized documents, contact protocols, and business presentations.

630 INTERNATIONAL MARKETING POLICIES 3 credits
Explores the problems of formulating and implementing marketing strategies and tactics within the complex and changing multinational organizations and international markets. A planning framework is emphasized.

685 MULTINATIONAL CORPORATIONS 3 credits
A course designed to develop an understanding of global businesses, their functions, structures, and strategic operations.

690 SEMINAR IN INTERNATIONAL BUSINESS 3 credits
A course covering major issues in international business.

697 INDEPENDENT STUDY IN INTERNATIONAL BUSINESS 1-3 credits
Prerequisite: 600. May be repeated for a total of six credits. Focus on special topics of study and research in international business on an independent basis.
523 PROFESSIONAL IMAGE ANALYSIS 3 credits
Prerequisites: Senior status. Comparison of theories associated with projecting and maximizing an appropriate professional image consistent with career goals and objectives.

524 NUTRITION IN THE LIFE CYCLE 3 credits
Prerequisite: 316. Study of the physiological basis for nutritional requirements; interrelated factors which affect growth, development, maturation and nutritional status from conception through the elderly years.

525 ADVANCED TEXTILES 3 credits
Prerequisite: 121. Evaluation of physical, aesthetic, comfort, care and durability properties of fabric properties and testing practices to determine suitability for desired end uses.

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 260. Emphasis on development of abilities and strengths in coordination of equipment, materials, motion, speech, and presentation delivery relating to education in Industry and Family Consumer Sciences.

536 TEXTILE CONSERVATION 3 credits
Prerequisites: 921, 923, 917. Principles and practices of textile conservation with emphasis on procedures appropriate for collectors and small historical agencies.

537 HISTORIC COSTUMES 3 credits
Study of western costume and textiles from antiquity to 1830, with emphasis on social-cultural influences.

538 HISTORY OF FASHION 3 credits
Prerequisite: 937. Study of western fashion, textiles, and designers from the sixteenth century to the 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.

542 HUMAN SEXUALITY 3 credits
Prerequisite: 265 or permission of instructor. Introduction to problems and values. Emphasis is on 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 PATTER DESIGN 3 credits
Prerequisite: 123 or equivalent. Theory and experience in clothing design using flat pattern techniques.

551 CHILD IN THE HOSPITAL 4 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, loneliness and stress. Examination of strategies for coping. 3 credits

555 PRACTICUM EXPERIENCE IN A CHILD LIFE PROGRAM 3 credits
Prerequisite: 461/561. Field experience in a child life program and classroom activities including critical analysis of a currently functioning program and program administration.

560 ORGANIZATION AND SUPERVISION OF CHILD-CARE CENTERS 3 credits
Theory, principles and procedures involved in establishing and operating centers for infants, toddlers, preschool and school-age children.

561 CASE MANAGEMENT FOR CHILDREN AND FAMILIES I 3 credits
Provides an overview of Case Management basics in a multi-systems collaborative context.

562 CASE MANAGEMENT FOR CHILDREN AND FAMILIES II 3 credits
Prerequisites: 461/561. Provides indepth exploration of Case Management principles and practice. Emphasis on processes, function and assessment, cross-system service planning and coordination, advocacy, and cultural diversity.

563 PRACTICUM IN CROSS-SYSTEMS CASE MANAGEMENT FOR CHILDREN AND FAMILIES 3 credits
Prerequisites: 461/561, 462/562, and six hours of electives. Provides on-site opportunities to apply skills in cross-systems collaborative Case Management with children and families. Includes review of strategies, approaches, and survival skills and supervision.

570 THE FOOD INDUSTRY: ANALYSIS AND FIELD STUDY 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. 3 credits

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: 315/330. General chemistry or equivalent. Comprehensive course in the theory and practice of food analysis by classical and modern chemical and instrumental methods. Principles 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 the characteristics of foods. Critical evaluation of current basic and applied research emphases.

580 COMMUNITY NUTRITION I LECTURE 1 credit
Corequisite: 481 for CP student only. Socio-cultural aspects of community assessment, program 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 nutritional care. Credit/Noncredit.

582 COMMUNITY NUTRITION II LECTURE 1 credit
Prerequisites: 480/580 (481/581 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 481/581. Corequisite: 482/582. Field placement in area agencies offering nutrition services. Study of the agency’s goals, organization, and philosophy of procedures are. Credit/Noncredit.
584 ORIENTATION TO THE HOSPITAL SETTING 2 credits
Prerequisite: 265, comparable course or permission of instructor. Focuses on hospital as a major social institution; includes procedures and functions of the hospital; role of various hospital personnel plus cursory knowledge of medical terminology, common childhood diseases, illnesses and injuries.

585 SEMINAR IN FAMILY AND CONSUMER SCIENCES 3 credits
Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas.

587 SPORTS NUTRITION 3 credits
Prerequisites: 163, 260/267, 265, 266 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.

589 PRACTICUM IN DIETETICS 1 credit
Prerequisite: approval of advisor/instructor. Practical experience in application of the principles of nutrition.

590 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. Specialized dietetic practice are explored. Students prepare the application for dietetic internship.

590 WORKSHOP IN FAMILY AND CONSUMER SCIENCES 1 credit
Prerequisite: 607/607. Investigation on current issue or topic in selected areas of family and consumer sciences. May be on an 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 directives, student organizations, 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.

596 PARENT EDUCATION 1 credit
Prerequisite: 265, comparable course, or permission. Practical application that requires students to analyze various parenting techniques with major emphasis on the evaluation of parent education programs.

598 STUDENT TEACHING SEMINAR 1 credit
Corequisites: 5600/565. Seminar for students currently enrolled in Family and Consumer Sciences student teaching. Emphasis on block and lesson plan development, licensure, portfolio development, PAA/KY III, professional development, and student teaching 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 2 credits
Study of family patterns and problems during middle and later years of life with emphasis on psychological, 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
Prerequisite: 265 or permission. Study of reciprocal interactions between parent and child from birth to adulthood. Consideration of cross-cultural studies, historical and societal influences, and various family characteristics and structures. Online course.

607 FAMILY DYNAMICS 2 credits
Development of techniques in family and consumer sciences programs utilizing role theory, exchange theory and systems theory as understood through the study of the family across the life cycle.

610 CHILD DEVELOPMENT THEORIES 2 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.

624 ADVANCED HUMAN NUTRITION I 2 credits
Prerequisite: undergraduate or graduate-level courses in nutrition and biochemistry. In-depth study of human nutrition emphasizing metabolism, physiological functions, and interrelationships of nutrients, fluids, and the determinates of human energy requirements.

625 ADVANCED HUMAN NUTRITION II 2 credits
Prerequisite: 624 or equivalent. In-depth study of human nutrition with emphasis in the utilization, physiological functions and interrelationships of vitamins and minerals.

631 PROBLEMS IN DESIGN 1 credit
May be repeated, but no more than 6 credits will apply to M.A. Prerequisite: written permission of thesis advisor. Supervised research in a specialized area of family and consumer sciences which makes a contribution to the field and may lead to publication.

636 ADVANCED FOOD THEORY AND APPLICATIONS 2 credits
Prerequisite: 426/526 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 emphasized.

639 MATERIAL CULTURE STUDIES 3 credits
Methods of studying clothing, textiles, and interiors from a cultural and historical perspective.

639 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 DIMINISHED 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. Practicum in current literature.

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.

655 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD 2 credits
Analyzes research and theoretical frameworks relative to infant and child development from conception through age five. Implications for guidance and education.

677 SOCIAL PSYCHOLOGY OF DRESS AND THE NEAR ENVIRONMENT 3 credits
Study of dress and the near environment as they relate to human behavior at 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 theoretical considerations.

688 PRACTICUM IN FAMILY AND CONSUMER SCIENCES 3 credits
Prerequisite: permission of advisor/instructor. A minimum of 150 hours of supervised experience in an approved community-based project to acquire skills related to area of specialization.

690 THESIS RESEARCH/READING 3 credits
Prerequisite: permission of thesis advisor. Supervised reading and research related to approved thesis topic. May be repeated once.

693 MASTER’S PROJECT 5 credits
Prerequisite: permission of advisor. The development, implementation and evaluation of a community-based supervised project which makes a significant contribution to the field and may lead to publication.

695 CHILD LIFE INTERNSHIP 5 credits
Prerequisite: 555 and permission of advisor. Field experience in a child life program at an approved pediatric facility under the supervision of Certified Child Life Specialist.

696 INDIVIDUAL INVESTIGATION IN FAMILY AND CONSUMER SCIENCES 1-3 credits
Prerequisite: permission of advisor. Individual investigation and analysis of a specific topic in student’s area of specialization of interest under direction of a faculty advisor.

697 INDIVIDUAL INVESTIGATION IN FAMILY DEVELOPMENT 1-3 credits
Prerequisite: permission of graduate advisor only. Individual pursuit and analysis in specific area of student’s interest and design under direction of faculty advisor.

698 INDIVIDUAL INVESTIGATION OF CHILD DEVELOPMENT 1-3 credits
Prerequisite: permission of graduate advisor only. Individual pursuit and analysis in specific area of student’s interest and design under direction of faculty advisor.

699 MASTER’S THESIS 5 credits
Prerequisite: permission of advisor. Supervised research in a specialized area of family and consumer sciences which makes a contribution to the field and may lead to publication.

MUSIC 7500:

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 harmonic vocabulary of the 18th, 19th, and 20th centuries.

527 GRADUATE MUSIC HISTORY REVIEW 2 credits
Prerequisite: Undergraduate music history equivalent to four semesters of music history or literature study. Review of basic music history for graduate students. Coverage extends from antiquity to the present. Both reading and listening assignments will be required.

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.

551 INTRODUCTION TO MUSICOLOGY 2 credits
Prerequisite: 562. Comparative musicology: aesthetics; psychology and physiology of music; aesthetics; theory of music history; historical musicology.

553 MUSIC SOFTWARE SURVEY AND USE 2 credits
Prerequisite: 152 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 the life study program.

555 ADVANCED CONDUCTING: INSTRUMENTAL 2 credits (30 clinical hours)
Prerequisites: 361 and 442 or permission. Baton techniques and problems relating to practice, reading and preparation of scores; organization of ensembles; programming; conducting large instrumental ensembles. One hour lab required.

556 ADVANCED CONDUCTION: CHORAL 2 credits
Prerequisite: 361 or equivalent. Conduction techniques to the choral ensemble, including lead sheet, error detection, tonal development, stylistic accuracy and analysis. One hour lab required.

562 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.

563 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 bass from violin and viola, 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 analysis of prevailing schools of guitar pedagogy, sound production psychology, method books and special problems in teaching addressed.

568 GUITAR ARRANGING 2 credits
Prerequisite: permission of instructor. After comparative analyses of selected examples, student make original solo guitar arrangements of works written for other solo instruments ensemble.

569 HISTORY AND LITERATURE OF THE GUITAR AND LUTE 2 credits
Prerequisite: permission of instructor. Study of plucked, fretted, string instruments from the 14th Century to the present; context, notation, literature and performance practices. Critical Editions and recordings evaluated.

571 STUDIES IN CHORAL LITERATURE I: MEDIAEVAL-RENAISSANCE 2 credits
A survey of choral repertoire in terms of general structure, character, voicing, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

572 STUDIES IN CHORAL LITERATURE II: BAROQUE 2 credits
A study of the repertoire in terms of general structure, character, voicing, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

573 STUDIES IN CHORAL LITERATURE III: CLASSIC-ROMANTIC 2 credits
A study of the repertoire in terms of general structure, character, voicing, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>633</td>
<td>TEACHING AND LITERATURE: PIANO AND HARPSCORD</td>
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<tr>
<td>634</td>
<td>TEACHING AND LITERATURE: STRING INSTRUMENTS</td>
<td>2</td>
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<td>640,1,2,3</td>
<td>ADVANCED ACCOMPANYING I, II, III, IV</td>
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<td>647</td>
<td>MASTER’S CHAMBER RECITAL</td>
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<td>657</td>
<td>STUDENT RECITAL</td>
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<tr>
<td>663</td>
<td>ELECTRONIC MUSIC</td>
<td>3</td>
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<td>665</td>
<td>VOCAL PEDAGOGY</td>
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<td>666</td>
<td>ADVANCED SONG LITERATURE</td>
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<td>675</td>
<td>SEMINAR IN MUSIC教育</td>
<td>1-3</td>
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<td>676</td>
<td>WORKSHOP IN CHORAL MUSIC EDUCATION</td>
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<td>687</td>
<td>ADVANCED PROBLEMS IN MUSIC</td>
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<td>697</td>
<td>ADVANCED PROBLEMS IN MUSIC</td>
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<tr>
<td>699</td>
<td>MUSICAL ORGANIZATIONS</td>
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**MUSICAL ORGANIZATIONS**

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<tbody>
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<td>602</td>
<td>ACRON SYMPHONY CHORUS</td>
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<tr>
<td>603</td>
<td>UNIVERSITY SYMPHONY ORCHESTRA</td>
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<td>604</td>
<td>SYMPHONIC BAND</td>
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<td>605</td>
<td>VOCAL CHAMBER ENSEMBLE</td>
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<td>606</td>
<td>BRASS ENSEMBLE</td>
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<tr>
<td>607</td>
<td>STRING ENSEMBLE</td>
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<td>608</td>
<td>OPERA WORKSHOP</td>
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<td>609</td>
<td>WOODWIND ENSEMBLE</td>
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<td>KEYBOARD ENSEMBLE</td>
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<td>612</td>
<td>UNIVERSITY SINGERS</td>
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## APPLIED MUSIC 7520:

### 521-569 APPLIED MUSIC FOR MUSIC MAJORS

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<th>Course</th>
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<tbody>
<tr>
<td>PERCUSSION</td>
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<td>CLASSICAL GUITAR</td>
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<td>HARPA</td>
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<tr>
<td>VOICE</td>
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<tr>
<td>PIANO</td>
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<td>VIOLIN</td>
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<tr>
<td>VIOLA</td>
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<tr>
<td>CELLO</td>
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<tr>
<td>STRING BASS</td>
<td>1</td>
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<tr>
<td>TRUMPET OR CORNET</td>
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<tr>
<td>FRENCH HORN</td>
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<tr>
<td>TROMBONE</td>
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<td>BARITONE</td>
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<tr>
<td>TUBA</td>
<td>1</td>
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<tr>
<td>FLUTE OR PICCOLO</td>
<td>1</td>
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<tr>
<td>OBOE OR ENGLISH HORN</td>
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<tr>
<td>CLARINET OR BASS CLARINET</td>
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<tr>
<td>BASSOON OR CONTRABASSOON</td>
<td>1</td>
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<tr>
<td>SAXOPHONE</td>
<td>1</td>
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<tr>
<td>HARPSCORD</td>
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<tr>
<td>PRIVATES LESSONS IN MUSIC COMPOSITION</td>
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<tr>
<td>GRADUATE STUDY IN APPLIED MUSIC (May be repeated)</td>
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<tr>
<td>JAZZ VOCAL STYLES</td>
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### 560 COMMUNICATION 7600:

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<tr>
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<tr>
<td>HISTORY OF JOURNALISM IN AMERICA</td>
<td>3</td>
</tr>
<tr>
<td>WOMEN, MINORITIES AND NEWS</td>
<td>3</td>
</tr>
<tr>
<td>NEW MEDIA WRITING</td>
<td>3</td>
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<tr>
<td>NEW MEDIA PRODUCTION</td>
<td>3</td>
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<tr>
<td>MAGAZINE WRITING</td>
<td>3</td>
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<tr>
<td>COMMERCIAL ELECTRONIC PUBLISHING</td>
<td>3</td>
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<td>COMMUNICATION IN ORGANIZATIONS</td>
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<td>ANALYZING ORGANIZATIONAL COMMUNICATION</td>
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<td>TRAINING METHODS IN COMMUNICATION</td>
<td>3</td>
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<td>COMMUNICATION IN ORGANIZATIONS</td>
<td>3</td>
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<tr>
<td>PUBLIC SPEAKING IN AMERICA</td>
<td>3</td>
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<tr>
<td>LEADERSHIP AND COMMUNICATION</td>
<td>3</td>
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<tr>
<td>ADVANCED MEDIA WRITING</td>
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<tr>
<td>NONLINEAR VIDEO EDITING</td>
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<tr>
<td>THEORIES OF RHETORIC</td>
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<td>FILM AS ART INTRODUCTION TO THE FILM FORUM</td>
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<td>COMMUNICATION WORKSHOP</td>
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<td>PRODUCTION PRACTICUM</td>
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<td>INTRODUCTION TO GRADUATE STUDY IN COMMUNICATION</td>
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<td>EMPIRICAL RESEARCH IN COMMUNICATION</td>
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<tr>
<td>INTRODUCTION TO QUANTITATIVE RESEARCH IN COMMUNICATION</td>
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<tr>
<td>COMMUNICATION PROBLEMS IN THE BASIC SPEECH COURSE</td>
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<tr>
<td>COMMUNICATION PEDAGOGY</td>
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</tbody>
</table>

### 600 INTRODUCTION TO GRADUATE STUDY IN COMMUNICATION

Introduction to the ideas and scholarship that constitute the various research interests in the department.

### 603 EMPIRICAL RESEARCH IN COMMUNICATION

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

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

Required of all teaching graduate assistants.

### 608 COMMUNICATION PEDAGOGY

Familiarizes students with aspects of teaching communication and media courses at the college level.
624 SURVEY OF COMMUNICATION THEORY 3 credits
Study of dimensions of field of communication: information analysis, social interaction and semantics.

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 of public relations application of communication concepts, theories and skills relevant to public relations programs in businesses and nonprofit organizations.

645 INTERCULTURAL COMMUNICATION THEORY 3 credits
Analysis of the impact on the communication process of cultural differences between communicators; 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 16 credits
(May be repeated for a total of six credits.) Prerequisites: must have attained the category of full-semester and be in good standing in the School's graduate program; must sign a memorandum and approval of internship placement and research proposal. Provides communication graduate students with opportunity to obtain experience and to apply knowledge of academic concepts in a supervised work setting in the communication field. (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.

697 GRADUATE RESEARCH IN COMMUNICATION 16 credits
(May be repeated for a total of six credits.) Prerequisites: 7800:600 and approval of project prospectus one term prior to undertaking the project. Research of problems on research found in mass media communication.

699 MASTER'S PROJECT/PRODUCTION 16 credits
(May be repeated for a total of six credits.) Prerequisite: Permission of the school director. (May be repeated for a total of six credits.) Prerequisite: Permission of the school director.

699 MASTER'S THESIS 16 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 majors] Introduction to acquisition and development of communication and production of language – phonologically, semantically and syntactically. Relates language acquisition to perceptual development of child and looks at function of language in individual, family and society.

540 AUGMENTATIVE COMMUNICATION 3 credits
Prerequisite: 330 or 430/530 or permission of instructor. Overview of augmentative communication systems-candidates, symbolic systems, devices, vocabulary, funding. Considers interdisciplinary issues in assessment/intervention.

545 MULTICULTURAL CONSIDERATIONS FOR AUDIOLOGISTS AND SPEECH-LANGUAGE PATHOLOGISTS 2 credits
Prerequisites: 7700:110 and graduate standing. This course introduces the multicultural considerations 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

561 ORGANIZATION AND ADMINISTRATION: PUBLIC SCHOOL SPEECH-LANGUAGE AND HEARING PROGRAMS 2 credits
Prerequisites: Permission of a Senior or graduate standing. For clinicians who plan to work in public school systems. Covers program requirements and professional/ethical issues imposed by PL 94-142.

590 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.

595 DEVELOPMENTAL DISABILITIES 2 credits
Prerequisite: Graduate graduate. Current practice related to clinical intervention designed for individuals with developmental disabilities. Explores the use of the natural environment and the use of task analysis. (May be repeated for a total of four credits) Prerequisite: 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 I 3 credits
Introduction to experimental design in field of communicative disorders.

612 RESEARCH METHODS IN COMMUNICATIVE DISORDERS II 2 credits
Prerequisite: 611 or permission of instructor. Advanced experimental methods; development of a research study.

622 ARTICULATION 2 credits
Historical background, current theories and research related to etiology, evaluation and treatment of articulation and phonology disorders.

623 SUPPORT SYSTEMS FOR INDIVIDUALS AND FAMILIES WITH COMMUNICATIVE DISORDERS 2 credits
Educational/developmental/clinical interview, provide educational information, and create support systems for persons with communicating handicaps and their families.

624 NEUROGENIC SPEECH AND LANGUAGE DISORDERS 3 credits
Prerequisite: Senior standing. Course presents current theories and research related to neuroanatomical, etiology, classification and treatment of adults with neurologically based communication disorders.

626 VULNERABLE 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 problems.

627 STUTTERING: THEORIES AND THERAPIES 2 credits
Prerequisite: 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 credits
Prerequisite: Permission of 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 historical literature.

630 CLINICAL ISSUES IN CHILD LANGUAGE 4 credits
Prerequisite: graduate status. Presents current research perspectives on child language disorders and clinical 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 DYSPHAGIA 3 credits
Outlines etiology, assessment, and treatment for infants, children, and adults with feeding and swallowing disorders (dyphagia). It provides actual experiences in diagnosis and feeding techniques.

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 3 credits

639 ADVANCED CLINICAL TESTING 4 credits
Theoretical basis for pure tone, speech tests, masking and acoustic impedance measurements. Review of classical and current literature relative to above tests.

640 SPECIAL TESTS/MEDICAL AUDIOLOGY 4 credits
Prerequisite: 639 or permission of instructor. Underlying psychoacoustic principles of administration and interpretation of site-of lesion tests. Relationship between otology and audiology; application of clinical audiology in medical environment.

641 AMPLIFICATION 3 credits
Prerequisite: 639 or permission of instructor. Components of amplification systems; methods of evaluating hearing aid performance.

642 PEDIATRIC AUDIOLOGY 2 credits
Prerequisite: 639 or permission of instructor. Etiology of hearing loss in children, techniques for testing preschool and school-age children and children offering difficult-to-test clients.

643 INDUSTRIAL AUDIOLOGY 2 credits
Prerequisite: 639 or permission of instructor. Theoretical principles of noise measurement; etiology of noise-induced hearing loss and acoustic trauma; industrial hearing conservation programs; Occupational Safety and Health Act (O.S.H.A.) regulations.

644 AURAL REHABILITATION 4 credits
Prerequisite: permission of instructor. Review of current methodologies employed in aural rehabilitation of children and adults as well as current and potential areas of research.

645 EVOKE POTENTIALS 2 credits
Prerequisite: 639 or permission of instructor. Prerequisite: Consent of instructor. Components of potential evaluation and their clinical applications in audiology and neuro-otology.

649 ELECTRONYSTAGMOGRAPHY 2 credits
Prerequisite: Permission of instructor. Study of the anatomy and physiology of the vestibular system; nystagmus; electroneystagmographic (ENG) recording procedures; ENG protocols; interpretation of ENG results.

650 ADVANCED CLINICAL PRACTICUM: SPEECH-LANGUAGE PATHOLOGY 16 credits
Prerequisite: Permission (May be repeated). Supervised clinical practicum in evaluation and treatment of speech and language disorders, including preparation of written reports.

651 ADVANCED CLINICAL PRACTICUM: AUDIOLOGY 16 credits
Prerequisite: Permission (May be repeated). Supervised clinical practicum in evaluation and treatment of hearing disorders; includes preparation of written reports.

655 EXTERNSHIP: SPEECH PATHOLOGY AND AUDIOLOGY 2 credits
Prerequisite: Permission (May be repeated). Clinical practicum in a selected speech-language pathology or audiology facility.

657 SPECIAL PROBLEMS: SPEECH PATHOLOGY AND/OR AUDIOLOGY 2-6 credits
Prerequisite: Permission (May be repeated). Clinical practicum in a selected speech-language pathology or audiology facility.

659 MASTER'S THESIS 4-6 credits
Prerequisite: permission of instructor. Supervised practicum in a selected speech-language pathology or audiology facility. (May be repeated for a total of six credits.) Prerequisite: Permission of School Director.

701 BASIC AND APPLIED PHYSICAL ACOUSTICS FOR AUDIOLOGY 4 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 audiology equipment included 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 PHONETICS 4 credits
Prerequisite: admission to the Au.D. program or permission of instructor. Study of the auditory, measurement, and nomenclature of speech sounds and theoretical and acoustic bases of speech perception (stenographic, credit). 4 credits

704 CRITICAL ANALYSIS OF RESEARCH IN AUDIOLOGY I 4 credits
Prerequisite: admission to the Au.D. program or permission of instructor. 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-OOTOLOGY 4 credits
Prerequisite: 702:702. 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 pricin- gles, theories, and research of psychoacoustics: the relationships between the 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 evaluate the quality of research studies.

709 ACOUSTIC ASSESSMENT 3 credits
Prerequisite: 705. A practical basis for tests underlying basic audiological assessments.
710 INDUSTRIAL AND COMMUNITY NOISE 3 credits
Prerequisite: admission to the Au.D. program or permission of instructor. Theoretical principles of noise measurement, effects of noise-induced hearing loss and occupational hearing conservation program, Occupational Health and Safety Act; community and recreational noise 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 site-of lesion 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 rehabilitation of older adults with hearing impairments.

715 CENTRAL AUDITORY PROCESSING: EVALUATION AND MEASUREMENT 3 credits
Prerequisites: 705 and 706. Study of auditory evaluation and habilitation/rehabilitation procedures for people having central auditory disabilities.

716 ADULT HEARING AID FITTING AND SELECTION 3 credits
Prerequisite: 713. Examination of the theory and practice of fitting hearing aids. Emphasis on special clinical procedures, research needs, and evolving technology in hearing instruments (includes 1 credit hour lab).

717 PEDIATRIC AUDIOLOGY 3 credits
Prerequisite: 709. Study of audiological diagnostic and audiological rehabilitative protocols for the birth to 3 population. Both assessment and management strategies will be emphasized.

718 COCHLEAR IMPLANTS 2 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 rehabilitation.

719 COUNSELING IN AUDIOLOGY 3 credits
Prerequisite: admission to the Au.D. program or permission of instructor. Focus on interviewing, counseling, and interacting with individuals with hearing impairments, their families, and significant others.

720 PEDIATRIC AMPLIFICATION 3 credits
Prerequisites: 713, 719, 717. The focus of study is on amplification systems and fitting techniques 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 electrostapediography, posturography and rotational testing; rehabilitation of the balance disordered patient (includes 1 credit hour lab).

722 AUDIOLOGIC MANAGEMENT OF THE SCHOOL-AGED CHILD 3 credits
Prerequisite: 717. Focus on educational audiology. Features delivery of audiological services designed to meet the needs of 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 3 credits
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 and vestibular disorders.

726 ELECTROPHYSIOLOGICAL TECHNIQUES IN AUDIOLOGY 3 credits
Prerequisite: 706. Study of selected responses used in diagnostic audiology, including ABR, MLR, ECoG, ENO, ALR, P300, VER, and SSER.

727 CULTURAL ISSUES IN DEAFNESS 2 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 members of the deaf community.

728 SEMINAR IN AUDIOLOGY 2 credits
Prerequisite: admission to the Au.D. program or permission of instructor. Selected current topics in audiology with emphasis on review of current literature.

729 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 practice, reimbursement, marketing, record keeping and professional liability.

731 SEMINAR: CLINICAL EXTERN 1 credit
Corequisites: 760 or 761 or permission of instructor. In depth consideration of topics/issues in the practice of audiology with emphasis upon issues related to clinical rotation issues.

732 DIRECTED OBSERVATION IN AUDIOLOGY I 1 credit
Prerequisite: admission to the Au.D. program or permission of instructor. Introduction to clinical practice in Audiology. Directed observation of clinical practice including audiological diagnosis and audiological rehabilitation are required.

733 CLERKSHIP I 1 credit
Corequisites: 709. Clinical practicum in audiology during which students perform discrete tasks under supervision.

734 CLERKSHIP II 1 credit
Prerequisite: A3. Supervised clinical practicum in audiology during which students will perform 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 2 credits
Prerequisites: 745 and 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 practices.

748 GRADUATE AUDIOLOGIST II 3 credits
Prerequisites: 747 and permission. Supervised clinical practicum in audiology requiring the independent performance of diagnostic audiology, assessment procedures, audiological rehabilitation, and vestibular assessment and rehabilitation.

749 GRADUATE AUDIOLOGIST III 3 credits
Prerequisites: All and permission. Supervised clinical practicum in audiology which encompasses the entire range of audiological procedures including neurophysiological based procedures.

501 SOCIAL WORK PRACTICE I 3 credits
Prerequisites: 278 or permission of instructor. Basic concepts and methods of social work practice, particularly relating to understanding and working with individuals and families.

502 SOCIAL WORK PRACTICE II 3 credits
Prerequisite: 401 or permission of instructor. Concepts and methods of social work practice particularly relating to understanding and working with groups in various settings in our society.

503 SOCIAL WORK PRACTICE III 3 credits
Prerequisite: 401 or permission of instructor. Development of understanding and practice methods for utilization of community organization and social planning as social work process in assessing problems and developing programs to meet needs.

504 SOCIAL WORK PRACTICE IV 3 credits
Prerequisite: 401 or permission of instructor. Professional social work practice with families in social services; the dynamics of family systems, assessment of family function and dysfunction, professional helping processes.

510 MINORITY ISSUES IN SOCIAL WORK PRACTICE 3 credits
Prerequisite: 276 or permission of instructor. Must be taken prior to or concurrently with 401 and one of the other practice courses 402, 403, 404. Racial, ethnic and cultural issues in social work related to various theoretical perspectives, professional roles, service agencies, individual, family, group, community and societal contexts intersecting with the methodological processes of the social work practitioners.

511 WOMEN’S ISSUES IN SOCIAL WORK PRACTICE 3 credits
Prerequisite: 276 or permission of instructor. Social work practice, knowledge and skills, social welfare institutions and social policy in relation to women’s issues and concerns in the United States.

525 SOCIAL WORK ETHICS 3 credits
Prerequisite: 276 or permission of instructor. Social Worker’s code of ethics as applied to practice, problems and issues.

527 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT I 3 credits
Prerequisite for 427: 278 or permission of instructor; for 527: permission of instructor. Social work perspective on human development across the life cycle. Human diversity approach consistent with the needs of social work students preparing for practice.

530 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT II 3 credits
Prerequisites for 429: 276, 427 or permission of instructor; for 530: permission of instructor. Emphasis on social workers’ understanding of and use of individual interaction and growth within family as a system, groups, roles, organizations, community, and culture.

540 SOCIAL WORK RESEARCH I 3 credits
Prerequisites for 440: 276 or permission of instructor; for 540: permission. Social work practitioner’s role in utilization of scientific methods in the conduct of practice and utilization of social work research as found in social work and social science literature for improvement and advancement of social work practice.

541 SOCIAL WORK RESEARCH II 3 credits
Prerequisites for 440: 276 or permission of instructor; for 541: permission of instructor. Examination of social work intervention with individual, group and community. Processing and interpreting agency information for better practice, policy and administrative decisions.

545 SOCIAL POLICY ANALYSIS FOR SOCIAL WORKERS 3 credits
Prerequisite: 446: 276 or permission of instructor: for 645: undergraduate social work degree or permission. Description, analysis and construction of social policy in social services; understanding forces and processes which can influence social policies, to predict consequences of social policies, and to establish goals for social policy development; interconnection of policy into effective social work methodology.

550 SOCIAL NEEDS AND SERVICES FOR LATER ADULTHOOD AND AGING 3 credits
Prerequisite: 276 or permission of instructor. Application of knowledge and principles of professional social work practice to understanding, development and provision of social services to meet needs of aging and later maturity individuals, families and communities and institutions serving them and their relatives.

551 SOCIAL WORK IN CHILD WELFARE 3 credits
Prerequisite: 276 or permission of instructor. In-depth exploration of structure and functioning of social services designed to help children, and of practice of social work in child welfare settings. Consideration of supports, supplementary, and substitute services.

552 SOCIAL WORK IN MENTAL HEALTH 3 credits
Prerequisite: 276 or permission of instructor. Issues, organization, development, and methodology of current professional social work practice in mental health settings.

554 SOCIAL WORK IN JUVENILE JUSTICE 3 credits
Prerequisite: 276 or permission of instructor (undergraduate). The theory and practice of social work in the juvenile justice systems of the United States. Traditional procedures and recent developments, prevention, diversion and community outreach, legal concerns, case management, institutional functioning.

555 THE BLACK FAMILY 2 credits
Prerequisite: 276 or permission of instructor. Contemporary problems facing black families; male-female relationships, single parent households, black teens and elderly, public policy, theoretical and practical models, explaining life of the black family.

560 SOCIAL WORK IN HEALTH SERVICES 3 credits
Prerequisite: 276 or permission of instructor. Policies, programs and practice in health-care settings: short-term, intermediate and long-term, hospital outpatient services, emergency services, clinics, visiting nurse services, nursing homes, pediatric services, self-help organizations.

588 ADULT DAY CARE 2 credits
Prerequisite for 458: 276 or permission of instructor; for 588: permission of instructor. Planning, development, implementing, evaluating, and delivery of adult day-care services.
599 SOCIAL WORK WITH THE MENTALLY RETARDED 3 credits
Prerequisite: 276 or permission of instructor. Application of social work principles to the provision of services to meet the needs of the mentally retarded and developmentally disabled and their families.

656 ADMINISTRATION AND SUPERVISION IN SOCIAL WORK 3 credits
Prerequisite: 408 or permission of instructor. Preparation for use of supervision, staff development, and program planning in a social work agency. Examines the social work/agency relationship in its community as it affects its organizational goal-setting and program-implementation problems.

672 LAW FOR SOCIAL WORKERS 3 credits
Prerequisite: 276 or permission of instructor. Basic terminology, theories, principles, organization, and legal aspects of social work practice will be explored along with the relationships between social work and law and comparisons of the theoretical bases of the two professions.

580 SPECIAL TOPICS IN SOCIAL WORK AND SOCIAL WELFARE 1-3 credits
Prerequisite: permission of instructor. Analysis of current social work and social welfare theories and practice settings, innovative interventions and trends in delivery systems in relation to selected areas of concern. Topics and credits variable.

597 INDIVIDUAL INVESTIGATIONS IN SOCIAL WORK SOCIAL WELFARE 1-3 credits
Prerequisites: permission and arrangement with instructor. Individual readings, research or projects in an area of interest in social welfare theory or institutional operations or in social work practice under the guidance of a faculty member. Preparation of report appropriate to the nature of topic. For social work major.

601 FOUNDATION FIELD PRACTICUM 3 credits
Prerequisites: first 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.)

602 FOUNDATION FIELD PRACTICUM 3 credits
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, based on the student's concentration and specialization. Credit/noncredit. (Offered only Spring Semester.)

603 ADVANCED FIELD PRACTICUM 3 credits
Prerequisites: first of two field practicum courses to be taken in the second year of the MSW program. A two-semester, 500 clock hour, supervised internship in a social service agency, based on the student's concentration and specialization. Credit/noncredit. (Offered only Fall Semester.)

604 ADVANCED FIELD PRACTICUM 3 credits
Prerequisites: second of two field practicum courses to be taken in the second year of the MSW program. A two-semester, 500 clock hour, supervised internship in a social service agency, based on the student's concentration and specialization. Credit/noncredit. (Offered only Spring Semester.)

605 SOCIAL WORK PRACTICE WITH LARGE SYSTEMS 3 credits
Prerequisite: 603 or permission of instructor. Provides the basic knowledge, skills, and strategies of social work practice with task groups, organizations, and communities.

606 SOCIAL WORK PRACTICE WITH LARGE SYSTEMS 3 credits
Prerequisite: 604 or permission of instructor. Provides the basic knowledge, skills, and strategies of social work practice with groups, task groups, organizations, and communities.

607 ADVANCED PRACTICE WITH SMALL SYSTEMS I 3 credits
Prerequisite: second level graduate student or permission of instructor. This course focuses on the differential assessment of individuals, families and small groups and the application of a range of theory bases.

608 ADVANCED PRACTICE WITHsmall SYSTEMS II 3 credits
Prerequisite: 607 or permission of instructor. As a continuation of Advanced Practice I, this course focuses on the development and implementation of intervention strategies with and on behalf of small systems.

609 SOCIAL WORK PRACTICE WITH SMALL SYSTEMS 3 credits
Prerequisite: graduate status or permission of instructor. Provides the basic knowledge, skills, professional ethics and values necessary for beginning social work practice with small client systems.

611 DYNAMICS OF RACISM AND DISCRIMINATION 3 credits
Prerequisite: graduate status or permission of instructor. Provides knowledge of analyzing and understanding the factors leading to and sustaining racism, sexism, homophobia, and the like, at micro and macro levels.

612 FUNDAMENTALS OF RESEARCH I 3 credits
Prerequisite: graduate status or permission of instructor. This course provides an introduction to the logic of scientific inquiry, the research process, and the relationship between research and social work practice.

613 FUNDAMENTALS OF RESEARCH II 3 credits
Prerequisite: 612, statistics course, or permission of instructor. Provides students with an understanding of quantitative and qualitative methodologies and the use of descriptive and inferential statistics in analyzing research data.

614 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT: SMALL SOCIAL SYSTEMS 3 credits
Prerequisite: graduate status or permission of instructor. This course focuses on understanding the human behavior and life cycle development of people as individuals and as members of families and other small groups.

615 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT: LARGE SOCIAL SYSTEMS 3 credits
Prerequisite: 613 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.

616 SOCIAL WELFARE POLICY I 3 credits
Prerequisite: graduate status or permission of instructor. Examines the historical, philosophical and value bases of social welfare as well as the relationship between social work practice, policy and service delivery.

617 SOCIAL WELFARE POLICY II 3 credits
Prerequisite: 616 or permission of instructor. This course prepares students with the beginning skills to engage in social problem analysis.

618 ADVANCED STANDING INTEGRATIVE SEMINAR 3 credits
Prerequisite: advanced standing. Provides an integrative view of social work practice with an emphasis on values, foundation knowledge and skills, and evaluation of professional inter- venions.

619 SOCIAL WORK PRACTICE WITH GAYS AND LESBIANS 3 credits
Prerequisite: second level graduate status 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.

620 PSYCHOPATHOLOGY AND SOCIAL WORK 3 credits
Prerequisite: second level graduate status or permission of instructor. An examination of psychological symptoms, theories, and psychosocial aspects of mental illness, and the role of the social worker in the treatment of mental disorders.

621 DIRECT PRACTICE RESEARCH 3 credits
Prerequisite: second level graduate student or permission of instructor. Provides students with advanced knowledge about the methodology of single system design and skills to implement an evaluation study of their intervention with clients.

622 SUPERVISION AND STAFF DEVELOPMENT 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination of the purposes, functions, and techniques of supervision and how to organize and empower diverse social work teams.

623 SOCIAL WORK ADMINISTRATION 3 credits
Prerequisite: second level graduate student or permission of instructor. This course focuses on supervisory and managerial roles and functions as they are carried out at different hierarchical levels in human service systems.

624 STRATEGIES OF COMMUNITY ORGANIZATION 3 credits
Prerequisite: second level graduate student or permission of instructor. Emphasizes the historical development and application of several community strategies used to identify common problems and resources and to organize and empower diverse communities.

625 COMMUNITY ORGANIZATION AND PLANNING 3 credits
Prerequisite: must have completed first year of master's program. Required for all second year students concentrating on Macro Practice sequence. Prepares students to work in communities and in public and private agencies.

626 COMMUNITY, ECONOMIC SYSTEMS AND SOCIAL POLICY ANALYSIS 3 credits
Prerequisite: second level graduate student or permission of instructor. This course provides a base for understanding economic systems and analyzing the political framework at federal, state, and local levels and their impact on communities.

627 PROGRAM EVALUATION 3 credits
Prerequisite: second level graduate student or permission of instructor. This course provides students with methods of evaluating programs in agencies, including approaches, measurement, design, data collection and analyses employed in program outcome research.

628 FISCAL MANAGEMENT OF SOCIAL AGENCIES 3 credits
Prerequisite: second level graduate student or permission of instructor. This elective course concentrates on the financial administration of social service programs and management, principles of economic and fiscal exchange, accountability and fiscal accounting.

629 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.

630 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.

631 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.

632 SOCIAL WELFARE POLICY AND SERVICES: FAMILY AND CHILDREN 3 credits
Prerequisite: second level graduate student or permission of instructor. Examines the federal and state laws, policies, and services governing children and families, including the supportive, supplemental and substitutive aspects of services.

633 POLICY PRACTICE AND PUBLIC ABUSE 3 credits
Prerequisite: second level graduate student or permission of instructor. This course provides students the knowledge and skill base necessary for managing and practicing with people involved in substance abuse, evaluating programs, and preventing problems.

634 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.

635 EPIDEMIOLOGICAL ANALYSIS OF HEALTH AND SOCIAL PROBLEMS 3 credits
Prerequisite: second level graduate student or permission of instructor. This course applies the epidemiological method to social work practice, such as treatment groups, making administrative decisions, in planning and evaluation, and doing preventive work.

THEATRE 7800: 3 credits

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 process drama techniques. Field experience provided when possible.

575 ACTING FOR THE MUSICAL THEATRE 3 credits
Prerequisite: permission. A scene study course in analyzing and performing roles in American musicals. Accompanying workshops.

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 art forms and organizations examined in relationship to the business management of arts. Team-taught.

611 REACTIONS: VERSUS ROLE 3 credits
A detailed examination of representative plays of the contemporary theatre.

612 THEATRE IN EDUCATION 3 credits
An in-depth experience with current theories, methods, and materials in P-12 theatre education and process drama techniques. Field experience provided when possible.

613 PROBLEMS IN DIRECTING 3 credits
Prerequisite: permission. For advanced directing course with special emphasis on staging of complex plays from all periods of dramatic literature.

614 SEMINAR IN DRAMATIC LITERATURE 3 credits
Representative Western stage play (non-American) are examined in theatrical, historical, and critical/theoretical contexts.

615 SOCIAL ACTING - TECHNIQUES 3 credits
Advanced study of basic acting techniques, especially Stanislavski, through analysis and performance of selected areas of concern. Topics and credits variable.

616 COLLOQUIUM ON THE ARTS 3 credits
A brief exploration of the major visual and performing art forms and organizations examined in relationship to the business management of arts. Team-taught.

617 STUDY OF PRODUCTION 3 credits
Prerequisite: permission. For advanced directing course with special emphasis on staging of complex plays from all periods of dramatic literature.

618 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.
598 SPECIAL READINGS 14 credits
Prerequisite: permission of student's advisor or dean. Special readings in an area of concern may be taken to satisfy elective credit. 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 extant nursing science. Evaluation and critique of nursing conceptual models. Analysis of the relationships of theory, research, and practice.

607 POLICY ISSUES IN NURSING 2 credits
Prerequisite: Admission to Graduate Program. Analysis of policy issues that impact on nursing and health care delivery to diverse population(s). 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 pathophysiological differences and related treatment modalities. The course focuses on specific nursing interventions related to these pathophysiological abnormalities.

610 ADVANCED ADULT/GERONTOLOGICAL ASSESSMENT 3 credits
Prerequisite: Admission to Graduate Program, permission of instructor: 608, 671. Advanced adult/gerontological assessment and clinical reasoning in primary health care nursing with an emphasis on diagnostic and clinical management.

612 ADVANCED CLINICAL PHARMACOLOGY 3 credits
Prerequisites: Admission to Graduate Program, 608. Examines principles of pharmacology and therapeutics for major pharmacologic agents used by Advanced Practice Nurses to manage adult/gerontological problems in primary health care settings.

613 NURSING INQUIRY I 3 credits
Prerequisites: Graduate level statistics, admission to Graduate Program. Concepts and ethical issues relating to scientific inquiry are examined, emphasizing the phases of the research process. Students participate in critical analysis of nursing research.

618 NURSING INQUIRY II 4-6 credits
Prerequisite: 613 or permission of instructor. Emphasis on development of competencies in scientific inquiry. Research practicum will involve a) a pilot study; or b) tll participation in faculty research.

620/ADULT/GERONTOLOGICAL HEALTH NURSING NP I 2 credits
Prerequisite: Admission to Adult/Gerontological Nurse Practitioner program or Post-Master's Adult/ Gerontological NP program; 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.

621/ADULT/GERONTOLOGICAL HEALTH NURSING NP II 2 credits
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.

622/ADULT/GERONTOLOGICAL HEALTH NURSING NP III 2 credits
Prerequisites: 610, 611, 690; corequisite: 680. Focuses on nursing care of middle age/adult older adults and their families experiencing chronic illness. Emphasizes management of problems common to chronic care and rehabilitation.

623 PRACTICUM: ADULT/GERONTOLOGICAL HEALTH NURSING NP 3 credits
Prerequisite: 622; corequisite: 684. Integration of nursing knowledge and skills with an adult/older adult population and their families. Emphasis on implementation and evaluation of programmatic interventions.

627/ADULT/GERONTOLOGICAL HEALTH NURSING NP I PRACTICUM 2 credits
Prerequisite: Admission to Adult/Gerontological Nurse Practitioner program or Post-Master's Adult/Gerontological NP program. Practical experience on health promotion and prevention with uncomplicated; acute or chronic illness states of the adult/older adult/families.

629/ADULT/GERONTOLOGICAL HEALTH NURSING NP III PRACTICUM 2 credits
Prerequisites: 626, 629, corequisite: 692. Practicum with emphasis on complex chronic illness states and Comorbidities of the adult/older adult.

630 RESOURCE MANAGEMENT IN NURSING SETTINGS 3 credits
Prerequisite: Admission to Graduate Program or permission of instructor. Examination of fiscal and human resources in nursing service settings; analyzes impact of economic and labor relations on health care.

632 FINANCIAL MANAGEMENT IN NURSING ADMINISTRATION 3 credits
Prerequisite: Admission to Graduate Program or permission of instructor. Examination of fiscal resources in nursing service settings.

633 LEADERSHIP IN NURSING ORGANIZATIONS I 3 credits
Prerequisites: Introduction to graduate studies. Leadership and management theory are utilized to guide practice in the role of nurse administrator.

634 LEADERSHIP IN NURSING ORGANIZATIONS II 3 credits
Prerequisites: 633, 638. Leadership and management theory are utilized to guide the role of nurse administrator.

635 ORGANIZATIONAL BEHAVIOR IN NURSING SETTINGS 3 credits
Prerequisite: Admission to Graduate Program or permission of instructor. Examination of organizational behavior principles related to systems analysis and assessment of organizational structure in nursing settings.

637 NURSE ANESTHESIA RESIDENCY I 4 credits
Prerequisites: 644, 645. This course introduces the second year student to the art and science of both obstetrical and pediatric anesthesia related theory, research, and practice.

638 PRACTICUM: NURSING ADMINISTRATION I 5 credits
Prerequisite: Admission to Graduate Program or permission of instructor. Leadership and management theories are utilized to guide the role of nurse administrator.

639 PRACTICUM: NURSING ADMINISTRATION II 2 credits
Prerequisite: 633, corequisite: 638. Leadership and management theory are utilized to guide the role of the nurse administrator.

640 SCIENTIFIC COMPONENTS OF NURSE ANESTHESIA 3 credits
Prerequisite: Admission to Nurse Anesthesia program. The course presents content dealing with the chemical and physical components of anesthetic agents.

641 PHARMACOLOGY FOR NURSE ANESTHESIA I 3 credits
Prerequisite: 640. The study of intravenous induction agents, injectable analgesics and inhalation anesthetics commonly used in the administration of general anesthesia. Includes use of muscle relaxants.

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**THEATRE ORGANIZATIONS 7810:**

601 PRODUCTION PRACTICUM/DESIGN/TECHNOLOGY 1-2 credits
(May be repeated for a total of four credits) Prerequisite: permission of instructor. Practice in production and design/technology of a theatrical production. Emphasis is on production and design/technology as they apply to production projects and major departmental productions.

605 PERFORMANCE PRACTICUM 1-2 credits
(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. Credited assignments are supervised by faculty project supervisor.

**DANCE PERFORMANCE 7820:**

590 WORKSHOP IN DANCE 1-3 credits
Prerequisite: Admission standing or permission. May be repeated for a total of eight credits. Group study/projects investigating a particular field of dance not covered by other courses.

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**NURSING 8200:**

509 INTERNATIONAL HEALTH 3 credits
Prerequisite: Bachelor’s degree in nursing. Study in an international location. Focus on comparisons of education, ethics, government, demographics and roles and responsibilities.

512 GLOBAL PERSPECTIVES OF HEALTH AND HEALTH CARE 3 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.

533 SCHOOL NURSE PRACTICUM I 5 credits
Prerequisites: 5670:521, 523 and 8200:225 or 650; corequisite: 225 or 650 if not previously completed. Emphasis on clinical primary care health nursing to enhance positive health behavior outcomes of well children and adolescents with minor conditions in family, community-sent environments.

544 SCHOOL NURSE PRACTICUM II 5 credits
Prerequisites: 5670:521, 8200:225 or 650; 8200:553. Emphasis on primary care health nursing for children/adolescents with minor conditions, behavioral or chronic illnesses.

561 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE I 3 credits
Prerequisite: acceptance into Graduate School. This course presents an in-depth study of physiological processes in the areas of neurological, neuromuscular and cardiovascular physiology. Emphasis is on the interhemispheric with therapeutic agents.

562 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE II 3 credits
Prerequisite: 561. This course presents an in-depth study of physiological processes in the areas of respiratory, renal and endocrine physiology and their interaction with therapeutic agents.

589 SPECIAL TOPICS: NURSING 14 credits
May be repeated for a total of 12 credits. Special topics in nursing. May be used to meet requirements for the major in nursing. May be used for elective credit.

590 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.
642 INTRODUCTION TO NURSE ANAESTHESIA  2 credits
Prerequisite: admission into the Nurse Anaesthesia program. This course provides a general overview of anaesthetic concepts and prepares students for their in-hospital residency. The course includes a lecture component and selected laboratory experiences.

643 PRINCIPLES OF ANAESTHESIA I  4 credits
Prerequisite: 640. This course focuses on the acquisition of basic skills related to nursing anaesthesia care and administration of anaesthetics agents, with a focus on equipment.

644 PHARMACOLOGY FOR NURSE ANAESTHESIA II  3 credits
Prerequisite: 641. Focuses on mechanisms of drug transport within the human body in anaesthesiology. The effects of accessory drugs are also discussed.

645 PRINCIPLES OF ANAESTHESIA II  4 credits
Prerequisite: 643. Emphasis on pre-operative anaesthesia care including induction techniques. Discussion of airway management, fluid therapy, and ventilator use.

646 NURSE ANAESTHESIA RESIDENCY I  4 credits
Prerequisite: 657. Concentration on the theoretical basis for specific nursing interventions and the role of nurse anaesthetists. The effects of accessory drugs are also discussed.

647 PROFESSIONAL ROLE SEMINAR  2 credits
Prerequisites: 644, 645. Discusses issues, concepts and theories related to the professional role of nurse anaesthetists. Focuses on leadership/management content as well as professional ethical issues.

648 NURSE ANAESTHESIA RESIDENCY II  4 credits
Prerequisite: 646. Focuses on the understanding of physiologic and pathophysiologic principles of particular organ systems and the relevant implication that govern anesthetic management.

649 NURSE ANAESTHESIA RESIDENCY IV  4 credits
Prerequisite: 648. Comprehensive review of basic and advanced anesthetic concepts important to residency training.

650 ADVANCED PEDIATRIC/ADOLESCENT ASSESSMENT  3 credits
Prerequisites: admission to Child and Adolescent Health Nursing 1 and 608, or permission of faculty; corequisites: 651. Advanced pediatric/adolescent assessment and clinical reasoning for primary health care nursing with introduction to diagnostic and clinical management.

652 CHILD AND ADOLESCENT HEALTH NURSING I  3 credits
Prerequisite: Child and Adolescent Health Nursing care to enhance positive health behavior outcomes of youth or children/adolescents and those with minor health disruptions and problems in family/community contexts.

654 CHILD AND ADOLESCENT HEALTH NURSING III PRACTICUM  2 credits
Prerequisite: Admission into Child and Adolescent Health Nursing NP track or Post MSN Child and Adolescent Health NP program. Clinical practicum course emphasizing primary health care nursing to enhance positive health behavior outcomes of children or children/adolescents, and those with minor health disruption/problems in family/community contexts.

655 CHILD AND ADOLESCENT HEALTH NURSING II PRACTICUM  2 credits
Prerequisite: 651. Clinical practicum course emphasizing primary health care nursing to enhance positive health behavior outcomes in all children/adolescents with acute and chronic health problems in family/community contexts.

656 CHILD AND ADOLESCENT HEALTH NURSING III PRACTICUM  2 credits
Prerequisite: 655. Clinical practicum course emphasizing advanced practice in primary health care using consultation and program development, marketing related to development and health care outcomes of children, adolescents, and families.

657 CHILD AND ADOLESCENT HEALTH NURSING IV  3 credits
Emphasis on primary health care nursing to enhance positive health behavior outcomes of children/adolescents with acute and chronic health disruptions in family/community contexts.

658 PHARMACOLOGY FOR CHILD AND ADOLESCENT HEALTH NURSING  3 credits
Prerequisites: 650, 655, 655A. Focuses on pharmacological agents, that influence developmental outcomes of children/adolescents in ambulatory, inpatient, and home settings.

659 CHILD AND ADOLESCENT HEALTH NURSING II  3 credits
Emphasis on advanced practice in primary health care using consultation and program development/marketing related to development and health behavior outcomes of children/adolescents and families.

660 CHILD AND ADOLESCENT HEALTH NP INTERNSHIP  1-6 credits
Prerequisites/corequisites: Post-MSN CAHN certification program students-651 and 655 or MSN MSN students- 655 and 652. Opportunity for the advanced graduate nursing practitioner in Child and Adolescent Health.

661 PRACTICUM: CHILD AND ADOLESCENT HEALTH NURSING  5 credits
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.

662 BEHAVIORAL HEALTH NURSING I PRACTICUM  2 credits
Development of clinical competencies and therapeutic techniques in the delivery of behavioral health care to individuals.

663 BEHAVIORAL HEALTH NURSING I  3 credits
Prerequisite: Admission to the graduate program. Focuses on the theories, concepts, and techniques utilized in the delivery of behavioral health care to individuals. Theoretical framework and direct intervention are examined.

664 CLINICAL PSYCHOPHARMACOLOGY  3 credits
Prerequisite: 608 or permission of instructor; corequisite: 612. Examines principles of neuroscientific and psychopharmacology and the therapeutic use of psychopharmacologic agents used to manage adult mental health problems in variety of treatment settings.

665 BEHAVIORAL HEALTH NURSING INTERNSHIP  1-4 credits
Prerequisites: 661, 665. Focuses on behavioral health interventions with families/groups and populations. Theoretical frameworks for direct intervention are examined.

666 BEHAVIORAL HEALTH NURSING II PRACTICUM  2 credits
Prerequisites: 668, 680, 661. Development of clinical competencies in direct intervention therapeutic frameworks addressing the stress of actual or potential health problems. Theoretical frameworks for direct intervention are examined.

667 BEHAVIORAL HEALTH NURSING II  3 credits
Prerequisites: 660, 662, 661. Focuses on advanced practice behavioral health nursing with families/groups and populations. Theoretical frameworks for direct intervention are examined.

668 BEHAVIORAL HEALTH NURSING III PRACTICUM  2 credits
Prerequisites: 664, 665. Development of clinical competencies in consultation, collaboration, and program development in behavioral health nursing practice. Practice is in psychiatric and non-psychiatric settings.

669 PRACTICUM: BEHAVIORAL HEALTH NURSING  5 credits
Prerequisites: 661,665,667. Integration of knowledge and skill related to behavioral health nursing; emphasizes integration of advanced practice nursing roles and implementation and evaluation of a programmatic intervention.

761 ADULT/GERIOTRONICAL HEALTH NURSING I  3 credits
Prerequisite: Admission to the Adult/Gerontological Nursing Practitioner Track or the Post-MSN Adult/Gerontological track and 620 or its equivalent for the Post-MSN student. Corequisites: 662 or 624. Focuses on the development of clinical competencies in middle aged/older adults and their families experiencing chronic illness. Emphasizes management of problems common to chronic care and rehabilitation.

762 ADULT/GERIOTRONICAL HEALTH NURSING II PRACTICUM  2 credits
Prerequisite: 661. Clinical practicum course emphasizing primary health care nursing to enhance positive health behavior outcomes of children or children/adolescents, and those with minor health disruption/problems in family/community contexts.

763 ADULT/GERIOTRONICAL HEALTH NURSING III PRACTICUM  2 credits
Prerequisite: 665. Clinical practicum course emphasizing advanced practice in primary health care using consultation and program development, marketing related to development and health behavior outcomes of children, adolescents, and families.

764 ADULT/GERIOTRONICAL HEALTH NURSING IV PRACTICUM  2 credits
Prerequisite: 668, 678. Focus on the development of clinical competencies in middle aged/older adults and their families experiencing chronic illness with emphasis on management of problems common to chronic care and rehabilitation.

765 PRACTICUM: ADULT/GERIOTRONICAL HEALTH NURSING CNS I  4 credits
Prerequisite: 677. Integration of nursing knowledge and skills with an adult/older adult population and their families. Emphasis on implementation and evaluation of programmatic interventions.

768 INSTRUCTIONAL METHODS IN NURSING EDUCATION  3 credits
Prerequisites: admission to the Advanced Role Preparation in Nursing Education certificate program. Study of a variety of instruction methods used in nursing education. Includes teaching and learning methods used in classroom, laboratory, and clinical settings.

769 NURSING CURRICULUM DEVELOPMENT  3 credits
Prerequisite: Admission to the Adult/Gerontological Nursing Practitioner Track or the Post-MSN Adult/Gerontological track and 620 or its equivalent for the Post-MSN student. Corequisites: 621 or 624. Clinical management of common chronic and acute problems of adults in primary health care settings. Focus on episodic management using differential diagnosis and clinical reasoning.

769A ACUTE CARE NURSE PRACTITIONER I  4 credits
Prerequisites: admission to the Adult/Gerontological Nursing Practitioner track or the Post-MSN Adult Care Nurse Practitioner or the Post-MSN Adult/Gerontological Nurse Practitioner certificate programs and 620 or 691; corequisites: 625, 626, 693. Clinical management of complex, chronic health problems of adults in primary health care settings. Focus on long term management using differential diagnosis and clinical reasoning.

769B ACUTE CARE NURSE PRACTITIONER II  4 credits
Prerequisites: 691; corequisite: 692. Focus on advanced nursing interventions related to systemic health care problems of adults in tertiary care settings.

769C ACUTE CARE NURSE PRACTITIONER III  3 credits
Prerequisites: admission to the Adult/Gerontological Nursing Practitioner track or the Post-MSN Adult Care Nurse Practitioner or the Post-MSN Adult/Gerontological Nurse Practitioner Certificate programs and 620 and 690. This course focuses on the acquisition of basic skills related to nursing anaesthesia care and administration of anaesthetics agents, with a focus on equipment.

769D ACUTE CARE NURSE PRACTITIONER IV  2 credits
Prerequisites: 690. Development of clinical competencies in consultation, collaboration, and program development in behavioral health nursing practice. Practice is in psychiatric and non-psychiatric settings.

8644 INSTRUCTIONAL METHODS IN NURSING EDUCATION  3 credits
Prerequisite: admission into the Nurse Anaesthesia program. This course provides a general overview of anaesthetic concepts and prepares students for their in-hospital residency. The course includes a lecture component and selected laboratory experiences.

9997 MASTER’S THESIS  16 credits
Prerequisite: Supervised research in a specific area of advanced nursing.

100 DOCTORAL DISSertation I  1 credit
Prerequisite: admission into the Ph.D. Program or permission of the professor. Examines the nature of metaphysics and epistemology and the influence of contemporary Eastern and Western philosophies on the developing epistemology of disciplinary nursing knowledge. (KUS 70710)
Polymer Science & Engineering

POLYMER ENGINEERING 9841:

525 INTRODUCTION TO BLENDING AND COMPOUNDING POLYMERS 3 credits
Prerequisite: 4240.521 or 4600.515. Introduction to polymer blending and enhancement of material properties through various processes.

527 MOLD DESIGN 3 credits
Prerequisite: 4240.521 or 4600.515. Design and development of the product and the mold that will make it. Includes mold design basics, mold layout, mold materials, mold design, mold assembly, mold maintenance, cost estimation, and mold maintenance.

550 ENGINEERING PROPERTIES OF POLYMERS 3 credits
Prerequisite: 9841.521. Mechanical properties and performance of polymers in various applications.

551 POLYMER ENGINEERING LABORATORY 3 credits
Prerequisite: 9841.521. Conducting experiments and analyzing data related to polymer engineering.

601 POLYMER ENGINEERING SEMINAR 1 credit
Presentations on recent research topics in polymer engineering.

611 STRUCTURAL CHARACTERIZATION OF POLYMERS WITH ELECTROMAGNETIC RADIATION 2 credits
Prerequisite: 9841.521. Techniques for analyzing polymer structures using electromagnetic radiation.

621 RHEOLOGY OF POLYMERIC FLUIDS 3 credits
Prerequisite: 9841.527. Analysis of the flow behavior of polymer melts, solutions, and concentrated suspensions.

622 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS I 3 credits
Prerequisite: 9841.521. Introduction to polymer processing operations and analysis of polymer processing equipment.

623 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS II 3 credits
Prerequisite: 9841.521. Advanced topics in polymer processing operations.

631 ENGINEERING PROPERTIES OF SOLID POLYMERS 2 credits
Prerequisites: 9841.521, 527, 531, 537. Analysis of the mechanical properties of polymers in various states.

641 POLYMER MATERIALS ENGINEERING SCIENCES 2 credits
Prerequisite: 9841.521. Fundamentals of polymer materials and their applications.

642 ENGINEERING ASPECTS OF POLYMER COLLOIDS 2 credits
Prerequisite: 9841.521. Understanding the behavior of polymer colloids in various applications.

650 INTRODUCTION TO POLYMER ENGINEERING 2 credits
Prerequisite: 9841.521. Introduction to the fundamentals of polymer engineering.

651 POLYMER ENGINEERING LABORATORY 3 credits
Prerequisite: 9841.521. Practical applications of polymer engineering concepts.

661 POLYMERIZATION REACTION ENGINEERING 3 credits
Prerequisite: 9841.521. Kinetics and mechanisms of polymerization reactions.

8300:

PUBLIC HEALTH

601 PUBLIC HEALTH CONCEPTS 3 credits
Prerequisite: Admission to the MPH program. Introduction to public health principles and concepts.

602 SOCIAL AND BEHAVIORAL SCIENCES IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Social and behavioral aspects of public health.

603 EPIDEMIOLOGY IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Introduction to epidemiology in public health.

604 BIOSTATISTICS IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Basic statistical methods in public health research.

605 HEALTH SERVICES ADMINISTRATION IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Administration of health services.

606 ENVIRONMENTAL HEALTH SCIENCES IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Environmental health issues.

610 GRANT WRITING IN PUBLIC HEALTH PRACTICE 3 credits
Prerequisite: Admission to the MPH program. Writing and evaluating grant proposals.

612 SPECIAL TOPICS IN PUBLIC HEALTH 1-3 credits
Special topics will be announced.

613 INTRODUCTION TO BLENDING AND COMPOUNDING POLYMERS 3 credits
Prerequisite: 4240.521 or 4600.515. Introduction to polymer blending and enhancement of material properties through various processes.

614 MOLD DESIGN 3 credits
Prerequisite: 4240.521 or 4600.515. Design and development of the product and the mold that will make it. Includes mold design basics, mold layout, mold materials, mold design, mold assembly, mold maintenance, cost estimation, and mold maintenance.

615 ENGINEERING PROPERTIES OF POLYMERS 3 credits
Prerequisite: 9841.521. Mechanical properties and performance of polymers in various applications.

616 POLYMER ENGINEERING LABORATORY 3 credits
Prerequisite: 9841.521. Conducting experiments and analyzing data related to polymer engineering.

617 POLYMERIZATION REACTION ENGINEERING 3 credits
Prerequisite: 9841.521. Kinetics and mechanisms of polymerization reactions.
## POLYMER SCIENCE 9871:

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### Graduate Courses

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<tr>
<td>699</td>
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**Graduate Courses**

- **POLYMER SCIENCE**
- **POLYMER CONCEPTS**
- **SYNTHESIS AND CHEMICAL BEHAVIOR OF POLYMERS**
- **SPECIAL TOPICS IN POLYMER SCIENCE**
- **POLYMER SCIENCE SEMINAR**
- **DOCTORAL DISSERTATION**
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 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.

7. If the party charged in the grievance denies the validity of the grievance, the Chairperson of the Hearing Committee shall waive the hearing and shall direct the appropriate resolution in consultation with the Hearing Committee.

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 Chair.
   c. A graduate student not involved with the complainant and not from the complainant’s department, selected by the Vice Chairperson of the Graduate Council.
   d. A member of the graduate faculty with full membership not involved in the complaint nor from the complainant’s department, selected by the Senior Vice President and Provost.

3. A Hearing Committee shall be organized anew each and every time a grievance is brought forth. A Hearing Committee shall serve through the adjudication and resolution of the complaint.

Hearing Procedure

1. The hearing must take place within 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 will meet.
   c. A copy of “Grievance Procedures for Graduate Students” and all relevant documents.

3. Each party shall be required to appear in person before the Hearing Committee to present his/her case. Each party may have an advisory colleague present to protect his/her rights if so desired. However, the parties shall speak and act on their own behalf. Witnesses may be called to present evidence on behalf of the complainant or the charged person. The use of tape recorders is prohibited, except as may be required to accommodate persons with disabilities.

4. All parties shall be entitled to an expeditious hearing. In urgent cases in which it is alleged that a regulation, administration decision, or action threatens immediate and irreparable harm to any of the parties involved, the Hearing Committee shall expedite the hearing and disposition of the case. The Hearing Committee is empowered to recommend to the Dean of the Graduate School that an individual, department, or college discontinue or postpone any action which threatens to cause irreparable harm, pending the final disposition of the case.

5. The burden of proof shall be on the complainant and the standards of justice and fair play shall prevail in the adjudication of violations and grievances.

6. If necessary, the Hearing Committee may consult with the University’s Office of General Counsel for advice at any time throughout this process.

Decisions and Actions

1. The Hearing Committee shall decide as follows: there has been a violation of the complainant’s rights, or there has been no violation of the complainant’s rights.

2. Should the Hearing Committee determine that a violation of the complainant’s rights occurred, the Committee shall, if practical, recommend a resolution to the Senior Vice President and Provost.

3. The Senior Vice President and Provost, exercising his/her judgment, shall act on the implementation of the resolution recommended by the Hearing Committee.

Record Keeping

The Chairperson of the Hearing Committee shall be responsible for keeping a summarized, written record of all the proceedings.

1. Records of all proceedings shall be prepared by the secretarial personnel of the Graduate School. Copies of all proceedings shall be distributed as follows:
   a. To all parties involved in the proceedings.
   b. To the Hearing Committee members.
   c. To the President of the Graduate Student Government.
   d. To the Dean of the Graduate School.
   e. To the Senior Vice President and Provost.

2. A copy of all proceedings shall be kept in the office of the Dean of the Graduate School pursuant to the University’s record retention proposal.

Appeal

An appeal may be made to the President of the University after all of the above procedures have been followed. The President of the University shall assess each case on an individual basis and his/her decision shall be considered final.
Family Educational Rights and Privacy Act (FERPA)

A student has a right to:
- Inspect and review education records pertaining to the student;
- Request and amendment to the student’s records; and
- Request a hearing (if the request for an amendment is denied) to challenge the contents of the education records, on the grounds that the records are inaccurate, misleading, or violate the rights of the student.

The parent or eligible student has a right to:
- Inspect and review the student’s education records;
- Request the amendment of the student’s education records to ensure they are not inaccurate, misleading, or in otherwise violation of the student’s privacy or other rights.
- Consent to disclosures of personally identifiable information contained in the student’s education records, except to the extent that FERPA authorizes disclosure without consent.
- File with the U.S. Department of Education a complaint concerning alleged failures by the school to comply with the requirements of FERPA; and
- Obtain a copy of the school’s FERPA policy.

Disclosure of Personally Identifiable Information

- FERPA regulations list conditions under which “personally identifiable information” from a student’s education record may be disclosed without the student’s prior consent.
- Disclosure may be made to authorized representatives of the U.S. Department of Education, the Office of Inspector General, or state and local education authorities. These officials may have access to education records as a part of an audit or program review, or to ensure compliance with Student Financial Assistance program requirements. (Representatives of the Department include research firms that are under contract with the Department to conduct studies of financial aid procedures, using student information provided by the schools selected for the study. The term also includes the Student Financial Assistance program public inquiry contractor.)
- Disclosure may be made if it is in connection with financial aid that the student may receive a request from the Immigration and Naturalization Service (INS) or the Federal Bureau of Investigation (FBI) for access to a student’s records. Such a request may be granted only if the student information is needed to determine the amount of the aid, the conditions for the aid, the student’s eligibility for the aid, or to enforce the terms or conditions of the aid.
- Disclosure may be made to the student’s parent, if the student is dependent on the parent, as defined by the Internal Revenue Service. If the student receives more than half of his or her support from the parent, under the IRS definition, the student is a dependent of the parent. (Note that the IRS definition is quite different from the rules governing dependency status for the Student Financial Assistance programs.)
- Disclosure may be made to organizations that are conducting studies concerning the administration of student aid programs on behalf of educational agencies or institutions.

Annual Notification

Each year, The University of Akron is required to give notice of the various rights accorded to parents or students pursuant to the Family Education Rights and Privacy Act (FERPA). Parents and students, under FERPA, have a right to be so notified and informed. In accordance with FERPA, you are notified of the following:

- Right to Prevent Disclosures
  You have the right to prevent disclosure of Education Records to third parties with certain limited expectations. It is the intent of The University of Akron to limit the disclosure of information contained in your Education Records to those instances where prior written consent has been given for disclosures, as an item of directory information of which you have not refused to permit disclosure, or under the provisions of FERPA which allows disclosure without prior written consent.

- Right to Inspect
  You have the right to review and inspect substantially all of your Education Records maintained at or by The University of Akron.

- Right to Request an Amendment
  You have the right to have corrected any parts of any Education Record that you believe to be inaccurate, misleading, or otherwise in violation of your FERPA rights. This right includes the right to a hearing to present evidence that the record should be changed if this institution decides not to alter the Education Records at your request.

- 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.

- 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., 20202-5615, (202) 260-9000, 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.
Questions of Authorship and Inventorship

In the event you think you have been improperly omitted from the list of authors, or sponsor when the work is placed in a fixed form (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 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.

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/dissertation, it will not delay acceptance or approval of your thesis/dissertation nor delay your graduation date.

The University and principal investigator must have written personal commitments from anyone working on a project involving and securing proprietary information. Therefore, all research students are required to execute the Confidentiality Agreement (sample form attached to this page). Prior to the start of your research, it is the responsibility of the research director to inform you in writing of any restrictions on the research with a copy also sent to the Office of Research Services and Sponsored Programs. If your research is subject to confidentiality provisions, you are to be informed by the research director about the scope of the research that is covered by any confidentiality provisions.

If you have any questions as to what information is proprietary, seek guidance from your project’s principal investigator or your faculty research advisor.

Questions of Authorship and Inventorship

In the event you think you have been improperly omitted from the list of authors, you should first discuss the matter with your faculty advisor. If you have further questions or consider the matter unresolved, you should inform the following order the appropriate department chair, the college dean, and finally the Dean of the Graduate School. (Questions are usually, and most quickly, resolved at the lowest administrative levels.)

In the event you think you have been omitted as an inventor on a patent application, you should first discuss the matter with your faculty research advisor and, thereafter, with your department chair and finally with your academic dean. Following such consultations, either you or your faculty advisor, or your department chair, or your dean can request the patent attorney who prepared the application to recheck the findings and then prepare a formal report on inventorship. The whole patent application file may then be referred to the Office of General Counsel for 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.
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September 2003

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GARY B. FRANK, Ph.D., College of Business Administration
PETER J. LAVENTYEV, Ph.D., College of Arts and Sciences; Natural Sciences
REX D. RAMSEY, Ph.D., College of Arts and Sciences; At-Large

Term expires August 31, 2005

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Term expires August 31, 2006

CHARLES BENKE, M.A., College of Fine and Applied Arts

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EROL SANCATAK, Ph.D., College of Polymer Science and Polymer Engineering
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Graduate Faculty* September 2003

LUIS M. PROENZA, Professor of Biology; Adjunct Professor of Education; Adjunct Professor of Political Science (January 1999) B.A., Emory University; M.A., The Ohio State University; Ph.D., The University of Minnesota, 1971.
RULA AIBASAAB, Associate Professor of History (1998) B.A., American University of Beirut; M.A., California State University at Fullerton; M.Phil., Ph.D., Yale University, 1998.
STEPHEN H. ABY, Professor of Bibliography; Education Bibliographer (August 1988) B.A., University of Texas at Austin; M.A., University of Houston; Ph.D., State University of New York at Buffalo; M.L.S., Kent State University, 1984.
MARIA AMADOWICZ-HARASZ, Associate Professor of Modern Languages (1995) B.A., Maria Curi-Skłodowska University; Poland; M.A., Ph.D., University of Pennsylvania, 1994.
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AIGBE AKHIGBE, Professor of Finance; Frederick W. Moyer Chair in Finance (2000) B.S., University of Texas at Southwestern Louisiana; M.B.A., Ph.D., University of Houston, 1991.
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SONIA ALEMAGNO, Associate Professor of Public Administration and Urban Studies; Senior Research Associate, Health and Social Policy; Associate Director, Institute for Social and Health Policy (1998) B.A., John Carroll University; M.A., Kent State University, Ph.D., Case Western Reserve University, 1991.
PHILLIP ALLEN, Professor of Psychology; Senior Fellow, Institute for Life-Span Development and Gerontology (2000) B.S., M.A., Ph.D., The Ohio State University, 1987.
ALAN S. AMBROSCIO, Assistant Professor of English (1999) B.A., SUNY Buffalo; M.A., Ph.D., Indiana University, 1999.
ALFRED L. ANDERSON, Professor of Music (1986) B.M.E., Mississippi College; M.M., Indiana University, 1970.
CAROLYN M. ANDERSON, Professor of Communication (1995) B.A., University of Detroit; M.A., Wayne State University; Ph.D., Kent State University, 1992.
JULIE DREW, Assistant Professor of Communication (1999) B.A., T. C. Cannon College of Business Administration; J.D., University of Dayton; Ph.D., Virginia, 1995.
ROGER B. OREIL, Associate Professor of English (1997) B.A., Ph.D., Case Western Reserve University, 1971.
CHRISTOPHER P. BANKS, Associate Professor of Political Science (1995) B.A., University of Michigan; J.D., University of Virginia, 1995.
ABEL A. BARTLEY, Associate Professor of History; Director, Pan African Studies; Director, Pan African Center for Community Studies (1994) B.A., M.A., Ph.D., Florida State University, 1994.
CÉLAL BATUR, Department Chair of Mechanical Engineering, Professor of Mechanical Engineering (February 1983) B.Sc., M.Sc., The Technical University of Istanbul; Ph.D., The University of Leices-
ter, 1976.
CAROLYN BEHRMAN, Assistant Professor of Anthropology (1998) B.A., Amherst College; M.A., University of Pennsylvania, 1997
ELIZABETH J. STROEBLE, Senior Vice President and Provost, Ph.D.

* The dates in parentheses indicate the beginning of service at The University of Akron; unless otherwise stated, service began in the month of September.


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IGOR A. TSUKERMAN, Associate Professor of Electrical Engineering (1995) M.S., Ph.D., Polytechnic University of Leningrad, Russia, 1988.


LARRY D. SNIDER, Professor of Music (1977) B.S., Illinois State University; M.M.E., North Texas University; D.M.A., University of Illinois, 1983.

DUDLEY B. TURNER, Associate Professor of Communication; Director of the School of Communication (1980) B.A., Ashbury College; M.A., The University of Akron; Ph.D., Purdue University, 1988.

MARK D. SOUCEK, Associate Professor of Polymer Engineering (August 1990) B.S., B.S., Bingham Young University; Ph.D., University of Georgia, 1982.

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SUSAN D. SPEERS, Professor of Theatre Arts (1988) B.A., M.A., University of Houston; Ph.D., University of California at Santa Barbara, 1982.

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RICK B. STERN, Associate Professor of Statistics (1984) B.S., Grove City College; M.S., University of Maryland, 1986.

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PATRICIA A. WALLACE, Associate Professor of Business Administration; Coordinator, Business Administration; Ph.D., University of Minnesota, 1989.

BRIAN E. WALLACE, Associate Professor of Business Administration; Ph.D., University of Minnesota, 1989.

ELIZABETH J. STROBLE, Senior Vice President and Provost; Dean of the College of Education; Professor of Education (September 2000) B.A., M.A., Augustana College; M.A., Southern Illinois University-Edwardsville; Ph.D., University of Virginia, 1987.


LANCE M. SVEHLA, Associate Professor of English (1997) B.A., University of Nebraska; M.A., Ph.D., University of New Hampshire, 1997.

LANCE M. SVEHLA, Associate Professor of English (1997) B.A., University of Nebraska; M.A., Ph.D., University of New Hampshire, 1997.

GERARD M. SWEENEY, Professor of English (1971) B.S., Manhattan College; M.A., New York University; Ph.D., University of Wisconsin, 1971.


MICHAEL J. TASHNER, Associate Professor of Chemistry; Acting Chair, Chemistry (1982) B.S., University of Wisconsin, M.S., Iowa State University, 1980.

MARK B. TAUSIG, Professor of Sociology (1983) B.A., University of Wisconsin; M.A., Cornell University; Ph.D., University of New York at Albany, 1979.

TERRI J. SWIM, Associate Professor of Psychology; Acting Chair, Psychology (1992) B.S., University of Kentucky; M.A., Ph.D., The University of Texas-Austin, 1995.

BRUCE C. TAYLOR, Associate Professor of Biomedical Engineering; Professor of Electrical Engineering (1988) B.A., Hiram College; M.A., Ph.D., Kent State University, 1971.


CLAIRE A. TESSIER, Professor of Chemistry (August 1990) B.S., University of Vermont; Ph.D., State University of New York at Buffalo, 1982.

THEODORE TERRY, Associate Professor of History; Field Coordinator in Social Work (1985) B.A., Indiana University; M.S.W., University of Akron, 1986.

WILLIAM THELMAN, Associate Professor of English; Director of Composition (2001) B.A., M.A., California Institute of Technology; Ph.D., Indiana University of Pennsylvania, 1997.

PHILIP G. THOMSON, Assistant Dean of Academic Affairs; Associate Professor of Music (1994) B.M., University of Toronto; M.M., The Juilliard School, 1981.
Deans of the Colleges of
The University of Akron

*Deceased.

**Buchtel College of Arts and Sciences**

ALBERT I. SPANTON*, 1928-1938, Ph.D., Litt.D.

HUGH E. MILLER, 1938-1948, Ph.D., Litt.D.

ERNEST H. CHERRINGTON, JR., 1948-1960, Ph.D.

THOMAS SUMNER*, 1960-1962, Ph.D.

GEORGE W. KNEPPER, 1962-1967, Ph.D.

DON A. KEISTER*, 1967-1969, Ph.D.

JAMES W. DUNLAP, 1970-1989, Ph.D.

JAMES W. BARNETT, 1990-1993, Ph.D.

WILBUR EARLE BENSON*, 1993-2000, Ph.D.

RUSSELL J. PETERSEN, 2001-present, Ph.D.

George R. Newsome, 2001-present, Ph.D.

Graduate School

CHARLES CULGER*, 1933-1951, Ph.D., Litt.D. (Dean of Graduate Work)

ERNEST H. CHERRINGTON, JR., 1955-1960 (Director of Graduate Studies); 1960-1967 (Dean of the Graduate Division); Ph.D.

ARTHUR K. BRINTALL, 1967-1968, Ph.D. (acting)

WILBUR EARLE BENSON*, 1968-1970, Ph.D.

JAMES W. DUNLAP, 1970-1989, Ph.D.

RUSSELL J. PETERSEN, 1989-1994, Ph.D.

JAMES INMAN, 1994-1995, LL.M. (interim)

STEPHEN F. HALLIAM, 1995-2003, Ph.D.

JAMES W. BARNETT, 2003-present, B.S. (interim)

School of Law

STANLEY A. SAMAD*, 1959-1979, J.S.D.


DONALD M. JENKINS, 1981-1987, LL.M.

ISAAC C. HUNT, JR., 1987-1999, LL.B.

RICHARD L. AYNES, 1995-present, J.D.

Continuing Education and Evening Division (formerly Evening College)

L. L. HOLMES, 1932-1934, M.A. (director)

LESLIE P. HARDY*, 1934-1953, M.S.Ed., L.H.D. (director)


CAESAR A. CARRINO, 1974-1986, Ph.D. (dean)

WILLIAM H. BEISEL, 1986-present, Ph.D. (dean)
Community and Technical College
W. M. PETRY*, 1964-1974, M.S.M.E.
ROBERT C. WEYRICK, 1974-1985, M.S.
JAMES P. LONG, 1987-1989, Ph.D.
DAVID A. SAM, 1996-2000, Ph.D.
WILLIAM H. BEISEL, 2000-present, Ph.D. (interim)

College of Fine and Applied Arts
RAY H. SANDEFUR*, 1967-1978, Ph.D.
GERARD L. KNIEFER, 1978-1986, Ph.D.
WALLACE T. WILLIAMS*, 1987-1991, Ph.D.
LINDA L. MOORE, 1992-1996, Ph.D.
MARK S. AUBURN, 1998-2000 (interim); 2000-present, Ph.D.

College of Nursing
ESTELLE B. NAES, 1967-1975, Ph.D.
LILLIAN J. DeYOUNG, 1975-1988, Ph.D.
ELIZABETH J. MARTIN, 1988-1992, Ph.D.
JANNIE R. DUNHAM-TAYLOR, 1996-1997, Ph.D. (interim)
CYNTHIA CAPERS, 1997-present, Ph.D.

Wayne College
MARVIN E. PHILLIPS, 1972-1974, M.A. (acting director)
JOHN G. HEDRICK, 1974-1974, M.A. (director)
JOHN G. HEDRICK, 1974-1979, M.A. (dean)
ROBERT L. McELWEE, 1979-1980, M.A. (acting dean)
JOHN P. KRISTOFIC, 1997-present, Ph.D. (dean)

College of Polymer Science and Polymer Engineering
FRANK N. KELLEY, 1988-present, Ph.D. (dean)
Dance Performance, 120

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THE UNIVERSITY OF AKRON IS AN EQUAL EDUCATION AND EMPLOYMENT INSTITUTION . . .


It is the policy of this institution that there shall be no discrimination against any individual at The University of Akron because of age, color, creed, disability, national origin, race, religion, veteran status, or sex.

The University of Akron prohibits sexual harassment of any form in its programs and activities and prohibits discrimination on the basis of sexual orientation in employment and admissions.

Complaint of possible discrimination, including sexual harassment, should be referred to:

Director, Equal Employment Opportunity and Training
Leigh Hall 202
The University of Akron
Akron, Ohio 44325-4709
330-972-7300

Information on Title IX (sex discrimination) may be obtained from

Title IX Coordinator
330-972-7300
The University of Akron
Graduate School
Akron, OH 44325-2101
330-972-7663

☐ First Application to Graduate School  ☐ Change in Major Field, Current Program
☐ Re-application to Graduate School  ☐ Application for Transient Status

(Requires additional form available from this office)

DOMESTIC: Submit application at least six weeks prior to the beginning of the term for which admission is sought.
INTERNATIONAL: Submit application at least six months prior to the beginning of the term for which admission is sought.

INCOMPLETE APPLICATIONS WILL BE RETURNED.

PS ID #
OFFICE USE ONLY

PERSONAL DATA

Social security no. LAST NAME First Middle initial
E-mail address (optional) Previously used names Name as Rejected on Passport (INTL Students Only) (Last Name, First Name)
Permanent address
No. and street
City State Zip/Postal code Province (non U.S.) Country (non U.S.) Ohio County code (from reverse side)
If same as permanent address, check this box ☐ Mailing address No. and street City State Zip/Postal code
Phone no. (including area code) ☐
Gender (optional) Male Female MO. Date of birth DAY YR. City/Country of Birth
Name of person to contact in case of emergency (first name, middle initial, last name): Relation (check one): ☐ Parents ☐ Mother ☐ Guardian ☐ Spouse ☐ Other
Address: Number/Street City State Zip/Postal code Telephone no. (including area code)
Please check one of the following (optional): ☐ Native American ☐ African-American ☐ Asian-American ☐ Chicano/Mexican or Latino ☐ Caucasian/White American ☐ Nonresident Alien
Your Employer ☐ Your Occupation ☐ Work phone no. ( )

I plan to enter (check one—must be for a term following completion of all baccalaureate requirements):
☐ Fall Semester (September) 200— ☐ Spring Semester (January) 200— ☐ Summer Semester I (June) 200— ☐ Summer Session II (July) 200— ☐ Summer Session III (July) 200— ☐ Day ☐ Evening

PROGRAM DATA

My intended program is: ☐ YES (check one) ☐ NO, Degree is desired
Program Code number: (Program Code number required for above)
Do you plan to pursue an advanced program leading to a degree? ☐ Master’s program ☐ Doctoral program
I am applying for an assistantship ☐ YES ☐ NO
Permanent residence location (If you have lived in Ohio less than one year, call 330-972-7836 for clarification.) ☐ Ohio State other than Ohio U.S. citizen living abroad Non U.S.
Date Ohio residence established MO. DAY YR.
U.S. citizen ☐ YES ☐ NO Country of citizenship if non U.S.
If you are not a U.S. citizen, indicate your current status: ☐ Non-immigrant. If you hold a visa, indicate visa type (e.g., F-1, J-1, etc.). ☐ Refugee or asylum or other. (Specify) and date that you received this number: month day year .
Immigrant. Indicate alien registration number: A and date that you received this number: month day year .
Native language ☐ YES ☐ NO

EDUCATION

(Excluding The University of Akron or school currently attending, if any)
Complete the following blanks for all universities, colleges, schools of nursing, technical schools, or other postsecondary educational programs you have attended or are now attending. (Attach additional sheet if necessary.) Request from each institution, except The University of Akron, that an official copy of your transcript be sent directly to the UA Graduate School.

College/University/School Location From To Major Degree/Certificate – Either completed or anticipated? Name of degree, if any
☐ Money ☐ Yes ☐ No
☐ Money ☐ Yes ☐ No
☐ Money ☐ Yes ☐ No
☐ Money ☐ Yes ☐ No

Are you currently under suspension or dismissal for disciplinary reasons from any college, university, or other formal postsecondary education program? ☐ NO ☐ YES – If yes, attach a statement of explanation.

If applicable) When did you last attend The University of Akron? _______ Did you attend as a workshop special only? ☐ YES ☐ NO
Highest degree achieved at time of admission: ☐ Baccalaureate ☐ Master’s ☐ Doctorate ☐ Professional (M.D., J.D., etc.)
Bachelor’s degree awarded by: ☐ The University of Akron ☐ Other Ohio public college ☐ College outside Ohio
Master’s degree awarded by: ☐ The University of Akron ☐ Other Ohio public college ☐ College outside Ohio

CERTIFICATION OF TRUTH STATEMENT

(please read the following and sign below)
I affirm that the information I have provided on this application form and all other admission application materials is complete, accurate, and true to the best of my knowledge.
I authorize each high school and each college or school I have attended to release academic and personal information as related to this admission application upon request. I agree to submit other materials which are required for this admission application. I agree that as a student, I will be subject to the rules and policies set forth in the Graduate and Undergraduate Bulletins by The University of Akron. I understand that furnishing false or incomplete information on any part of this admission application material may result in cancellation of admission or registration, or both.

Signature Date Fee paid

Write, do not print, your legal signature.

rev. 04/03 592-G-26
Credit Card Type:
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Visa  Master Card  Discover

Credit Card #
(With Dashes)
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Expiration Date:
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Print name as shown on card:
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Telephone #:
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Sign Your Name Here:  Date:
_____________________________________________________________

Amount to be paid:
(Please circle)

Graduate Application/Transient Fee  $40.00
International Graduate Application/Transient Fee  $60.00
Temporary Admission  $30.00
(For temporary admission, pay $30.00 plus Application fee if not already submitted)

Total Approved Amount to be Charged  $_______________
APPLICATION FOR A GRADUATE ASSISTANTSHIP/FELLOWSHIP

Department __________________________________________ Area of Specialization __________________________________________

To be considered for financial aid you must first be admitted to the Graduate School. If you are not now an active student in a graduate program you must apply immediately. Applications for admission are sent to the Dean of the Graduate School, The Polsky Building 469, The University of Akron, Akron OH 44325-2101. Applications for assistantships must be sent in a separate envelope to the chair/director of the department/school or program to which you are seeking acceptance.

Name _______________________________________________________ Social Security Number ________________________________

Address ______________________________________________  City _____________________  State ________  Zip __________________

Phone ( ) ________________________  Date of Birth _________________________  Citizenship ______________________________

Present position _______________________________________________________________________________________________________

You must have a bachelor’s degree from an accredited college or university or expect such a degree prior to September 1 (for fall appointment) of the year in which you begin graduate study.

DEGREES RECEIVED
College or University ____________________________ Degree ____________________________ Major Field ____________________________ Date Awarded/Expected ____________________________

OTHER PROFESSIONAL EXPERIENCE (employment, etc.)

_____________________________________________________________________________________________________________________

LETTERS OF REFERENCE
Persons listed (name, title, and address) should be sufficiently acquainted with you and your work to write a letter of recommendation. Have each person listed write a letter directly to the department chair/school director concerned.

_____________________________________________________________________________________________________________________

_____________________________________________________________________________________________________________________

APPLICANT’S STATEMENT
On the back of this form write a short essay in which you explain why you believe you are qualified for an assistantship or fellowship. You should describe your undergraduate preparation as well as other relevant experiences, such as employment, teaching, activity in professional or technical societies, foreign languages read or spoken, and any other pertinent information.

Send this application to:

Chair/Director
Department/School of ____________________________ _____________________________________________________

The University of Akron
Akron, Ohio  44325

Signature of Applicant

PLEASE NOTE: Ohio state law requires all Teaching Assistants to be assessed for English proficiency before beginning classroom duties. Students for whom English is the first language are assessed by departmental procedures. Students for whom English is a second language must submit a Test of Spoken English (TSE) score of 50 or better (TSE, Revised 1995) before a teaching assistantship will be awarded. Applicants from abroad should take the test before leaving home. TSE scores are not required of research or administrative assistants.