1999
Graduate Bulletin
2000
THE UNIVERSITY OF AKRON
Contents

Section 1 ......................................................... 6
Background Information

Section 2 ......................................................... 20
General Information

Section 3 ......................................................... 28
Academic Requirements

Section 4 ......................................................... 32
Graduate Studies

Section 5 ......................................................... 80
Research Centers and Institutes

Section 6 ......................................................... 85
Courses of Instruction

Appendix
Grievance Procedures for Graduate Students ......................... 130
Intellectual Property Rights and Obligations ......................... 131
Family Educational Rights and Privacy Act ......................... 133

Directory ......................................................... 136

Index ......................................................... 146

Campus Map ................................................... 150

Application for Graduate School
Application for a Graduate Assistantship
Calendar 1999-2000

Fall Semester 1999
Day and Evening Classes Begin Mon., Aug. 30
*Labor Day (Day and Evening) Mon., Sept. 6
Veterans Day (classes held; staff holiday) Thu., Nov. 11
**Thanksgiving Break Thu.-Sat., Nov. 25-27
Classes Resume Mon., Nov. 29
Final Instructional Day Sat., Dec. 11
Final Examination Period Mon.-Sat., Dec. 13-18
Commencement Sat., Dec. 18
Spring InterSession Sat.-Sat., Jan. 1-15, 2000

Spring Semester 2000
*Martin Luther King Day Mon., Jan. 17
Day and Evening Classes Begin Tue., Jan. 18
*Presidents' Day Tue., Feb. 15
Spring Break Mon.-Sat., Mar. 20-25
***May Day Fri., May 5
Final Instructional Day Sat., May 6
Final Examination Period Mon.-Sat., May 8-13
Commencements Sat.-Sun., May 13-14
Summer InterSession Mon.-Sat., May 15-June 10
Commencement for Law School Sun., May 21

Summer Session I 2000
First 5- and 8-Week Sessions Begin Mon., June 12
*Independence Day Tue., July 4
First 5-Week Session Ends Sat., July 15

Summer Session II 2000
Second 5-Week Session Begins Mon., July 17
8-Week Session Ends Sat., Aug. 5
Second 5-Week Session Ends Sat., Aug. 19
Summer Commencement Sat., Aug. 19

Fall Semester 2000
Day and Evening Classes Begin Mon., Aug. 28
# 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.

## Graduate School

**Dean, Graduate School**  
Dr. Charles Dye ................. 972-7664

**Associate Dean, Graduate School**  
Dr. Kathardus Goggins .......... 972-6783

**Assistant to the Dean, Graduate School**  
Mrs. Dolli Markovich .......... 972-6737

**Coordinator, Graduate Financial Assistance**  
Mrs. Karen Calewell ........... 972-6310

**Secretary to the Dean, Graduate School**  
Ms. Heather Blake ............. 972-7664

**Coordinator, Graduate School Admissions**  
Miss Brenda Henry ............ 972-7665

**Coordinator, Graduate Degree Completion**  
Mrs. Cheryl Garcia .......... 972-5169

**Clerical Specialist, Graduate School**  
Mr. Kevin Tondra ............. 972-7663

**Graduate Student Government**  
Ms. Jacqueline A. Suppan (1999-2000 President) ... 972-5387

## 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** ................. 972-7681

**College of Engineering** ................. 972-7816

**College of Fine and Applied Arts** ................. 972-7584

**College of Nursing** ................. 972-7651

**College of Polymer Science and Polymer Engineering** ................. 972-7500

**The University of Akron-Wayne College** .......... 1-800-221-9308

**NEOUCOM (Northeast Ohio Univ. College of Medicine)** ................. 325-2811

**University College** ................. 972-7066

## Other Offices

**Buchtelite, The (student newspaper)** ................. 972-7457

**Campus Diversity, Office of** ................. 972-7858

**Academic Support Services** ................. 972-7679

**Access and Retention** ................. 972-7679

**Careers Program, Arts and Sciences** ................. 972-5714

**Center for Child Development** ................. 972-8210

**Communication Centers (photocopying)** ................. 972-8278

**Buchtel Library** ................. 972-7870

## Important Phone Numbers

Cooperative Education Programs ................. 972-6722

Counseling, Testing, and Career Center
  Counseling ................. 972-7082
  Testing ................. 972-7084
  Career Placement Services ................. 972-7477

English Language Institute ................. 972-7544

Financial Aid, Office of Student
  Scholarships ................. 972-7032
  Student Employment ................. 972-7405
  Work Study ................. 972-8074

Gardner Student Center ................. 972-7866

Health Services, Student ................. 972-7808

International Programs
  Immigration ................. 972-6349
  International Admission ................. 972-6349

Libraries, University
  Bierce Library ................. 972-7236 or 972-7497
  Law Library ................. 972-7330
  Science and Technology Library ................. 972-7195
  University Archives ................. 972-7670

Pan-African Culture and Research Center ................. 972-7039

Parking Services ................. 972-7213

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

Registrar, Office of the University ................. 972-8300

Graduation Office ................. 972-8300

Records and Transcripts ................. 972-8300

Residence Life and Housing ................. 972-7800

Services for Students with Disabilities
  TTY/TDD (hearing impaired) ................. 972-5764

Sports Information, Director of ................. 972-7466

Student Assistance Center ................. 972-6755

Student Conduct ................. 972-7021

Study Abroad ................. 972-8349

Ticketmaster ................. 972-6684

University Program Board ................. 972-7014

Veterans Affairs Coordinator and Counselor ................. 972-7838

WZIP-FM Radio Station ................. 972-7105

## Emergency Phone Numbers

**Police/Fire/EMS** ................. 911

**Police** (non-emergency) ................. 972-7123

**Campus Patrol** ................. 972-7263

**University Switchboard** ................. 972-7111

**Closing Information** ................. 972-SNOW (7669)
Section 1

Background Information
Background

HISTORY

The connection between The University of Akron and its surrounding community has been a recurring theme from the institution's founding as a small denominational college in 1870 to its current standing as a major, metropolitan, state-assisted university. It is significant that the efforts, energy, and financial support of Akron Manufacturers' Association of Ammonia Equipment, John R. Buettel, were instrumental in persuading the Ohio University in 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 generous financial support of organizations and individuals who had prospered 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 1912 those strong ties and the school's financial situation caused trustees to consider the institution and its assets to the city. For the next 50 years, The Municipal University of Akron received its principal support from city tax funds and was included in a special district from the outset.

The growth of the school paralleled the remarkable expansion of the community. 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. In 1913, thanks in large part to a boom in local factories that produced small items such as Goodyear Firestone Goodrich, and other, the age of the automobile was at its demand for inflatable rubber treads—changed the complexion of Akron forever.

Changes within the Municipal University's curriculum reflected the strong interrelationship of town and gown. In 1912 a College of Engineering began instruction, and other professional schools followed: Education (1921), Business Administration (1925), Fine and Applied Arts (1957), 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 (1969), now the largest academic polymer program in the world. In the 1930s and 1940s, with the establishment of the Akron Institute of the Guggenheim Airship Institute, University scientists studied the structure and design of zeppelins. During World War II, University of Akron researchers helped fill a critical need of the U.S. defense 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 teaching more effectively, to maximize performance; they are developing new ways to synthesize fuel, they write and produce plays, pen poetry, choreograph dance works; they explore improved methods of tumor detection; they evaluate water quality in northeast Ohio; they provide speech and hearing therapy to hundreds of children in the free-enterprise system, to list in business practices with new and established companies alike; they provide health care in community clinics, and they study political campaign financing and reform. Faculty are awarded patents each year for their work on new technologies and products. The University's strong and continuing commitment to the liberal arts is signified by the perpetuation of the institution's original name in the Buchtel College of Arts and Sciences.

And the University has maintained an openness to innovation in other ways. As early as the 1880s, Buchtel College was liberalizing its curriculum by allowing students to choose free electives among their courses of study. The University later adopted and developed the general education concept, which represents an attempt to prepare students for both their personal and professional lives by providing a balance between courses that teach them how to make a living and courses that teach them how to live as we know it in Western civilization. As early as 1914, nine University engineering students headed out into Akron factories initiating one of the country's first engineering cooperative education programs. World War I-era students included the nation's first female students to co-op in a commercial job.

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 17 doctoral degree programs and four law degree programs as well as more than 100 master's degree programs and options. The University offers graduate students a choice of more than 200 majors and areas of study leading to associate and bachelor's degrees. Hundreds of noncredit continuing education courses, certificate programs, and specialized training opportunities are available for individuals and organizations.

In 1963, the receipt of state tax monies made The University a state-assisted municipal university, and on July 1, 1967, The University of Akron officially became a state university. Today, nearly 24,000 students from 40 states and 70 foreign countries are enrolled in its 10 degree-granting units. The University of Akron is among the 80 largest universities in the nation and boasts the third-largest principal campus enrollment of Ohio's state universities. The University offers a comprehensive academic package featuring select programs unsurpassed nationally and internationally. Alumni of the University number more than 115,000 and include scientists, engineers, artists, lawyers, educators, nurses, writers, business people, and other professionals at work in every state and 84 foreign countries.

The 170-acre Akron campus, with 73 buildings, is wining walking distance of downtow Akron and is located in a metropolitan area of 2.8 million people. The University's presence in northeast Ohio includes numerous opportunities in recreation, major collegiate, amateur, and professional sports; concerts, cultural events, and commerce, all within easy driving distance and many accessible via public transportation. Located at campus, the Ohio Ballet, Emily Davis Art Gallery, University Orchestra, Opera/Musical Theatre, concerts, recitals, choral programs, Turning Arts Program, University Theatre, Playwright Dance Company, and professional artists performing at E.J. Thomas Performing Arts Hall contribute to the University's rich cultural environment. The University has achieved a position of prominence in a number of intercollegiate sports. Having joined the Mid-American Conference in 1991, the University participates on the NCAA Division I level in 14 sports.

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

MISSION STATEMENT

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

STRATEGIC DIRECTIONS

The following strategic directions provide further definition of the University's mission and service as the bases upon which the colleges, departments, and service units of the University are establishing program objectives now and toward the 21st century.

**Strategic Direction I**

Attract and retain a higher quality and more diverse student body.

**Strategic Direction II**

Identify and eliminate barriers to a campus culture of service, and make every effort to improve the campus environment.

**Strategic Direction III**

Increase student retention and progress toward completion of their academic programs.

**Strategic Direction IV**

Improve the quality of the undergraduate experience.

**Strategic Direction V**

Cultivate scholarly and creative activities that are recognized regionally, nationally, and internationally.

**Strategic Direction VI**

Acquire and efficiently utilize the human, informational, financial, and physical campus resources needed to fulfill the mission of The University of Akron.

A CIVIL CLIMATE FOR LEARNING: Statement of Expectations

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

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

Together we maintain an intellectual culture that is accessible, disciplined, free, safe, and committed to excellence. By our behavior with one another we endorse a culture of diversity, celebrating the uniqueness of the individual and developing our understanding and tolerance of differences in gender, ethnicity, age, spiritual belief, sexual orientation, and physical or mental potential.

We take responsibility for sustaining a caring culture, nurturing growth and fulfillment in one another and in the larger communities of which we are a part. We insist on a culture of civility, united in our rejection of violence, coercion, deceit, or terrorism. We work to increase collaboration, cooperation, and consensus within rational dialogue characterized by mutual respect and consideration.

Ours is a responsible culture. We expect each member of our community to carry out responsibly his or her duties for preserving the integrity, quality, and decorum 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 their responsibility in maintaining our culture.

Inside the Classroom

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

Students are expected to respect the sanctity of the teaching/learning process by expressing respect for the faculty member as the organizer and guide through this learning experience, as well as for fellow students. Disruptive, disrespectful, discriminatory, harassing, violent and/or threatening behavior is explicitly prohibited. Academic dishonesty will not be tolerated. Students are expected to take responsibility for their own learning and, in return, can expect responsible teaching from the faculty member. Students should report 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's expected to respect and protect the dignity and freedom of all. 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 obtained, proper authorities must be informed 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.

ACCREDICATION

Accreditation assures that degrees are recognized and approved by select regional and national education associations, societies, and councils. The University of Akron has been approved by the North Central Association of Colleges and Schools (36 N. LaSalle St., Chicago, Ill. 60602-2194, telephone (800) 621-2244) since 1914 and was recently reaccredited at the highest level as a comprehensive doctoral-degree-granting institution. This recognition illustrates the high academic standards maintained at the University and assures students taking preprofessional courses leading to advanced study in such fields as medicine, dentistry, law, and theology that they are receiving sound preparation for acceptance at other graduate and professional schools. Accreditation also 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.

In addition to the recognized regional accreditations, special accreditation for particular programs has been awarded as follows:

- AACSB, the International Association for Management Education
- Accreditation Board for Engineering and Technology
- Technology Accreditation Commission
- Accreditation Board for Engineering and Technology, Engineering Accreditation Commission
- American Bar Association
- American Chemical Society
- American Council on Social Work Education
- American Dietetic Association
- American Home Economics Association
- American Medical Association
- American Psychological Association
- American Speech-Language-Hearing Association
- Association of Collegiate Business Schools and Programs
- Commission on Accreditation of Allied Health Education Programs
- Council for the Accreditation of Counseling and Related Educational Programs
- Council on Certification of Nurse Anesthesia Educational Programs
- Council for Professional Development of the American Home Economics Association
- Foundation for Interior Design Education
- National Academy of Early Childhood Programs (division of the National Association for the Education of Young Children)
- National Accrediting Agency for Clinical Laboratory Sciences
- National Association of Schools of Art and Design
- National Association of Schools of Dance
- National Association of Schools of Music
- National Association of Schools of Public Affairs and Administration
- National Council for Accreditation of Teacher Education
- National League for Nursing Accrediting Commission
- Ohio Board of Nursing
- Ohio Department of Education

The University also holds membership in the following educational organizations:

- American Association of Colleges of Nursing
- American Association of Colleges for Teacher Education
- 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
- Association of American Law Schools
- Council of Graduate Schools
- Council of the North Carolina State Bar
- Department of Baccalaureate and Higher Degree Programs (National League for Nursing)
- League of Ohio Law Schools
- Midwestern Association of Graduate Schools
- National Association of Graduate Admission Professionals
- National League for Nursing
- North American Association of Sumner Sessions
- Ohio College Association
- Ohio Continuing Education Association
- Ohio State Board of Education
- 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

During recent years, the University campus has undergone many major changes. In 1951 the University’s 13 acres encompassed only 10 buildings. Currently the Akron campus covers 170 acres and includes 73 buildings. Plans have been made to renovate and build additional academic, recreational, and parking facilities. The campus is illuminated at night and security personnel patrol the area hourly.

LOCATION

The University is situated in a large metropolitan area. The campus, although centrally located within the city, features parklike pedestrian areas. Students have easy access to retail outlets, transportation, and churches. Akron is centrally located within the city, features parklike pedestrian areas. Students have easy access to retail outlets, transportation, and churches.

The center houses the Auburn Science and Engineering Center.

Computer Science. Just west of the Gardner Student Center, the Computer Science is operated by Information Services.

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 million, was formally opened in 1973. Designed to accommodate lecture 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 Guzzetta Hall, this facility provides classrooms, practice rooms, and offices for music.

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

Gallucci Hall. This building, at 200 East Exchange Street, formerly a Holiday Inn, is a coed residence hall and home to the Honors Program and honors students. It also provides office space for Academic Achievement Programs, and temporary quarters for the Hospitality Management Department and Crystal Room Dinning facility.

Gardner Student Center. This complex was named for Danfro H. Gardiner, who was appointed dean of men in 1926. The University’s first dean of students in 1926, later in 1959, was promoted to vice president. He retired in 1962. This facility, which serves as a unifying force in the life of the institution, houses nearly 80 percent of all nonacademic activity on the campus. It provides bowling alleys, meeting rooms, lounges, student activity and publication offices and workrooms, a game and billiard room, a bookstore, bank facilities, the Gardner Theatre, a cafeteria, and other dining facilities.

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

Goodyear Polymer Center. Construction of the $17 million Polymer Science Building was completed in the spring of 1991. This two-story structure of steel, concrete, and glass, located at 178 University Avenue, houses offices for the dean of the College of Polymer Science and Polymer Engineering; and the Rubber Division of the American Chemical Society. The facility features a 200-seat lecture hall, offices, classrooms, and research laboratories for the Institute and Department of Polymer Science.

Guzzetta Hall. Complementing the E.J. Thomas Performing Arts Hall, this facility was constructed directly across Hill Street. The $5.5 million structure, dedicated in October 1976, houses the Office of the Dean of the College of Fine and Applied Arts and the cultural space for the School of Dance, Theatre and Arts Administration and for the School of Music. In addition to providing more than 40 student office rooms, the complex houses a small experimental theater and a 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 7000, an indoor running track, physics 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 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 area, WZWP-FM radio station, computer labs and classrooms. The building also houses the University Theatre.

Leigh Hall. Named in honor of Warren W. Leigh, first dean of the College of Business Administration, this facility on Buchtel Common currently houses the John S. Knight Auditorium and general purpose classroom space. Temporary occupants of the building include Interdisciplinary Studies, the English Language Institute, World Civilizations and Humanities in the Western Traditions offices. The Center for Teaching and Learning, the Statistics Department, and the Equal Employment Opportunity/ Affirmative Action Office.

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 large dining room is open for lunch between 11:30 a.m. and 2:00 p.m. Sundays are reserved for special events. Many of the student’s student affairs offices are on the second floor.

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:

Admissions Building. Located at 381 Buchtel Common, the Office of Admissions assists students with applications, requirements, and procedures for undergraduate, postbaccalaureate, guest, transfer, auditing, or special student status.

Akron Polymer Training Center. The Akron Polymer Training Center is an instructional classroom and laboratory facility for Polymer Engineering and Science Technology Polymer Science classes.

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. The center houses the College of Engineering, including the dean’s office, the Engineering Coop Office, Mechanical, Electrical, Chemical, and Civil Engineering; as well as the Department of Biology, the recently completed $2 million biology research facility, and the science and engineering holdings of University Libraries.

Ayer Hall. Named for the first dean of the College of Engineering, Fredric A. Ayer, Ayer Hall provides classrooms and offices for the mathematics and physics departments.

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

Bierce Library. Named for General Lucius C. Bierce, an Akron mayor, lawyer, historian, state senator, philosopher, philanthropist, and soldier, the building opened in the spring of 1873. In addition to the book and periodicals collections, the facility houses audiosvisual 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 restored in 1901 (Buchtel Hall II). The administration center of campus, Buchtel Hall was completely restored in 1973 following a devastating fire in 1971. It is the University’s link with its predecessor, Buchtel College. It provides office space for numerous administrative offices of the University.

Buckingham Center. This building houses a Cultural Diversity Center, which includes the Black Cultural Center, Peer Counseling Program, Diversity Council and a repository of African-American history.

Business Administration Building. This $9.1 million facility, located at 259 South Broadway, was completed in 1974. The structure contains offices, classrooms, and laboratory facilities for the dean of the College of Business Administration; the George W. Davie School of Accountancy, and the departments of Finance, Marketing, and Management.

Carroll Hall. Adjacent to the Gardner Student Center, Carroll Hall houses classrooms, laboratories, and offices for the departments of Counseling and Special Education, Geography and Planning, Developmental Programs, The Academic Computing Testing Facility, and the Office of the President of the Faculty Senate.

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

Central Services Building. At 185 S. Forge St., this building houses the administrative service department of central stores, printing services, and mail services.

Computer Center. Purchased and renovated in 1981 for $13 million, this building at 185 Carroll Street houses the University’s Information Services offices, main computers, and workrooms, as well as student and faculty microcomputer labs and time-sharing terminals.
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 study space, and a $1.5 million 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 Physical and Health Education, a main gymnasium, a gymnastics area, a convocation area, a motor learning lab, a human performance lab, an athletic training lab for sports medicine, a weight training and fitness center, an athletics battrs Rage, the intramurals sports office, and classrooms.

North Hall. Located on South Forge Street, this building houses, on a temporary basis, supplemental services for the campus police department.

O'Osake Natatorium. The $6 million natatorium, completed in 1986, 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 nine racquetball courts as well as weight room facilities. The natatorium is named for former Ohio State Senator Oskar O'Osake.

Olin Hall. Named in honor of Professor Oscar E. Olin and Mr. Charles Olin, this facility was completed in May 1975. The hall houses the Office of the Dean of the Buchtel College of Arts and Sciences and the following departments and institutes: Classics, Economics, English, General Studies, History, Modern Languages, Political Science, Philosophy, Sociology, and the Ray C. Bliss Institute of Applied Politics.

The complex is at the corner of Buchtel/ Common and South Union Street.

100 Lincoln Street Building. This building houses the Purchasing Department and telephone communications Department offices, as well as the office of the University Architect and Senior Director of Facilities Planning, and the Office of the Director of Space Utilization.

143 Union Street Building. This building provides temporary administrative office space for the University Treasurer, Resource Analysis and Budget and the Payroll Department.

Olson Research Center. This remodeled warehouse on Forge Street houses 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 Polsky Building. The largest academic building in Ohio, this renovated downtown building, now home to the Graduate School, University Archives, the Archives of the History of American Psychology, the School of Speech-Language Pathology and Audiology and its Audiology and Speech Center, the Department of Public Administration and Urban Studies, the School of Social Work, the Continuing Education office, the Office of International Programs, the Associate Vice President for Research and Development Office, including the Office of the Director of Sponsored Programs, and the Institute for Policy Studies offices. Also located here are the Community and Technical College dean's office, and the departments of Business Administration, Public Service Technology, Allied Health Technology, and Associate Studies. A campus bookstore (operating on the High Street level third floor).

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 700 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 UL's Board of Trustees, this complex, which adjoins Adams Science and Engineering Center, is composed of two academic structures and a parking deck. Schrank Hall North contains space for Civil Engineering offices, the Construction Technology program, and classrooms. Schrank Hall South provides facilities for the School of Family and Consumer Sciences, the Community and Technical College's Engineering and Science Technology Department, and the Army and Air Force ROTC units.

Simmons Hall. Named for Hezleton Simmons, University president from 1933 to 1951, this hall houses the University Counseling and Testing Center and the Department of Psychology. The Institute for Life-Span Development and Gerontology occupies a portion of the building. A student interested in employment counseling and assistance will find the Placement Services office in this facility.

Spier Hall. This major student services building houses the Registrar's Office, Academic Advisement Center, the Office of Student Financial Aid, University College, the Office of Services for Students with Disabilities, and the Student Assistance Center, as well as the Parking System's office, and offices for the University Controller, the University Auditor and External Auditor, the Cashier's Office, the Loans Office, and Receivables Office.

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

277 Broadway Street Building. This building provides administrative space for the Office of Human Resources, including benefits, employment services, labor and employee relations, and personnel services, as well as the Department of University Communications.

West Hall. This renovated structure on Wolf Ledges Parkway is part of the McDowell/Law Center.

Whitby Hall. Named for G. Stafford Whitby, a pioneer in the development of polymer science, this building opened in 1975. Housed in this facility are polymer science laboratories and the Department of Chemical Engineering.

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 and provides a lecture room that seats 245, general classrooms, a handicrafts room, a teaching demonstration classroom, a microteaching laboratory, educational media lab, and the Student Teaching Office.

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 center, modern laboratories, and equipment that includes advanced light microscopes (differential interference contrast, fluorescence), electron microscopes (scanning and transmission), scintillation counters, ultracentrifuges, DNA sequencing apparatus, and photomicrographs, vehicles and boats are available for fieldwork. Many biology courses use the 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 Economics is housed on the second floor of Olin Hall in a modern office facility with space for faculty and graduate assistants. 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 in a Windows environment. In addition, the department has a variety of software, including economic tutorials, word processing programs, SAS/MVS, SAS/IM, and SAS/HPC. The lab is also equipped with laser printers. Network access allows students to search for books, journal 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 maintains a Communication Center, where English students can receive rotating workshops, print a disc, and publish their work. The Communication center is open to any student. The lab is equipped with the latest equipment running in a Windows environment. In addition, students can receive individual assistance from an English graduate student or faculty member. Many services that are available to faculty are also available to students. The lab is also equipped with laser printers. Network access allows students to search for books, journal articles, and other academic articles relevant to the specialties taught. Graduate seminars are held in the department's own seminar room within the English complex.

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 soil 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 microscope, automated X-ray diffraction system, ion-coupled plasma spectrometer, atomic absorption spectrometer, ion chromatograph, coal and sulfur analyzers, oxygen bomb calorimeter, gravimeter, resistivity, gravimeter, refractometer, atomic absorption spectrophotometer, plasma spectrometer, electron microscopes (scanning and transmission), scintillation counters, ultracentrifuges, DNA sequencing apparatus, and photomicrographs. Vehicles and boats are available for fieldwork. Many biology courses use the 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 Geology has modern instrumentation for field and laboratory studies which includes an automated electron microscope, automated X-ray diffraction system, ion-coupled plasma spectrometer, atomic absorption spectrometer, ion chromatograph, coal and sulfur analyzers, oxygen bomb calorimeter, gravimeter, resistivity, gravimeter, refractometer, atomic absorption spectrophotometer, plasma spectrometer, electron microscopes (scanning and transmission), scintillation counters, ultracentrifuges, DNA sequencing apparatus, and photomicrographs. Vehicles and boats are available for fieldwork. Many biology courses use the department's student computer lab for review of multimedia presentations, data analysis, simulations, Internet and Web assignments, teleconferencing, scanning, word-processing, and printing.
Two labs, which contain Intel-based computers, are connected by a NT Server network. One of these labs is frequently used for class laboratory sessions for up to twenty students. This is a standard feature of many entry-level courses in mathematics and computer science. The other lab is an open lab in which students find a similar environment in which to work independently on assignments. The PCs themselves have a Windows 95 operating system that is pre-installed and access is provided to the Internet via ftp, telnet, and NetScap. Software available includes Maple, ISETL, and MATLAB for mathematics; Turbo C++, Java, Visual C++, Microsoft Word, and Macromedia Director for computer science; Microsoft Office, and Microsoft Works for more general use.

Another open laboratory is mainly devoted to a large computer cluster that is devoted to a small group of students who are working on applied mathematics and scientific problems. The lab contains a SUN SparcStation (Solaris 2.3/Openwindows) for eight X-terminals. These terminals are used for many of the upper-division level courses. The system is connected to both the NT Server network and the SUN network. The lab is connected to the Department of Business Administration server, which is a UNIX client/server environment.

There are ten SUN SparcStations (Solaris 2.3/Openwindows) which support eight X-terminals. These terminals are used for many of the upper-division level courses. They are located on separate local area networks supported by a SUN Sparc server. They also support Mosaic and Netscape. Languages available include Lisp, FORTRAN, Pascal, two versions of C and C++, Perl, and JAVA.

Three special graduate/research laboratories are also part of the Department. An Applied Mathematics and Scientific Computation Lab contains SUN SparcStations, IBM RISC 6000s, and Silicon Graphics Workstations. A Modem parallel computer is provided for parallel processing. It is available for research, but is also used for an undergraduate computer science course. A lab is also available for graduate students in computer science. It has a variety of workstations and PCs and is connected to both the NT Server network and the SUN network.

Most machines in the department also provide Internet access to encourage students and faculty to keep current on subjects of interest. The University and the department have home pages on the web. Additional information about the department, its faculty, and its programs is therefore available to the Internet. The address for the home page of the department is http://www.maths.uakron.edu. Remote log-ins from the University are permitted to those who have accounts elsewhere. For example, many faculty members have accounts at the Ohio Supercomputer Center in Columbus, Ohio.

Dial-in access to all facilities, except the NT server network, is available. Students are encouraged to work at the location that is most convenient to them. Any communication software using ppp protocols can be used. Several popular communication programs that are available include OhioLink, ZipLink, VM, MVS and DAX. Equipment available in the computer labs includes Pentium-based computers, HP Laser printers, VCRs, and video/computer projectors. Supported throughout the lab is statistical software that includes SAS, SPSS, and Ladder. WordPerfect and MS Word are available throughout the department for word processing. A full-time research processor/analyst provides hardware and software support for the department and writes custom software for computerized research. In addition to the computer labs, a counseling clinic is maintained by the department and has videotaping capabilities for the study of counseling processes and outcomes. Additional facilities of the Psychology Department include: research areas for individual computer research and for small group behavior research, a Test Room where current psychological tests and materials are administered, a Test Room for psychology students. Additional information about the department, its faculty, and its programs, is available on the Internet at http://www.uakron.edu/psychology.

The Department of Sociology facilities include research laboratories used for funded research projects. The department shares a computer facility for all students in Olm Hall which includes microcomputers and terminals directly linked to the University's network of computers. The department maintains a webpage at http://www.uakron.edu/sociology. The Interdisciplinary Anthropology Program laboratories contain hominid fossil casts, archaeological collections, and a variety of equipment used in archaeological fields research projects. The Anthropology website is http://www.uakron.edu/anthro.

The Department of Statistics maintains two instructional computer labs. One of these labs is used for class laboratory sessions for the general education mathematics requirement course, Basic Statistics, and is located in Pack Hall. The second lab is designed for students who are taking an introductory statistics course and is located in Pack Hall, wing 20.

The college has a variety of research facilities available to students. The department makes the facilities available to students on a first-come, first-served basis. The facilities are available to students on a first-come, first-served basis. The facilities are available to students on a first-come, first-served basis.
education. In the area of leadership, the department provides undergraduate courses in school administration and higher education administration. The department members also teach the core curriculum of historical, philosophic, psychological, and social foundations required in all graduate education programs. They teach, advise, and supervise graduate students, and disseminate research by students in their design-granting programs, the master's programs in Educational Foundations, the master's and doctoral programs in Educational Administration, and the master's program in Higher Education.

The Department of Physical and Health Education prepares students for careers in teaching, athletic training for sports medicine, health education, coaching, related recreational fields, and related health fields. There are laboratories for the study of exercise physiology, motor behavior, teaching skills (microteaching), and computer utilization in physical and health education. The department has access to the James A. Rhodes Health and Physical Education Building (classrooms, the main gym, an outdoor running track, a multipurpose room, and the teaching station areas), Memorial Hall (classrooms, as well as lab and small gymnasiums), Ocasek Natatorium (a classroom, a swimming pool, nine racquetball courts, and a weight room), and Lee Jackson Field (14 tennis courts, an outdoor running track, and two softball fields).

The Department of Curricular and Instructional Studies includes the areas of early childhood, middle childhood, secondary (adolescent to young adult) and preschool to grades 12 (P-12) education. Initial teacher preparation programs are available at the undergraduate, post-baccalaureate, and master's degree levels. The early childhood program prepares teachers to teach age three to grade three. The middle childhood program prepares teachers to teach grades four through nine with nine specialization areas selected from reading/language arts, social studies, mathematics, science, social studies, home economics (grades 4-12), or vocational education (grades 4-12). The P-12 program prepares teachers to teach language arts, physical education, dance, drama, and visual arts. Endorsements are available in computer/technology, reading, and teaching English as a second language. The department also offers the Technical Education degree, which prepares students for teaching/training and other personnel positions at the postsecondary level and for business and industry settings. The University Center for Child Development, directed by department faculty, provides day care for children while serving as an experimental learning site for teacher education students.

The Department of Counseling and Special Education incorporates three divisions: Counseling and School Psychology, both graduate programs, and Special Education, which prepares undergraduates as teachers for children with special needs and graduate students to be master teachers and supervisors of special education programs. The department operates a multidisciplinary clinic, the Clinic for Child Study and Family Therapy.

College of Engineering

The offices, undergraduate laboratories, classrooms, research facilities, machine shops, computer laboratories, and other facilities of the College of Engineering are located in the Auburn Science and Engineering Center, Schrirk Hall North, Whitley Hall, and the Olson Research Building. Every regular faculty member actively teaches at both the undergraduate and graduate levels while performing research and professional service to the community. The current core facilities include the Computational Mechanics Research Center, the Process Research Center, the Institute for Biomedical Engineering Research, and the Microscale Physicochemical Engineering Center. The College enjoys excellent relations with industry and the public sector. This relationship is formalized through the Engineering Advancement Council, which works actively on behalf of the College, and the Engineering Advisory Council.

The master's programs in the College consist of departmentally administered Master of Science programs in Civil, Electrical, and Mechanical Engineering. The Dean's Office administers the Master of Science in Engineering degree with specializations in Biomedical Engineering, Polymer Engineering, and Engineering Management.

The Doctor of Philosophy in Engineering is offered in the interdisciplinary fields of Environmental Engineering, Engineering Mechanics, Systems Engineering, Materials Science, Transport Processes, Biomedical Engineering, Engineering Applied Mathematics, Chemical Engineering, Process Engineering, Microscale Physical Engineering, and Polymer Engineering. This interdisciplinary degree integrates departmental disciplines and is administered by the Dean's Office. There is a coordinated Doctor of Philosophy in Engineering Degree with Youngstown State University and a joint MOT/Doctor of Philosophy Degree in Engineering with the Northeast Ohio Universities College of Medicine.

The Department of Biomedical Engineering is located in the Olson Research Center and has classrooms, instructional laboratories and research laboratories. Master's students in the Department of Biomedical Engineering, upon completing their studies, receive the Master of Science in Engineering Degree with a Specialization in Biomedical Engineering. Doctoral students, who have completed their doctoral requirements in the interdisciplinary field of Biomedical Engineering, receive the Doctor of Philosophy in Engineering Degree. Biomedical engineering graduate students may also participate in the joint MOT/Doctor of Philosophy in Engineering Degree program between the College of Engineering and the Northeast Ohio Universities College of Medicine.

Research faculty members in the Biomedical Engineering Department have strong research programs in biomechanics, instrumentation, signals, and imaging and are active participants in the Institute for Biomedical Engineering Research. 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, and feedback therapy and is equipped with an immersive virtual environment. The Rehabilitation Engineering Laboratory is equipped to conduct collaborative research on problems related to stroke, head injury and amputee patients. The Biomedical Instrumentation Laboratory has continuous wave and Doppler ultrasound equipment, temperature sensing devices, and blood pressure and flow monitoring equipment. The Vascular Dynamics Laboratory provides facilities to analyze blood flow using laser Doppler anemometry and Doppler ultrasound techniques. The Motion Analysis Laboratory studies all aspects of human movement. The 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 Kay Maps-200 Digitizing System and a JK Laser Holographic camera for laser holographic interferometry.

The Department of Chemical Engineering is located in Whitby Hall with undergraduate laboratories in the South Tower of the Auburn Science and Engineering Center and research laboratories in the North Tower of Auburn Science and Engineering Center. The department provides educational opportunities for students at both the undergraduate and graduate levels in Chemical Engineering.

The Applied Colloid and Surface Science Laboratory has a state-of-the-art laser light scattering facility including a Laser 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 Biotechnology Laboratory is a satellite center of the Ohio Bioprocessing Research Consortium, housing a state-of-the-art HPLCMS with additional luminocessors, UVVIS, and RI detectors. The labs are well equipped with several bioreactor assemblies, a Brookhaven 4500C refrigerated super centrifuge, Perkin-Elmer UVVIS spectrometer and LS-50B luminescence spectrophotometer, and on-line NAD(p)H fluorometers. The Biomaterials Laboratory is available for polymer synthesis and storage including a nitrogen hood, Sephadex separation columns, an oil bath, a dry bath, a vacuum oven, a Buchi rotary evaporator, and a Labconco lyophilizer.

The Catalysis Research Laboratory is equipped with high temperature and high pressure FTIR reactor system with a Nicolet MagnaIR 550 Spectrometer Series II, a Nicolet MagnaIR 560 Spectrometer E.S.P. and a Bakers Prima QMG 200 Mass Spectrometer for in situ catalyst preparation, in situ characterization, temperature programmed description of N2, H2, and CO, and in situ reaction studies. The Multiscale and Solid Processing Laboratory is equipped to do research in filtration and the three-dimensional porous media. The labs are equipped with an X-ray instrument for measuring porosity of packed columns and filter cakes, a Frazer Test to measure air permeability of filter media, a Hit Royco BRB 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 size and size distributions. The Nominal Control Laboratory is equipped with Unix-based workstations and a variety of engineering software packages.

The Supercomputer Laboratory, a key lab in the Ohio Supercomputer Fluid Technology Consortium, is equipped with FTIR/RAMAN/ATR, GC/FID/TCD high pressure phase behavior apparatus, Berty Reactor, 14-liter stirred Reactor, dynamic light scattering, mechanical testing and high temperature GPC. The Thr Film Laboratory is equipped with plasma systems, thermal chemical vapor deposition, and in situ monitoring. The Department of Civil Engineering is located in the Auburn Science and Engineering Center and Schrirk Hall North and has five major laboratories. In the Environmental Engineering Laboratory, students learn to analyze water, wastewater and contaminated soils to assess its quality and to determine the most effective treatment techniques. Laboratory equipment includes UV-visible spectrophotometers, resistometers, pH meters, automated, high-performance liquid chromatographs, colorimeters, and a total organic carbon analyzer. Water and wastewater analytical kits and specialized meters are also available for field studies.

In the Hydraulic Engineering Laboratory, a tilting flume enables the student to visualize water flow in streams and rivers. Models of bridges and dams can be studied, the wave tank enables a student to study the effect of waves on lake shore erosion, harbors, breakwaters, and offshore structures. The mobile bed tank is used to demonstrate erosion and sediment movement patterns around bridges, piers, and culverts and storm drain outlets.
In the soil mechanics and foundation engineering lab, a student learns how to analyze soil by a variety of tests and equipment to determine shear strength characteristics, compaction characteristics, and seismic and electrical resistivity equipment for geological exploration of soil and rock deposits.

In addition to the standard equipment for routine testing, the laboratory has a computer-controlled cyclic triaxial testing system, pneumatically loaded consolidometers, flexible wall permeameters, 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 verification of earlier training on the behavior of structural subjects subjected to tension, compression, bending, and torsion is accomplished with the use of three universal testing machines, an MTS closeloop system which has a loading capacity to 100,000 pounds, and two Instron dynamic testing machines which can be used in either uniaxial or torsional loading.

The Department of Electrical Engineering is located in the South Tower of the Auburn Science and Engineering Center. The Department of Electrical Engineering includes laboratories for the study of circuits, analog and digital electronics, control, computers, energy conversion, microprocessor interfacing, power electronics, and electromagnetic/microwaves. Laboratories follow instruction to help the student apply the material learned in class.

In the circuits laboratory, students learn the basics of circuit design, instrumentation, and measurements. The laboratory is equipped with digital oscilloscopes, digital voltmeters, meters, and 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 for research purposes.

The two control laboratories teach the basics of analog and digital control. The laboratories are equipped with digital measuring equipment, analog and digital computers and interfacing components. The energy conversion laboratory teaches electric machine, energy conversion, and machine control. The laboratory is equipped with motors, generators and controllers, both digital and analog. Emphasis is placed on computer control of machines.

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

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

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

Additional laboratories in software engineering, signal processing and advanced control exist as part of elective courses.

The Department of Mechanical Engineering is located in the Auburn Science and Engineering Center. There are eight laboratories in the Department of Mechanical Engineering. The Thermal and Fluid Science Laboratory has internal combustion engines, a supercritical water tunnel, a subsonic wind tunnel, and a water tunnel. The Heat Transfer Laboratory has temperature measurements systems, a gase laser, and a spectrum of heat exchangers.

The Mechanical Measurements Laboratory has a complete complement of transducers, calibration equipment and standards, signal conditioners, analog recording devices and microprocessor-based digital data acquisition systems. The Materials Testing Laboratory has a computer-controlled hydraulic and pneumatic testing machine and a universal testing machine for performing static, quasistatic, cyclic and dynamic tests on a spectrum of engineering materials and several types of hardness testing equipment.

The Experimental Mechanics Laboratory has photelastic strain measuring equipment and associated facilities, coupled with a complete range of strain gage instrumentation for both static and dynamic measurements. The Mechanical Design Laboratory has several major software packages for computer-aided design connected to the College's Engineering Network Facility (ECNF). The System Dynamics and Controls Laboratory is composed of several microprocessors, analog computers, and digital controllers, as well as equipment for process control and robotics.

The Vibrational and Acoustical Laboratory has electromechanical shakers, sound pressure level instrumentation, and frequency spectrum analyzers for modal analysis. This Metallurgy and Failure Analysis Laboratories has a complete suite of metallographic instrumentation for microstructural analysis of both conventional and advanced engineering materials, and electron microscopes for analysis of failure.

The facilities in the Department of Polymer Science contain extensive laboratories for polymer synthetic chemistry and for the characterization of macromolecules and polymer morphology. A nuclear magnetic resonance laboratory is maintained with several high performance instruments, including a $^{13}$C nuclear magnetic resonance instrument.

The Department of Electrical Engineering includes laboratories for the study of circuits, analog and digital electronics, control, computers, energy conversion, microprocessor interfacing, power electronics, and electromagnetic/microwaves. Laboratories follow instruction to help the student apply the material learned in class.

The Akron Polymer Training Center serves as a laboratory for the processing and testing of rubber and plastic materials. This Center provides classrooms and laboratories for undergraduate students in the Mechanical Polymer Engineering program.

Laboratories available in the Department of Polymer Engineering include the Extrusion Laboratory, the Electromagnetic Radiation and Electron Optics Laboratory, the Thermal and Dielectric Laboratory, the Rheological Laboratory, and the Mechanical Laboratory.

College of Fine and Applied Arts

The School of Communication features a television classroom-studio and a wide complement of support equipment, including graphics generators and linear and non-linear editors. Portable audio and video equipment is available for location use. There is an audio recording facility with multitrack capabilities. The School also houses radio station WZIP on over 7,500 watts FM radio station serving northeast Ohio. WZIP-FM is operated by UA students under the supervision of professional broadcasters and gives students an opportunity to develop skills in broadcasting and communication through the completion of on-air assignments. A multimedia production/editing laboratory-classroom supports class instruction. News, publications, and other media classes have access to a Macintosh computer laboratory with complete desktop publishing layout, graphics, and print capabilities. The School works in cooperation with local organizations, non-profit groups and professional agencies in an internship program for upper level students.

The School of Dance, Theatre, and Arts Administration is located in the Bell Tower. The Theatre Program utilizes three different performing spaces to present its annual season of two to four productions. Guzzena Hall houses the versatile "black box" experimental Sandefur Theatre as well as rehearsal, teaching, and shop facilities. Kolbe Hall is the site of the 244-seat Daum Theatre, complete with support facilities. This conventional proscenium theatre is the home of theatre productions as is E.J. Thomas Performing Arts Hall. Student productions are performed in Studio 2B, Sandefur Theatre, and Daum Theatre.

The School of Family and Consumer Sciences is housed in Schrank Hall South and is accredited by The American Association of Family and Consumer Sciences. The School provides education in nine undergraduate and six graduate programs, including Child Development, Family Development, Child Life, Family and Consumer Sciences Teacher Education, Fashion and Home Economics, Fashion and Home Design, Interior Design. Nine laboratories, including a Computer Center, are available for authentic student learning experiences. All programs provide community experiences through internships, clinics, and student teaching. These programs offer a variety of certificate programs, including Divorce Mediation, Home Based Intervention and Case Management. In cooperation with the College of Education, the School maintains the Early Childhood Center for the study of child development and teacher education.

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

The School of Social Work offers CSWE-accredited professional training to social work students by linking them to a variety of local health and human services community agencies and organizations. The strong commitment and interaction with a network of agencies in the community serves as a laboratory for students.

The School of Speech-Language Pathology and Audiology provides professional and personal training to students who wish to become speech-language pathologists and/or audiologists. The department houses the Audiology and Speech Center, which functions as a practicum training arm as well as a service agency for persons in the Akron community who have speech, language, and/or hearing problems.
College of Nursing

The College of Nursing, located in Mary Gladwin Hall, provides professional nursing education at the baccalaureate (BSN) and masters (MSN) levels. The College is approved by the Ohio Board of Nursing and all programs are 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 for 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 master's program includes advanced practice opportunities as either a clinical practicum, education and research.

Anesthesia. Post-master's offerings are in the nurse practitioner areas of Acute and Adolescent, Adult Health, Gerontology, Behavioral Health and Nurse Anesthesia. Post-master's offerings are in the nurse practitioner areas of Acute Care, Child and Adolescent, Adult Health, Gerontology, Behavioral Health and Nurse Anesthesia. Master's core courses are offered via distance learning between the Akron campus and Lorain County Community College.

College of Polymer Science and Polymer Engineering

The College of Polymer Science and Polymer Engineering offers only graduate degrees in the areas of Polymer Science and Polymer Engineering. In addition, there are elective courses in both polymer science and polymer engineering for undergraduate science and engineering majors.

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 for research, and provides a way to introduce chemistry students in local high schools to computer modeling. A nuclear magnetic resonance laboratory is maintained with several high-resolution instruments supervised by a professional staff. 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 $5 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 with five twin-screw extruders, a Bliss 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 stretcher. Molding facilities include screw injection molding capability of five machines, blow molding, plug assist thermoforming and compression molding with composites capability. The Institute of Polymer Engineering is the home of the EPIC-MA Hannan Compounding and Blending Center and the Molding Technology Center. Characterization capability includes scanning and transmission electron microscopy, x-ray diffraction, x-ray (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 quasi-static and dynamic, rheometry, 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 also provides classrooms and laboratories for graduate students in Polymer Engineering, for undergraduate students in Mechanical Polymer Engineering, and for two-year associate degree students in Polymer Technology as well as continuing education courses for scientists and engineers.

University Libraries

Library facilities are housed in three separate locations: in Bierce Library on Burnt Hill Common; the Science Library in Autumn Science and Engineering Center, Room 104, and Archives Services in the Polsky Building, lower level.

Library services include reference and research assistance, user education, bibliographic instruction, and computer-based information search services. Materials of interest 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 5,000 journals, newspapers, and other serial publications, such as annual reports and the publications of various societies.

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. Photocopy services and equipment for use in making paper copies from microforms are available in Bierce Library and in the Science Library. Group study rooms and typing facilities are also available in Bierce Library.

Audiovisual Services, located in Bierce Library, Room 638, 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 (filmstrip, slide, etc.) to supplement class-room instruction. The New Media Center supports faculty who want to improve teaching through the use of technology. Audio Visual Services also designs, installs, and maintains technology-enhanced general purpose classrooms, offering permanent in-room projection, sound reinforcement and a sophisticated media retrieval system.

Bierce Library houses the Distance Learning Classroom on the second floor. This is a state-of-the-art facility that permits the University to offer credit and non-credit classes to area schools, agencies and businesses. Part of the Medina Link initiative, this classroom can be connected to "virtually" any geographic location that has the appropriate technology. The University of Akron will have a Distance Learning classroom in all Medina County high schools and other locations by the year 2000.

Information Services

The Information Services Department provides communications and computing support for The University of Akron. There are four divisions within the department: Client Services (Computer Center, Lincoln Building and Carroll Hall), Technical Services (Computer Center), Telecommunications Services (Lincoln Building), and Applications Services (Computer Center). The Information Services Help Desk can be reached at (330) 972-6888. Help Desk personal can answer questions or refer callers to the appropriate source for more information. The walk-in consulting desk is located in the Computer Center, room 141. You can also be reached by e-mail at consult@uakron.edu. Free seminars, handouts, and dial-in software are available.

There are seven general purpose computer labs for students, faculty and staff to use. In addition, there are about 160 Windows/DOS computers and 10 Macintosh computers (Computer Center only) in these labs. These computers have personal productivity tools (such as word processing and spreadsheets) and network access. The lab locations are:

- Computer Center, rooms 139, 141 and 145
- Gallucci Hall, room 279
- Bierce Library, room 27A
- Polsky Building, room 267
- Olin Hall, room 273
- Mary Gladwin Hall, room 306
- Gardner Student Center, room Chestnut B

There are more than 300 dial-in lines for faculty, staff, and students to use with their computers and modems from home to access UA and internet networks.

UA computer network, named UAnet, has about 4,000 computers connected on campus. To use these services, faculty, staff and students should go to the Computer Center at 185 Carroll Street and obtain a UAnet ID. The network provides access to:

- 2ipLink - UAs library catalog
- OhoLINK - the library catalogs of all State of Ohio universities and colleges.
- Electronic Mail (E-mail)
- The Internet: a world-wide network, including the popular World Wide Web (WWW) multimedia information protocol
- Usenet news groups
- Discussion lists
- Wayne College
- IBM mainframes and Digital servers

Student information is available using a touch-tone telephone and a PIN number. Services available in this manner include registration for classes, personal financial aid information, course grades, and fee payment by credit card.
Computer-Based Education and Testing services provide on-line tutorials, instruction, and testing for UA. The Testing Center is located in Carroll Hall, room 325.

Applications development and support for University systems is provided. Major systems supported include Human Resources, Student Information, Alumni and Financial Aid systems.

Central computer services include:

- A CMS-based IBM 9872/R41 CMS running MVS/ESA for administrative and batch research applications
- An IBM 4381/R14 running VM/ESA for interactive computer language support
- A Digital DECSystem 5000/240 for unix and c programming
- A Digital AlphaServer 1000 for E-mail and web home pages
- A Digital AlphaServer 2100 for ZiplINK, the online library catalog
- A Digital DEC 3000/2000LX Usenet news server
- An IBM RS6000/590 for graphical, secure information access
- An NC1 Opiscan 21-75 optical mark sense reader for scanning mark sense forms

Other services provided to the campus by Information Services include:

- PC purchase information and assistance
- C-camphus hardware and software installation services for departments
- Computer repair services (on-campus and carry-in)
- Cable Television - ZIP-TV
- Telephone and voice mail services
- Security systems
- Cable plant management
- Cable television and network connections to residence hall rooms in Grant, Garson, Gallucci, and the Townhouses
- Rental of public address systems for campus events

The Information Services Department continues its quest to bring staff and students the most-up-to-the-minute advances in computer applications, research, knowledge, and training.

Visit our web site at http://Gozips.uakron.edu for more information.

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 psychotherapy trainees, and placement professionals. All services are confidential and free to enrolled students. The Center is located in Room 163, the Testing Services in Room 161, and the Career Placement Services in Room 176 of Simmons Hall. Phone numbers are: Counseling Services (330) 972-7892, Testing Services (330) 972-7084, and Career Placement Services (330) 972-7747.

Counseling Service

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

- Personal-emotional counseling deals, within a short term framework, with feelings of loneliness, inadequacy, guilt, anxiety, and depression; harmful involvement with alcohol and drugs; recovery from acquaintance or stranger rape; interpersonal relationships, especially with the immediate family; intimate relationships, and roommates; personality development, 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 happiness, and addressing personal issues; as well as providing support groups for minority students and others with a variety of concerns. Brochures are available.

Career Service

- Career counseling involves 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 two computerized career guidance and information systems, SIGI and CCIS.

Testing Service

- A wide range of testing programs including college entrance examinations, career assessments, personality assessments, 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, residences, student organizations, and administrative offices. Topics include, among others, academic performance, wellness, sexuality, and appreciating cultural diversity.

The Counseling, Testing and Career Center, along with the efforts of its Career Placement Services, is able to provide students with career development services, from helping them decide on majors and career directions to helping them develop job-seeking skills, resume development and interviewing skills. The Center, through the Career Placement Services, also arranges for recruiters to come to campus to interview student candidates and organizes and sponsors several career fairs, which also brings recruiters in direct contact with students.

Student Health Services

Health services are available to all students enrolled at The University of Akron. It is located in Robertson Dining Hall, immediately adjacent to the North Quad residence halls. This facility is capable of handling most acute injuries and episodic illnesses. Student Health Services is open from 8:00 a.m. to 6:00 p.m. Monday through Thursday, and from 8:00 a.m. to 5:00 p.m. on Friday.

If a student becomes seriously ill or suffers a serious injury on campus should be taken to an emergency ward of one of the local hospitals without delay. Those persons present in this kind of emergency should call University Police at 911 immediately. The University assumes no legal responsibility or obligation for the expenses of such transportation or for medical services at the hospital.

Student Health and Accident Insurance, designed specifically for students, is required of all residence hall students and all international students except those who present proof of similar coverage. Other students may purchase this insurance at the annual individual rate. The student's insurance provides coverage for such items as hospitalization, surgical benefits, and in-hospital medical benefits.

Completed health forms and other health-related records are treated as confidential and are kept in the Student Health Services office.

Services for Students With Disabilities

The Office of Services for Students with Disabilities is part of the Student Assistance Center in the Division of Student Affairs. The primary mission of this office is to ensure that qualified students are afforded the opportunity for full participation in all University academic programs, activities, and services.

According to provisions outlined in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, institutions of higher education which receive federal funding are prohibited from discriminating against "otherwise qualified" individuals with disabilities.

If a student has a specific disability, he or she should contact the Office of Services for Students with Disabilities, Spencer Hall 124, (330) 972-7928 (voice) or (330) 972-5764 (TTY).

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. Each classroom staffed by a state-certified teacher and student aides. Opportunities are provided for the children to engage in developmentally appropriate activities in the following areas: creative art, language arts, music and rhythm, science exploration, gross and fine motor development, socio-dramatic play, multisensory activities, and computer experience. The program emphasizes the development of a positive self-concept through an anti-bias curriculum.

The Center for Child Development is open during the Fall and Spring semesters of the academic year 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 two-and-a-half to five years old and toilet trained.

A summer preschool flextime program is offered Summer Session I.

A summer program is also offered for school-aged children. This program is offered during Summer Sessions I and II from 7:00 a.m. to 5:00 p.m.

For more information call the Center for Child Development, (330) 374-8210.

Gardner Student Center

The Gardner Student Center, 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 four food service facilities, meeting rooms, lounges, Gardner Theatre, student organization offices, recreation facilities, the DocuZip Copy Center, a bank, TicketMaster/Film Center, and a bookstore.
• Food Areas in the Gardner Student Center offer a variety of food items. On the first level, the Chuckery features the services of a fast-food operation, a pizza & Mexican shop, and an ice cream and yogurt shop. For more of a cafe/after-style offering, the Hilltop features a second level, provides deli-style selections at Sara Lee's, as well as full catering for banquets and meals.

• Gardner Theatre, located on the upper level, screens first- and second-run movies twice per night Tuesday through Sunday and is open to the public.

• The Game Room, located on the lower level of the Gardner Student Center, is open seven days a week for the convenience of the University family to enhance free time activity. The Game Room offers eight bowling lanes, 16 billiard tables, foosball, and a variety of video games. For the competitive individual, tournaments in many of these recreational activities are programmed each semester by the Game Room staff.

• The DocuZip Copy Center, located in the lobby of Gardner Student Center 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 Ticketmaster/Film Center, located in the lobby of Gardner Student Center 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 Division of Administrative Services provides for student and safety and security through the departments of Environmental and Occupational Health and Safety, Physical Facilities, and University Police. The Division of Student Affairs is responsible for security and safety policies governing residence halls, fraternities, and sororities and for teaching students about security and crime prevention.

• The University's 32 police officers are commissioned by the State of Ohio and employed and trained by The University of Akron Police Department, the campus police force for the University of Akron. They are responsible for public safety services such as crime reports, medical emergencies, fire emergencies, and traffic accidents.

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

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

• Incidents which may not rise to the level of a violation of law are referred to the Office of Student 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 service to the members of the University community.

• The University's disciplinary process and is available through the Office of Student Conduct.

• The University hopes students will read and become familiar with this information and instruction on University crime and safety policies and procedures.

• 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.

• 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.

• A safe campus can be achieved only with the cooperation of the entire campus and sororities and for teaching students about security and crime prevention.

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

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

• Incidents which may not rise to the level of a violation of law are referred to the Office of Student 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.

• The University's disciplinary process and is available through the Office of Student Conduct.

• The University hopes students will read and become familiar with this information and instruction on University crime and safety policies and procedures.

• 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.

• 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.

• University Police

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 Administrative Services provides for student and employee safety and security through the departments of Environmental and Occupational Health and Safety, Physical Facilities, and University Police. The Division of Student Affairs is responsible for security and safety policies governing residence halls, fraternities, and sororities and for teaching students about security and crime prevention.

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

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

University Police

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

The University's 22 police officers are commissioned by the State of Ohio with full law enforcement authority and responsibilities identical to the local police or sheriff. The University Police Department works closely with the Akron Police Department and other law enforcement agencies. Reports are exchanged every business day so that both agencies receive pertinent information. Information is shared through personal contacts and by phone and radio. University and City of Akron police regularly work together at large campus events such as athletic competitions and dances.

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 for 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 unacceptable 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.

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 7203, 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 royal 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 972 before the campus extension.
**Campus Buildings**

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

**Health and Safety**

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

**Personal Responsibility**

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

**EMERGENCY PHONE NUMBERS**

Call extension 911 on campus to reach UA police immediately.

<table>
<thead>
<tr>
<th>Service</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police</td>
<td>7123</td>
</tr>
<tr>
<td>Campus Police</td>
<td>7263</td>
</tr>
<tr>
<td>(Police Nonemergency)</td>
<td>8123</td>
</tr>
<tr>
<td>Environmental and Occupational Health and Safety</td>
<td>6966</td>
</tr>
<tr>
<td>Fire</td>
<td>911</td>
</tr>
<tr>
<td>EMS/Health Care</td>
<td>911</td>
</tr>
<tr>
<td>Electrical/Plumbing</td>
<td>7415</td>
</tr>
<tr>
<td>Hazardous Materials</td>
<td>8123</td>
</tr>
</tbody>
</table>

Closing Information: 7069

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

**Crime Statistics**

The University of Akron Police Department prepares monthly statistics for the Federal Bureau of Investigation under the Uniform Crime Reporting (UCR) program. The serial numbers of property stolen on campus are reported nationwide through the National Crime Information Center. A LEADS computer terminal at the police station dispatch center allows information to be exchanged with law enforcement agencies across the United States and Canada.

The following statistics are from the University Uniform Crime Reports of the past five calendar years. The statistics under Off-Campus (O.C.) are compiled from the City of Akron Police Department that occurred at University properties off campus.

### Crime Statistics

**Crime**

<table>
<thead>
<tr>
<th>Crime</th>
<th>94 O.C.</th>
<th>95 O.C.</th>
<th>96 O.C.</th>
<th>97 O.C.</th>
<th>98 O.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Homicide</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Rapes</strong></td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td><strong>Robbery</strong></td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>41</td>
<td>0</td>
</tr>
<tr>
<td><strong>Aggravated Assault</strong></td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td><strong>Burglary</strong></td>
<td>10</td>
<td>0</td>
<td>3</td>
<td>126</td>
<td>3</td>
</tr>
<tr>
<td><strong>Forcible Entry</strong></td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>42</td>
<td>7</td>
</tr>
<tr>
<td><strong>Attempted Forcible Entry</strong></td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td><strong>Burglary Total</strong></td>
<td>24</td>
<td>0</td>
<td>5</td>
<td>170</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>0</td>
<td>50</td>
<td>426</td>
<td>36</td>
</tr>
</tbody>
</table>

**Forcible Entry**

<table>
<thead>
<tr>
<th>Crime</th>
<th>94 O.C.</th>
<th>95 O.C.</th>
<th>96 O.C.</th>
<th>97 O.C.</th>
<th>98 O.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Under $50</strong></td>
<td>16</td>
<td>0</td>
<td>125</td>
<td>178</td>
<td>140</td>
</tr>
<tr>
<td><strong>$50 to $100</strong></td>
<td>16</td>
<td>0</td>
<td>146</td>
<td>130</td>
<td>102</td>
</tr>
<tr>
<td><strong>$100 and Over</strong></td>
<td>18</td>
<td>0</td>
<td>150</td>
<td>169</td>
<td>172</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>51</td>
<td>0</td>
<td>425</td>
<td>430</td>
<td>459</td>
</tr>
<tr>
<td><strong>Non-Vehicle Theft</strong></td>
<td>25</td>
<td>0</td>
<td>13</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td><strong>Arson</strong></td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>31</td>
<td>0</td>
<td>14</td>
<td>11</td>
<td>2</td>
</tr>
</tbody>
</table>

**Hate Crimes (Race/Bias)**

<table>
<thead>
<tr>
<th>Crime</th>
<th>94 O.C.</th>
<th>95 O.C.</th>
<th>96 O.C.</th>
<th>97 O.C.</th>
<th>98 O.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Number of Arrests**

<table>
<thead>
<tr>
<th>Crime</th>
<th>94 O.C.</th>
<th>95 O.C.</th>
<th>96 O.C.</th>
<th>97 O.C.</th>
<th>98 O.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Liquor Law Violations</strong></td>
<td>12</td>
<td>15</td>
<td>10</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td><strong>Drug Abuse Violations</strong></td>
<td>15</td>
<td>9</td>
<td>26</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td><strong>Weapon Possession</strong></td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

**NOTE:** O.C. 98 statistics will be available on the University Police web site as soon as they are available from the Akron Police Department.
Graduate School

Charles M. Dye, Ph.D., Dean
Lathardus Goggins, Ph.D., Associate Dean
Dolli Q. Markovich, B.A., Assistant to the Dean
Karen L. Caldwell, Coordinator of Graduate Financial Assistance
Heather A. Blake, M.S., Secretary to the Dean
Brenda J. Henry, Admissions Coordinator
Cheryl Garcia, J.D., Degree Completion Coordinator
Kevin M. Tondre, M.A., Clinical Specialist

OBJECTIVES

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

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

Nature of Graduate Education

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

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

History of the Graduate School

Graduate study began a few years after Buchtel College opened its doors, and the first earned master's degree was conferred in 1892. The College of Education awarded its first master's degree in 1924, the Colleges of Engineering and Business Administration in 1939, the College of Fine and Applied Arts in 1967 and the College of Nursing in 1971.

The School of Speech-Language Pathology and Audiology (previously the Department of Speech and later the School of Communication Disorders), now housed in the College of Fine and Applied Arts, was formerly a part of the Buchtel College of Arts and Sciences and conferred a master's degree in 1963. The first earned doctoral degrees were conferred in 1959. Professor Charles Bulger was appointed first dean of graduate work in 1933, and he continued in that capacity until 1950. Professor Ernest H. Cherington, Jr. served as director of graduate studies from 1955 to 1960 and as dean of the Graduate Division from its establishment in 1960 to 1967. Dr. Arthur K. Brinnall was appointed dean of Graduate Studies and Research in 1967. An advisory council was established in 1969 by Dr. Edgar L. Lively. Dr. Clabourne E. Griffin succeeded Dr. Lively in 1974 and served in that capacity until 1977. Dr. Joseph M. Walton, associate dean of Graduate Studies and Research, was administrative head of the Graduate School during the 1977-78 academic year. Dr. Alan N. Gent was appointed dean of Graduate Studies and Research in 1978 and served in that capacity until 1986. Dr. Joseph M. Walton served as acting dean of Graduate Studies and Research from 1986 until 1988. In 1989 Dr. Patricia L. Carrell became dean of the Graduate School. Dr. Charles M. Dye was named interim dean in 1993 and became the dean of the Graduate School in 1995.

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

Graduate Programs

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

The Graduate School offers programs of advanced study leading to the degree of Doctor of Philosophy in chemistry, counseling psychology, elementary education, engineering biomedical, chemical, civil electrical, engineering applied mathematicics, mechanical, and polymer), guidance and counseling, history, political science, psychology, secondary education, sociology, and urban studies. The Doctor of Education degree is offered in educational administration. The Doctor of Philosophy program in sociology is a joint program with Kent State University. The Doctor of Philosophy program in urban studies and public affairs* is a joint program with Cleveland State University.

The school also offers programs of study leading to the master's degree with majors in the following areas: accountancy, applied politics, audiology, biology, biomedical engineering, business administration (accounting, entrepreneurship, financial management), business education, career services management, chemical engineering, chemistry, civil engineering, communication, counseling (classroom guidance for teachers, community counseling, elementary school counseling, marriage and family therapy, secondary school counseling), counseling psychology, economics labor and industrial relations, educational administration (administrative specialists, assistant superintendent, elementary school administration, general administration, higher educational administration, principlship, superintendent), educational foundations (computer based education, educational psychology, historical foundations, instructional technology, social, philosophical foundations), electrical engineering, elementary education, English (composition), geography (urban planning), geology (earth science), engineering, engineering environmental geology, geophysics, guidance and counseling, history, home economics and family ecology (child development, child life, family studies/interiors, food, home economics), mathematics (applied mathematics, computer science, mathematics), mechanical engineering, modern languages (Spanish), music (accompanying, composition, education, history/literature, performance, theory), nursing (RN/MSN), nutrition/dietetics, outdoor education, physical education (adapted physical education, athletic training for sports medicine, exercise physiology/adult fitness), physics, political science, polymer engineering, polymer science, psychology (applied cognitive aging, counseling, industrial/organizational), public administration and urban studies UD/MIP Joint Program, public administration, urban studies), social work, sociology, special education, speech-language pathology, statistics, taxation (UD/Max joint program), technical education (guidance, instructional technology, teaching, training), theatre arts (arts administration).

In addition, the College of Education provides a year of study beyond the master's degree in the area of school superintendency.

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.

* pending OBR approval of degree name change

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 graduate program 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:

- Possession of terminal degree in field.
- Scholarly publication record.
- Activity in research.
- 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 Social Work, one member from the College of 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 advisory and counseling the dean in administrative matters.

* An exclusive listing of graduate faculty and Graduate Council can be found in the "Directory" of the Graduate Bulletin.
Graduate Student Government

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

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

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

REGULATIONS

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

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

Applications for admission to the Graduate School should be submitted to the dean of the Graduate School at least six weeks 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 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.

Each first-time application to the Graduate School must be accompanied by an application fee. The fee for domestic students is $25. The fee for international students is $50.

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

All records, including academic records from other institutions, become part of the official file and cannot be returned for any purpose. An offer of admission will normally be made to an applicant who meets all admission requirements. However, it must be recognized that staff, facilities and other resources are limited, so the number of students accepted will vary among departments and from term to term. An accepted applicant may begin graduate work in the fall, spring or summer semester. An 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, if otherwise qualified, is normally required to complete at least 10 semester credits of post-baccalaureate 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 admisibility to enter a graduate program or eligibility to continue in one is the prerogative of the departments offering graduate programs. The department has the right to select the examination and minimum acceptable level of performance. Information and procedure may be obtained from the chair of the appropriate department.

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

• Full Admission may be granted to an applicant who possesses a baccalaureate degree and has an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent), or holds an advanced degree from an accredited college or university in or appropriate to the intended field, or holds a baccalaureate or master's degree from a foreign college or university with first-class standing or its equivalent, plus satisfactory evidence of competence in English. Full admission may also be granted to applicants to the College of Business Administration who meet the college's admission requirements.

• Provisional Admission may be granted to a person who has not met all of the requirements for full admission (2.74-2.50 overall GPA or 2.75 over the last two years) and whose provisional admission status permits a student to take up to 15 semester credits of graduate coursework. Graduate courses taken under this admission status may be applied to a graduate degree program, but only when all requirements for full admission have been met.

• Deferred Admission may be granted if the applicant's record does not meet provisions of 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. No graduate-level coursework can be taken by a student under the deferred admission status.

• Non-Degree Admission may be granted to a person who wishes to take partial courses but who is not working toward a graduate degree. This admission status permits a student to take up to 15 semester credits of graduate coursework. Graduate courses taken under this admission status may be applied later to a graduate degree program, but only when all requirements for full admission have been met.

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

• 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 attend a course or seminar provided space is available. Normally, space and facilities for research cannot be provided for a postdoctoral guest but special requests will be considered. Requests should be submitted, in writing, to the dean of the Graduate School who will review such requests with the appropriate college dean and department chair.

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

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

• Full Admission may be granted to an applicant who possesses a baccalaureate degree and has an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent), or holds an advanced degree from an accredited college or university in or appropriate to the intended field, or holds a baccalaureate or master's degree from a foreign college or university with first-class standing or its equivalent, plus satisfactory evidence of competence in English. Full admission may also be granted to applicants to the College of Business Administration who meet the college's admission requirements.

• Provisional Admission may be granted to a person who has not met all of the requirements for full admission (2.74-2.50 overall GPA or 2.75 over the last two years) and whose provisional admission status permits a student to take up to 15 semester credits of graduate coursework. Graduate courses taken under this admission status may be applied to a graduate degree program, but only when all requirements for full admission have been met.

• Deferred Admission may be granted if the applicant's record does not meet provisions of 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. No graduate-level coursework can be taken by a student under the deferred admission status.

• Non-Degree Admission may be granted to a person who wishes to take partial courses but who is not working toward a graduate degree. This admission status permits a student to take up to 15 semester credits of graduate coursework. Graduate courses taken under this admission status may be applied later to a graduate degree program, but only when all requirements for full admission have been met.

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

• 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 attend a course or seminar provided space is available. Normally, space and facilities for research cannot be provided for a postdoctoral guest but special requests will be considered. Requests should be submitted, in writing, to the dean of the Graduate School who will review such requests with the appropriate college dean and department chair.
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.

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 with graduate degree programs. A graduate assistant renders service to the University through teaching, research and other duties. For information and/or applications, contact the chair of the department. Tuition scholarships are also available on a limited basis in some departments.

A number of fellowships sponsored by industry and government agencies are available in some departments. Stipends range up to $33,000. For information, contact the chair of the department.

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

Additional information concerning financial aid policies is available in the Graduate Assistant Handbook which can be obtained from the Graduate School.

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 88 countries pursue studies and research at The University of Akron.

Admission
International students may apply to begin their graduate study for the Fall or Spring semester or for either of the University's two summer sessions. Students should submit their applications at least five months in advance of the date they wish to begin their studies. Graduate students applying for assistantships should submit applications four months before the term begins for best consideration. The following procedures should be followed:

- Obtain an international student application from the Office of International Programs, The University of Akron, Polsky Building, Room 483, Akron, OH 44325-3101. Telephone (330) 972-6349, fax (330) 972-8604. World Wide Web address: http://www.uakron.edu/oip. E-mail address: international@uakron.edu.
- Return the completed application and the one-time nonrefundable application fee of $500 with the following documentation:
  - An official transcript and degree from a secondary institution or university attended previously. Original records in languages other than English must be accompanied by exact English translations and certified by the school, U.S. consulate or other legal certifying authority.
  - Proof of English language proficiency. The University requires each student for whom English is not the native language to take the Test of English as a Foreign Language (TOEFL). This test is administered in major cities throughout the world. Applications may be obtained from binational agencies, United States Information Service (USIS) offices, or from the Educational Testing Service, Princeton, NJ 08540. Graduate applicants must achieve 650 or greater on the paper-based TOEFL or 23 on the computer-based TOEFL. Exceptions include the departments of English and History (580) on the paper-based TOEFL or 237 on the computer-based TOEFL, Urban Studies Ph.D. (570) on the paper-based TOEFL or 230 on the computer-based TOEFL and Biomedical Engineering (590) on the paper-based TOEFL or 243 on the computer-based TOEFL.
  - Admission may be offered to students who are academically acceptable but who have not yet reached the level of English proficiency required for full admission, such students must attend intensive English instruction until they have attained the required level of English proficiency for full-time academic study.
  - Proof of adequate financial support. An international student should submit the Declaration of Finances (DCF) and an original statement from the bank showing availability of sufficient funds to cover the cost of the first year of study. The Office of International Programs will prepare the Certificate of Eligibility (I-20A/B or IAP-68) upon receipt of adequate financial support and admission to the University.

Costs, Financial Aid, and Medical Insurance
To cover tuition and living expenses for the 1999-2000 academic year, international graduate students holding F-1 visas will need approximately $18,290. Additional costs for J-1 visa holders and student dependents are indicated on the DCF. Graduate students may request financial aid through fellowships and graduate assistantships. A graduate student interested in applying for this aid should request the necessary forms when requesting the admission application.

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

International Student Orientation
The required International Student Orientation takes place one week before classes begin and costs $45. The orientation dates will be mailed to students with their orientation letter and immigration documents.

Teaching Assistants
Applicants whose native language is not English and who expect to become teaching assistants, are also required to achieve a minimum score of 50 on the Test of Spoken English (TSE, Revised 1995). 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.

Course Numbering System
Each course at the University has two numbers. One designates the college and department of which it is a part; one specifies the subject matter of the particular course. For instance:

3300:507  Middle English Literature

In the above example, the first four digits of the number (3300) indicate the college and department. In the case, 3000 represents the Buchtel College of Arts and Sciences, 330 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.

An explanation of that numbering system follows:

- 500-699  Master's-level courses
- 700-799  J.D. level courses
- 730-799  Doctoral-level courses

A student must apply for and be admitted to the Graduate School before registering for graduate credit.

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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality</th>
<th>Points</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>0.0</td>
<td>0</td>
<td>Credit</td>
</tr>
<tr>
<td>NC</td>
<td>0.0</td>
<td>0</td>
<td>No credit</td>
</tr>
<tr>
<td>AUD</td>
<td>0.0</td>
<td>0</td>
<td>Audit</td>
</tr>
<tr>
<td>0.0</td>
<td>F</td>
<td>0</td>
<td>Failure</td>
</tr>
<tr>
<td>0.0</td>
<td>D</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>C</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>B+</td>
<td>3.3</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>B</td>
<td>3.0</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>B-</td>
<td>2.7</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>C+</td>
<td>2.3</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>C</td>
<td>2.0</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>C-</td>
<td>1.7</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>D+</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>D</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>0.0</td>
<td>F</td>
<td>0.0</td>
<td>0</td>
</tr>
</tbody>
</table>

Each course at the University has two numbers. One designates the college and department of which it is a part; one specifies the subject matter of the particular course. For instance:

3300:507  Middle English Literature

In the above example, the first four digits of the number (3300) indicate the college and department. In the case, 3000 represents the Buchtel College of Arts and Sciences, 330 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.

An explanation of that numbering system follows:

- 500-699  Master's-level courses
- 700-799  J.D. level courses
- 730-799  Doctoral-level courses

A student must apply for and be admitted to the Graduate School before registering for graduate credit.

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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality</th>
<th>Points</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>0.0</td>
<td>0</td>
<td>Credit</td>
</tr>
<tr>
<td>NC</td>
<td>0.0</td>
<td>0</td>
<td>No credit</td>
</tr>
<tr>
<td>AUD</td>
<td>0.0</td>
<td>0</td>
<td>Audit</td>
</tr>
<tr>
<td>0.0</td>
<td>F</td>
<td>0</td>
<td>Failure</td>
</tr>
</tbody>
</table>

Each course at the University has two numbers. One designates the college and department of which it is a part; one specifies the subject matter of the particular course. For instance:

3300:507  Middle English Literature

In the above example, the first four digits of the number (3300) indicate the college and department. In the case, 3000 represents the Buchtel College of Arts and Sciences, 330 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.

An explanation of that numbering system follows:

- 500-699  Master's-level courses
- 700-799  J.D. level courses
- 730-799  Doctoral-level courses

A student must apply for and be admitted to the Graduate School before registering for graduate credit.

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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality</th>
<th>Points</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>0.0</td>
<td>0</td>
<td>Credit</td>
</tr>
<tr>
<td>NC</td>
<td>0.0</td>
<td>0</td>
<td>No credit</td>
</tr>
<tr>
<td>AUD</td>
<td>0.0</td>
<td>0</td>
<td>Audit</td>
</tr>
<tr>
<td>0.0</td>
<td>F</td>
<td>0</td>
<td>Failure</td>
</tr>
</tbody>
</table>
The following grades may also appear on the term grade reports or on the official academic record. There are no grade points associated with these grades.

I – Incomplete: Indicates that the student has done passing work in the course but that some part of the work is, for good and acceptable reasons, 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”) to an in progress (“IP”) to a permanent incomplete (“PI”).

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

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

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

*If instructors wish to extend the “I” grade beyond the following term for whom 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.

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. Repeated 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 and 899 are the only courses which will count toward a master’s thesis. 599 will only be used for courses which indicate credit is given for a doctor’s dissertation. 699 will be given unless the thesis or dissertation is completed.

Colloquia, Seminars and Workshops

Colloquium (credit/noncredit grading): A course that normally involves guest, 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 grade-point average falls below 3.00 is no longer in good standing and will be placed on probation. 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 satisfactory performance is submitted and found acceptable.

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

Commencement
Students earning graduate degrees are expected to participate in the commencement exercises. A degree candidate who has legitimate reasons for graduat­ing “in Absentia” should make a written request to the registrar within the established dates and pay the designated fee.

Students must apply to graduate in advance of completing degree requirements. Applications are filed with the Graduation Office which observes the following deadlines:
• Fall graduation: May 15.
• Spring graduation: September 15.
• Summer graduation: February 15.

Academic Dishonesty
Students at The University of Akron are an essential part of the academic commu­nity, and enjoy substantial freedom within the framework of the educational objec­tives of the institution. The freedom necessary for learning in a community rich in diversity and achieving success toward our educational objectives requires high standards of academic integrity. Academic dishonesty has no place in an institution of advanced learning. The University community is governed by the polices and regulations contained with the Student Code of Conduct available in the Office of Student Conduct, Gardner Student Center 104, (330) 972-7021.

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

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

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

A further discussion of these procedures and other avenues for recourse can be found in the Grievance Procedures for Graduate Students, available at the Graduate School, The Dey Building 469, and included in the Appendix of this Bulletin.
Ohio Residency Requirements

Payment of a non-resident surcharge is required of any student who does not qualify as a permanent resident of Ohio as defined by one or more of the following sections:

3333-1-10 of the Ohio Revised Code

A. Intent and Authority

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

2. This rule is adopted pursuant to Chapter 119 of the Revised Code, and under the authority conferred upon the Ohio Board of Regents by Section 3333.31 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 5707.01 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, an individual's immigration status will not preclude an individual from obtaining resident status if that individual has the current legal status to remain permanently in the United States.

C. Residency for Subsidy and Tuition Surcharge Purposes

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

1. A dependent student, at least one of whose parents or legal guardian has been a resident of the state of Ohio for all other legal purposes for 12 consecutive months or more immediately preceding the enrollment of such student in an institution of higher education.

2. A person who has been a resident of Ohio for the purpose of this rule for at least 12 consecutive months immediately preceding his or her enrollment in an institution of higher education and who is not receiving, and has not directly or indirectly received in the preceding 12 consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.

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

4. A dependent child of a parent or legal guardian or the spouse of a person who is a full-time student enrolled in an institution of higher education while his or her dependents are residents of Ohio, and who is employed by his or her employer beyond the territorial limits of the state of Ohio for all other legal purposes for which the individual is permitted to reside permanently in Ohio.

5. A person who has been admitted as a migrant worker in the state and whose parent or legal guardian is employed by his or her employer beyond the territorial limits of the state of Ohio for all other legal purposes.

6. Any institution of higher education charged with reporting student residency status otherwise established under paragraphs C.1. or C.2. of this rule.

7. A dependent student classified as resident of Ohio under the provisions of Section 4.2 of this rule who is enrolled in an institution of higher education or at the University of Cincinnati while his or her parents or legal guardian are residents of Ohio and who provides the instruction at an institution of higher education.

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 qualifies to vote in Ohio;
   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 an Ohio vehicle registration;

2. Criteria evidencing lack of residency:
   a. if a person is 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 pursuing a part-time program of instruction at an institution of higher education.

2. A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile.

3. A person on active duty status in the United States military service who is stationed and resides in Ohio and his or her dependents shall be considered residents of Ohio for these purposes.

4. A person who is transferred by his or her employer beyond the territorial limits of the state 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 whose resident status otherwise established under paragraphs C.1. or C.2. of this rule will be considered a resident for these purposes.

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 residency 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.
## College of Engineering

All full-time graduate engineering students will be charged a $4,500 fee each fall and spring semester. A pro-rated graduate tuition/fee plan will be charged to all part-time graduate engineering students. Approval fees are assessed for the following courses:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000:523</td>
<td>Chemistry for Environmental Engineers</td>
</tr>
<tr>
<td>4000:568</td>
<td>Highway Materials</td>
</tr>
<tr>
<td>4400:555</td>
<td>Microwave Engineering</td>
</tr>
<tr>
<td>4400:566</td>
<td>Programmable Logic</td>
</tr>
<tr>
<td>4400:576</td>
<td>Solid State Processing</td>
</tr>
<tr>
<td>4400:572</td>
<td>Control Systems II</td>
</tr>
<tr>
<td>4400:584</td>
<td>Power Electronics Laboratory and Design Project</td>
</tr>
<tr>
<td>4800:601</td>
<td>Biomedical Instrumentation I</td>
</tr>
<tr>
<td>4840:634</td>
<td>Medical Imaging Devices</td>
</tr>
<tr>
<td>4800:640</td>
<td>Spine Mechanics</td>
</tr>
<tr>
<td>4800:641</td>
<td>Soft Connecting Tissue Biochemistry</td>
</tr>
<tr>
<td>4800:642</td>
<td>Hard Connecting Tissue Biochemistry</td>
</tr>
</tbody>
</table>

## College of Education

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:521</td>
<td>Design and Production of Instructional Materials</td>
</tr>
<tr>
<td>5100:520</td>
<td>Introduction to Computer-Based Education</td>
</tr>
<tr>
<td>5100:520</td>
<td>Seminar in Computer-Based Education</td>
</tr>
<tr>
<td>5100:462</td>
<td>Statistics in Education</td>
</tr>
<tr>
<td>5400:530</td>
<td>Systematic Curriculum Design for Technical Education</td>
</tr>
<tr>
<td>5400:535</td>
<td>Instructional Techniques in Technical Education</td>
</tr>
<tr>
<td>5530:575</td>
<td>Microcomputer Applications for Elementary Teachers</td>
</tr>
<tr>
<td>5500:576</td>
<td>Microcomputer Applications for Secondary Teachers</td>
</tr>
<tr>
<td>5560:580</td>
<td>Application of Outdoor Education to the School Curriculum</td>
</tr>
<tr>
<td>5560:592</td>
<td>Resources and Res Mgmt for the Teaching of Outdoor Ed</td>
</tr>
<tr>
<td>5560:600</td>
<td>Outdoor Education: Rural Influences</td>
</tr>
<tr>
<td>5560:615</td>
<td>Tests and Analysis in Counseling</td>
</tr>
<tr>
<td>5600:447</td>
<td>Career Development and Counseling Across the Life Span</td>
</tr>
</tbody>
</table>

## College of Business Administration

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>5630:575</td>
<td>Practicum in Counseling I</td>
</tr>
<tr>
<td>5630:675</td>
<td>Practicum in Counseling II</td>
</tr>
<tr>
<td>5630:702</td>
<td>Advanced Counseling Practicum I</td>
</tr>
<tr>
<td>5630:712</td>
<td>Principles and Practice of Individual Intake Testing</td>
</tr>
<tr>
<td>5660:714</td>
<td>Objective Personality Evaluation I</td>
</tr>
<tr>
<td>5660:720</td>
<td>Topical Seminar: Guidance and Counseling I</td>
</tr>
<tr>
<td>5660:735</td>
<td>Assessment in Special Education I</td>
</tr>
<tr>
<td>5670:566</td>
<td>Nutrition Aspects of Medical Disabilities</td>
</tr>
<tr>
<td>5670:570</td>
<td>Clinical Practicum in Special Education</td>
</tr>
<tr>
<td>5700:515</td>
<td>Computer Applications in Educational Administration</td>
</tr>
</tbody>
</table>

## College of Fine and Applied Arts

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7100:591</td>
<td>Architectural Preparations I</td>
</tr>
<tr>
<td>7100:592</td>
<td>Architectural Preparations II</td>
</tr>
<tr>
<td>7100:593</td>
<td>Advanced Food Preparation</td>
</tr>
<tr>
<td>7100:594</td>
<td>History of Furniture and Interiors I</td>
</tr>
<tr>
<td>7100:595</td>
<td>History of Furniture and Interiors II</td>
</tr>
<tr>
<td>7100:602</td>
<td>Experimental Foods</td>
</tr>
<tr>
<td>7100:603</td>
<td>Professional Analysis in Food Science</td>
</tr>
<tr>
<td>7100:624</td>
<td>Nutrition in the Life Cycle</td>
</tr>
<tr>
<td>7100:652</td>
<td>Advanced Textiles</td>
</tr>
<tr>
<td>7100:653</td>
<td>Interiors, Textiles, and Product Analysis</td>
</tr>
<tr>
<td>7100:654</td>
<td>Residential Design</td>
</tr>
<tr>
<td>7100:655</td>
<td>Commercial Interiors</td>
</tr>
<tr>
<td>7100:656</td>
<td>Principles and Practices of Interior Design</td>
</tr>
<tr>
<td>7100:657</td>
<td>Textile Conservation</td>
</tr>
<tr>
<td>7100:658</td>
<td>History of Western Costume to 1800</td>
</tr>
<tr>
<td>7100:659</td>
<td>History of Fashion Since 1780</td>
</tr>
<tr>
<td>7100:650</td>
<td>Child in the Hospital</td>
</tr>
<tr>
<td>7100:656</td>
<td>Practicum: Establishing &amp; Supervising a Child-Life Program</td>
</tr>
<tr>
<td>7100:676</td>
<td>Developments in Food Science</td>
</tr>
<tr>
<td>7100:590</td>
<td>Community Nutrition I</td>
</tr>
<tr>
<td>7100:591</td>
<td>Community Nutrition II</td>
</tr>
<tr>
<td>7100:592</td>
<td>Community Nutrition III</td>
</tr>
<tr>
<td>7100:593</td>
<td>Community Nutrition IV</td>
</tr>
<tr>
<td>7100:594</td>
<td>Nutrition to Hospital Setting</td>
</tr>
<tr>
<td>7100:588</td>
<td>Practicum in Dietetics</td>
</tr>
<tr>
<td>7100:603</td>
<td>Family Relationships in Middle and Later Years</td>
</tr>
<tr>
<td>7100:604</td>
<td>Orientation to Graduate Studies-Family Consumer Sciences</td>
</tr>
<tr>
<td>7100:685</td>
<td>Research Methods in Family and Consumer Sciences</td>
</tr>
<tr>
<td>7100:553</td>
<td>Music Software Survey and Use</td>
</tr>
<tr>
<td>7100:613</td>
<td>Instructional Programming in Music for the Microcomputer</td>
</tr>
</tbody>
</table>

## General Information

### 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.
To apply for a variety of grants and 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. Inquiries may be directed to the Office of Student Financial Aid, Spicer 119, (330) 972-7032 or (800) 621-3847.

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

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. An Application Service Charge of $17 per contract for regis-
tration fees and $17 per contract for University housing fees is assessed for the
Installment Payment Plan (IPP). If a payment is not received on the due date, a
late payment penalty is assessed at $20 per payment for registration fees or $40
per payment if University housing is included. These fees are subject to change.

For applications received up to and including the published semester fee deadline,
a 30-percent down payment is required with three follow-up installments at 20
percent, 25 percent and 25 percent respectively. Applications received after the fee
deadline will receive a 50-percent down payment
with two follow-up installments of 25 percent each. For summer terms, the
down payment is 30 percent plus one installment at 70 percent or less, depend-
igin the amount of direct application. If the direct application of financial aid for
the fall or spring semester is greater than 30 percent and is used as a down pay-
ment, the remaining balance will be billed in one, two or three equal payments, de-
depending on when the student registers. Installments are billed monthly starting
approximately 30 days at the start of classes.

Financial aid may be used to pay the down payment. If the amount of aid is
greater than the required down payment, the entire aid amount must be used as
the downpayment. The remaining installment balance will be billed either in two
or three equal payments, depending on the registration period.

Application forms are included with the Student Fee Invoice or may be obtained
in Spicer Hall 105 or by calling (330) 972-5100.

Graduate Assistantships
Graduate assistantships may be available through various graduate degree-grant-
ing academic units. Graduate assistantships and other graduate awards are dis-
tributed to the colleges through the Graduate School; therefore, a separate
application is required. For further information, contact the Graduate School, Pol-
sky Building, room 469, (330) 972-7663.

International Students
An international 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 auto-
matically 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 fee.
- Student parking fee (only if permit is returned).
- Student teaching fee.
- Laboratory breakage and late service deposit.
- Residence hall fees (more: subject to special policy).

Amount of Refund
Amount of refund is to be determined in accordance with the following regula-
tions 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 sus-
pended 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 induc-
tion 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
  - less $5 per enrolled credit to a maximum of $55 if the student requests offic-
ial withdrawal from all credit courses on or before the Sunday (midnight)
which begins the second week of the enrolled term. (Note: If a semester
begins other than on a Monday, the maximum refund period will extend to
seven (7) days from the beginning of the semester. Example, semester
begins on Tuesday, the maximum refund period will end at midnight on
the following Monday.)
  - if the student requests official withdrawal after the Sunday (midnight) which
begins the second week of the fall or spring semesters, 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 fifth week of the semester: 20%
    Thereafter: 0%
  - if the student requests official withdrawal after the Sunday (midnight) which
begins the second week of the semester of any Summer Session the fol-
lowing refund percentages apply:
    During the second week of the summer session: 40%
    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 rate basis according to the number
of days of the section (class, institute, or workshop) which have passed com-
pared 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 con-
finement, 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
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 dean of 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 credits (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 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.

Advance to Candidacy
A student should apply for admission 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 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 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 by 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 dissertation 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 student 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 in 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 references to the doctoral program in engineering.
Continuous Enrollment Requirement

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

Time Limit

All doctoral requirements must be completed within 10 years of starting coursework at The University of Akron or elsewhere. This refers to graduate work after receipt of a master's degree or the completion of 30 semester credits. Extensions of up to one year may be granted by the dean of the Graduate School under unusual circumstances.

Credits

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

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

Transfer Credits

Up to 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 beyond the master's degree. All credits transferred must be at the "A" or "B" level 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 credits 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 techniques (e.g., statistics and computer use) 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.

Optional Department Requirements

Each department may determine requirements for a doctoral student with regard to entrance examinations, qualifying examinations, preliminary or comprehensive examinations and course sequences.

Advancement to Candidacy

A student should apply for advancement to candidacy after completion of one-half of the credits required for the degree in his or her program. A student must be fully admitted and in good standing to be advanced to candidacy.

Advancement to Candidacy forms 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.

Dissertation and Oral Defense

The ability to do independent research and demonstrate competence in scholarly exposition must be demonstrated by the preparation of a dissertation on some topic related to the major subject. It should represent a significant contribution to knowledge, be presented in a scholarly manner, and reveal the candidate's ability to do independent research and indicate experience in research techniques. A doctoral dissertation committee supervises and approves the dissertation and administers an oral examination upon the dissertation and related areas of study. This examination is open to the graduate faculty. The dissertation and oral examination must be approved by the committee before the dissertation is submitted to the Graduate School.

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

A draft copy of the dissertation is due in the Graduate School prior to the preliminary deadline. Two copies of the dissertation are due in the Graduate School prior to the final deadline. These copies must be signed by the advisor, department chair, and college dean prior to submission to the dean of the Graduate School. A manual entitled Guidelines for Preparing a Thesis or Dissertation is available in the Graduate School and all copies of the dissertation must conform to these instructions.

Graduation

To be cleared for graduation, a candidate must have completed the academic program with a grade-point average of at least 3.00; been advanced to candidacy; met preliminary dissertation deadlines; submitted an approved dissertation and passed an oral examination; filed an application for graduation with the registrar, paid all applicable fees; and met any other department and University requirements.
The University of Akron offers a doctoral program in Counseling Psychology. The program allows the student a choice of entry points through the Psychology Department of the Buchtel College of Arts and Sciences or through the Counseling and Special Education 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-effective, 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 yearlong, full-time internship in an applied service setting. Pertinent information regarding the emphasis, orientation, and coursework for the Psychology Department entry 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.

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 interdisciplinary, collaborative approach in Counseling Psychology. Electives and other courses are to be planned along with the student's advisor.

- Psychology core courses (610, 620, 630, 640, 650)
- Counseling psychology core courses (701, 710, 711, 712, 713, 714, 715, 717, 718, 780)
- Practicum sequence (672, 672A, 72A, 72B, 72C)
- Advanced Psychological Tests and Measures (750)
- Electives (minimum)
- Statistics (601, 602)
- A statistics sequence that may be substituted for the doctoral language requirement
- Thesis credits (minimum)
- Dissertation credits (minimum)

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 with 1,600 hours over no more than two years. The internship site must be approved in advance by the Collaborative Program Internship Committee.
- Students must maintain a 3.50 GPA in their content courses each year in the Department of Psychology.

Doctor of Philosophy in History

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

- Fulfill admission requirements of the School.
- The Graduate Committee of the History Department will consider an applicant for admission if a person has a Master's degree in the equivalent and a grade-point average of 3.3 or better at the M.A. level from an accredited institution. Those holding a Master's degree from The University of Akron or other accredited institution should not assume that they will automatically be admitted to doctoral studies. In

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 with Cleveland State University.

Doctor of Philosophy in Chemistry

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

- Complete a course of study designed in consultation with an advisor or advisory committee. The consists of the completion of at least 90 credits beyond the baccalaureate degree, including 24 credits of appropriate coursework.
- Complete monthly cumulative exam requirement.
- Complete oral exam requirement.

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 School.
- The Graduate Committee of the History Department will consider an applicant for admission if a person has a Master's degree in the equivalent and a grade-point average of 3.3 or better at the M.A. level from an accredited institution. Those holding a Master's degree from The University of Akron or other accredited institution should not assume that they will automatically be admitted to doctoral studies. In
addition to the application made to the Graduate School of The University of Akron, the student must submit to the History Department the following materials:

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

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

- Complete studies selected by the student in consultation with an advisory committee, including:
  - completion of 60 credits beyond master's degree requirements, including dissertation credit. Courses at the 500-level in the student's major and dissertation fields will not be counted toward the degree, and only 9 hours of 500-level courses in the student's secondary fields will be counted;
  - demonstration of competency in four fields of study selected from the following areas: ancient, medieval, modern Europe to 1750, modern Europe since 1750, England and the Empire, United States 1607 to present, Latin America, Far East, and history of science. Further, students will be required to sit for examination in three fields chosen from the above list. They will be examined in a fourth field as well, a specialty or sub-topic falling within one of the general fields listed above. The fourth field will be designed by the student and the student's advisor, in consultation with the student's doctoral committee and the Graduate Committee of the History Department. The student's dissertation will fall within this fourth field;
  - satisfactory performance in written and oral comprehensive examinations;
  - defense of the dissertation in an oral examination.

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

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

Doctor of Philosophy in Psychology

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

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;
  - completion of master's core courses or equivalent;
  - attainment of a graduate grade-point average (GPA) or 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 doctoral 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 375:899 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 student 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 (9 credits) in the sociology master of arts program at The University of Akron. The coursework must include the master of arts core sequence. Scores from the 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 two following courses, such courses not to count toward meeting specialization requirements:
  - 3850:531 Social Psychology
  - 3850:545 Social Organization

- Take two doctoral-level courses in theory. These courses are to be selected from the predetermined group of courses (see Department of Sociology Graduate Student Handbook).

- Complete two doctoral-level courses in methods/statistics. These courses are to be selected from the predetermined group of courses (see the department's graduate student handbook).

- Complete a specialty of at least 15 credits.

- Complete a minimum total of 30 credits in coursework.

- Pass the doctoral comprehensive examination. This examination is given in the specialty area and will include an evaluation of methods, theory, and statistics as relevant to the specialty area.

- Full residency requirement of the Graduate School.

- Complete foreign language requirement by one of four sequences as detailed in the department's graduate student handbook:
  - foreign language;
  - computer science;
  - statistics;
  - philosophy.

- 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). 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 train professionals interested in the areas of policy analysis and evaluation, public administration, and urban and regional planning for university and professional appointments.

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:

- Grade point average from previous Master's Degree Program. Students will normally not be admitted with a GPA below 3.5. Having a 3.5 GPA, however, is not sufficient, in itself, for admission.
- Graduate Record Examination General Test Scores. The applicant is expected to submit a score on both the verbal and quantitative portions of the GRE.
- 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 Program. Students who do not have such a requirement in the Master's Program are free to submit several samples of written work – for example, term papers, professional reports, published articles.
- A personal statement from the applicant detailing area of intended specialization.
- Those whose native tongue is not English must demonstrate proficiency in the English Language by scoring a minimum of 570 on the Test of English as a Foreign Language (TOEFL) and submitting an acceptable score from the Test of Written English (TWE) and a minimum score of 220 on the Test of Spoken English (TSE).

A student may be required to appear before the Doctoral Committee before a decision is made on admission to the Program.

Entering students will also have successfully completed the following Master's level social science prerequisites (or equivalents) before formal admission:

- Basic Quantitative Research 3
- Advanced Research and Statistical Methods 3
- Introduction to the Profession of Public Administration 3
- Introduction to Planning Theory 3
- Fiscal Analysis 3
- Introduction to Public Policy 3
- Introduction to the Profession of Public Administration 3

The Doctoral Committee may also require an applicant to take an admission examination, either written or oral, or both. A student may be admitted to the doctoral program subject to completing graduate-level bridge-up coursework designed to make up 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, 48 hours of coursework, and 15 hours of dissertation.

Course work consists of a required core of 27 credits and an area of specialization consisting of 21 credits.

- Core Courses: 3
  - Advanced Research Methods I
  - Advanced Research Methods II
  - Urban Theory I
  - Urban Theory II
  - Economics of Urban Policy
  - Urban Policy: The Historical Perspective
  - Seminar in Public Policy
  - Seminar in Policy Analysis and Evaluation
  - Seminar in Urban and Regional Planning

- Specialization:
  - Policy Analysis and Evaluation
  - Public Administration
  - Urban and Regional Planning

Students will develop a specialization consisting of 21 credits in consultation with their advisors and committees.

- Examinations:
  - Students must pass written and oral comprehensive examinations on the program core and on their areas of specialization. Students must also successfully defend their dissertations.
- Other requirements:
  - Refer to departmental graduate student handbook for other requirements or guidelines. Complete general doctoral degree requirements of the Graduate School.


Programs of advanced study leading to the master's degree are offered by the departments of biology, chemistry, economics, English, geography, geology (earth science), history, mathematics and computer science, modern languages (Spanish), physics, political science, psychology, sociology, statistics 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-native speakers of English must submit a TSE score of 220 or above (minimum score of 50 on TSE, revised 1995) to be considered for a graduate assistantship.

Master of Science

Thesis Option I

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

- Course work in addition to the master's research and seminars must be approved by the student's advisory committee – 24 credits.
- Research and thesis – minimum of 12 credits.
- Participation in seminars – a maximum of four credits.
- The student's advisory committee may require the demonstration of reading proficiency in a foreign language appropriate to the field of study.

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

Thesis Option II

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

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

Nonthesis Option

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

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

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

Master of Science

- Chemistry coursework – with the approval of the advisor, up to 12 credits may be taken in related areas – 24 credits.
- Research and thesis – 6 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.

Economics

Master of Arts

Thesis Option

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

Nonthesis Option

A minimum of 30 credits of coursework is required. At least 21 credits must be at the 600 level in economics. The individual must also specialize in an area.

Required Courses for both options:

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

Areas of Specialization:

- Economic Development and Planning
- Economic Theory and Policy
- Industrial Organization and Public Policy
- International Economics
- Labor and Industrial Relations
- Quantitative Methods

Other Available Courses for both Options:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:575</td>
<td>Theory of Rhetoric</td>
</tr>
<tr>
<td>3300:576</td>
<td>Scholarly Writing</td>
</tr>
<tr>
<td>3300:588</td>
<td>Seminar: Hearing Theory</td>
</tr>
</tbody>
</table>

Linguistics:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:570</td>
<td>History of the English Language</td>
</tr>
<tr>
<td>3300:571</td>
<td>U.S. Dialects: Black and White</td>
</tr>
<tr>
<td>3300:588</td>
<td>Grammaratical Structures of Modern English</td>
</tr>
<tr>
<td>3300:589</td>
<td>Sociolinguistics</td>
</tr>
<tr>
<td>3300:593</td>
<td>Contextual Linguistics</td>
</tr>
</tbody>
</table>

Literature and Literary Theory:

Any approved department offering at the 500 or 600 level.

Graduate Foreign Language Requirement for All Master’s Degrees in English:

The language requirement for the M.A. in English and the M.A. in English: Alternate Track in Composition is as follows:

Demonstration of reading proficiency in a foreign language appropriate to English Studies. Completion of one junior or senior-level course in a foreign language (with a grade of "B" or better) will exempt the student from examination provided the course was taken no more than five years before the student began his or her graduate work.

Note: 3300:600 Teaching College Composition Practicum is required for Teaching Assistants. This does not count toward the degree requirements.

English

Master of Arts

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 (exclusive of individual reading).

Nonthesis Option

A minimum of 36 credits is required. Only 6 of which may be individual reading. At least 24 credits are required in composition studies including courses in composition, linguistics, and rhetoric and 9 credits in literature or literary theory (exclusive of individual reading). Of the 36 credits of coursework, 21 must be at the 600 level.

Required Courses for Both Options:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:575</td>
<td>Theory of Rhetoric</td>
</tr>
<tr>
<td>3300:576</td>
<td>Scholarly Writing</td>
</tr>
<tr>
<td>3300:588</td>
<td>Seminar: Hearing Theory</td>
</tr>
</tbody>
</table>

Linguistics:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:570</td>
<td>History of the English Language</td>
</tr>
<tr>
<td>3300:571</td>
<td>U.S. Dialects: Black and White</td>
</tr>
<tr>
<td>3300:588</td>
<td>Grammaratical Structures of Modern English</td>
</tr>
<tr>
<td>3300:589</td>
<td>Sociolinguistics</td>
</tr>
<tr>
<td>3300:593</td>
<td>Contextual Linguistics</td>
</tr>
</tbody>
</table>

Literature and Literary Theory:

Any approved department offering at the 500 or 600 level.

Graduate Foreign Language Requirement for All Master’s Degrees in English:

The language requirement for the M.A. in English and the M.A. in English: Alternate Track in Composition is as follows:

Demonstration of reading proficiency in a foreign language appropriate to English Studies. Completion of one junior or senior-level course in a foreign language (with a grade of "B" or better) will exempt the student from examination provided the course was taken no more than five years before the student began his or her graduate work.

Note: 3300:600 Teaching College Composition Practicum is required for Teaching Assistants. This does not count toward the degree requirements.

Geography and Planning

Master of Arts in Geography

Nonthesis Option

- A minimum of 39 graduate credit hours, to include no more than 6 credits of 3350:568. At least 12 credit hours must be at the 600 level, excluding 3350:568 and 589.
- Core Requirements – 12 credit hours (4 Courses)
  - 3350:581 Research Methods in Geography and Planning
  - 3350:583 Spatial Analysis
  - 3350:596 Field Research Methods
  - 3350:687 History of Geographic Thought
- Seminar: Completion of research papers in at least 2 courses from the following (6 hours):
  - 3350:600 SEM: (tag)
  - 3350:601 SEM: (tag)
  - 3350:602 SEM: (tag)
- Electives – 21 credit hours

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

Thesis Option

- A minimum of 36 graduate credit hours, to include no more than 6 credits of 3350:568. At least 12 credit hours must be at the 600 level, excluding 3350:568 and 589.
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

- Minimum of 36 graduate credit hours, to include no more than 6 credits of 3350:688. At least 12 credit hours must be taken at the 600 level, excluding 3350:688 and 699.
- Core Required Courses – 15 credit hours
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:687 History of Geographic Research
- Thesis – 9 credit hours
- Electives – 15 credit hours, at least 3 credits of which must be from the following:
  3350:600 SEM: Tag
  3350:601 SEM: Tag
  3350:602 SEM: Tag

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)

- A total of 45 credits of coursework plus internship (3350:688) as follows:
  - Core Requirements
    3350:533 Introduction to Planning
    3350:536 Urban Land Use Analysis
    3350:581 Research Methods in Geography and Planning
    3350:583 Spatial Analysis
    3350:630 Planning Theory
    3350:631 Facilities Planning
    3350:632 Land Use Planning Law
  - Electives – 12 credit hours

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.
- Proficiency examination at the beginning of program to determine any weaknesses in undergraduate preparation. The student who demonstrates a lack of basic knowledge will be required to take appropriate undergraduate courses. The student may not begin formal thesis work until he/she has successfully passed the proficiency examination and has corrected deficiencies from same. (Formal thesis work includes thesis proposal and/or thesis research credits). Field camp can be taken for graduate credit; however, it will not count toward the 30 credits for the M.S. in the geology or geophysics options.
- Core Requirements:
  3370:690 Seminar in Geology
  3370:699 Master’s Thesis
- Pass comprehensive examination after completion of 18 credits. Examination may be attempted twice.
- 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/sтратigraphy, and any two upper level geology courses.

Students should have completed the equivalent of a minimum of six semester courses in introductory chemistry, physics, biology, calculus or equivalents, including at least one semester of calculus, physics and chemistry. All courses should be taught for science/mathematics/engineering majors.

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

Earth Science

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

Geophysics

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

Engineering Geology

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

- Required courses:
  3370:101 Introductory Physical Geology
  3370:210 Geomorphology
  3370:350 Structural Geology
  3450:221,2,3 Analytical Geometry Calculus I, II, III
  4300:201 Statics
  4300:202 Introduction to Mechanics of Solids
  4300:313 Soil Mechanics
  4300:314 Geotechnical Engineering

Environmental Geology

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

Master of Arts

- Students applying for admission to the M.A. program must have a minimum undergraduate grade-point average of 3.0. The applicant’s average in history courses should be substantially higher. Applicants must also have completed at least 24 semester or 36 quarter hours in history courses at the undergraduate level. An application to the M.A. program consists of the following:
  - an application form;
  - a letter of intent, stating the applicant’s reasons for wishing to pursue graduate work and the fields of history in 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 Written Language (TOEFL), at least 240 on the Test of English as a Spoken Language (TSE), and take the Test of Written English (TWE).

Degree requirements include:
- Satisfactory completion of a minimum of 30 credits of graduate study in history, of which only six may be in individual reading.
- Concentrated study of three fields, two of which must be chosen from the following:
  - Ancient America to 1877
  - Medieval United States Since 1877
  - Europe, Renaissance to 1750 Latin America
  - Europe, 1750 to the Present East Asia
  - England and the Empire History of Science
- The third field must be chosen from the above history fields or from an approved cognate discipline.
- The student must pass written examinations in two of the three fields. The third field requirement will be met by at least seven credits of coursework at the graduate level, completed with a GPA of 3.0.
- 3400:689 Historiography
- Twenty-three hours of 600-level coursework, at least 16 credits of which must be in seminars. Seminars must be chosen to satisfy one of the following options.

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

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

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

Mathematics and Computer Science

Master of Science - 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 Abstract Algebra I (3450:511). 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
- 3450:627 Advanced Numerical Analysis I 3
- 3450:635 Optimization 3
- 3450:636 Advanced Combinatorics and Graph Theory 3
- 3470:650 Advanced Probability and Stochastic Processes 3
- 3470:651 Probability and Statistics 4
- 3450:692 Seminar in Mathematics 1-3

Thesis Option (30-39 credits)
In addition to the placement review and core requirements, 3-11 credits of 500/600 level courses in mathematics (3450), statistics (3470), or approved 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, 16 credits of 500/600 level courses in mathematics (3450), statistics (3470), or approved 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.

Successful completion of the comprehensive examinations in the two courses selected from among 3450:510, 511 or 611 and in the courses 3450:621, 622 and 625.

Master of Science -- Applied Mathematics

Option I
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 3
- 3450:634 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, 3-11 credits of 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), 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.

Successful completion of the Comprehensive Examination in the courses 3450:621, 625, 627, 633 and 634.

Option II
Completion of a placement process prior to the beginning of classes in the student’s first semester in the program is required. 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 Mathematical Models (3450:535). 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
- 3450:627 Advanced Numerical Analysis I 3
- 3450:635 Optimization 3
- 3450:636 Advanced Combinatorics and Graph Theory 3
- 3470:650 Advanced Probability and Stochastic Processes 3
- 3470:651 Probability and Statistics 4
- 3450:692 Seminar in Mathematics 1-3

Thesis Option (30-39 credits)
In addition to the placement review and core requirements, 2-4 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, 9 credits of approved 500/600-level courses in mathematics (3450), statistics (3470), or computer science (3480) 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.

Successful completion of the Comprehensive Examinations in the courses 3450:621, 627, 635, 636 and 3470:651 is required.

Master of Science – Computer Science

Admission Requirements

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

• 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 Graduate Record Examination (aptitude and advanced Computer Science Tests) 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.

• Core Courses (required of all students)
  Seven courses must be chosen from the following categories: two from each of categories A and B, and one from each of categories C, D, and E.

  A. Programming Languages
  B. Operating Systems and Computer Architecture
  C. Theoretical Computer Science
  D. Data and File Structures
  E. Applications

• Complete at least one 2-course sequence from each of the following groups:
  Group 1: (526, 626), (540, 640), (565, 665), (570, 670), (575, 675)
  Group 2: (536, 636), (555, 655), (565, 665), (570, 670), (575, 675)

• 3460:692 Seminar in Computer Science. This seminar is an introduction to research in computer science. For thesis option students, it is the beginning of the thesis research.

• At least 20 credits must be taken at the 600 level.

• With prior consent, up to 3 credits of approved graduate-level work outside the department may be substituted for elective courses in both the thesis and nonthesis options.

Thesis Option (30 credits of graduate work)

In addition to the core curriculum, 3-5 credits in approved 500/600-level departmental courses and 2-4 credits in 3460:699 Master's Thesis must be completed. The thesis must be of publishable quality and must be successfully presented at a public defense moderated by three full time Graduate Faculty in Computer Science.

Non-thesis Option (33 credits of graduate work)

In addition to the core curriculum, 9-10 credits in approved 500/600-level departmental courses must be completed. A written comprehensive examination, taking the form suggested by the department, must be completed. The examination will cover four areas of computer science chosen by the student and the student's advisor. Two of the areas will be based on the two-course sequences (listed in Group 2) above.

Coordinated Program

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

The faculty in the College of Engineering and the Department of Mathematics and Computer Science 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 Mathematics and Computer Science. The Admission Requirements for the Doctor of Philosophy in Engineering, as given in the Graduate Bulletin (see page 42, College of Engineering), shall apply to all applicants for the Engineering Applied Mathematics Program.

Physics

Master of Science

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

• A cumulative grade-point average of 3.00 or better for all graduate-level credits applicable toward the degree.

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

  3650:551 Advanced Laboratory I
  3650:615 Electromagnetic Theory I
  3650:625 Quantum Mechanics I
  3650:641 Lagrangian Mechanics
  3650:661 Statistical Mechanics
  3650:685 Solid State Physics I

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

  3650:581, 2 Methods of Mathematical Physics I, II
  3650:616 Electromagnetic Theory II
  3650:626 Quantum Mechanics II
  3650:652 Advanced Laboratory II

A student preparing for teaching secondary school science should include the following courses in the graduate program:

  3650:500 History of Physics
  3650:568 Digital Data Acquisition
  3650:590 Workshops (maximum credit) 6

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

Option A: A written exam covering the field of physics at the advanced graduate level.

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

Option C: 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.

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. The Graduate Record Examination (GRE) is not required.

The Master of Arts in Political Science allows students to concentrate their study in one of four areas: American Politics, Comparative Politics, International Politics, or Political Theory.

Students may also work toward certificates in Applied Politics and Public Policy in conjunction with their graduate studies.

Degree Requirements

• Complete 30 credits of graduate work, including 18 credits at the 600 level.

Two required core courses:

  3700:600 Scope and Theory of Political Science
  3700:601 Research Methods in Political Science
Three additional departmental seminars – 9 credits (Neither Independent Research, Thesis, nor Internship is considered a graduate seminar).

Three additional credits at the 600 level.

• Twelve additional credits at the graduate level.

• Pass a comprehensive written examination covering one field (American Politics, Comparative Politics, International Politics, or Political Theory).

• Complete either of the following.

A master’s thesis, including six hours of thesis credit (3700:699) in preparation. These credits may be presented as part of the overall 30-credit requirement. Thesis topic and completed thesis must be approved by the student’s thesis committee and the student must complete a successful oral defense of the thesis.

A nonthesis option, which shall consist of two extended seminar papers approved by a department committee of three persons chosen by the student with the approval of the graduate advisor.

Master of Applied Politics

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

Admission

Admission is open to students who have completed a four-year undergraduate degree and who fulfill the admission requirements of the Graduate School. 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
    3700:571 Campaign Management II
    3700:572 Campaign Finance
    3700:540 Survey Research Methods
    3700:690 Scope and Theory of Political Science
    3700:681 Research Methods in Political Science
    3700:665 Internship in Government and Politics
    3700:672 Seminar: Political Influence and Organizations
    7000:651 Advanced Communication Studies: Communication in Political Campaigns

• Elective courses - 12 credits: 6 credits must be at the 600-level selected from the following courses:

  3700:502 Politics and the Media
  3700:624 Political Behavior and Electoral Politics
  3700:573 Voter Contact and Elections
  3700:575 American Interest Groups
  3700:535 American Political Parties
  3700:692 Seminar in Comparative Politics
  3700:630 Seminar in National Politics
  3700:668 Seminar: Policy Agenda and Decisions
  3700:690 Special Topics in Political Science (applied focus)
  7000:697 Independent Research and Readings (applied focus)
  7000:665 Theories of Argument and Persuasion

• 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 fullfill general master’s degree requirements of the Graduate School.

Thesis Option

Completion of a minimum of credits of graduate work, including thesis, as follows: Applied Cognitive Aging program, 39 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, 44 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 a four-year undergraduate degree and whose application is approved by the Program Coordinator. No specific field of undergraduate major is required for admission. GPA requirements for consideration of full admission require a GPA of 3.0 or greater for the last 60 hours of course work. GPA requirements for consideration of provisional admission require a GPA between 2.5 and 2.79 or between 2.75 and 3.05 for the last two years (60 hours) of course work. Additionally, students must submit the following to the department:

- A standardized test score from 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 professional experience.)
- A personal essay stating why they are seeking admission in the MA program.

Admission decisions will be based on the GPA and competitive evaluation of the standardized test scores, essay, and resume. If a student is deficient in one or two of the areas, he/she may be admitted provisionally depending on GPA. Provisional students must take 15 credits as specified in the department Master’s Handbook and must secure recommendations on courses to be taken from his/her advisor.

In order to ensure competitive admissions, applicants are encouraged to observe the following deadlines in submitting their applications. Consideration of admission will be made following these dates depending upon availability of space in the program:

- Fall admissions April 15
- Spring admissions October 15
- Summer July 15

The Department will no longer grant deferred admissions.

• Core:

  3980:600 Basic Quantitative Research
  3980:601 Advanced Research and Statistical Methods
  3980:602 History of Urban Development
  3980:641 Urban Economic Growth and Development
  3980:643 Introduction to Public Policy
  3980:699 Master’s Thesis (optional)

Basic Program

Complete 33 credits of course work as follows:

• Core - 15-18 credits

• Approved electives - 15-18 credits

3 credits of approved electives may be substituted for thesis with approval of academic advisor.
Master of Public Administration (MPA)

The Program in Public Administration is specifically designed to prepare the student for a public service career in public management and administration, as well as the management and administration of non-profit organizations. The program of study is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA).

Admission

Admission is open to students who have completed a four-year undergraduate degree and whose application is approved by the Program Coordinator. No specific field of undergraduate major is required for admission. GPA requirements for consideration of full admission require a four-year GPA of 2.6 or greater or 3.05 or better for the last 60 hours (two years of course work). GPA requirements for consideration of provisional admission require a GPA between 2.5 and 2.75 or between 2.75 and 3.05 for the last two years (60 hours). Additionally, students must submit the following to the Department:

- A standardized test score from GRE, GMAT, LSAT, or MAT
- A copy of their current resume. (Especially important for in-service students to assert professional experience.)
- A personal essay stating why they are seeking admission in the MPA program.

Admission decisions will be based on the GPA and competitive evaluation of the standardized test scores, essay, and resume. If a student is deficient in one or two of the areas, he/she may be admitted provisionally depending on GPA. Provisional students must take 15 credits as specified in the department Master’s Handbook and must secure recommendations on courses to be taken from his/her advisor.

In order to ensure competitive admissions, applicants are encouraged to observe the following deadlines in submitting their applications. Consideration of admission will be made following these dates depending upon availability of space in the program.

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

The department will no longer grant deferred admissions.

Degree Requirements

- The number of graduate credits required for the MPA will be as follows:
  - Master’s Degree in Public Administration: 45 credits
  - Core requirements (36-39 credits):
    - 3980:600 Basic Quantitative Research
    - 3980:601 Advanced Research and Statistical Methods
    - 3980:610 Legal Foundations of Public Administration
    - 3980:611 Introduction to the Profession of Public Administration
    - 3980:614 Ethics and Public Service
    - 3980:615 Public Organization Theory
    - 3980:616 Personnel Management in the Public Sector
    - 3980:640* Fiscal Analysis
    - 3980:642* Public Budgeting
    - 3980:643 Introduction to Public Policy
    - 3980:659** Internship (may be repeated for a total of 6 credits)
    - 3980:669 Master’s Thesis (optional)

- and select 1 from the following 3 courses:
  - 3980:602 History of Urban Development
  - 3980:617 Leadership and Decision Making
  - 3980:671 Program Evaluation

- Transfer of course credit in a comparable course from another university.
- Completion of a comparable course in another department at the University.
- Transfer of course credit in a comparable course from another university.
- Proficiency in an area demonstrated by a group of courses or other work done in the area covered by the course.
- **Students may take 3520:606 Economics of the Public Sector and 3520:506 State and Local Public Finance to fulfill the requirements of 3980:640 Fiscal Analysis and 3980:642 Public Budgeting. Students must, however, take both 3980:606 and 3980:642 or both 3980:606 and 3980:642.
- **Students may take either 3850:621 or 3850:673 in lieu of 3980:601. Students may also take either 3850:602, 3850:607 or 3980:621 in lieu of 3850:643.
- **Students working full-time may satisfy internship without a field placement. See advisor for alternative requirement.

J.D./Master of Public Administration

The University offers a joint J.D. and Public Administration program. The title is J.D./M.P.A.

To be accepted into the program, a student must meet the admission requirements of the School of Law, the Graduate School, and the Department of Public Administration and Urban Studies.

Degree Requirements

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

Under this program a student must take 43 credits of required law courses, 32 credits of required graduate classes, 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 or anthropology (excluding 3850:699, 3850:697 and 3850:698). In meeting these requirements the student must:

- Complete five required core courses with at least a 3.00 grade-point average:
  - 3850:603 Sociological Research Methods
  - 3850:604 Social Research Design
  - 3850:617 Sociological Theory
  - 3850:631 Social Psychology
  - 3850:645 Social Organization
  - 3850:706 Multivariate Techniques in Sociology
- 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 four required core courses with at least a 3.00 grade-point average:
  - 3850:603 Sociological Research Methods
  - 3850:604 Social Research Design
  - 3850:617 Sociological Theory
  - 3850:631 Social Psychology
  - 3850:645 Social Organization
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.

Anthropology

There is no graduate degree in anthropology. However, there are many graduate courses available. A student interested in taking such courses for graduate credit must be admitted to the Graduate School through an existing graduate program, or may apply for non-degree status through the Department of Sociology. The student should enroll in graduate courses only for specific professional preparation or enhancement and with the permission of the instructor. Inquiries should be directed to the graduate director in the Department of Sociology.

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.

Second language requirement: completion of 202 with a grade of at least "B" in another language, or a translation from another language. Choice of the second language will be left to the student in consultation with an advisor.

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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3470:651</td>
<td>Probability and Statistics</td>
<td>4</td>
</tr>
<tr>
<td>3470:652</td>
<td>Advanced Mathematical Statistics</td>
<td>3</td>
</tr>
<tr>
<td>3470:656</td>
<td>Linear Models</td>
<td>3</td>
</tr>
<tr>
<td>3470:663</td>
<td>Experimental Design</td>
<td>3</td>
</tr>
<tr>
<td>3470:665</td>
<td>Regression</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

Statistical Computer Science option

(Addition to existing master's program).

Other required courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3460:501</td>
<td>Fundamentals of Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>3460:506</td>
<td>Introduction to C and UNIX</td>
<td>3</td>
</tr>
<tr>
<td>3460:575</td>
<td>Data Base Management</td>
<td>3</td>
</tr>
<tr>
<td>3470:580</td>
<td>Statistical Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Thesis requirements (30 credits of graduate work)

In addition to the core curriculum, 2-4 credits in 3470:699 Master's Thesis and 10-12 other approved elective graduate credit hours must be completed.

Successful completion of the comprehensive examinations in the core curriculum.

Nonthesis requirements (33 credits of graduate work)

In addition to the core curriculum, 2-4 credits in 3470:892 Seminar in Statistics and 13-15 other approved elective graduate credit hours must be completed. The Statistical Computer Science option requirements may be applied toward the elective courses.

Successful completion of the comprehensive examinations in the core curriculum.
College of Engineering

S. Graham Kelly, Ph.D., Interim Dean
Subramaniam I. Haniraham, Ph.D., Interim Associate Dean, Research and Graduate Studies
Paul C. Lam, Ph.D., Associate Dean, Undergraduate Studies and Diversity Program
Deanna Dunn, Coordinator of Engineering Cooperative Education Program

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 with a master’s degree must have a cumulative grade-point average of at least 3.0/4.0, and must select and complete graduate engineering courses may be taken prior to graduate admission, or concurrent with the student’s classified graduate study.

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

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

Degree Requirements

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

• Pass a departmental Qualifying Examination. The purpose of the qualifying examination is to determine admisibility to the doctoral program and any technical weaknesses.
• Identify an interdisciplinary field of study, a dissertation director, and an interdisciplinary Doctoral Committee before completion of 18 credits of coursework.
• Complete a formal Plan of Study that is acceptable to the Interdisciplinary Doctoral Committee. The plan of study must have at least 48 credits of coursework, of which 42 credits must be taken at the 600 and 700 level and of which 6 credits may be special topics or 400/500 level courses. At least 24 of these course credits must be completed at The University of Akron. The minimum total credit hours for the doctoral program is 96 credit hours.
• 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 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.

Transfer Credits

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.

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

Applicants with a master’s degree or a master’s degree in a discipline other than engineering shall have completed undergraduate coursework in calculus, differential equations, have one year of classical physics, and must select and complete at least 24 credits of undergraduate coursework of which 18 credits must be from one of the four undergraduate engineering disciplines listed below. The remaining 6 credits may be from among the four disciplines listed below. 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.

Chemical Engineering

4200:325 Equilibrium Thermodynamics 4
4200:321 Transport Phenomena 3
4200:330 Chemical Reaction Engineering 3
4200:351 Fluid and Thermal Operations 3
4200:353 Mass Transfer Operations 3
4200:435 Process Analysis and Control 3
4200:441 Process Economics and Design 4
Total 23

Civil Engineering

4300:306 Theory of Structures 3
4300:313 Soil Mechanics 3
4600:370 Fluid Mechanics 3
4600:323 Water Supply and Wastewater Disposal 4
4300:341 Hydraulic Engineering 3
4300:361 Transportation Engineering 3
4300:421 Steel Design 3
4300:403 Reinforced Concrete Design 3
Total 25

Electrical Engineering

4400:360 Physical Electronics 3
4400:361 Electronic Design 4
4400:363 Switching and Logic 4
4400:334 Energy Conversion I 3
4400:335 Energy Conversion Lab 2
4400:445 Analog Communications 3

4400:553 Antenna Theory 3
4400:572 Control Systems II 4
Total 26

Mechanical Engineering

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
4600:346 Systems Dynamics and Response 3
4600:330 Mechanical Metallurgy 2
4600:531 Fundamentals of Mechanical Vibrations 3
4600:541 Control Systems Design 3
Total 33

Total 76

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 approving 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.

Total 76
**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, Chemical, Civil, Electrical, and Mechanical, as the basic disciplines for the interdisciplinary programs in Environmental Engineering, Materials Engineering, Mechanics, Systems Engineering, and Transport Processes. The objectives of the proposal were to: 1) allow doctoral students access to the infrastructure resources of the entire college, 2) reduce administrative costs, and 3) 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, solids, 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 biornaterials.

**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 Mathematics and Computer Science**

The faculty in the College of Engineering and the Department of Mathematics and Computer Science 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 Mathematics and Computer Science. 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 successfully (no "fail" votes) defending the dissertation before the Interdisciplinary Doctoral Committee.

Students in the Engineering Applied Mathematics Program must pass a department Qualifying Examination composed and administered by the participating faculty from the Department of Mathematics and Computer Science and the participating faculty from one of the four 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 within primary appointments in the College of Engineering and participating program faculty from the Department of Mathematics and Computer Science. The participating faculty from the Department of Mathematics and Computer Science must hold joint appointments in the College of Engineering.

Students lacking a bachelor's degree or master of science degree in engineering shall take a minimum of 24 credits of bridging courses of which 6 credits may be at the 500 level. (For a list of these bridging courses, see the Admission Requirements for the Doctor of Philosophy in Engineering degree.) Students with a bachelor's degree in engineering shall take:

- 3450:312 Linear Algebra
- 3450:427 Introduction to Numerical Analysis
- 3450:436 Advanced Engineering Mathematics I
- 3450:439 Advanced Engineering Mathematics II
- 3450:421 Advanced Calculus I
- 3450:422 Advanced Calculus II

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 42 credit hours of 600/700 level courses, of which none are special topics courses, and 6 credits of special topics or 400/500 level courses. At least 24 credits of coursework must be from the College of Engineering and at least 24 credits of coursework must be from the Department of Mathematics and Computer Science.

**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.
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 at least 24 credits of undergraduate coursework of which 18 credits must be from one of the four undergraduate disciplines listed below. 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.

### Chemical Engineering
- 4200:325 Equilibrium Thermodynamics (4)
- 4200:321 Transport Phenomena (3)
- 4200:330 Chemical Reaction Engineering (7)
- 4200:251 Fundamentals of Heat and Thermal Operations (3)
- 4200:353 Mass Transfer Operations (3)
- 4200:435 Process Analysis and Control (3)
- 4200:441 Process Economics and Design (4)
- **Total** 23

### Civil Engineering
- 4300:306 Theory of Structures (3)
- 4300:313 Soil Mechanics (3)
- 4400:310 Fluid Mechanics (3)
- 4300:323 Water Supply and Wastewater Disposal (4)
- 4300:341 Hydraulics (3)
- 4300:361 Transportation Engineering (3)
- 4300:420 Steel Design (3)
- 4300:403 Reinforced Concrete Design (3)
- **Total** 25

### Electrical Engineering
- 4400:396 Electromagnetic Theory I (4)
- 4400:361 Electronic Design I (4)
- 4400:383 Switching and Logic (4)
- 4400:384 Energy Conversion I (3)
- 4400:385 Energy Conversion Lab (2)
- 4400:444 Analog Communications (3)
- 4400:453 Antenna Theory (3)
- 4400:472 Control Systems II (4)
- **Total** 26

### Mechanical Engineering
- 4600:300 Thermodynamics I (4)
- 4600:301 Thermodynamics II (4)
- 4600:310 Fluid Mechanics (3)
- 4600:215 Heat Transfer (3)
- 4600:336 Analysis of Mechanical Components (3)
- 4600:540 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

### Degree Requirements

The University's Academic Requirements (see Academic Requirements in this Graduate Bulletin) and the departments' academic requirements must all be satisfied for the master's science degree 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 (and at least 6 credits are special topics courses). The formal Plan of Study may be revised upon approval of the Advisory Committee.
- Successfully (no "fail" votes) defend the thesis before the Advisory Committee, or have the Engineering Report approved by the Advisory Committee, or successfully complete the appropriate department's nonthesis option requirements.

### Master of Science in Chemical Engineering

#### Thesis Option
- 4200:600 Transport Phenomena (3)
- 4200:601 Chemical Reaction Engineering (3)
- 4200:610 Classical Thermodynamics (3)
- 4200:611 Chemical Engineering Electives* (6)
- Approved Electives (6)
- Approved Mathematics (3)
- **Master's Thesis** 6
- **Total** 36

#### Nonthesis Option
- 4200:600 Transport Phenomena (3)
- 4200:601 Chemical Reaction Engineering (3)
- 4200:610 Classical Thermodynamics (3)
- 4200:611 Chemical Engineering Electives* (6)
- Approved Electives (18)
- Approved Mathematics (3)
- **Total** 36

Chemical engineering students in both degree options are expected to attend and participate in the department's seminars.
**Five Year BS/MS Chemical Engineering Program**

The five year BS/MS program in Chemical Engineering provides superior undergraduate students with the opportunity to complete an M.S. in Chemical Engineering with one additional year of study beyond their B.S. Chemical Engineering degree at The University of Akron. The program is open to B.S. Chemical Engineering students at The University of Akron. Applications are accepted in the spring of the junior year.

**Master of Science in Civil Engineering**

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

**Thesis Option**

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

**Nonthesis Option**

- Civil Engineering Courses
  - Approved Mathematics or Sciences: 6
  - Approved Electives: 12
  - Engineering Report: 2
  - Total: 30

**Master of Science in Electrical Engineering**

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

**Thesis Option**

- Electrical Engineering Courses
  - Approved Mathematics: 6
  - Approved Electives: 9
  - Master’s Thesis: 6
  - Total: 33

**Nonthesis Option**

- Electrical Engineering Courses
  - Approved Mathematics: 6
  - Approved Electives: 9
  - Total: 18

**Master of Science in Mechanical Engineering**

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
  - Approved Mathematics: 3
  - Approved Electives: 6
  - Master’s Thesis: 6
  - Total: 30

**Nonthesis Option**

- Mechanical Engineering Courses
  - 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
  - Approved Mathematics: 6
  - Approved Electives: 9
  - Master’s Thesis: 12
  - Total: 30

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

**Nonthesis Option**

- Engineering Courses
  - Approved Mathematics: 3
  - Approved Electives: 9
  - Engineering Report: 2
  - Total: 18

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

**Biomedical Engineering Specialization**

- 4800:601 Biomedical Instrumentation: 3
- 4800:611 Biometry: 3
- 5000:695 Physiology for Engineers and Lab: 12
- 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
- Total: 36

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: 3
- 6400:602 Managerial Finance: 3
- 6500:6100 Management and Organizational Behavior: 3
- 6600:600 Marketing Concepts: 3

**Elective**

Choose three credits of 500 level College of Business Administration courses.

*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.*

**2200:631** is a prerequisite for 6400:602.
College of Education

Larry G. Bradley, Ph.D., Interim Dean
James T. Hardy, Ph.D., Advanced Programs

Mission Statement
The University of Akron College of Education offers a comprehensive slate of programs for school and community professionals, with teacher education programs entitled "Educator as Decision Maker" as the cornerstone. Our faculty is a community of learners with wide-ranging specialties and strengths but firmly committed to a common goal: to prepare and support educators at all levels and across a range of school, community and agency settings for the challenges of the 21st century. The College holds primary responsibility within The University of Akron for producing educational personnel for Ohio schools and colleges, contributing to the positive reform of education, and strengthening the research and knowledge base of the discipline.

The College provides initial and advanced preparation and continuing professional development and support of educators from early childhood through adult. Educators include classroom teachers, teacher educators, and other personnel such as administrators, counselors, and school nurses. The College meets this comprehensive charge through teacher education programs as well as programs in counseling, technical education, athletic training for sports medicine, and a few teacher education programs that are housed outside the College of Education.

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.
6. Completion of at least six credits in a cognate area.
7. Completion of a comprehensive written and oral examination.
8. Completion of a dissertation comprising more than 20 credits. Credits beyond the 20 hours may not be applied to the degree. The oral examination committee must be constituted of at least five full-time graduate faculty members, one of whom must be outside the College.

Doctor of Philosophy Degree in the Department of Curricular and Instructional Studies
The Doctor of Philosophy degrees offered by the Department of Curricular and Instructional Studies are designed to meet the needs and interests of persons in pre-K, elementary, middle, secondary, postsecondary, higher education, and other institutions or agencies that might have educational/learning programs. A qualified student can, through consultation with an advisor and within the expertise and resources of the department, design a specialization to meet his/her career objectives.

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

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

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

1. Written and Oral Comprehensive
   These Comprehensive Examinations should be taken after the completion of the first two-thirds of work and prior to the completion of three-fourths of the program with the approval of the student's advisor. Written comprehensive examinations are offered each semester.
2. Dissertation
   The dissertation proposal must receive approval of the Dissertation Committee prior to advancement to candidacy.

Admissions Requirements
Admission to the Curricular and Instructional Studies Ph.D. program is limited to a select number of students each Fall or Spring Semester. More candidates apply for admission than the Department has 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 the verbal portion of the GRE, and a prescribed and evaluated written assignment.
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 written assignment.

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

a. Applicants who score less than 45 on the MAT or 550 on the verbal portion of the GRE and receive three or more failing evaluations on the controlled writing assignment shall 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.
   The GRE may be repeated subject to The Psychological Corporation's rules for repeated testing.
   The GRE may be repeated subject to The Psychological Corporation's rules for repeated testing.

b. Applicants who score less than 45 on the MAT or 550 on the verbal portion of the GRE but receive passing evaluations on the writing assignment shall have their application deferred pending a faculty interview and reevaluation.

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

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

b. 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 assignment shall have their application deferred pending a faculty interview and reevaluation.

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

d. All doctoral applicants must take the MAT or the GRE. This includes those persons who took the test upon entry into a master's program.

5. Intended area of specialization is considered feasible 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 October 1 for Fall admits or March 1 for Spring admits.
2. Complete the Miller Analogies Test or Graduate Record Exam. This includes applicants who have taken either of their tests at a Master's level applicant.
3. Complete a controlled writing assignment offered the third Saturday in October for Fall and the second Saturday in March.
4. Complete the "Agreement to Advise" form and secure faculty signatures by October 1 for Fall and March 1 for Spring. The major advisor must be from the Department of Curricular and Instructional Studies; the minor advisor must be from the College of Education.
Doctoral Programs in Counseling

Collaborative Ph.D. Program in Counseling Psychology

The Collaborative Program in Counseling Psychology allows the students a choice of entry options: one through the College of Education for students with a master's degree or one through the College of Arts and Sciences for students with a baccalaureate degree. Students in both tracks are expected to attain a broad scientific competence in the core areas of psychology: the biological, social, cognitive-affective, and individual bases of human behavior. Counseling psychology coursework covers the special areas of theories of counseling and psychotherapy, supervision, vocational psychology, ethics, assessment, and research design. Practica and internship experiences are required of students in both tracks and range from skill building in basic psychological assessment and counseling to actual work with clients, to a yearlong, full-time internship in an applied setting. Students may credit either track or both colleges through shared coursework and faculty involvement with dissertations but must formally enter through one or the other of the colleges.

The American Psychological Association (APA) has conferred accreditation on the Ph.D. Program in Counseling Psychology.

Admission to the Collaborative Program in Counseling Psychology will be handled through the department associated with the student's chosen emphasis. 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 if they have a master's degree in counseling, guidance and counseling psychology, school psychology, or a related field.

- Psychology Core (3750:610, 620, 630, 640) is required of all students.
- Students register for dual listed courses (3750/6600) under their home department code.
- The comprehensive written examination is prepared, administered, and graded by a Comprehensive Examination Committee composed of four faculty members, two from each track. At least one faculty member from each track participates in the oral portion of the Comprehensive Examination.
- Dissertation -- at least one faculty member from each track is required or the student's dissertation committee.
- Internship -- 2,000 hours post-master's with 1,700 hours over the next two years. The internship site must be listed in the Association of Psychology Post-doctoral and Internship Centers (APPIC) Directory.
- Language and residency requirements are to be completed in accordance with the guidelines from the Graduate School and student's home department.
- Counseling and Special Education Track requirements:

Students may be considered for admission to the Counseling Psychology program through the Department of Counseling and Special Education if they have a master's degree in counseling, guidance and counseling psychology, school psychology, or a related field.

Course Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3750/6600:707</td>
<td>Supervision in Counseling Psychology I</td>
<td>3</td>
</tr>
<tr>
<td>3750/6600:710</td>
<td>Supervision in Counseling Psychology II</td>
<td>3</td>
</tr>
<tr>
<td>3750/6600:714</td>
<td>Research Design in Counseling</td>
<td>3</td>
</tr>
<tr>
<td>3750/6600:715</td>
<td>Research Design in Counseling II</td>
<td>3</td>
</tr>
<tr>
<td>3750/6600:717</td>
<td>Professional and Ethical Issues in Counseling Psychology</td>
<td>3</td>
</tr>
<tr>
<td>3750/6600:718</td>
<td>History and Systems in Psychology</td>
<td>2</td>
</tr>
<tr>
<td>3750/6600:736</td>
<td>Counseling Psychology Practicum</td>
<td>3</td>
</tr>
<tr>
<td>5100:786</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:787</td>
<td>Advanced Educational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>5100:789</td>
<td>College of Education Internship</td>
<td>6</td>
</tr>
<tr>
<td>5200:850</td>
<td>Electives</td>
<td>8</td>
</tr>
<tr>
<td>5600:859</td>
<td>Doctoral Dissertation (minimum)</td>
<td>15</td>
</tr>
</tbody>
</table>

Area of Specialization: 18 credit hours

Cognitive 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.

Notes:

1. If requested by the Department, interview with 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.

2. In certain cases an applicant may be required to take coursework on the graduate level at The University of Akron before a final decision on his/her application for admission is made.

3. 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. The 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.

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 (University of Akron Graduate Bulletin, 1996-97, p. 24).

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 5400/5000) | 3 |
- 5100:701 | History of Education in American Society (or 701) | 3 |
- 5100:705 | Seminar in Social/Philosophical Foundations of Education | 3 |
- 5100:723 | Teaching Behavior and Instruction (or 721 or 710) | 3 |

Research Foundations (18)

- 5100:640 | Techniques of Research | 3 |
- 5100:641 | Research Design | 3 |
- 5100:642 | Data Collection Methods | 3 |
- 5100:643 | Statistics in Education | 3 |
- 5100:644 | Seminar I: Exploratory/Descriptive | 3 |
- 5100:645 | Seminar II: Ethnographic-Historical or Case Study Research or Legal Research and Writing | 3 |

Curricular and Instructional Studies Core (15)

- 5500:800 | Professional Doctoral Seminar in Curricular and Instructional Studies | 3 |
- 5500:801 | Seminar in Curricular and Instructional Studies | 3 |
- 5500:802 | Concepts of Curriculum & Instruction | 3 |
- 5500:803 | 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

Cognitive 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.
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 allows the student a choice of three specialty areas: (a) Counselor Education, (b) Clinical Mental Health Counseling, and (c) Marriage and Family Therapy. Students in each specialty are expected to attain an advanced level of competence in the core areas of counseling, research, and their specialty. Prac¬tice and internship experiences are required in each specialty. In addition, the cognate and elective options allow students flexibility in designing a program that is consistent with their career goals. With the proper selection of courses, graduates of the program can meet the academic requirements for a Licensed Professional Clinical Counselor in Ohio. Graduates with a specialty in Marriage and Family Therapy with the proper selection of courses can meet the academic requirements for membership in the American Association for Marriage and Family Therapy.

The Graduate Record Examination (General Test) will be 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 (COEP).

Ph.D. in Guidance and Counseling Requirements:

Master's Degree

<table>
<thead>
<tr>
<th>Foundations of Education</th>
<th>31-34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Statistics</td>
<td>12</td>
</tr>
</tbody>
</table>

Required:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:741</td>
<td>Introduction to Guidance and Counseling</td>
<td>3</td>
</tr>
<tr>
<td>5100:403</td>
<td>Advanced Educational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>5600:715</td>
<td>Research Design in Counseling</td>
<td>3</td>
</tr>
<tr>
<td>5600:716</td>
<td>Research Design in Counseling</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Guidance and Counseling

<table>
<thead>
<tr>
<th>Must be taken after admission to the doctoral program</th>
<th>29-32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
</tr>
<tr>
<td>5600:702</td>
<td>Advanced Counseling Seminar</td>
</tr>
<tr>
<td>5600:686</td>
<td>Internship in Counseling</td>
</tr>
<tr>
<td>5600:707</td>
<td>Supervision in Counseling Psychology</td>
</tr>
<tr>
<td>5600:708</td>
<td>Supervision in Counseling Psychology</td>
</tr>
<tr>
<td>5600:709</td>
<td>Major Electives</td>
</tr>
</tbody>
</table>

Cognates

Cognate coursework must be taken outside the College of Education and approved by the major advisor.

Electives

Electives to be selected with the approval of the student's major advisor.

Dissertation

Minimum Total Semester Credits

120

Normally a minimum of 60 semester hours must be taken after the student is admitted into the doctoral program in guidance and counseling.

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>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>5100:706</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 Potentials</td>
<td>3</td>
</tr>
</tbody>
</table>

Research (22)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral Dissertation</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.

Cognitive (12)

(Candidates who intend to conduct research in an area of concentration outside their primary area of study may be required to complete additional coursework in that area.)

General Electives (9)

Total Program: 90

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.

Masters Degree

Programs leading to the degree of M.A. in education, M.S. in education, and M.S. in 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 University of Akron 1999-2000

DOCTORATE IN EDUCATIONAL ADMINISTRATION

Overview

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.

DOCTORATE IN EDUCATIONAL ADMINISTRATION

Overview

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 student must complete a minimum of nine credits in foundation studies in education.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:600</td>
<td>Philosophies of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:602</td>
<td>Comparative and International Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:604</td>
<td>Topical Seminar in the Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:620</td>
<td>Psychology of Instruction for Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:624</td>
<td>Seminar: Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5100:646</td>
<td>Techniques of Research</td>
<td>3</td>
</tr>
</tbody>
</table>

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

### Certification/Licensure Standards

New Teacher Education and Licensure Standards for the State of Ohio became effective January 1, 1998. However, students admitted to certification programs under the old 1987 Certification Standards may receive initial Provisional Certificates until September 2, 2002. This is the last date the Ohio Department of Education will issue initial four-year Provisional Certificates. Students failing to complete programs before that date will automatically fall under the new Licensure Standards.

### Programs

#### Counseling and Special Education

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

The Graduate Record Examination (General Test) will be used as the qualifying examination in all Counseling master’s programs. The Miller’s Analog Test will be used as the qualifying examination in all Special Education master’s programs. Admissions to the master’s programs will be twice a year (application deadline of March 15 for summer 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.

### Classroom Guidance for Teachers

This course of study leads to 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 certification 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
    - 5100:624 Seminar: Educational Psychology
    - 5600:5100:634 Individual and Family Development Across the Lifespan
  - Humanistic Foundations
    - 5100:600 Philosophies of Education
    - 5100:604 Topical Seminar in the Cultural Foundations of Education
    - 5600:5100:646 Multicultural Counseling
  - Research
    - 5100:640 Techniques of Research
  - Minimum Foundation Hours Required: 9

- **Required Departmental Courses**
  - 5600:631 Elementary School Guidance
  - 5600:633 Secondary School Guidance
  - 5600:647 Career Development and Counseling Across the Lifespan
  - 5600:645 Tests and Appraisal in Counseling
  - 5600:610 Counseling Skills for Teachers

- **Elective Courses** (Select a minimum of 6 hours with advisor’s approval. Recommended courses appear below.)
  - 3750:500 Personality
  - 3750:510 Abnormal Psychology
  - 3750:530 Psychological Disorders of Children
  - 3750:550 Learning and Cognition
  - 3750:610 Psychology Core: Organizational, Social, Applied

### 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
    - 5600:645 Community Counseling
  - Humanistic Foundations
    - 5600:643 Community Counseling
  - Research
    - 5600:645 Techniques of Research
  - Minimum Foundation Hours Required: 9

- **Required Counseling Department Courses**
  - Professional Orientation
    - 5600:600 Seminar in Counseling
    - 5600:635 Community Counseling
  - Multicultural Counseling
    - 5600:645 Community Counseling
  - Research
    - 5600:645 Techniques of Research
  - Minimum Semester Hours Required for Graduation: 35

### Certification/Licensure Standards

New Teacher Education and Licensure Standards for the State of Ohio became effective January 1, 1998. However, students admitted to certification programs under the old 1987 Certification Standards may receive initial Provisional Certificates until September 2, 2002. This is the last date the Ohio Department of Education will issue initial four-year Provisional Certificates. Students failing to complete programs before that date will automatically fall under the new Licensure Standards.
Counseling in Elementary or Secondary Schools

This course of study leads to eventual employment as a counselor in the public schools. Note that a school counselor must be certified as a teacher and possess three years of teaching experience. Any changes in the agreed upon program must be approved by the student's advisor.

- **Foundations (select one course from each area)**
  - Behavioral Foundations: Required Counseling
    - 5600:648 Individual and Family Development Across the Life Span
    - 5600:646 Humanistic Foundations
    - 5600:644 Multicultural Counseling
    - 5600:642 Research
  - 5600:640 Techniques of Research
  - 5100:741 Statistics in Education
  - **Minimum Department Hours Required: 38-39**

- **Required Counseling Department Courses**
  - 5600:660 Seminar in Counseling
  - 5600:661 Elementary School Guidance
  - 5600:662 Secondary School Guidance
  - 5600:663 Organization & Administration of Guidance Services
  - **Subtotal:** 11
  - 5600:669 Marital, Family, and Group Counseling
  - 5600:667 Career Development and Counseling Across the Lifespan
  - **Subtotal:** 7
  - 5600:666 Internship
  - 5600:665 Internship in Counseling (2 terms, prerequisite 5600:675)**
  - **Subtotal:** 10
  - **Minimum Department Hours Required: 36-36**

- **Specialized Studies**
  - Family Studies
    - 7400:650 Family and Consumer Law
    - 7400:651 Family and Consumer Law
    - **Subtotal:** 3
  - Human Development and Individual Differences
    - 3700:500 Personality
    - 3702:500 Abnormal Psychology
    - 3705:500 Psychological Disorders of Children
    - 3705:510 Learning and Cognition
    - 3705:550 Developmental Psychology
    - 3705:600 Psychological Development
    - **Subtotal:** 10
  - **Minimum Specialized Studies Required: 10-10**

- **Marriage and Family 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: Required Counseling
      - 5600:648 Individual and Family Development
      - 5600:646 Humanistic Foundations
      - 5600:644 Multicultural Counseling
      - 5600:642 Research
    - 5600:640 Techniques of Research
    - 5100:741 Statistics in Education
    - **Minimum Foundation Hours Required:** 3
  - 5600:660 Seminar in Counseling
  - 5600:661 Elementary School Guidance
  - 5600:662 Secondary School Guidance
  - 5600:663 Organization & Administration of Guidance Services
  - **Subtotal:** 11
  - 5600:669 Marital, Family, and Group Counseling
  - 5600:667 Career Development and Counseling Across the Lifespan
  - **Subtotal:** 7
  - 5600:666 Internship
  - 5600:665 Internship in Counseling (2 terms, prerequisite 5600:675)**
  - **Subtotal:** 10
  - **Minimum Department Hours Required: 36-36**

* 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 year of term preceding internship. Independent Study, Field Experience, Practicum, and Internship require closed class permission. You must get one from the Department office prior to registering.

---

**School Psychologist**

*(admissions temporarily suspended)*

- **College requirements:**
  - 5100:640 Techniques of Research
  - 5100:640 Research Project
  - 5600:698 Master's Problem
  - 5600:698 Master's Thesis

* A minimum of 50 client contact hours must be completed by the end of internship.
** Must be taken no later than the second term of the program.
*** Counseling Theory and Philosophy and Techniques of Counseling may be taken concurrently.
**** Must sign up with Secretary one year in advance.
Prerequisites for professionals who do not hold an undergraduate degree in special education

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

- **5610:540 Developmental Characteristics of Exceptional Individuals**
- **5610:547 Developmental Characteristics of Individuals with Moderate/Severe Educational Needs**
- **5610:640 Developmental Characteristics of Individuals with Moderate/Severe Educational Needs**
- **5610:650 Special Education Programming: Early Childhood**
- **5610:652 Special Education Programming: Secondary/Vocational**
- **5610:653 Assessment in Special Education**

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

A signed program plan specifying the student's program, the sequence of course offerings, and timeline for completion must be completed with the student's advisor upon completion of 9 graduate credit hours. 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 or intervention specialist for mild/moderate educational needs or moderate/intensive educational needs. Upon request from the student, the student advisor can assist in program planning for licensure.

- **Foundations core (9 credits):**
  - 5100:600 Philosophy of Education
  - 5100:620 Psychology of Instruction for Teaching and Learning
  - 5100:640 Techniques of Research
- **Special Education core: (24 credits)**
  - 5610:610 Counseling Skills for Teachers
  - 5610:613 Seminar Special Education Curriculum Planning
  - 5610:602 Supervision of Instruction
  - 5610:614 Collaboration and Consultation Skills for Special Educators
  - 5610:605 Inclusion: Models and Strategies
  - 5610:611 Seminar: Legal Issues in Special Education
  - 5610:612 Seminar: Social/Ethical Issues in Special Education
  - 5170:720 Topical Seminar: Educational Administration (Disability Law for Educators)
- **Research Requirement (choose one of the following):**
  - 5610:606 Research Applications in Special Education
  - 5610:694 Research Project in Special Area
  - 5610:696 Master's Project
  - 5610:698 Master's Thesis

Total Program 36-37

## Educational Foundations and Leadership

### Educational Administration

The Department of Educational Foundations and Leadership offers a master's degree program in educational administration which is not directed toward a particular administrative license. With the help of an advisor and approval of the Graduate School, coursework may be substituted and/or waived to create specialized options. Requirements of the standard program and examples of two such specialized programs are listed below:

### General Administration (Standard Program)

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

- **Educational Administration – 15:**
  - 5170:601 Principles of Educational Administration
  - 5170:604 School Community Relations
  - 5170:606 Evaluation in Educational Organizations
The Department of Educational Foundations and Leadership offers programs in 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
  - 5170:608 School Finance and Economics 3
  - 5170:610 Principles of Educational Supervision 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
- 5170:613 Administration of Pupil Services 3
- 5170:795P 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. 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**

**Master's Requirements**

- 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
  - 5103:442 Topical Seminar in Measurement and Evaluation 3
  - 5101:341 Statistics in Education 3

- Educational Administration – 15 credits:
  - 5170:601 Principles of Educational Administration 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:608 School Finance and Economics 3

- Post-Master’s Requirements – 16 credits:
  - 5170:704 Advanced Principles of Educational Administration 3
  - 5170:707 The Superintendency 3
  - 5170:363 Advanced Educational Statistics 3
  - 5170:795P Internship 4
  - 5170:801 Research Seminar 3

**Administrative Specialist: Educational Staff Personnel Administration**

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

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

- Post-Master’s Requirements – 14 credits:
  - 5170:704 Advanced Principles of Educational Administration 3
  - 5170:705 Decision Making in Educational Administration 3
  - 5170:707 The Superintendency 3
  - 5170:795P Internship 4
  - 6500:654 Industrial Relations 3

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

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

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

- Post-Master’s Requirements – 13 credits:
  - 5170:608 Principles of Curriculum Development 3
  - 5170:610 Principles of Educational Supervision 3
  - 5176:413 Administration of Pupil Services 3
  - 5170:795P Internship 4

**Administrative Specialist: Pupil Personnel Administration**

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

- Educational Administration – 21 credits:
  - 5170:601 Principles of Educational Administration 3
  - 5170:603 Management of Human Resources 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:608 School Finance and Economics 3
  - 5170:613 Administration of Pupil Services 3
  - 5170:707 The Superintendency 3

- Post-Master’s Requirements – 16 credits:
  - 5600:631 Elementary School Guidance 3
  - 5600:633 Secondary School Guidance 3
  - 5600:635 Group Counseling 3
  - 5600:659 Organization and Administration of Guidance Services 3
  - 5170:704 Advanced Principles of Educational Administration 3
  - 5170:795P Internship 4
Administrative Specialist:
School and Community Relations

- Foundation Studies – 12 credits:
  - 5100:600 Philosophies of Education 3
  - 5100:604 Topic 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 Topic Seminar in Educational Technology 3
  - 5100:640 Techniques of Research 3
- Educational Administration – 21 credits:
  - 5170:601 Principles of Administrative 3
  - 5170:603 Management of Human Resources 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:647 School Law 3
  - 5170:658 School Finance and Economics 3
  - 5170:660 The Principalship 3
  - 5170:707 The Superintendent 3
- Post-Master’s Requirements – 16 credits:
  - 5170:604 School Community Relations 3
  - 5170:704 Advanced Principles of Educational Administration 3
  - 7600:525 Theories of Mass Communication 3
  - 7600:628 Contemporary Public Relations Theory 3
  - 5170:795 Internship 4

Superintendent Program
Both teaching and administrative experience is required for the superintendent certification.

- Foundation Studies – 12 credits:
  - 5100:600 Philosophies of Education 3
  - 5100:604 Topic Seminar in the Cultural Foundations of Education 3
  - 5100:620 Psychology of Instruction for Teaching and Learning 3
  - 6100:624 Seminar: Educational Psychology 3
  - 5100:636 Topic Seminar in Educational Technology 3
  - 5100:640 Techniques of Research 3
- Educational Administration – 15 credits:
  - 5170:601 Principles of Administrative 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:
  - 5170:608 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
  - 5170:609 The Principalship 3
  - 5170:624 Advanced Principles of Educational Administration 3
  - 5170:707 The Superintendent 3
  - 5170:795 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. Special admission for noncredit 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 (26 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
    - 5190:622 Finance and Higher Education 3
    - 5190:626 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
- Electives:
  - 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.

Educational Foundations
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. Emphasis can range from advanced instructional technology to studies in educational psychology or the social/philosophical aspects of education. The student can elect to include a thesis or master’s problem or take an additional six semester hours of coursework.

- Foundation Studies – College Core Foundation Studies (nine hours):
- Departmental Requirements – minimum of 21 hours:
- Outside Departmental – minimum of six hours.
- Master’s comprehensive exam.

Master’s Emphasizing Instructional Technology
- Foundation Core (College Requirement – nine hours)
- Departmental Requirements – with your advisor’s approval, a minimum of 12 hours from the following:
  - 5100:520 Introduction to Instructional Computing 3
  - 5100:590 Workshop in Instructional Technology 3
  - 5100:630 Topical Seminar in Computer-Based Education (may be repeated) 3
  - 5100:636 Topical Seminar in Educational Technology (may be repeated) 3
  - 5100:604 Planning for Technology 3
  - 5100:605 Field Experience: Master’s 1-3
  - 5100:696 Master’s Technology Project 2-3
  - 5100:697 Independent Study: Master’s 1-3
- Other Requirements – a minimum of six hours, with your advisor’s approval, related to instructional technology, from outside the Department:
  - Thesis/Master’s Problem Option (minimum program total of 30 semester hours):
    - 5100:698 Master’s Problem 3-4
    - 5100:699 Master’s Thesis 4-6
- Non-Thesis/Master’s Problem Option:

Applicable course work in the area of educational technology selected jointly by the student and the advisor for a minimum program total of 36 semester hours.

Elementary Education

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
- 5500:615 Seminar in Trends and Issues in Curriculum and Instruction 3
- 5500:616 Seminar in Trends and Issues in Curriculum and Instruction 3
- 5500:617 Seminar in Trends and Issues in Curriculum and Instruction 3
- 5500:618 Seminar in Trends and Issues in Curriculum and Instruction 3
- 5500:619 Seminar in Trends and Issues in Curriculum and Instruction 3
- Area of concentration within curriculum and instruction approved by the advisor – 15 credits.
  - 5500:696 Master’s Project 6-8
  - 5500:699 Master’s Thesis 6-8
- 36 total hours are required.
- A comprehensive exam is required.
The outdoor education program, requiring 32 credits, is designed for those agencies which conduct outdoor/environmental education programs. Students having an undergraduate background in elementary or professional education, post-baccalaureate and in-service physical educators. The theme of the program is "physical educator as decision-maker." Training received in this program comes from two (2) areas: the foundations (8 cr) and the program studies area of physical education (24 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?" Successful completion of this program would meet a tenure requirement for Ohio public schools as well as for other states. Each student will be assigned an advisor who should be consulted with on a regular basis. In fact, advisor approval is required on certain course work.

**Physical Education**

The graduate program in physical education, requiring 33 credits, is designed for post-baccalaureate and in-service physical educators. The theme of the program is "physical educator as decision-maker." Training received in this program comes from two (2) areas: the foundations (6 cr) and the program studies area of physical education (26 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?" Successful completion of this program would meet a tenure requirement for Ohio public schools as well as for other states. Each student will be assigned an advisor who should be consulted with on a regular basis. In fact, advisor approval is required on certain course work.

**Physical Education and Health 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, and state or national park programs, or private and public agencies which conduct outdoor/environmental education programs.

**Required Foundation Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:600 Philosophies of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:604 Topical Seminar in the Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:620 Psychology of Instruction for Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:642 Topical Seminar in Measurement and Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>5100:695 Field Experience: Master's (see program advisor)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Required Department Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500:536 Foundations and Elements of Adapted Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>5550:601 Sports Administration and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>5550:602 Motor Behavior Applied to Sports</td>
<td>3</td>
</tr>
<tr>
<td>5550:604 Current Issues in Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>5550:603 Tactics and Strategies in the Science of Coaching</td>
<td>3</td>
</tr>
<tr>
<td>5550:605 Physiology of Muscular Activity and Exercise</td>
<td>3</td>
</tr>
<tr>
<td>5550:606 Statistics: Qualitative and Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>5550:609 Motivational Aspects of Physical Activity</td>
<td>3</td>
</tr>
<tr>
<td>5570:521 Comprehensive School Health</td>
<td>4</td>
</tr>
<tr>
<td>5590:695 Field Experience: Master's</td>
<td>2 (minimum)</td>
</tr>
<tr>
<td>5550:698 Master's Thesis</td>
<td>2 (minimum)</td>
</tr>
</tbody>
</table>

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

**Option: Exercise Physiology/Adult Fitness**

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

**Required Foundation Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:620 Psychology of Instruction for Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:640 Techniques of Research</td>
<td>3</td>
</tr>
<tr>
<td>5100:641 Seminar: Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5550:604 Topical Seminar in the Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5550:602 Motor Behavior Applied to Sports</td>
<td>3</td>
</tr>
<tr>
<td>5550:604 Current Issues in Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>5550:603 Tactics and Strategies in the Science of Coaching</td>
<td>3</td>
</tr>
<tr>
<td>5550:605 Physiology of Muscular Activity and Exercise</td>
<td>3</td>
</tr>
<tr>
<td>5550:606 Statistics: Qualitative and Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>5550:609 Motivational Aspects of Physical Activity</td>
<td>3</td>
</tr>
<tr>
<td>5570:521 Comprehensive School Health</td>
<td>4</td>
</tr>
<tr>
<td>5590:695 Field Experience: Master's</td>
<td>2 (minimum)</td>
</tr>
<tr>
<td>5550:698 Master's Thesis</td>
<td>2 (minimum)</td>
</tr>
</tbody>
</table>

At least two (2) credits from among the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5550:695 Field Experience: Master's</td>
<td>2 (minimum)</td>
</tr>
<tr>
<td>5550:698 Master's Thesis</td>
<td>2 (minimum)</td>
</tr>
</tbody>
</table>

**Effective:** Select at least one (1) course from among the following and have advisor approval.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:620 Introduction to Instructional Computing</td>
<td>3</td>
</tr>
<tr>
<td>5100:640 Techniques of Research</td>
<td>3</td>
</tr>
<tr>
<td>5100:641 Seminar: Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5550:601 Sports Administration and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>5550:609 Motivational Aspects of Physical Activity</td>
<td>3</td>
</tr>
</tbody>
</table>

**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's 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:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:620 Psychology of Instruction for Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:640 Techniques of Research</td>
<td>3</td>
</tr>
<tr>
<td>5100:641 Seminar: Educational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Required Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5550:641 Advanced Athletic Injury Management</td>
<td>3</td>
</tr>
<tr>
<td>5550:650 Principles of Coaching</td>
<td>3</td>
</tr>
<tr>
<td>5550:652 Legal Ethical Issues in Physical and Leisure Activity</td>
<td>3</td>
</tr>
<tr>
<td>5550:653 Sports Administration and Supervision</td>
<td>3</td>
</tr>
</tbody>
</table>
Secondary Education

Secondary Education (M.A.)

This program leading to a Master of Arts in Secondary Education is for secondary school teachers. Students complete foundation courses in education and in curriculum and instruction and an area of concentration such as English, mathematics, or secondary education. As a culminating activity, students apply theory to practice in their area of concentration through creative critical thinking.

- **Foundation studies—nine credits.**
  - 5500:606 Concepts of Curriculum and Instruction 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 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 Microcomputer Applications for Secondary Teachers, or 5100:604 Planning for Technology)
  - Area of concentration within curriculum and instruction approved by the advisor—15 credits.
  - 5500:696 Master's Project
  - 5500:697 Master's Thesis
  - 36 total hours are required.
  - A comprehensive exam is required.

Secondary Education with Licensure (M.S.)

This program, which leads to a Master's of Science with Licensure, is open to highly qualified students who hold the B.A. or B.S. degree. All requirements for licensure must be met including the 600 hours of field and clinical/diagnostic experience.

- **Foundation Course—10 credits:**
  - 5100:600 Philosophies of Education
  - 5100:604 Topical Seminar in the Cultural Foundations of Education
  - 5100:606 Psychology of Instruction for Teaching and Learning
  - 5100:604 Topical Seminar in Measurement and Evaluation
  - 5100:695 Field Experience: Master's
  - **Curricular and Instructional Studies (19):**
    - 5500:576 Microcomputer Applications for Secondary Teachers
    - 5500:617 Elementary and Secondary Licensure Seminar
    - 5500:619 Advanced Instructional Techniques
    - 5500:619 Instructional and Management Practices
    - 5500:629 Reading Programs in Secondary Schools
    - 5500:695 Field Experience: Master's
    - 5500:695 Elective in curriculum or teaching practices approved by advisor—1 credit
  - **Area of Concentration (9):**
    - Select 9 credits at 500-level or above.
    - Field Experience (Student Teaching)—7 credits:
      - 5500:695 Field Experience: Master's
      - 5500:695 Field Experience: Master's

Technical Education

The major objective of the 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.

**Program**

- **Foundation Studies—12 credits:**
  - 5000:590 Introduction to Instructional Computing
  - 5100:602 Comparative and International Education
  - 5100:604 Topical Seminar in Cultural Foundations
  - 5400:600 Postsecondary Learner
  - 5700:690 Techniques of Research
  - 5700:690 Topical Seminar in Measurements and Evaluation
  - **Professional Technical Education Courses—16 credits:**
    - 5400:601 Learning with Technology (prerequisite for all courses)
    - 5400:605 Workforce Education for Youth and Adults
    - 5400:630 Systematic Curriculum Design for Technical Education
    - 5400:635 Instructional Techniques in Technical Education
    - 5400:635 Advanced System Design: Needs Assessment and Evaluation
    - 5400:690 Internship in Technical Education

- A comprehensive examination must be passed.
- A cumulative portfolio will be evaluated as an exit requirement during the internship course.

**Options**

(Select one for a minimum total of 37 credits.)

**Teaching Option (9 credits):**

An approved schedule of career-related elective graduate courses will be determined by the student's academic and professional background with advisor approval.

- 5400:606 The Two-Year College
- 5400:612 Electives with advisor approval

**Training Option (9 credits):**

An approved schedule of career-related elective graduate courses will be determined by the student's academic and professional background with advisor approval.

- 5400:615 Training in Business and Industry
- 5400:620 Supervision of Technical Instruction

**Instructional Technology Option (9 credits):**

An approved schedule of career-related elective graduate courses will be determined by the student's academic and professional background with advisor approval.

- 5100:630 Topical Seminar in Computer-Based Education
- 5100:636 Topical Seminar in Educational Technology
- 5100:640 Planning for Technology
- 5400:690 Postsecondary Distance Learning

**Guidance Option (9 credits):**

An approved schedule of career-related elective graduate courses selected from the Graduate School offerings. Course selection will be determined by the student's academic and professional background with advisor approval.

- 5600:635 Community Counseling
- 5600:647 Career Development and Counseling
- Electives with advisor approval (3 credit hours)

**Total Program:**

46 credits
The University of Akron 1999-2000

College of Business Administration

Stephen F. Hallam, Ph.D., Dean
James T. Strong, Ph.D., Associate Dean
James R. Emore, D.B.A., Assistant Dean and
Director of Undergraduate Programs
James J. Civoky D.B.A., Assistant Dean and
Director of Graduate Programs

Mission Statement

The MBA program is the principle graduate program of UA's 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 UA's MBA program should possess:

- The analytical and conceptual abilities needed to identify and cope with ambiguities and unstructured business problems;
- A solid grounding in the basic business functions, with an emphasis on the integration of those functions and an understanding of how those functions are linked in the formulation and execution of business strategy;
- A strong ethical perspective, an appreciation of cultural diversity, and an ability to communicate in an effective, persuasive manner;
- An understanding of the legal, political, regulatory, economic and technological environment; and,
- An awareness of the global economy in which business operates and an understanding of the forces that shape competitiveness in that economy.

In order to accomplish these goals, the graduate faculty of the College of Business Administration commits itself to providing a quality graduate business experience. That experience will have a strong professional focus, characterized by teamwork among students. The faculty is dedicated to creating an intense and rewarding learning environment; and,

...continued...

Admission

Policy

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

- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,050 or more points based upon the overall undergraduate grade-point average (GPA)(A=4.0) times 200 plus the Graduate Management Admissions Test (GMAT) score.
- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,050 or more points based upon the junior-senior (J-S) last 64 semester or 96 quarter credit 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. If School of Business faculty 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 on 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.

Procedure

GMAT scores should be sent to the Director of Graduate Programs in Business, College of Business Administration, The University of Akron, Akron OH 44325-4805 (Institution code 1829). The GMAT test is administered world-wide and the applicant should register for it sufficiently in advance to the filing of the graduate application, so evaluation for admission will not be delayed. GMAT registration bulletins can be obtained from the Graduate Programs in Business Office or Educational Testing Service, Box 9660-R, Princenton, 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 programs.

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

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 1915, initially through the Department of Commerce and since 1953 through the College of Business Administration. In 1958, graduate studies in business were begun. Both the under-
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.Tax 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 ten following areas: accounting, entrepreneurship, finance, health services management, international business, management of technology, marketing, materials management, or quality 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
  6500:600 Management and Organizational Behavior 3
  6500:601 Quantitative Decision Making 3
  6500:602 Computer Techniques for Management 3
  6600:600 Marketing Concepts 3

- Functional Core (12 credits):
  6200:610 Accounting Management and Control 3
  6400:634 Financial Management and Policy 3
  6500:610 Operations Management 3
  6600:620 Strategic Marketing Management 3

- Professional Core (4 credits):
  6700:694 Professional Responsibility 1
  6700:692 International Business 1
  5700:694 Applied Business Documentation and Contact 1
  6100:694 Special Topics in Professional Development 1

- Quantitative Tools (3 credits):
  Student must complete one of the following courses:
  6200:564 Research and Quantitative Methods in Accounting 3
  6400:560 Techniques of Financial Analysis 3
  6500:562 Applied Operations Research 3
  6600:540 Business Research Methods 3

- Concentration (3 credits):
  The student must select 3 credits in a field of concentration (accounting, entrepreneurship, finance, health services management, international business, management of technology, marketing, materials management, or quality management).
  Free Electives (3 credits)
  Students must select 3 credits of free electives outside area of concentration. Approval of Director is required.
  Integrative (3 credits)
  6500:686 Business Strategy and Policy, Domestic and International 3

Program Summary

Foundation Core 24
Functional Core 12
Professional Core 4
Quantitative Tools 3
Concentration 9
Free Elective 3
Integrative 3
Total Program 58

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

Concentration in International Business

International Business concentration students must select one of the following options.
1. Foreign Language option: demonstrate reading and conversational proficiency in a language other than English.
2. Cross-Cultural option: select one course (3 credits) from the following courses.
  3250:550 Comparative Economic Systems 3
  3250:560 Economic Development and Planning for Underdeveloped Countries 3
  3250:570 International Monetary Economics 3
  3250:671 International Trade 3
  3350:538 World Metropolises 3
  3350:540 Development Planning 3
  3350:633 Comparative Planning 3
  3400:516 Modern India 3
  3400:573 Latin America: The Twentieth Century 3
  3400:575 Mexico 3
  3700:506 Politics in the Middle East 3
  3700:511 Theories of International Political Economy 3
  3700:512 Global Environmental Politics 3
  3700:625 Latin American Politics 3
  3870:581 Language and Culture 3

Concentration in Entrepreneurship

This program prepares potential entrepreneurs. It provides students with exposure to entrepreneurial activities and builds critical skills needed for entrepreneurial initiatives.

- Required:
  6500:508 Entrepreneurship 3
  6500:640 Financing the Entrepreneurial Venture 3
  6500:679 Managing Entrepreneurial Growth 3

Concentration in Health Services Administration (HSA)

- Required:
  6500:683 Health Services Systems Management 3
  Choose 6 credits from the following list:
  6500:582 Health Services Operations Management 3
  3850:616 Special Topics in Health Services Administration 3
  6500:686 Health Services Research Project 3
  6500:687 Graduate Seminar in Health Services Policy and Administration 3
  6900:588 Independent Study in Health Services Administration 3
  3200:620 Latin American Seminar in Life-Style Development and Gerontology 3
  3250:540 Special Topics: Economics (Medical) 3
  3850:615 Epidemiological Methods in Health Research 3
  3850:698 Medical Sociology 3
  3880:622 Urban Planning and Health Care 3
  4600:630 Biomedical Computing 3
  8200:632 Fiscal Management in Nursing Administration 3

Or three graduate credits approved by the Director.

Concentration in Management of Technology

Management of Technology concentration students must take the following courses:

- Required:
  6500:686 Management of International Operations 3
  6500:665 Management of Technology 3
  6600:540 Product Planning 3

- Recommended free elective (3 credits)
  Select one course from the following courses.
  6500:508 Entrepreneurship 3
  6500:640 Management Information Systems 3
  6500:650 Fundamentals of Human Resource Administration 3
  6500:678 Project Management 3
  6500:170 Business Negotiation 3

Concentration in Materials Management

- Required:
  6500:675 Materials Management 3

- Choose 6 credits from the following list:
  6500:641 Data Management and Communication 3
  6500:642 Systems Simulation 3
  6500:651 Productivity and Quality of Worklife Issues 3
  6500:673 Quality and Productivity Techniques 3
  6500:676 Management of Production and Operations 3
  6500:678 Project Management 3

Or three graduate credits approved by the Director.
The University of Akron 1999-2000

Concentration in Quality Management
- Required:
  650:651 Quality and Productivity Techniques 3
- Choose 6 credits from the following list:
  650:660 Productivity and Quality of Worklife Issues 3
  650:663 Data Analysis for Managers 3
  650:684 Applied Statistical Techniques 3
  660:674 Advanced Quality and Productivity Techniques 3
  3470:675 Response Surface Methodology 3
- Or three graduate credits approved by the Director.

Master of Science in Accountancy

The Master of Science in Accountancy (MSA) program is designed to provide students with a professional accounting education which will enable the student to sit for the Uniform CPA Examination under the Ohio 150-hour legislation. For students with undergraduate degrees in areas other than accounting, the MSA will allow the student to pursue career options which combine their undergraduate interests with professional accounting credentials.

- Foundation Courses:
  650:800 Marketing Concepts 3
  640:502 Managerial Finance 3
  650:800 Management and Organizational Behavior 3
  620:601 Financial Accounting 3
  620:603 Business Systems with Processing Applications 3
  620:601 Quantitative Decision Making 3
  640:621 Legal Aspects of Business Transactions 3
  3250:600 Foundations of Economic Analysis 3

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

- Required of all MSA Students:
  620:665 Advanced Information Systems 3
  330:675 Writing for MBAs 3

- Required of MSA Students without undergraduate degrees in Accounting:
  620:621 Corporate Accounting and Financial Reporting 3
  620:622 Corporate Accounting and Financial Reporting II 3
  620:610 Accounting Management and Control 3
  620:627 Survey of Federal Taxation 3
  620:620 Advanced Accounting 3
  620:591 Taxation I 3
  520:540 Auditing 3
  Electives: Two 600-level non-accounting courses 6

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 with foundation coursework is 57 hours.

- Required of MSA Students with undergraduate degrees in Accounting:
  620:607 Advanced Accounting Theory 3
  620:601 Taxation I 3
  620:626 Advanced Accounting II 3
  620:640 Advanced Auditing 3
  Electives: 600-level accounting courses 3
  Electives: Three, not more than one of which may be at the 500 level 9

* Students who have taken 620:437 as undergraduates will select another 600-level tax pass.

Master of Taxation

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

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

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

- Foundation Courses:
  620:601 Financial Accounting 3
  620:621 Corporate Accounting and Financial Reporting I 3
  620:622 Corporate Accounting and Financial Reporting II 3
  620:623 Legal Aspects of Business Transactions 3
  620:650 Taxation I 3
  620:651 Taxation II 3

- Required Master of Taxation Courses:
  620:626 Basic Tax Research 1
  620:631 Corporate Taxation I 3
  620:632 Taxation of Transactions in Property 3
  620:653 Estate and Gift Taxation 3

- Electives:
  Twenty credits of graduate taxation courses selected from courses numbered 620:641-693.

Total Required Taxation Courses 30-48 credits

In exceptional situations, subject to the approval of the Chair of the G.W. O'Keefe 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 their advanced study in one of two areas: human resource management or information systems management. Because of the complex nature of these specializations, they are not normally offered as options in traditional MBA programs. They are designed for individuals who know what they want to do or to help them apply what they already know more effectively. For example, computer science majors may choose to concentrate in information systems while psychology majors would benefit from the human resource management option. The introductory coursework for this program is termed a foundation core and consists of 24 credits which may be waived if the student has completed prior study in the area. The remaining 30 credits of coursework consists of 12 credits of general management coursework, 15 credits of specialization courses and one 3-credit free elective. If all foundation courses are waived, the program is 30 credits in length.

- Foundation Core:
  All are required unless waived at time of admission:
  3250:660 Foundation of Economic Analysis 3
  620:600 Financial Accounting 3
  640:602 Managerial Finance 3
  650:655 Government and Business 3
  650:660 Management and Organizational Behavior 3
  650:662 Quantitative Decision Making 3
  650:661 Computer Techniques for Management 3
  660:600 Marketing Concepts 3

- MSM Core Courses:
  650:640 Management Information Systems 3
  650:663 Data Analysis for Managers 3
  Organizational Core Courses: Choose 1
  650:653 Organizational Theory 3
  650:665 Organizational Behavior 3
  Operations Core Courses: Choose 1
  650:662 Applied Operations Research 3
  550:670 Operations Management 3

* Free Elective:
  Any 3 graduate credits approved by the Graduate Director 3

Total Core: 36 credits

Options:
Choose a concentration from the following:

Information Systems Management (ISM) 15 credits
- ISM Required Concentration Courses:
  650:661 Data Management and Communication 3
  650:663 Analysis and Design of Business Systems 3
  650:664 Managerial Decision Support and Expert Systems 3
  650:665 Advanced Management Information Systems 3

ISM Restricted Electives (Select 3 credits):
  650:662 Systems Simulation 3
  650:667 Project Management 3
  650:665 Productivity and Quality of Worklife Issues 3

Total Required Concentration Courses 18 credits

Options:
Choose a concentration from the following:

Human Resource Management (HRM) 15 credits
- HRM Required Concentration Courses:
  620:660 Human Resource Management 3
  620:662 Training and Development 3
  620:664 Human Resource Planning and Analysis 3

HRM Restricted Electives (Select 3 credits):
  620:662 Systems Simulation 3
  620:667 Project Management 3

Total Required Concentration Courses 18 credits

Options:

**Human Resource Management (HRM) (15 credits)**

- HRM Required Concentration Courses:
  - 6500:650 Fundamentals of Human Resource Administration 3
  - 6500:654 Labor Management Relations 3
  - 6500:655 Compensation Administration 3
  - 6500:652 Organizational Behavior 3
  - 6500:653 Organizational Theory 3

- HRM Restricted Electives (Select 3 credits):
  - 6500:658 Strategic Human Resource Management 3
  - 6500:690 Employment Regulation 3
  - 6500:651 Productivity and Quality of Worklife Issues 3
  - 6700:696 Selected Topics in Professional Development 1

Total concentration: 15
Total program: 30*

*54 total credits if foundation courses are required. See Graduate Director.

**Health Services Administration**

The Department of Management has made the Master of Science in Management—Health Services program inactive. No students will be admitted to this program until further notice.

**Materials Management**

The Department of Management has made the Master of Science in Management—Materials Management program inactive. No students will be admitted to this program until further notice.

**Quality Management**

The Department of Management has made the Master of Science in Management—Quality Management program inactive. No students will be admitted to this program until further notice.

**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.) and a joint program in legal and taxation studies (J.D./M.Tax.). These combinations are open to the student preparing for a career in such areas as corporate law, tax accounting 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 cooperative program, 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 44325-2801.

**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 25 credits for M.B.A. of advanced courses in the CBA plus 10 credits transferred from the School of Law. The reciprocal acceptance of course credits by each school is the essence of the joint programs. All law courses used to fulfill CBA requirements must be approved by the Director of Graduate Programs in Business prior to completion. To earn both degrees, a total of 97 (J.D./M.Tax.) or 102 (J.D./M.B.A.) credits is required, depending on the master's program pursued. More credits may be required for the master's degree if Foundation courses are required.

Upon the approval of the director of Graduate Programs in Business, 10 credits of School of Law courses may be applied toward the Masters of Taxation degree. No more than six credits from the School of Law may be in non-tax courses. The other four credits taken in the School of Law must be in tax courses which substitute for equivalent tax courses in the CBA.

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

<table>
<thead>
<tr>
<th>Law Courses to be used as MBA Concentration Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choices for Concentration Electives:</td>
</tr>
<tr>
<td>Accounting (choose 3 credits)</td>
</tr>
<tr>
<td>9200:639 Estate and Gift Taxation</td>
</tr>
<tr>
<td>9200:640 Individual Taxation</td>
</tr>
<tr>
<td>9200:641/642 Corporate Taxation I, II</td>
</tr>
<tr>
<td>9200:685 Taxation of Partnerships</td>
</tr>
<tr>
<td>9200:674 Current Problems in Taxation</td>
</tr>
<tr>
<td>9200:675 Special Problems in Estate Planning</td>
</tr>
<tr>
<td>9200:680 Qualified Pensions and Profit Sharing</td>
</tr>
<tr>
<td>9200:685/686 Wills, Trusts and Estates I, II</td>
</tr>
<tr>
<td>Finance (choose 3 credits)</td>
</tr>
<tr>
<td>9200:629 Commercial Law II</td>
</tr>
<tr>
<td>9200:635 Bankruptcy Law</td>
</tr>
<tr>
<td>9200:639 Estate and Gift Taxation</td>
</tr>
<tr>
<td>9200:652 Land Use Planning</td>
</tr>
<tr>
<td>9200:671 Securities Regulation</td>
</tr>
<tr>
<td>9200:675 Special Problems in Estate Planning</td>
</tr>
<tr>
<td>9200:680 Qualified Pensions and Profit Sharing</td>
</tr>
<tr>
<td>9200:685/686 Wills, Trusts and Estates I, II</td>
</tr>
<tr>
<td>9200:691 International Investments</td>
</tr>
<tr>
<td>International Business (choose 6 credits)</td>
</tr>
<tr>
<td>9200:649 International Law</td>
</tr>
<tr>
<td>9200:676 International Trade</td>
</tr>
<tr>
<td>9200:651 International Investments and the European Economic Community Management (choose 6 credits)</td>
</tr>
<tr>
<td>9200:637 Equal Opportunity Law</td>
</tr>
<tr>
<td>9200:650 Labor and Employment Law</td>
</tr>
<tr>
<td>9200:651 Labor Arbitration and Collective Bargaining</td>
</tr>
<tr>
<td>9200:659 Lawyer as Negotiator</td>
</tr>
<tr>
<td>9200:660 Workers' Compensation</td>
</tr>
<tr>
<td>9200:672 Seminar in Business Planning</td>
</tr>
<tr>
<td>9200:679 Labor Law</td>
</tr>
<tr>
<td>Marketing (choose 6 credits)</td>
</tr>
<tr>
<td>9200:627 Commercial Law I</td>
</tr>
<tr>
<td>9200:659 Lawyer as Negotiator</td>
</tr>
<tr>
<td>9200:662 Mail Law</td>
</tr>
<tr>
<td>9200:667 Patent, Trademark and Copyright Law</td>
</tr>
<tr>
<td>9200:672 Seminar in Business Planning</td>
</tr>
<tr>
<td>9200:683 Seminar in Product Liability</td>
</tr>
<tr>
<td>9200:694 Sports and Entertainment Law</td>
</tr>
</tbody>
</table>
College of Fine and Applied Arts

Mark S. Auburn, Ph.D., Interim Dean
John D. Bee, Ph.D., Associate Dean
William H. Seaton, Ph.D., Associate Dean

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

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

1. Minimum GPA of 2.75 for four years of undergraduate study or 3.00 for the last two years of undergraduate study.
2. 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.
3. 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:

1. 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:
  7400:604 Orientation to Graduate Studies in Family and Consumer Sciences 1
  7400:680 Historical and Conceptual Bases of Family and Consumer Sciences 3
  7400:685 Research Methods in Family and Consumer Sciences 3

Child Development Option
- Core Courses:
  7400:605 Developmental Parent-Child Interactions 3
  7400:610 Child Development Theories 3
  7400:665 Development in Infancy and Early Childhood 3

Option Electives
Select 12 credits from the following courses with approval of advisor if a course has been taken at the undergraduate level, other courses must be selected:

- 7400:501 Family Life Patterns in the Economically Deprived Home 2
- 7400:504 Adolescence in the Family Context 3
- 7400:542 Human Sexuality 3
- 7400:568 Before and After School Child Care 2
- 7400:560 Organization and Supervision of Child-Care Centers 3
- 7400:596 Parent Education 3
- 7400:607 Family Dynamics 3
- 7400:616 Infant and Child Nutrition 3
- 7400:651 Family and Consumer Law 3
- 7400:660 Programming for Child-Care Centers 3
- 7400:688 Practicum in Family and Consumer Sciences 3

Child Life Option
- Core Courses:
  7400:551 Child in the Hospital 4
  7400:555 Practicum: Establishing and Supervising a Child Life Program 3
  7400:565 Orientation to the Hospital Setting 2
- 7400:695 Child Life Internship 6

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:

- 7400:501 Family Life Patterns in the Economically Deprived Home 2
- 7400:504 Adolescence in the Family Context 3
- 7400:542 Human Sexuality 3
- 7400:560 Organization and Supervision of Child-Care Centers 3
- 7400:585 Seminar in Family and Consumer Sciences (Child Life topic) 3
- 7400:596 Parent Education 3
- 7400:606 Developmental Parent-Child Interactions 3
- 7400:610 Child Development Theories 3
- 7400:616 Infant and Child Nutrition 2
- 7400:660 Programming for Child-Care Centers 2
- 7400:665 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 Total 5 40

Clothing, Textiles and Interiors Option
- Core Courses:
  7400:634 Material Culture Studies 3
  7400:639 Theories of Fashion 3
  7400:677 Social Psychology of Dress and the Near Environment 3

- Options Electives:
  7400:518 History of Interior Design I 4
  7400:519 History of Interior Design II 4
  7400:523 Professional Image Analysis 3
  7400:525 Advanced Textiles 3
  7400:527 Global Issues in Textiles and Apparel 3
  7400:535 Principles and Practices Interior Design 3
  7400:536 Textile Conservation 3
  7400:537 Historic Costume to 1800 3
  7400:538 History of Fashion Since 1780 3
  7400:631 Problems in Design 1 6
  7400:688 Practicum in Family and Consumer Sciences 3
  7400:696 Individual Investigation in Family and Consumer Sciences 1 6

Cognate Electives:
Select 6 credits with approval of advisor from 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 Total 5 40
Family Development Option

- **Core Courses**:  
  7400.602 Family Life Span Perspective 3  
  7400.607 Family Dynamics 3  
  7400.661 Family and Consumer Law 3  

- **Option Electives**:  
  Select 12 credits from the following courses with approval of advisor (if a course has been taken at the undergraduate level, other courses must be selected):  
  7400.501 Family Life Patterns in the Economically Deprived Home 3  
  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  
  7400.556 Parent Education 3  
  7400.603 Family Relationships in Middle and Later Years 3  
  7400.605 Developmental Parent-Child Interactions 3  
  7400.610 Child Development Theories 3  
  7400.588 Practicum in Family and Consumer Sciences 3  

- **Cognate Electives**:  
  Select 7 credits with the approval of advisor from within the School of Family and Consumer Sciences OR from a cognate area outside the School OR a combination of the two.  
  - **Thesis or Project (select one)**:  
    7400.684 Master's Project 5  
    7400.689 Master's Thesis 5  
    Total 10  

Food Science Option

- **Core Courses**:  
  7400.575 Analysis of Food 3  
  7400.576 Developments in Food Science 3  
  7400.520 Experiments (Food if taken at the undergraduate level, choose 3 additional credits from option electives) 3  

- **Option Electives**:  
  Select 9-12 credit hours with the approval of advisor from among the following (if a course has been taken at the undergraduate level, other courses must be selected):  
  3100.500 Food Plants 2  
  3200.540 Special Topics: Economics/World Food Problems 4  
  7400.534 Cultural Dimensions of Food 3  
  7400.565 Seminar in Family and Consumer Sciences (Food Science topic) 2-3  
  7400.570 The Food Industry: Analysis and Field Study 3  
  7400.563 Advanced Food Preparation 3  
  7400.524 Nutrition in the Life Cycle 3  
  7400.524 Advanced Human Nutrition I 3  
  7400.625 Advanced Human Nutrition II 3  
  7400.686 Practicum in Family and Consumer Sciences 3  

- **Cognate Electives**:  
  Select 5-8 credits with approval of advisor from the School of Family and Consumer Sciences OR from a cognate area outside the School OR from a combination of the two.  
  - **Thesis of Project (select one)**:  
    7400.684 Master's Project 5  
    7400.689 Master's Thesis 5  
    Total 10  

**Note**: Students in all of the options who are working on a master's thesis may elect to take the course 7400.680 Thesis Research/Reading. This course will not, however, count as part of the required 40-42 credits in the program.

Nutrition and Dietetics

A program of study is offered leading to the Master of Science in Nutrition and Dietetics. Students must meet the following admission requirements for acceptance in the program:  
- Meet the minimum GPA of 2.75 for four years of undergraduate study or 3.00 for the last two years of undergraduate study.  
- 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 that have been taken at the graduate level.  
- 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 project. The thesis proposal 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**:  
  7400.654 Orientation to Graduate Studies in Family and Consumer Sciences 1  
  7400.655 Historical and Conceptual Bases of Family and Consumer Sciences 3  
  7400.655 Research Methods in Family and Consumer Sciences 3  

- **Core Courses**:  
  7400.624 Advanced Human Nutrition I 3  
  7400.625 Advanced Human Nutrition II 3  

- **Electives** (8 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.  
  3100.561 Human Physiology I 4  
  3100.562 Human Physiology II 4  
  3100.565 Cardiovascular Physiology 3  
  3100.564 Pharmacology 3  
  3100.570 Medical Physiology, Pathophysiology, and Pharmacology 3  
  3100.566 Research in the Biology of Aging 3  
  3150.501 Biochemistry I 3  
  3150.502 Biochemistry II 3  
  7400.590 Nutrition Communication and Education Skills 4  
  7400.520 Experimental Foods 3  
  7400.524 Nutrition in the Life Cycle 3  
  7400.574 Cultural Dimensions of Foods 3  
  7400.576 Development in Food Science 3  
  7400.580 Community Nutrition I - Lecture 3  
  7400.582 Community Nutrition II - Lecture 3  
  7400.584 Sports Nutrition 3  
  7400.588 Practicum in Dietetics 1  
  7400.588 Professional Preparation for Dietetics 1  
  7400.640 Nutrition in Diminished Health 3  

Cognate Electives (8 to 11 credits required)  
Select with the approval of advisor from the following or other courses that strengthen the student's goals.  
  3470.664 Statistics for the Health Sciences 4  
  3850.679 Social Gerontology 3  
  5000.651 Techniques of Counseling 3  
  6000.560 Management and Organizational Behavior 3  
  6100.602 Computer Techniques for Management 3  

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

Music

The degree Master of Music is offered by the School of Music with options in music education, performance, composition, theory, music history and literature, and accompanying. Entrance requirements for each program are as follows:  
- The standard requirements for an undergraduate major in the area of proposed graduate speciality or performance which the school director approves as equivalent to an undergraduate major.  
- The Graduate School's requirements for admission.
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 is required for completion of the Master of Music Degree in Voice Performance. If the student lacks background in any of these languages, auditing of undergraduate courses is required.

After completion of all core 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/Stravinsky) 2
  - 7500:619 Theory and Pedagogy 2

- **Major required courses** - 21-23 credits:
  - 7500:601 Choral Literature 2
  - 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Stravinsky) 2
  - 7500:624 Music History Survey, 20th Century 2
  - 7500:647 Master's Chamber Recital 1
  - 7500:699 Master's Thesis 4+6
  - 7510:6— Ensemble (participation in two ensembles required) 2
  - 7520:642 Applied Composition 8

- **Additional music courses** - zero to two credits.

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

- **Electives** - three credits.

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

Degree total: 34-36 credits.

### Music Education Option

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

- **Additional music/education courses** – select 17-19 credits with approval music education and graduate advisors. Choices may include the following:
  - 7500:675 Seminar in Music Education* 6
  - 7500:689 Advanced Problems in Music Education* 6
  - 7520:6— Applied 6
  - 7510:6— Ensemble 2
  - 5105:6— Educational Foundations and Leadership 4
  - 5170:5— General Administration 4
  - 5505:5— Curricular and Instructional Studies 4

- **Topics related to instrumental music.

#### Non-Thesis Option  – 34 credits
- **Required Music Education Core Courses** – 9 credits
  - 7500:611 Foundations of Music Education (summer) 3
  - 7500:612 Practices and Trends in Music Education (fall) 3
  - 7500:614 Measurement and Evaluation in Music Education (spring) 3
  - 7500:689 Master's Thesis 4+6

- **Additional music/education courses** – select 17-19 credits with approval music education and graduate advisors. Choices may include the following:
  - 7500:675 Seminar in Music Education* 6
  - 7500:689 Advanced Problems in Music Education* 6
  - 7520:6— Applied 6
  - 7510:6— Ensemble 2
  - 5105:6— Educational Foundations and Leadership 4
  - 5170:5— General Administration 4
  - 5505:5— Curricular and Instructional Studies 4

- **Topics related to instrumental music.

### Music Education Option: Instrumental Emphasis

#### Thesis Option  – 32 credits
- **Required Music Education Core Courses** – 13-15 credits
  - 7500:611 Foundations of Music Education (summer) 3
  - 7500:612 Practices and Trends in Music Education (fall) 3
  - 7500:614 Measurement and Evaluation in Music Education (spring) 3
  - 7500:689 Master's Thesis 4+6

- **Additional music/education courses** – select 17-19 credits with approval music education and graduate advisors. Choices may include the following:
  - 7500:675 Seminar in Music Education* 6
  - 7500:689 Advanced Problems in Music Education* 6
  - 7520:6— Applied 6
  - 7510:6— Ensemble 2
  - 5105:6— Educational Foundations and Leadership 4
  - 5170:5— General Administration 4
  - 5505:5— Curricular and Instructional Studies 4

- **Topics related to instrumental music.

### Music Education Option: General Music Emphasis

#### Thesis Option  – 32 credits
- **Required Music Education Core Courses** – 13-15 credits
  - 7500:611 Foundations of Music Education (summer) 3
  - 7500:612 Practices and Trends in Music Education (fall) 3
  - 7500:614 Measurement and Evaluation in Music Education (spring) 3
  - 7500:689 Master's Thesis 4+6

- **Additional music/education courses** – select 17-19 credits with approval music education and graduate advisors. Choices may include the following:
  - 7500:675 Seminar in Music Education* 6
  - 7500:689 Advanced Problems in Music Education* 6
  - 7520:6— Applied 6
  - 7510:6— Ensemble 2
  - 5105:6— Educational Foundations and Leadership 4
  - 5170:5— General Administration 4
  - 5505:5— Curricular and Instructional Studies 4

- **Topics related to general music.

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

- **Additional music/education courses** – select 25 credits with approval music education and graduate advisors. Choices may include the following:
  - 7500:675 Seminar in Music Education* 6
  - 7500:689 Advanced Problems in Music Education* 6
  - 7520:6— Applied 6
  - 7510:6— Ensemble 2
  - 5105:6— Educational Foundations and Leadership 4
  - 5170:5— General Administration 4
  - 5505:5— Curricular and Instructional Studies 4

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

**Thesis Option – 32 credits**

- Required Music Education Core Courses – 13-15 credits
  - 7500:611 Foundations of Music Education (summer) 3
  - 7500:612 Practices and Trends in Music Education (fall) 3
  - 7500:614 Measurement and Evaluation in Music Education (spring) 3
  - 7500:619 Master’s Thesis 4-6

- Additional music/education courses – select 17-39 credits with approval music education and graduate advisors. Choices may include the following:
  - 7500:675 Seminar in Music Education* 6
  - 7500:697 Advanced Problems in Music Education* 6
  - 7500:690 Music Workshops* 6
  - 7520:5-6- Applied 6
  - 7510:6- Ensemble 2
  - 7510:6- Other music courses 2
  - 5100:5-6 Educational Foundations and Leadership 2
  - 5105:2- General Administration 4
  - 5500:5-6 Curricular and Instructional Studies 4

* Topics related to choral music.

**Non-Thesis Option – 34 credits**

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

- Additional music/education courses – select 20 credits with approval of music education and graduate advisors. Choices may include the following:
  - 7500:675 Seminar in Music Education* 6
  - 7500:697 Advanced Problems in Music Education* 6
  - 7500:690 Music Workshops* 6
  - 7520:5-6- Applied 6
  - 7510:6- Ensemble 2
  - 7510:6- Other music courses 2
  - 5100:5-6 Educational Foundations and Leadership 4
  - 5105:2- General Administration 4
  - 5500:5-6 Curricular and Instructional Studies 4

* Topics related to choral music.

**Music History and Literature Option**

- Music core courses – eight credits (to be selected):
  - 7500:555 Advanced Conducting: Instrumental 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:618 Musical Styles and Analysis IV (20th Century) 2
  - 7500:690 Music History Survey: Middle Ages and Renaissance 2
  - 7500:692 Advanced Problems in Music 2

- Major required courses – 20-22 credits:
  - 7500:551 Introduction to Musicology 2
  - 7500:621 Music History Survey: Baroque 2
  - 7500:622 Music History Survey: Classic and Romantic 2
  - 7500:624 Music History Survey: 20th Century 2
  - 7500:625 Graduate Bibliography and Research in Music 2
  - 7500:690 Music History Survey: Renaissance 2
  - 7500:692 Advanced Problems in Music 4
  - 7500:692 Master’s Thesis 4

- Additional music courses – two to four credits.
  - Graduate-level (music) workshops, applied music and/or courses to be selected by the student and advisor.
  - A minimum reading proficiency in German is required. If a student lacks background in this language, completion of undergraduate courses is required.

- Electives – two to four credits.

To be selected by the student and advisor. Areas include graduate-level courses in other disciplines in which the student obtains permission of instructor.

Degree Total: 33-36 credits.

**Music Technology Option**

The Master of Music, Music Technology Option is designed to give the student additional exposure to the functional areas of music plus an advanced concentration in music technology and related business. The program provides a framework of conceptual, technical, and professional knowledge which will assist the student in career opportunities of fields related to music technology. Students will be given the program with a portfolio of tutorials, revised works, and/or computer software.

- Music core courses – six credits (to be selected):
  - 7500:555 Advanced Conducting: Instructional 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:615 Musical Styles and Analysis I 2
  - 7500:616 Musical Styles and Analysis II 2

- Major required courses – 26-28 credits:
  - 7500:625 Graduate Bibliography and Research in Music 2
  - 7500:675 Music Software Survey and Use 2
  - 7500:613 Instructional Programming in Music for the Microcomputer 2
  - 7500:618 Musical Styles and Analysis IV (20th Century) 2
  - 7500:619 Theory and Pedagogy 2
  - 7500:621 Advanced Problems in Music 4
  - 7500:690 Music History Survey: Middle Ages and Renaissance 2

- Electives – 0-2 credits.

To be selected by the student and advisor.

Degree Total: 32-36 credits.

**Performance Option in Accompanying**

- Music core courses – Eight credits (to be selected):
  - 7500:555 Advanced Conducting: Instrumental 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:616 Musical Styles and Analysis I (Chant through Palestrina) 2
  - 7500:617 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  - 7500:618 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  - 7500:619 Advanced Accompanying (20th Century) 2
  - 7500:621 Music History Survey: Middle Ages and Renaissance 2
  - 7500:622 Music History Survey: Baroque 2
  - 7500:623 Music History Survey: Classic and Romantic 2
  - 7500:624 Music History Survey: 20th Century 2

- Major required courses – 23-26 credits:
  - Select either 7500:631 or 7500:633
  - 7500:652 Repertoire and Pedagogy: Organ 3
  - 7500:633 Teaching and Literature: Piano and Harpsichord 2
  - 7500:641 Advanced Accompanying I 1
  - 7500:642 Advanced Accompanying II 1
  - 7500:643 Advanced Accompanying III 1
  - 7500:666 Advanced Song Literature 3
  - 7500:692 Graduate Recital (to be completed in a minimum of two performance periods) 2
  - 7500:694 Keyboard Ensemble (participation in two ensembles required) 2
  - 7500:618 Small Ensemble – Mixed 2
  - 7500:698 Applied Music (piano, organ and harpsichord) 8

- 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.

- Elective – two credits.

Areas may include graduate-level courses in other disciplines, such as theatre arts, for which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 33-36 credits.

**Performance Option in Winds, String Percussion**

- Music core courses – eight credits to be selected:
  - 7500:555 Advanced Conducting: Instrumental 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  - 7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  - 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  - 7500:621 Music History Survey: Middle Ages and Renaissance 2
  - 7500:622 Music History Survey: Baroque 2
  - 7500:623 Music History Survey: Classic and Romantic 2
  - 7500:624 Music History Survey: 20th Century 2

- Major required courses – 16-18 credits:
  - Select either 7500:618 or 7500:621
  - 7500:692 Graduate Recital (to be completed in a minimum of two performance periods) 2
  - 7500:694 String/Orch Ensemble (participation in two ensembles required) 2-4
  - 7500:698 Applied Music (select appropriate instrument) 8

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.

Graduate level must accompany a minimum of three solo or ensemble rentals. Instrumental and vocal. These can be done as part of 7500:697.

**Two semesters ensemble participation required for degrees completed in two semesters. Four semesters ensemble participation required for degrees completed in four semesters.**
• Select one of the following as appropriate to major instrument:
  7500:630 Teaching and Literature: Brass Instruments 2
  7500:631 Teaching and Literature: Woodwind Instruments 2
  7500:632 Teaching and Literature: Percussion Instruments 2
  7500:634 Teaching and Literature: String Instruments 2
  7500:698 Graduate Recital 2

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

• Electives – four credits.*

Areas may include graduate-level courses in other disciplines, such as theatre arts, in which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits.

Note: No more than a total of 15 credits of 7520 courses may be applied to the degree.

Performance Option in Voice

• Music core courses: eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Choral through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: 20th Century 2

• Major required courses – 20-22 credits:
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:665 Vocal Pedagogy 3
  7500:696 Advanced Song Literature 3
  7500:698 Graduate Recital 2
  7510:606— Ensemble participation in two ensembles required** 2
  7520:624 Applied Voice 8

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

• Electives – four credits.

Areas may include graduate-level courses in other disciplines, such as theatre arts, in which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits.

Performance Option in Keyboard

• Music core courses: eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: 20th Century 2

• Major required courses – 18-21 credits:
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:656 Advanced Conducting Choral 2
  7500:656 Advanced Conducting Choral 2
  7500:656 Advanced Conducting Choral 2
  7500:656 Advanced Conducting Choral 2
  7500:656 Advanced Conducting Choral 2
  7500:656 Advanced Conducting Choral 2
  7500:656 Advanced Conducting Choral 2

• Additional music courses – three to four credits.
  Graduate-level (music) courses, advanced problems, workshops and/or applied lessons, to be selected by the student and advisor.

• Electives – four credits.

Areas may include graduate level courses in other disciplines, such as theatre arts, for which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits.

Theory Option

• Music core courses – six credits (to be selected):
  7500:553 Bibliography and Research 2
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:693 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: 20th Century 2

• Major required courses – 26-28 credits:
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:619 Theory and Pedagogy 2
  7500:621 Advanced Problems in Music 8
  7500:669 Master's Thesis 4-6
  7510:606— Ensemble participation in two ensembles required** 2
  7520:642 Applied Composition 2

• Additional music courses – zero to two credits.
  Graduate-level (music) workshops, applied music (other than composition), advanced problems, and/or courses to be selected by student and advisor.

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

Degree total: 34-36 credits.

*It is recommended that each student's graduate committee recommend the appropriate elective credits.

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

Communication

The School of Communication offers the master of arts degree in a coordinated program of communication arts.

Entrance requirements:

• Meet the general requirements for admission to the Graduate School.

• Possess an undergraduate major in communication, journalism or a related field; or, complete at least 15 semester credits of undergraduate communication coursework approved by the department.

Program requirements:

• Complete 36 credits, distributed as follows:
  School core courses – 12 credits:
  7600:600 Introduction to Graduate Study in Communication 3
  7600:601 Empirical Research in Communication 3
  7600:624 Survey of Communication Theory 3
  7600:625 Theories of Mass Communication 3
  7600:670 Communication Criticism 3
  School course work – 12 credits.
  Graduate electives – 6 credits.

Thesis (699) or Project/Production (698) – 6 credits.

Total – 36 credits.

• Comprehensive examination required for students not pursuing a thesis, project, or production after 24 credits of coursework, including all core courses.

• Advancement to candidacy. Registration for six (6) credits of Thesis (699) or Project/Production (698).

• Presentation and defense of a thesis/project/production.

The thesis, project, or production requirement is designed to be the culmination of the student's academic program and involves the conceptualization, design and execution of an academic, practical, or aesthetic problem in a manner which requires a high level of substantive, methodological, technical, and written skills. These skills may be demonstrated in any of the three types of activities, depending on the student's background and career orientation.
Theatre Arts

The School of Dance, Theatre, and Arts Administration offers a master of arts degree. The following will qualify the student in the field of theatre:

- Complete the general requirements for admission to the Graduate School.
- Complete an undergraduate major in the area of proposed graduate work or equivalent work as approved by the coordinator of the graduate theatre program.
- Complete an oral defense of the thesis or thesis project.

Theatre Option

Complete a minimum of 36 credits distributed as follows:

- School core courses - 24 credits:
  - 7800:600 Introduction to Graduate Studies 3
  - 7800:641 Problems in Directing 3
  - 7800:645 Seminar in Dramatic Literature 3
  - 7800:646 Graduate Acting Techniques 3
  - 7800:658 History of Theatre 3
  - 7800:662 Seminar in Scene Design 3
  - 7800:699 Master's Thesis 16

- Graduate electives:
  12 credits to be selected from Theatre Arts, English, Communication, Music, etc., in consultation with the student's advisor or the graduate program coordinator.

Arts Administration Option

- Complete a minimum of 45 credits
- Required theatre arts courses (30-33 credits):
  - 7800:600 Introduction to Graduate Studies in Theatre Arts 3
  - 7800:605 Colloquium in the Arts 3
  - 7800:695 Audience Development 3
  - 7800:696 Principles of Arts Management 3
  - 7800:692 Fund Raising and Fundmanship in the Arts 3
  - 7800:691 Arts Administration Practices and Policies 3
  - 7800:692 Legal Aspects of Arts Administration 3
  - 7800:698 Internship 3
  - 7800:699 Master's Thesis 16

- Required business courses (9 credits):
  - 6200:590 Special Topics in Accounting 3
  - 6500:600 Management and Organizational Behavior 3
  - 6600:600 Marketing Concepts 3
  - or 6600:630 Marketing of Services 3

- Electives in related fields (3-6 credits):
  Options here include course work in business, computer science, urban studies, art, music, and theatre and dance.

- Complete an oral defense of the thesis.
- General electives 0-3

Speech-Language Pathology and Audiology

This program, leading to the M.A. in speech-language pathology and audiology, are designed to lead to professional certification by the American Speech-Language-Hearing Association (ASHA) in speech-language pathology, and/or audiology and licensure by the State of Ohio Board of Speech-Language Pathology and Audiology. To be eligible for admission to the program the candidate must:

- Complete requirements for admission to the Graduate School
- Hold an undergraduate major in the area of proposed graduate specialty or complete undergraduate work within one calendar year of application.
- Complete department requirements for admission which include submission of three letters of recommendation and Graduate Record Examination Aptitude Test results.
- Declare intent to major in either speech-language pathology or audiology.

Speech-language pathology and audiology majors are accepted for entrance into the program only for Fall Semester. Applications for admission should be received by February 15th.

Degree Requirements

- The master's thesis is optional for students in speech-language pathology and audiology. 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 will write comprehensive examinations during their final semester. Academic requirements within the school include:

  - Complete undergraduate work within one calendar year of application.
  - Complete an oral defense of the thesis or thesis project.
  - Complete 36 credits distributed as follows:
    - Arts Administration
    - Required undergraduate work within one calendar year of application.
    - Complete an oral defense of the thesis or thesis project.

For speech-language pathology majors:

- 7700:611 Research Methods in Communicative Disorders I 3
- 7700:628 Topics in Differential Diagnosis of Speech and Language Disorders 2
- 7700:650 Advanced Clinical Pracitum: Speech-Language Pathology 7
- 7700:695 Master's Thesis 4-6

For audiology majors:

- 7700:611 Research Methods in Communicative Disorders I 3
- 7700:612 Research Methods in Communicative Disorders II 2
- 7700:699 Master's Thesis 4-6
- 7700:654 Advanced Clinical Pracitum: Audiology 7
- 7700:695 Master's Thesis 4-6

Completion of 5610:693. Student Teaching in Speech Pathology or 5670:692. Student Teaching in Audiology may be substituted for one 7700:695 registration. The audiology student must take 4 credits in speech-language pathology, and the speech-language pathology student must take 4 credits in audiology. It is recommended that the speech-language pathology major elect 7700:650 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

- Only 7 credits of clinical practicum (7700:650/654/695 and 5610:692/693) may be applied toward completion of degree requirements. 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 Cleveland State University and The University of Akron. The two-year program began in January 1995 with a new class beginning each Fall Semester on both campuses. Distance learning technology, which utilizes interactive video and audio systems, will link faculty and students at the two institutions. The degree program is in candidacy status with the Council on Social Work Education.

Students accepted into the graduate program leading to a master's degree in social work must register only for 600 level courses. Graduate courses taken at the 500 level are not applicable for the graduate degree program in social work, but can be used (with approval) as an elective for other University of Akron graduate programs.

Admission Requirements:

- Meet the general Graduate School requirements for admission.
- An undergraduate major in social work or a related field.
- Have a minimum grade point average of 3.00 in social work and behavioral science courses taken prior to application for admission. A minimum of 8 courses is required in this area (24 semester or 36 quarter credit hours completed in the social, behavioral and biological sciences, including one human biology course, and the humanities).
- Submit 3 letters of reference.
- Submit 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.
A description of any social work/human service work experience must be submitted.

Program Requirements:

- Complete a minimum of 60 graduate credits of approved courses in social work. Up to 9 credits of graduate-level electives outside the department may be included in the program. There is no foreign language requirement.
- Complete an approved program of courses which include the following required courses:
### 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
- 7750.611 Dynamics of Racism and Discrimination 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
- 7750.647 Social Welfare Policy II 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 Single System Design 3
- Two electives 6

### Second Year Concentrations (Macro Practice):

**- Fall Semester**
- 7750.603 Advanced Field Practicum 3
- 7750.647 Social Welfare Policy II 3
- 7750.674 Community, Economic Systems and Social Policy Analysis 3
- 7750.673 Introduction to Community Organization and Planning 3
- One elective 3

**- Spring Semester**
- 7750.604 Advanced Field Practicum 3
- 7750.671 Social Work Administration 3
- 7750.672 Strategies of Community Organization 3
- 7750.675 Program Evaluation 3
- One elective 3
College of Nursing

Cynthia F. Capers, R.N., Ph.D., Dean
Elaine Nichols, R.N., Ed.D., Associate Dean of Academic Affairs
Kathleen M. Ross-Adeolmolki, Ph.D., Coordinator; Master's Programs

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.
• 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 interacts within the environment in biological, psychological, social, spiritual, cultural, and other dimensions. The individual is unique and universal. The individual is a thinking, feeling, interacting, evolving, creating, valuing being.
Families are individuals dynamically connected with each other over time in traditional and nontraditional family configurations.
Communities are groups of people with one or more common characteristics who are in relationship to one another and may or may not interact.
Health is comparative, dynamic, multidimensional, and has personal meaning. It includes disease, nondisease, and quality of life. People have the right to participate in decisions affecting and effecting personal health.
Environment includes all living and nonliving dimensions with which the individual, family, and community have interrelationships. The dynamic environmental interrelations define and establish rules for health and modes of action.
Nursing is an art and a science. The discipline of nursing is concerned with individuals, family and community and their responses to health within the context of the changing health care environment. Professional nursing includes the appraisal and the enhancement of health. Personal meanings of health are understood in the nursing situation within the context of familial, societal, and cultural meanings. The professional nurse uses knowledge from theories and research in nursing and other disciplines in providing nursing care. The role of the nurse involves the exercise of social, cultural, and political responsibilities, including accountability for professional actions, provision of quality nursing care, and community involvement.
Education is an individualized, life-long process. Learning includes the individual's interrelations with the environment, knowledge, and skill acquisition, development of critical thinking, and self-awareness. Self-expression enables the student to respond to clients who have unique human values and cultural heritage. Each nursing student brings attitudes, beliefs, values, feelings, knowledge, and experience into the learning environment. These variables influence learning that occurs through controlled construction and reconstruction of experience in relation to environmental influences.
Nursing education at the baccalaureate level synthesizes knowledge from nursing, humanities, social, cultural, physical, and natural sciences to operationalize critical decision-making. The student is prepared to function as a nurse generalist in a variety of settings. Faculty and student continually seek to refine the commitment to and understanding of the relationship between theory and practice. Students are encouraged to become self-directed, collaborative, interdependent, and independent. These variables are the foundation for lifelong learning and professional development.
Nursing education at the master's level builds upon baccalaureate nursing education and provides a foundation for doctoral study. Graduate education 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.

MASTER OF SCIENCE IN NURSING

Accreditation
The master's degree programs are fully accredited by the National League for Nursing Accreditation Commission (NLNAC). NLNAC is a resource of information regarding tuition, fees, and length of program and can be contacted at 350 Hudson Street, New York, New York 10014, 1-888-669-9656 extension 153.

Characteristics of the Graduate*
Upon completion of the program graduates will be able to:
• Incorporate theories and advanced knowledge into nursing practice.
• Demonstrate competence in selected roles.
• Identify researchable nursing problems and participate in research studies in advanced nursing practice.
• Use leadership, management, and teaching knowledge and competencies to influence nursing practice.
• Assume responsibility for contributing to improvement in the delivery of health care and influencing health policy.
• Assume responsibility for contributing to the advancement of the nursing profession.

Admission
• Baccalaureate degree in nursing from NLN-accredited nursing program.
• 3.00 GPA on a 4.00 scale for all previous college work.
• Miller Analogies Test taken within the last five years with a minimum score of 50 or GRE taken within the last five years. During the last three years, the range of GRE scores has been: verbal 400-654, quantitative 400-695, and analytical 400-640.
• Three (3) letters of reference from a recent employer; a member of the nursing profession; a former faculty member.
• 300-word essay describing professional goals.
• Interview prior to admission to the program.
• Current state of Ohio license to practice nursing and evidence of malpractice insurance.
• Prerequisite course requirements: Undergraduate Statistics, Nursing Research, Basic Health Assessment, and Computer Skills, Graduate Level Statistics.
A one year experience in an area where critical care and emergencies occur is required for all students admitted to the nurse anesthesia specialty. 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 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 admissions process.

*National League for Nursing.
**A baccalaureate degree in nursing from a foreign university which is recognized by The University of Akron.
### Instructional Program

The Master of Science in Nursing curriculum includes a minimum of 36 credit hours of study depending on the specialty track. The advanced practice tracks include Adult/Gerontological Health Nursing, 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 program in Nurse Anesthesia includes 45 credit hours of study and focuses on the master’s preparation of certified registered nurse anesthetists (CRNA).

### Nursing Core

The curriculum consists of a core of 17 credit hours. These courses encompass advanced theory, research, computers in nursing, and study and focuses on the master’s preparation of certified registered nurse anesthetists (CRNA).

### Nursing Research

All students enroll in a research core for a total of 7 credits: 8200:613. Nursing Inquiry I and 8200:650 Master’s Thesis or 8200:618 Nursing Inquiry II.

### Advanced Practice Roles

Options are provided for advanced practice as a clinical nurse specialist, nurse practitioners, or nurse anesthetist, or for advanced roles as an administrator or educator.

The graduate nursing curriculum requires between 38 and 45 credits, depending on the Advanced Practice Role selected by the student.

#### Core courses required of all students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:605</td>
<td>Theoretical Basis for Nursing</td>
<td>3</td>
</tr>
<tr>
<td>8200:606</td>
<td>Computer Applications in Nursing</td>
<td>2</td>
</tr>
<tr>
<td>8200:610</td>
<td>Nursing Inquiry</td>
<td>1</td>
</tr>
<tr>
<td>8200:618</td>
<td>Nursing Inquiry II</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Functional roles courses selected by students based upon area of specialty

- **Nurse Anesthesia**: The Anesthesia Track is accredited by the Council on Accreditation of Nurse Anesthesia Programs.

  - 8200:651 Human Physiology I 4
  - 8200:652 Human Physiology II 4
  - 8200:640 Scientific Components of Nurse Anesthesia 3
  - 8200:641 Pharmacology for Nurse Anesthesia I 3
  - 8200:642 Introduction to Nurse Anesthesia I 3
  - 8200:643 Principles of Anesthesia I 3
  - 8200:644 Pharmacology for Nurse Anesthesia II 3
  - 8200:645 Principles of Anesthesia II 3
  - 8200:647 Professional Role Seminar 2
  - 8200:649 Nurse Anesthesia Residency 0

- **CRNA-MSN Anesthesia Option:**

  - 8200:640 Scientific Components of Nurse Anesthesia 3
  - 8200:641 Pharmacology for Nurse Anesthesia I 3
  - 8200:642 Introduction to Nurse Anesthesia I 3
  - 8200:643 Principles of Anesthesia I 3
  - 8200:644 Pharmacology for Nurse Anesthesia II 3
  - 8200:645 Principles of Anesthesia II 3
  - 8200:647 Professional Role Seminar 2

- **Child and Adolescent Health (40 credits and meets eligibility requirement for certification)** (see advisor for additional course in pediatric nutrition, 2 credits)

  - 8200:650 Pediatric/Adolescent Assessment 2
  - 8200:651 Child and Adolescent Health Nursing I 4
  - 8200:652 Child and Adolescent Health Nursing II 4
  - 8200:653 Pharmacology for Child and Adolescent Health Nursing I 3
  - 8200:654 Pharmacology for Child and Adolescent Health Nursing II 3
  - 8200:655 Pracitcium: Child and Adolescent Health Nursing 4

- **Behavioral Health Nursing**

  - Behavioral Health Nurse Practitioner Track (44 credits and meets eligibility requirements for certification). Requirements for full admission include one year experience in psychiatric mental health nursing, graduate statistics, basic health assessment.

    - 5000:720 Topical Seminar: Guidance and Counseling (DSM IV) 3
    - 8200:610 Advanced Adult/Gerontological Assessment 3
    - 8200:612 Advanced Clinial Pharmacology 3
    - 8200:660 Behavioral Health Nursing I 4
    - 8200:662 Clinical Psychopharmacology 3
    - 8200:665 Behavioral Health Nursing II 4
    - 8200:667 Pracitcium: Behavioral Health Nursing 4

- **Adult Gerontological Health (Clinical Nurse Specialist Track)**

  - 8200:671 Adult and Gerontological Health Nursing I 3
  - 8200:672 Adult and Gerontological Health Nursing II 4
  - 8200:673 Adult and Gerontological Health Nursing III 4
  - 8200:674 Pracitcium: Adult and Gerontological Health Nursing 2

- **Adult Gerontological Health Nurse Practitioner Track (43 credits and meets eligibility requirement for certification)**

  - 8200:671 Adult and Gerontological Health Nursing I 3
  - 8200:672 Adult and Gerontological Health Nursing II 4
  - 8200:673 Adult and Gerontological Health Nursing III 4
  - 8200:674 Pracitcium: Adult and Gerontological Health Nursing 2

### Admission Policies

The R.N.-M.S.N. Program is a graduate program, and as such, applicants must meet the following admissions requirements:

- **Current Ohio State license as a registered nurse and evidence of malpractice insurance.**
- **Graduate average of 3.00 or a 4.00 scale for all previous college work.**
- **Three (3) letters of reference from a recent employer, a member of the nursing profession, and a former faculty member.**
- **Miller Analogies Test taken within the last five years with a minimum score of 50 or Graduate Record Exam (GRE) taken within the last five years. During the past three years, the range of GRE scores has been verbal 400-695, quantitative 400-640.**
- **300-word essay describing professional goals.**
- **Interview with selected faculty members.**
- **Computer skills.**

### Curriculum

The R.N.-M.S.N. Sequence is designed for those registered nurses holding a diploma or associate degree in nursing who aspire to the Master of Science in Nursing degree. Students must complete 67 hours of prerequisite undergraduate coursework prior to acceptance into the Sequence. The R.N.-M.S.N. Sequence consists of bridge courses totaling 21 hours of preprofessional baccalaureate coursework and a minimum of 36 hours of graduate coursework. Students will receive 46 hours of undergraduate by-passed credits after successful completion of all undergraduate course requirements. This is in accordance with the current University policy for by-passed credit. Upon successful completion of all program requirements, the student will receive the B.S.N. and M.S.N. degrees.

#### R.N.-M.S.N. Bridge Courses

- 8200:225 Health Assessment 3
- 8200:435 Nursing Research 3
- 8200:440 Issues and Roles of the Profession of Nursing 3
- 8200:465 Concepts and Theories of Professional Nursing 3
- 8200:470 Community Health Nursing 4
- 8200:485 Leadership Roles of Professional Nursing 5

---

*Cogitate electives may be substituted for this course for the Administrative track.

**Students in education are required to take an additional 2 credits of Advanced Practice Nurse, Child and Adolescent Health, Behavioral Health, Adult Gerontological Health Nursing.

***In addition to the listed courses, all nurse anesthetists students must complete a 16 month residency.

**Students in Adult Gerontological Health Nursing are required to take the 2 credit hour Advanced Clinical Practice Seminar for Nurse Practitioner Specialties.
MASTER OF PUBLIC HEALTH

The Northeastern Ohio Universities Master of Public Health (NEOUMPH) program is a multidisciplinary, interdepartmental, and interinstitutional organization that 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.

Admission

Applications are sent to Northeastern Ohio Universities Master of Public Health, Division of Community Health Sciences, Northeastern Ohio Universities College of Medicine, 4209 State Route, P.O. Box 95, Rootstown, Ohio 44272.

Students must meet the following admission requirements:

- submit completed application by the required date
- possess a bachelor’s degree from an accredited college or university
- provide official transcripts from each institution of higher education attended
- a minimum undergraduate GPA of 2.75
- three letters of recommendation from individuals familiar with applicant’s academic or professional background, submitted to: NEOUMPH Admissions Committee, Division of Community Health Sciences, NEUUCOM, 4209 State Route, P.O. 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 statistic course and a college-level social or natural science course
- acceptable GRE taken within the last five years (may be waived if applicant has a professional degree [master’s or doctoral] in a relevant area)
- international candidates for whom English was not the language of instruction must achieve a minimum score of 550 on the TOEFL
- two years work experience in a relevant field is highly recommended
- cover letter (maximum two pages) explaining candidate’s educational and professional history, area of interest in public health, interest and motivation for seeking the MPH, and professional or academic career plans upon completion of the program
- $35 non-refundable application fee

Admitted students are assigned to an “enrollment university” based on preference. Questions may be directed in writing to the above address or applicants may contact the Program Director by telephone (330) 325-6179, fax (330) 325-6907, or e-mail at pubhlth@neoucom.edu.

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:
  - 8300601 Public Health Concepts 3
  - 8300602 Social and Behavioral Sciences in Public Health 3
  - 8300603 Epidemiology in Public Health 3
  - 8300604 Biostatistics in Public Health 3
  - 8300605 Health Services Administration in Public Health 3
  - 8300606 Environmental Health Sciences in Public Health 3
  Subtotal 18

- Additional program requirements:
  - 8300697 Capstone Project 3-6
  - Electives 15-18
  Total 39

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

Frank N. Kelley, Ph.D., Dean
Rudolph J. Scavuzzo, Jr., 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. White, 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 1966. 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 designs. Undergraduate students from other colleges within the University participate in specialized courses taught by the polymer faculty as they pursue their traditional degree programs. Also, a variety of non-credit offerings are presented as continuing education, intensive short courses, and seminars.

DESCRIPTION
The College of Polymer Science and Polymer Engineering carries out a program of research and education, primarily at the graduate level, and serves as a major intellectual resource for the scientific and technological development of polymers and related materials and processes. The college consists of the Department of Polymer Science, the Department of Polymer Engineering, the Maurice Morton Institute of Polymer Science and the Institute of Polymer Engineering.

The Department of Polymer Science and The Institute of Polymer Science, emphasize polymer synthesis, the physical chemistry, physics and mechanical behavior and technology of polymers, and many of their applications. The Department of Polymer Engineering and the Institute of Polymer Engineering, emphasize polymer processing (including reactive processing), solid state structure/morphology and properties of polymers as related to process history as well as engineering analysis and design. Collaborative research among the faculty in the two departments is common and provides a unique environment and capability for solving modern-day problems. This provides a fertile environment for students to obtain multidisciplinary training.

ADMISSION REQUIREMENTS
Admissions to the graduate program in the college are competitive. The departmental admission committees carefully consider each applicant. Early application is suggested.

DEPARTMENT OF POLYMER SCIENCE
Students with an undergraduate degree in chemistry, physics, or engineering and a grade point average of 2.75/4.0 or better are admissible. Students holding a degree in biology or natural sciences usually need additional courses on the undergraduate level in physics, physical and analytical chemistry. For such students, a special non-degree admission may be granted for one or two semesters, followed by a full admission upon a student's successful completion of the remedial undergraduate courses. All applications must be supported by at least one letter of recommendation from a teacher or supervisor that the candidate is able to handle independent scientific research. GRE scores are recommended with each application.

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

DEPARTMENT OF POLYMER ENGINEERING
Students with an undergraduate degree in Chemical Engineering, Mechanical Engineering or related degrees with a grade point average of 2.75/4.0 or better are admissible. Students holding a degree in the natural sciences usually need additional undergraduate engineering courses, which are required prerequisites for core courses. For such students, depending upon their background, a special non-degree admission may be given followed by full admission upon successful completion of a series of required remedial courses.

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

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

Doctor of Philosophy in Polymer Science
An interdisciplinary program leading to the Doctor of Philosophy in Polymer Science is administered by the Department of Polymer Science. Graduates from the three main disciplines (chemistry, physics and engineering) are guided into the appropriate courses of study and research in that field under the supervision of a faculty member. Research facilities of the Institute of Polymer Science are available for dissertation research. Students may be admitted directly to the Ph.D. program upon screening of their qualifications and recommendation by the department chair and dean.

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

- Complete a course of study prescribed by the student's advisory committee based on the committee's judgment of the student's background and on the result of any special examinations it might impose. This course will consist of a minimum of, but usually more than, 36 credits in graduate courses, or their equivalent, plus sufficient Ph.D. research credits to make a total of 84 credits (exclusive of Master of Science thesis credit). Credits for participation in either Polymer Science of Polymer Engineering seminars do not apply toward the degree. At least 18 credits of graduate course work and all dissertation credits must be completed at the University.
There is a university minimum residence time requiring one year, although graduate students starting with a B.S. or B.A. typically spend 4 years in residence.

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

  4 credits of polymer physical chemistry courses:
  9871:634 Polymer Structure and Characterization
  9871:675 Polymer Thermodynamics

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

  4 credits of polymer engineering and technology courses:
  9871:701 Polymer Technology I
  9871:702 Polymer Technology II
  9871:703 Polymer Technology III

  3 credits of polymer science laboratory:
  9871:613 Polymer Science Laboratory

- Completion of 18 credits of elective courses appropriate to each student's area of interest.
- Pass eight cumulative examinations which are given at monthly intervals during the academic year. The candidate is urged to begin these examinations early in the graduate program.
- Complete 9871:6078 Polymer Science Seminar I and II.
- Attendance at and participation in seminar-type discussions scheduled by the department. Credits for participation in either polymer science or polymer engineering seminars do not apply toward the degree.
- Present a public/departmental seminar on the completed research.
- Pass an oral examination upon completion of a research dissertation.
- Demonstrate competency in computer programming.
- Pass the general requirements for the Doctor of Philosophy degree.
- Satisfy the foreign language requirement for the doctoral degree by meeting the requirements of Plan A, B, or C as specified by the student's advisory committee. Appropriate research skills for Plan C are to be specified by the department on the basis of the student's area of specialization and intended research. These skills include proficiency in computer programming language, special mathematical methods, applied statistical analysis, and special literature search techniques.

Doctor of Philosophy in Engineering (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 Engineering. Requirements in the interdisciplinary field of Polymer Engineering for that degree are as follows:

- 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 advisory committee.
- Complete courses in the plan of study developed by the student advisory committee on the basis of the qualifying examination. A minimum of 96 credits of graduate work must be earned. A total of 48 credit hours of lecture courses and 48 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 48 lecture course credit requirement.
- A student entering with a master's degree or graduate credits from another institution may be given up to 24 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 higher research proposal for approval by the advisory committee and taken after 50% 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.

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 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 13 credit hours of elective courses appropriate to each student's area of interest.
- Completion of a research project (9871:699) and the resulting 6 credits.
- Attendance at and participation in seminar-type discussions scheduled by the department. Credits for participation in either polymer science or polymer engineering seminars do not apply toward the degree.
- Demonstrated competence in computer skills.
- At least 12 credits of graduate coursework and all theses credits must be completed at the University.

Master of Science in Engineering (Polymer Engineering Specialization)

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 33 credits: 12 credits of core courses, 3 credits of approved mathematics courses, 6 thesis credits, and 12 credits of approved electives.

- Polymer engineering core:
  9841:611 Structural Characterization of Polymers with Electromagnetic Radiation
  9841:621 Rheology of Polymeric Fluids
  9841:622 Analysis and Design of Polymer Processing Operations I
  9841:631 Engineering Properties of Solid Polymers
  9841:641 Polymeric Materials Engineering Science

- Total: 12

- Polymer engineering elective:
  9841:601 Polymer Engineering Seminar
  9841:623 Analysis and Design of Polymer Processing Operations II
  9841:642 Engineering Aspects of Polymer Coatings
  9841:651 Polymer Engineering Laboratory
  9841:661 Polymerization Reactor Engineering

- Approved engineering and science elective (a minimum of 3 credits of approved science or mathematics required):
  3420:681 Advanced Engineering Materials
  4600:622 Continuum Mechanics
  9871:613 Polymer Science Laboratory
  9871:674 Polymer Structure and Characterization
  9871:675 Polymer Thermodynamics

- Thesis:
  9841:699 Master's Thesis

- Requirements:
  Polymer Engineering Core: 12
  Approved Electives: 12
  Approved Mathematics: 3
  Thesis: 6
  Total: 33

- 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 a 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 taught. Interdisciplinary Studies and certificate programs will include coursework designated as 1800—.

Upon completion of any of these programs, a statement will be placed on the student’s permanent record indicating the area of concentration. The certificate indicates the area of concentration will be awarded when the student completes the requirements for a degree unless otherwise specified.

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 intensive 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 15 credits of graduate level course work and 625 hours of clinical practice.

Admission Criteria
Hold an MSN degree from a professionally accredited nursing program.
Minimum of a 3.0 GPA on a 4.0 scale for the master’s degree program.
Recent acute/critical care experience (within the past three years).
A 300 word essay describing professional goals.
Completion of the following prerequisite courses: graduate level pharmacology, pathophysiology, and advanced assessment.
Completion of an interview with the selection committee.
Advanced Cardiac Life Support (ACLS) Certification.

Program of Study

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:691</td>
<td>Acute Care Nurse Practitioner I</td>
<td>4</td>
</tr>
<tr>
<td>8200:692</td>
<td>Clinical Management II</td>
<td>2</td>
</tr>
<tr>
<td>8200:693</td>
<td>Acute Care Nurse Practitioner II</td>
<td>4</td>
</tr>
<tr>
<td>8200:695</td>
<td>Acute Care Nurse Practitioner III</td>
<td>4</td>
</tr>
<tr>
<td>8200:696</td>
<td>Clinical Reasoning</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

ADDITIONAL CREDENTIALS

Addiction Counseling

John J. Zarski, Ph.D., Department Chair

This certificate program represents specialty training in addiction counseling. The curriculum emphasizes the empirical foundations for theory, assessment, treatment, planning and intervention with addictive disorders. Each student will complete an internship and participate in addiction research. This program will be of special interest to graduate students and graduate degree professionals in counseling or related behavioral sciences such as psychology, social work, and nursing.

Admission

Persons are eligible for admission to the Graduate Certificate Program in Addiction Counseling if they are currently enrolled in a master’s degree program in counseling or a closely related field or currently hold a master’s degree in counseling or a closely related field. To participate in the program the student should:

- Be formally admitted to The University of Akron as a degree seeking or a special non-degree graduate student.
- Make written application to the program to the Counselor Education Admissions Committee in the Department of Counseling and Special Education.
- Receive written notification for admission from the Counselor Education Admissions Committee.
- Consult with the Counselor Education Internship Coordinator to plan for an internship in an appropriate addiction counseling setting.

Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>9600:670</td>
<td>Addiction Counseling I: Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>9600:712</td>
<td>Addiction Counseling II: Assessment and Treatment Planning</td>
<td>2</td>
</tr>
<tr>
<td>9600:734</td>
<td>Addiction Counseling III: Models and Strategies of Treatment</td>
<td>3</td>
</tr>
<tr>
<td>9600:685</td>
<td>Internship in Counseling</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>15-16</strong></td>
</tr>
</tbody>
</table>

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 director of the department 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):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3700:570</td>
<td>Campaign Management I</td>
<td>3</td>
</tr>
<tr>
<td>3700:571</td>
<td>Campaign Management II</td>
<td>3</td>
</tr>
<tr>
<td>3700:572</td>
<td>Seminar: Political Influence and Organizations</td>
<td>3</td>
</tr>
<tr>
<td>3700:685</td>
<td>Internship in Government and Politics</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives:

Six credits selected from the following (at least 3 credits must be from 3700:502, 540, 572, 573, 574, 575, 576, or 630):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3700:502</td>
<td>Politics and the Media</td>
<td>3</td>
</tr>
<tr>
<td>3700:540</td>
<td>Survey Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>3700:572</td>
<td>Campaign Finance</td>
<td>3</td>
</tr>
<tr>
<td>3700:673</td>
<td>Voter Contact and Elections</td>
<td>3</td>
</tr>
<tr>
<td>3700:674</td>
<td>Political Opinion, Behavior and Electoral Policies</td>
<td>3</td>
</tr>
<tr>
<td>3700:575</td>
<td>American Interest Groups</td>
<td>3</td>
</tr>
<tr>
<td>3700:576</td>
<td>American Political Parties</td>
<td>3</td>
</tr>
<tr>
<td>3700:630</td>
<td>Seminar in National Politics</td>
<td>3</td>
</tr>
</tbody>
</table>

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 an M.A. 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 12 credit program, the students are eligible to sit for the psychiatric nurse practitioner certification examination.
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 15 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
- 8200:655 Child and Adolescent Health Nursing II
- 8200:656 Pharmacology for Child and Adolescent Health Nursing
- 9200:672 Independent Study

Total: 15

COMPOSITION
Martin McKoski, Ph.D., Director

Requirements
To be eligible for the certificate in composition, a person must be admitted to the University as a graduate student (with either full or provisional status). An eligible person interested in the program should contact the program director. Five courses in composition and linguistics are required. Other appropriate English courses in composition or linguistics may be substituted as optional courses with the permission of the director.

Required Courses:
- 3300:676 Seminar: Theory and Teaching of Basic Composition
- 3300:673 Theories of Composition
- 3300:674 Seminar Research Methodology in Composition

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

DIVORCE MEDIATION
Helen Cleminshaw, Ph.D., Coordinator

Requirements
This graduate certificate program in divorce mediation requires a minimum of 15 graduate credits dependent upon previous educational background. The program has been designed to serve the practicing or prospective divorce mediator.
All applicants to the program should have previously earned a law degree or a master's degree in 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 the 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
- 1800:602 Divorce Mediation Practicum

Select at least one from each area:
- Law
  - 9200:638 Family Law
  - 7400:661 Family Consumer Law
- Accounting
  - 6200:601 Financial Accounting
  - 9200:621 Accounting for Lawyers

CANCELLATION 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 program represents a concentration in theoretical and practical knowledge in collaborative cross-systems case management for children and families in the context of community-based services. This course of study promotes collaboration among disciplines and services.

Admission
To participate in the program the student should:

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

Make written application to the program and receive written notification of admission from the Center for Family Studies.

Requirements
Core:
Students should successfully complete all three of the core courses listed below. However, the first two courses plus three hours of electives must be completed prior to the student's enrollment in the practicum course.

- 7400:561 Case Management for Children and Families I
- 7400:562 Case Management for Children and Families II
- 7400:563 Practicum in Cross-Systems Case Management for Children and Families

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

- Home-Based Intervention
  - 1820:501 Home-Based Intervention Theory
  - 1820:502 Home-Based Intervention Techniques and Practice

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 15 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.
Family

- Family Courses
  - 5600:655 Marriage and Family Therapy: Theory and Techniques 3
  - 5600:667 Marital Therapy 3
  - 7400:607 Family Dynamics 3

Electives:

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

- 5600:647 Career Counseling 3
- 5600:669 Systems Theory in Family Therapy 3
- 7400:541 Family Crisis 3
- 7400:622 Family in Life Span Perspective 2
- 5200:684 Alternative Dispute Resolution 3

GERONTOLOGY

Harvey Sterns, Ph.D., Director
Isadore Newman, Ph.D., Associate Director
Terry H. Albanese, Ph.D., Program Coordinator
Gerontology Certificate Program, Practicum Coordinator
Jerome Kaplan, Ph.D., Program Coordinator,
Nursing Home Administrator Program

Requirements

This certificate program is a special course of study in gerontology that complements 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 help 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 the certificate program and certify, through the director of the Institute, that all requirements for 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, NEUCOM.

Admission

To participate in the program at the graduate level, a student must:

- Obtain admittance to The University of Akron Graduate School.
- Submit an application to the program countersigned by the student's major academic advisor.
- Participate in an interview with the Director or a designated faculty member of the Institute for Life-Span Development and Gerontology.
- Consult with the director or a designated faculty member to formulate a program of study.
- Receive written notification for admission from the director of the Institute for Life-Span Development and Gerontology.

Program

Minimum: 18 credits.

Core:

- 3006:690 Interdisciplinary Seminar in Life-Span Development and Gerontology 3
- 3006:695 Practicum/Internship 3
- 3006:696 Research Methods Course 3

Electives:**

- 3006:696 Retirement Specialist 2
- 3006:690 Workshop - Women: Middle and Later Years 2
- 3006:690 Workshop - Aging: Process and Intervention 2
- 3006:680 Policy Problems: Aging*** 3
- 3730:620 Psychology Core II: Developmental, Perceptual, Cognition 4
- 3735:677 Physiology of Alcohol and Aging 4
- 3850:688 Social Gerontology 3
- 3850:681 Cross Cultural Perspectives in Aging 3
- 5400:641 Educational Gerontology Seminar 3
- 5400:681 Current Issues in Higher Education: Life-Span and Community Education 2
- 6500:687 Graduate Seminar in Health, Services Policy and Administration 3
- 6500:683 Health Services Systems Management (w/th permission) 3
- 7400:680 Family Relationships in Middle and Later Years 3
- 7400:690 Social Needs and Services for Later Adulthood and Aging 3

**From student's home department.

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

*Offered every other year

HIGHER EDUCATION

Dianne Brown-Wright, Ph.D., Coordinator

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 director. 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, 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:

- 5190:503 Seminar: History and Philosophy of Higher Education 3
- 5190:550 Introduction to the Study of Higher Education 3
- 5190:600 Advanced Administrative Colloquium in Higher Education 1
- 5190:601 Internship in Higher Education 2
- 5190:602 Internship in Higher Education Seminar 1

Total: 10

Options:

A student may select all three courses listed as "A" and omit "B" or may select an area of concentration and take one course from "A" under I, II, or III and the supporting course from "B" from the same heading:

Organization and Administration in Higher Education (I)

- 5190:515 Administration in Higher Education (A) 3
- 5190:525 Topical Seminar: Higher Education 3
- 5190:625 Organization and Policy Development in Higher Education (B) 3

Student Services in Higher Education (II)

- 5190:525 Topical Seminar in Higher Education 3
- 5190:610 Student Services in Higher Education (A) 3
- 5190:627 The American College Student (B) 5

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

- 5190:530 Higher Education Curriculum and Program Planning (A) 3
- 5190:635 Instructional Strategies and Techniques for the College Instructor (B) 3

Total hours required: 18.

*The awarding of this certificate is not contingent upon completion of a degree program. Undergraduate certificate programs require a 2.00 grade point average; graduate certificate programs require a 3.00 grade point average.
HOME-BASED INTERVENTION THERAPY
Richard N. Shepler, M.A.Ed., Coordinator

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

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

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

All students enrolled in the home-based certificate programs will enroll in the core course in Home-Based Intervention. Students enrolled in the undergraduate and postbaccalaureate program will enroll in the courses at the undergraduate level. Students admitted to the Graduate School as degree seeking or non-degree students will enroll in graduate courses. Graduate students enrolled in the core courses at the 500 level will have an additional graduate level project.

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

Requirements

Core Courses:

<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</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 theoretical frameworks from their discipline or related areas as follows:

Theoretical Frameworks:

• Systems Theory
  3800:620 General Systems Theory
  5600:643 Theories and Philosophy of Counseling
  5600:695 Marriage and Family Therapy: Theory and Techniques
  7000:607 Family Dynamics

• Developmental Theory
  2850:512 Socialization: Child to Adult
  3900:602 Family in Life Span Perspective
  3900:605 Developmental Parent-Child Interactions
  4900:610 Child Development Theories

• Therapeutic Theory
  5600:651 Techniques in Counseling
  5600:655 Mental Health
  5600:669 Systems Theory in Family Therapy

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
  3750:704 Theories of Personality

• Sociology
  3850:650 Sociology of Mental Illness
  3850:658 Family Sociology
  3850:753 Family and Health (Special Topics)

• Counseling
  6600:550 Counseling Problems Related to Life-Threatening Illness and Death
  6600:560 Special Seminar: Multicultural Counseling
  6600:620 Special Seminar: Substance Abuse
  6600:620 Special Seminar: Human Sexuality

• Special Education
  6610:540 Developmental Characteristics of Exceptional Individuals
  6610:650 Family Dynamics and Communication in the Educational Process
  6610:654 Collaboration and Consultation Skills for Special Educators

• Multicultural Education (Curricular and Instructional Studies)
  5500:571 Characteristics of Culturally Diverse Populations

• Family and Consumer Sciences
  7400:501 Family-Life Patterns in the Economically Depressed Homes
  7400:504 Adolescence in the Family Context
  7400:506 Family Financial Management
  7400:540 Family Crisis
  7400:542 Human Sexuality
  7400:546 Culture, Ethnicity, and the Family
  7400:590 Workshop in Family and Consumer Sciences: Family and Divorce
  7400:596 Parent Education

• Social Work
  7750:510 Minority Issues in Social Work Practice
  7750:551 Social Work and Child Welfare
  7750:552 Social Work and Mental Health
  7750:564 Social Work in Juvenile Justice

MANAGEMENT OF TECHNOLOGY
R. Ray Gehani, D.Eng., Ph.D., Director

In an increasingly global economy that is integrated with technology, an effective and efficient management of technology driven enterprises has emerged as a strategic requirement for their survival and growth. A certificate program in Management of Technology cooperatively developed by the College of Business Administration and the College of Polymer Science and Polymer Engineering is the expectation and strong requirement of potential employers and members of the Advancement Councils for the two colleges. The College of Business Administration, in consultation with the College of Polymer Science and Polymer Engineering, has therefore developed a graduate certificate in Management of Technology. The Graduate Certificate Program in Management of Technology offers coursework in Management of Technology and other related business disciplines. The Certificate will prepare the learner from the College of Polymer Science and Polymer Engineering to effectively and efficiently manage a polymer technology driven enterprise, and run the technology function of other manufacturing and service enterprises.

Persons are eligible for admission to the Graduate Certificate Program in Management of Technology if they have been admitted to a master’s degree program in the College of Polymer Science and Polymer Engineering.

Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6600:665</td>
<td>Management of Technology</td>
<td>3</td>
</tr>
<tr>
<td>6620:600</td>
<td>Marketing Concepts</td>
<td>3</td>
</tr>
<tr>
<td>6620:601</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>6550:600</td>
<td>Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>6850:656</td>
<td>Management of International Operations</td>
<td>3</td>
</tr>
<tr>
<td>6500:650</td>
<td>Fundamentals of Human Resource Administration</td>
<td>3</td>
</tr>
<tr>
<td>6500:506</td>
<td>Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>6500:602</td>
<td>Computer Techniques for Management</td>
<td>3</td>
</tr>
<tr>
<td>6600:575</td>
<td>Business Negotiation</td>
<td>3</td>
</tr>
<tr>
<td>6600:603</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>6720:610</td>
<td>Accounting, Management and Control</td>
<td>3</td>
</tr>
<tr>
<td>6600:540</td>
<td>Product Planning</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 the program will be limited to 20 credits. If the student wishes to pursue more than 20 credits, the student must be admitted to the MA 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:
- 3980600 Basic Analytical Research 3
- or
- 3980601 Advanced Research and Statistical Methods 3

Options:

Geography/Urban Planning
- 3350600 Introduction to Planning Theory 3
- 3350600.1 Seminar: Urban Planning Design 3
- 3350600.1.2 Seminar: Planning Theory and Innovation 3

Urban Studies
- 3350670 Research for Futures Planning 3
- 3350673 Computer Applications in Public Organizations 3

Urban Service Systems
- 3980620 Social Services Planning 3
- 3980621 Urban Society and Service Systems 3
- 3980671 Program Evaluation in Urban Studies 3

PARENT AND FAMILY EDUCATION

Helen K. Clemens, 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 Center for Family Studies.

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.

Electives:
Students must successfully complete six credits of coursework selected from among the various departmental courses listed below. These credits will be chosen from departments outside the student’s discipline.

- Family and Consumer Sciences
  - 7400501 Family-Life Patterns in the Economically Depressed Home 3
  - 7400504 Adolescence in the Family Context 3
  - 7400540 Family Crisis 3
  - 7400546 Culture, Ethnicity and the Family 3
  - 7402602 Family in Life-Span Perspective 3
  - 7402607 Family Dynamics 3
  - 7402610 Child Development Theories 3
  - 7402651 Family and Consumer Law 3
  - 7402665 Development in Infancy and Early Childhood 3

- Social Work
  - 7750555 The Black Family 3
  - 7750685 Social Work Practice: Family and Children 3
  - 7750686 Social Welfare Policy and Services: Family and Children 3

- Nursing
  - 8200651 Child and Adolescent Health Nursing I 3

- Psychology
  - 3750530 Psychological Disorders of Children 4
  - 3750576 Child Psychology 4
  - 3750577 Psychology of Learning Disabilities 4

- Sociology
  - 3850512 Socialization Child to Adult 3
  - 3850577 Family Analysis 3

- Educational Foundations
  - 5100484 Individual and Family Development Across the Lifespan 3
  - 5100721 Learning Processes 3

- Educational Guidance and Counseling
  - 5600646 Multicultural Counseling 3
  - 5600648 Individual and Family Development Across the Lifespan 3
  - 5600655 Marriage and Family Therapy: Theories and Techniques 3
  - 5900667 Mental Therapy 3
  - 5900669 Systems Theory in Family Therapy 3

- Special Education
  - 5610545 Developmental Characteristics of Exceptional Individuals 3
  - 5610559 Communication and Consultation with Parents and Professionals 3

- Multicultural Education (Curricular and Instructional Studies)
  - 5500571 Characteristics of Culturally Diverse Populations 3

- Educational Administration
  - 5710604 School Community Relations 3

PUBLIC POLICY

Stephen C. Brooks, Ph.D., Chairman, Coordinating Committee

Program
This program will assist the person in understanding, formulating and implementing decisions in the public realm. A person who is interested in government service, administration of publicly supported institutions and the teaching of government at the college level should find such an interdisciplinary program to be of great value.

Admission
Persons are eligible for admission to the Graduate Certificate in Public Policy Program if they have been admitted to graduate study as non-degree students in the departments of economics, political science or sociology, or are pursuing a master's or doctoral degree in one of those three departments. Students who are pursuing a graduate degree in other departments at the University may be 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)
  - 3250530 Human Resource Policy 3
  - 3250531 Public Finance 3
  - 3250665 Seminar in Economic Planning 3

- Political Science (choose one)
  - 3700541 The Policy Process 3
  - 3700542 Methods of Policy Analysis 3
  - 3700668 Seminar in Public Policy Agenda and Decisions 3

Electives:
- 3700670 Seminar in the Administrative Process 3
TEACHING ENGLISH AS A SECOND LANGUAGE*

Kenneth J. Pakenham, Ph.D., Director

**Requirements**

This program is intended for those who seek training in the teaching of English as a second language (ESL) at the elementary or high school level or who wish to obtain an initial qualification in teaching ESL in order to teach 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>3300:588</td>
<td>Seminar in English: Grammatical Structures of English</td>
<td>2-3</td>
</tr>
<tr>
<td>5500:570</td>
<td>Multicultural Education in the U.S. **</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5500:588</td>
<td>Seminar in English: Sociolinguistics **</td>
<td>2-3</td>
</tr>
<tr>
<td>5500:543</td>
<td>Techniques for Teaching ESL in the Bilingual Classroom</td>
<td>4</td>
</tr>
</tbody>
</table>

*These courses must be completed within the first 30 semester hours of graduate credit.

**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>3300:588</td>
<td>Seminar in English: Grammatical Structures of English</td>
<td>2-3</td>
</tr>
<tr>
<td>5500:570</td>
<td>Multicultural Education in the U.S. **</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5500:588</td>
<td>Seminar in English: Sociolinguistics **</td>
<td>2-3</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, undergraduate certificate programs require a 2.00 grade point average.

**Choice to be decided in consultation with the program director.
Section 5

Research Centers and Institutes
Research Centers and Institutes

University Research Council:

G. Edwin Wilson, Ph.D., Interim Associate Vice President for Research (interim chair)
Roger B. Creel, Ph.D., Dean, Buchtel College of Arts and Sciences
Charles M. Oye, Ph.D., Dean, Graduate School
Frank N. Kelley, Ph.D., Dean, College of Polymer Science and Polymer Engineering
S. Graham Kelly, Ph.D., Interim Dean, College of Engineering
David E. Kyvig, Ph.D., History
Ted A. Mallo, J.D., Vice President and General Counsel, Secretary, Board of Trustees
Gerald M. Parker, Director, Research Services and Sponsored Programs
Jerri H. Stinner, Ph.D., Biology
Mark B. Tausig, Ph.D., Sociology
John C. Tiernan, LL.M., Assistant to the General Counsel for Intellectual Property Administration
James L. White, Ph.D., Director, Institute of Polymer Engineering

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, centers, and institutes. The council consists of the Interim Associate Vice Provost for Research, the Director of Research Services and Sponsored Programs, representatives of the Faculty Senate, various college deans and institute directors, and General Counsel. Sponsored research activities on campus are coordinated by the Interim Associate Vice Provost for Research and the Director of Research Services and Sponsored Programs.

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

Stanley Ritter, Ph.D., Director

This institute was established in 1979 to promote interdisciplinary studies in the rapidly growing areas of knowledge which overlap the fields of biology and medicine, on the one hand, and engineering and the physical sciences, on the other. It conducts seminars, courses and degree programs in biomedical engineering in association with the College of Engineering and individual departments. In addition to its research and educational functions, the institute provides a research service to local hospitals and industry, as well as to private and government agencies. The premise for this program is that the combined resources of the University, Northeastern Ohio Universities College of Medicine and affiliated organizations will often permit more cost-effective solutions than would be possible by an individual or group doing the research independently. The work of the institute is carried out by faculty of the Department of Biomedical Engineering in association with "members" selected from the faculties of The University of Akron and Northeastern Ohio Universities College of Medicine, as well as from the ranks of area physicians, engineers and scientists. The institute and the department occupy the third floor of the Olson Research Center on the north edge of the campus.

Center for Conflict Management

For information, contact the office, 201 Leigh Hall, (330) 972-6513.

The Center for Conflict Management provides students with the opportunity for an interdisciplinary program of study in resolving and managing conflicts in the areas of Business/Economics/Labor, Family/Community, and the International arena. Course programs draw on the resources of a wide spectrum of the University's academic departments. Upon completion of all selected courses, students receive not only academic credits for the courses but a Certificate for Conflict Management in their area of specialization. The Center sponsors workshops for teachers, special campus programs, and research projects. It also collaborates with community organizations and similar programs on other campuses.

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 material and programs. It also fosters understanding and appreciation of the American economic system.

Center for Environmental Studies

Annabelle M. Foos, Ph.D., Interim Director

The Center for Environmental Studies matches the expertise of 56 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 issue. 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 seminars, conferences and round table groups 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.

Center for Family Studies

Helen K. Clemintshaw, Ph.D., Director

The Center for Family Studies, established in 1979, was designed to stimulate and encourage the interdisciplinary study of the family. It serves both the University and the community by fostering collaboration between faculty, students, practitioners and community leaders on curriculum development, educational conferences and seminars, research and training, and public policy relevant to important family issues. The Center is represented by faculty from 5 colleges and over 15 disciplines. It also includes leaders from various community systems, such as the schools, hospitals, courts, churches, mental health, social and health care agencies. In addition, the Center has a fellows program in which outstanding faculty and community leaders are named as either fellows, adjunct fellows or senior fellows.

The Center offers certificates in the following specialty areas: Divorce Mediation and Home-Based Intervention. For more information, please refer to the descriptions of interdisciplinary and certificate programs in the Bulletin of the General Bulletin for further information.

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.
Training Center for Fire and Hazardous Materials

David H. Hoover, Ph.D., Director

The Training Center for Fire and Hazardous Materials brings the University, government and industry together into one comprehensive regional center to integrate educational programs, fire and hazardous materials training and other applications of fire and safety technology. The center coordinates seminars and workshops presented by the Federal Emergency Management Agency (FEMA), the Division of State Fire Marshal and other related organizations. Training in all phases of hazardous materials contamination 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.

William and Rita Fitzgerald Institute for Entrepreneurial Studies

In 1995, a generous gift from William and Rita Fitzgerald created the Fitzgerald Institute for Entrepreneurial Studies in the College of Business Administration. The Institute was established to promote the principles of free enterprise and encourage entrepreneurial spirit and practices both within the University's curriculum and throughout the business community.

The Fitzgerald Institute focuses on the development of curriculum appropriate for both new ventures and the entrepreneurial development and growth of existing businesses. The Institute provides the needed link between the University and the community of entrepreneurs critical to business development in the future. The Fitzgerald Institute also sponsors several outreach projects, such as the Center for Family Business, The Center for Small Business, and Students in Free Enterprise.

For information, contact the Institute, CBA 336, (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 also develops short courses and seminars designed to help improve the international competitiveness of area business.

Institute for Life-Span Development and Gerontology

Harvey L. Sterns, Ph.D., Director
Isadore Newman, Ph.D., Associate Director
Terry H. Al-Tarase, Ph.D., Program Coordinator, Gerontology Certificate Program; and Practicum Coordinator
Jerome Kaplan, Ph.D., Program Coordinator, Nursing Home Administrator Program

The Institute for Life-Span Development and Gerontology, founded in 1976, coordinates multidisciplinary credit certificate programs in gerontology at the undergraduate and graduate levels. In addition, this certificate is included in the Ohio Board of Examiners of Nursing Home Administrators approved course of study in Nursing Home Administration which combines a Bachelor of Science degree in management (Human Resource Management Concentration) with a Certificate in Gerontology.

The Institute for Life-Span Development and Gerontology has grown into a campuswide program involving more than 65 faculty in 23 different departments, representing 6 colleges. Students in the certificate programs carry out field placements at numerous community service settings. There are over 40 courses at the undergraduate and graduate levels. Research, education, training and service support has been received from the U.S. Administration on Aging, National Institute on Aging, U.S. Department of Education, Office of Special Education and Rehabilitation Services, National Institute on Disability and Rehabilitation Research, AARP Andrus Foundation, Ohio Department of Aging, and Area Agency on Aging 106. The Institute also serves as a major site for the Rehabilitation Research and Training Center Consortium on Aging and Developmental Disabilities involving seven universities in six states.

Examples of outreach activities include the Elderhostel program, offered each summer for older adults who participate in a week-long residential learning experience. The institute is a member of the Northeastern Ohio Consortium on Geriatric Medicine and Gerontology, joining together with the Office of Geriatric Medicine and Gerontology, Northeastern Ohio Universities College of Medicine; Gerontology Center, Kent State University; and Gerontology Committee, Youngstown State University.

Microscale Physiochemical Engineering Center (MPEC)

George G. Chase, Ph.D., Director

The Microscale Physiochemical Engineering Center (MPEC) was established in 1996 by faculty with a common research interest in materials composed of very small particles. These small particles occur, for example, in heterogeneous catalysts, fluid/solid separations, paper/pulp processing, soil remediation, wastewater decontamination, and solid transport.

The unique feature of MPEC is the ability to form multidisciplinary teams of faculty and graduate students to solve specific industrial problems.

The Center hosts an annual conference, promotes networking, provides a forum for industrial-university cooperation, and is a consortium of industrial sponsors for fundamental and applied research in microscale physiochemical engineering.

Center for Nursing

Elizabeth Kinion, Ed.D., R.N., Director

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

Since 1981 the Center for Nursing has provided wellness services to campus students, faculty and staff as well as outreach services to community residents of all ages. Services include health assessments and nursing diagnosis, stress management and self-care assistance, family and group education and support sessions.

Community outreach to vulnerable populations is a major emphasis of the center.

Center for Organizational Development

Mark Lewis, M.A., Director

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

Institute for Policy Studies

Jesse F Marquette, Ph.D., Director
AnneMarie Scanbrick-Hauser, Ph.D., Associate Director
Richard W. Stratton, Ph.D., Associate Director

The Institute for Policy Studies houses a number of programs, located in two units, the Urban and Policy Research Division and Institutional Research.

The Urban and Policy Research Division houses the University of Akron Survey Research Center with responsibility for external grant and contract research, research support for the Urban University Linkage Program, sponsored research for faculty, and internal University surveys. The research facility is equipped to facilitate telephone interviewing, mail surveys, focus group administration, intercept studies and personal interviews, database analysis, and computer assisted data entry and multiple method studies. Most of the work conducted at the Urban and Policy Research Division is on behalf of government or non-profit agencies. Institutional professional staff are available for consultation in the development of grant proposals and budgets.

The Urban and Policy Research Division (UPRD) also has responsibility for the administration of the Ohio Board of Regents' Urban University Program (UUP) which links eight state universities to collaborate on the identification of urban problems and propose solutions designed to improve urban regions in Ohio. The University of Akron Urban University Program, in addition to the collaborative mission of the Ohio UUP, coordinates community oriented research and policy analysis. The UPRD also houses the Ohio State Data Center and coordinates GIS activities with the Department of Geography and Planning.

The Institutional Research Division has responsibility for research and analysis of University operations and assessment. The Institutional Research Division mission is to ensure the timely submission of all appropriate Ohio Board of Regents reports and to coordinate the development and maintenance of the appropriate data structures for the continuing analysis of university operations and assessment. The Institutional Research Division also maintains a regularly updated web site of institutional information.

Research Centers and Institutes 81
Institute of Polymer Engineering

James L. White, Ph.D., Director

The Institute of Polymer Engineering carries out fundamental and applied research in polymer processing, engineering performance and associated characterization. The Institute, founded in 1962, seeks to be a major intellectual and research resource in northeast Ohio. The Institute maintains up-to-date and futuristic processing and characterization laboratories, with continued interest in development investigation of new process technology and new materials. Its activities also include organization of scientific symposia and various seminars related to polymer processing and engineering.

The Maurice Morton Institute of Polymer Science

Frank Harris, Ph.D., Director

The Institute is concerned with basic and applied research in polymers. It was established in 1956 as the Institute of Rubber Research and in 1964 became the interdisciplinary Institute of Polymer Science. The University’s first Ph.D. program in polymer chemistry was started in 1958 and was administered by the Institute until a separate Department of Polymer Science was established in 1967. The Institute maintains extensive laboratory facilities, an applied research group, a Macromolecular Modeling Center, and a mini pilot plant for polymer synthesis. It is the principal organization responsible for external funding of research projects and graduate fellowships in polymer science.

Process Research Center (PRC)

The Process Research Center (PRC), founded in 1990, focuses on fundamental and applied research involving new chemical processes and novel materials. The specialties of the PRC include chemical reactors, separation technology, new polymeric materials, biotechnology, and environmental engineering. In conjunction with this, the Center operates several scale-up and mini pilot plant facilities.

The PRC aims at responding more positively to the needs of industries, enhancing cooperation between the University and industries. Great opportunities are available for both graduate and undergraduate students to conduct practical research.

For information, contact Dr. Steven S. Chuang, (330) 972-6993

Fisher Institute for Professional Selling

Jon M. Hawes, Ph.D., Director
James T. Strong, Ph.D., Associate Director

The Fisher Institute for Professional Selling was founded in 1963. 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.

Center for Small Business

Jeffrey C. Dilts, Ph.D., Director

Established in 1973, the Center for Small Business (formerly the Small Business Institute) offers full management assistance counseling to area businesses through the utilization of senior students, working as advisors under the supervision of the College of Business Administration faculty. Over 350 firms have been serviced by the Center since its founding.

Center for Urban Studies

Nancy K. Grant, Ph.D., Director

The Center for Urban Studies (CUS) is The University of Akron’s oldest policy research and professional service unit. Established in 1965, the Center acts as a bridge between the University and the Akron community, Ohio and beyond in pursuit of the University’s urban mission.

Using the talents of faculty, researchers, support staff, and students, the Center explores important economic, social, and political issues, works with others to reach a better understanding of these issues, and assists groups and organizations actively engaged in problem solving, coalition building, or strategic planning.

This multidisciplinary approach encourages faculty and graduate student participation from all departments with an urban focus. A part of the Buchtel College of Arts and Sciences, the Center for Urban Studies provides the setting and facilities through which interested faculty and graduate students do become involved in urban research or professional service activities in the urban community. For many graduate students, experience gained in the Center for Urban Studies becomes an important complement to formal classroom training in their career participation.
Courses of Instruction
# Course Numbering System*

## INDEX

### Interdisciplinary Programs
- 1800 Divorce Mediation
- 1820 Home-Based Intervention Therapy
- 1880 Medical Studies
- 3000 Cooperative Education

### Bachelor College of Arts and Sciences
- 3100 Biology
- 3110 BiologYNEOUCOM
- 3150 Chemistry
- 3200 Classics
- 3210 Greek
- 3220 Latin
- 3250 Economics
- 3300 English
- 3350 Geography and Planning
- 3370 Geology
- 3400 History
- 3450 Mathematics
- 3460 Computer Science
- 3470 Statistics
- 3500 Modern Languages
- 3520 French
- 3530 German
- 3540 Economics
- 3550 Geology
- 3560 Physics
- 3580 Spanish
- 3600 Philosophy
- 3650 Physics
- 3700 Political Science
- 3750 Psychology
- 3800 Sociology
- 3850 Sociology
- 3960 Public Administration and Urban Studies

### College of Engineering
- 4200 Chemical Engineering
- 4300 Civil Engineering
- 4400 Electrical Engineering
- 4450 Computer Engineering
- 4600 Mechanical Engineering
- 4800 Biomedical Engineering

### College of Education
- 5100 Educational Foundations and Leadership
- 5120 General Administration
- 5180 Higher Education Administration
- 5400 Technical and Vocational Education
- 5500 Cumulative and Instructional Studies
- 5550 Physical Education
- 5560 Outdoor Education
- 5570 Health Education
- 5610 Special Education and Counseling
- 5610 Special Education and Counseling
- 5610 Special Education and Counseling

### College of Business Administration
- 6200 Accountancy
- 6300 Entrepreneurship
- 6400 Finance
- 6500 Management
- 6600 Marketing
- 6700 Professional
- 6800 International Business

### College of Fine and Applied Arts
- 7100 Art
- 7200 Family and Consumer Sciences
- 7500 Music
- 7510 Musical Organizations
- 7520 Applied Music
- 7600 Communication
- 7700 Speech-Language Pathology and Audiology
- 7750 Social Work
- 7800 Theatre
- 7810 Theatre Organizations
- 7900 Dance
- 7910 Dance Organizations
- 7920 Dance Performance

### College of Nursing
- 8200 Nursing

### College of Polymer Science and Polymer Engineering
- 9841 Polymer Engineering
- 9871 Polymer Science

---

* A more detailed explanation of the numbering system can be found in Section Two, "Course Numbering System," in this Bulletin.
Interdisciplinary Programs

DIVORCE MEDIATION
1800:

601 DIVORCE MEDIATION 3 credits
Prerequisite: Admission to the Graduate Certificate Program on Divorce Mediation. Overview of divorce mediation process includes guidelines for negotiating separation and divorce agreements, division of personal and real property, support, custody, and future plans.

602 DIVORCE MEDIATION PRACTICUM 2 credits
Prerequisite: 601. Practical application of divorce mediation procedures. Review of strategies and ethical considerations.

HOME-BASED INTERVENTION THERAPY
1820:

503 HOME-BASED INTERVENTION THEORY 2 credits
Prerequisite: Admission to Certificate Program. Overview of home-based intervention to include philosophy and description of this programming in addition to assessment of family, home, and community environments.

504 HOME-BASED INTERVENTION TECHNIQUES AND PRACTICE 3 credits
Prerequisite: 503. Provides intervention techniques and skill areas required for home-based intervention and training opportunities for matching techniques with specific family problems.

505 HOME-BASED INTERVENTION INTERNSHIP 3.5 credits
Prerequisite: 504. Gives students the opportunity to apply knowledge of home-based intervention in actual delivery process working with families in their homes under the direct supervision of trained, experienced home-based intervention therapists.

MEDICAL STUDIES
1880:

501 SPECIAL TOPICS: MEDICAL EDUCATION 1-3 credits
May be repeated with a change of topic with a maximum of three credits toward graduation.
Prerequisites: Upper college student status and permission. Selected topics on medical education offered by professionals intended to provide advanced undergraduate education in continuing education for students and practitioners in the health services. Graded credit/no credit.

COOPERATIVE EDUCATION
3000:

501 COOPERATIVE EDUCATION 1-3 credits
Prerequisite: Must complete 12 graduate credit hours with at least a 3.0 grade point average. May be repeated for cooperative education credit only. Work in business, industry, or governmental agency. Comprehensive performance evaluation and written report required. Graded credit/no credit.

WOMEN'S STUDIES
3001:

580 FEMINIST THEORY 3 credits
Prerequisite: 3000-300. A survey of feminist theory to gain a broad understanding of feminist currents in contemporary feminist theory and the origins and development of women's thought.

585 SPECIAL TOPICS IN WOMEN'S STUDIES 1-3 credits
May be repeated; specialized topics and current issues in Women's Studies. Covers content and issues not currently addressed in other academic courses. Instruction will be on original source materials, critical analyses and the synthesis of empirical and theoretical aspects.

590 WORKSHOP 3 credits
May be repeated. Group experimental study of special issues in Women's Studies.

INSTITUTE FOR LIFE-SPAN DEVELOPMENT AND GERONTOLOGY
3006:

586 INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY 3 credits
Prerequisite: Permission. Overview of interdisciplinary seminar which focuses on life-span issues in research and development of gerontology and discipline. Emphasis is on aging as a process and the functional and emotional integration of the individual into his environment and community facilities and services.

588 SPECIAL TOPICS 3 credits
Prerequisite: Permission. Selected topics such as life-span development and gerontology, or determined. Emphasis is on aging as a process and the functional and emotional integration of the individual into his environment and community facilities and services.

588 RETIREMENT SPECIALIST 3 credits
May be repeated. Group studies of special topics in retirement. May be selected effective credit but not all part of the required specialization.

595 PRACTICUM IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY 2 credits
Prerequisite: permission. Supervised experience. May be repeated up to three times.

ENVIRONMENTAL STUDIES
3010:

501 SEMINAR IN ENVIRONMENTAL STUDIES 3 credits
Prerequisite: Upper college standing. Specific topics are selected from current and future topics of environmental science. May be repeated with different emphasis.

590 WORKSHOP IN ENVIRONMENTAL STUDIES 3 credits
Prerequisite: permission. May be repeated. Group studies of special topics in environmental science. May be selected effective credit but not all part of the required specialization.

602 EVALUATION OF ENVIRONMENTAL DATA 3 credits
Prerequisite: graduate standing. May be repeated. Special topics in evaluation of environmental data and techniques and fundamentals of interpreting with reference to current and future topics. May be repeated up to three times.
56.12 HUMAN PHYSIOLOGY 4 credits each
Prerequisites: senior or graduate standing. Detailed study of the functions of the human body with special emphasis on neuromuscular, cardiovascular, respiratory, renal and endocrine physiology. Laboratory.

56. GENERAL AND COMPARATIVE PHYSIOLOGY 4 credits
Prerequisites: T1 and one year of organic chemistry. Study of cellular, endocrine, respiratory, cardiovascular, endocrine and renal mechanisms involved in understanding physiology if a variety of invertebrate and vertebrate animals. Laboratory.

56. ADVANCED CARDIOVASCULAR PHYSIOLOGY 3 credits
Prerequisites: 462 or 562 or permission. Study of biophysical mechanisms involved in heart attack, stroke, fluid balance, hypertension and heart disease. Controversial issues in each area will be examined and current research presented.

56. VERTEBRATE EMBRYOLOGY 4 credits
Prerequisites: 461 or permission of instructor. Designed to introduce the process of vertebrate development. Lecture and lab work include descriptive and experimental embryology.

56. COMPARATIVE VERTEBRATE MORPHOLOGY 4 credits
Prerequisites: 461 or permission of instructor. Introduction to the comparative morphology of major vertebrates. The laboratory consists of dissections of representative vertebrates.

56. THE PHYSIOLOGY OF REPRODUCTION 3 credits
Prerequisites: 462,562 or permission. Study of the physiological mechanisms of reproduction throughout the animal kingdom, with special emphasis upon mammalian endocrinology, control. Controversial issues in each area will be examined and current research presented.

56. RESPIRATORY PHYSIOLOGY 3 credits
Prerequisites: 462,464,562 or permission. Study of mechanisms determining gas exchange including ventilation, blood flow, diffusion, and control systems. Emphasis will be given to normal human lung function. (Clinical aspects are not considered in detail.)

57. BIOLOGICAL REGULATIONS 1 credit
Prerequisite: Required of anyone working with animals, and covers government regulations, care of animals, and a lab to teach basic animal handling and measurement techniques.

57. MOLECULAR BIOLOGY 3 credits
Prerequisite: 3 credits. Introduction to the techniques of molecular biology, including recombinant DNA technology, application in biotechnology, medicine, and genetic engineering. Emphasis on gene regulation.

58. ADVANCED GENETICS 3 credits
Prerequisites: 2 credits. Nature of the gene, genetic codes, hereditary determinants, malignancy and malignancy in population. Laboratory and seminar.

58. PHARMACOLOGY 3 credits
Prerequisites: 317 or 269 or permission of instructor. Study of mechanisms from molecular to behavioral of how stress influences body systems and signals. The latest research and experimental issues are discussed.

58. MOLECULAR BIOLOGY 4 credits
Prerequisites: 361. Fundamentals of molecular biology, including recombinant DNA technology, application in biotechnology, medicine, and genetic engineering. Emphasis on gene regulation.

59. 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.

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

60. BASIC DNA TECHNIQUES 3 credits
Prerequisites: 317 or equivalent, or consent of instructor. Introduction to DNA techniques including extraction of DNA, cleavage of DNA and cloning. Laboratory.

61. ENVIRONMENTAL PHYSIOLOGY 3 credits
Prerequisites: 561, 562. Study of physiological reactions of healthy mammals to natural changes or extremes of physical environment.

62. MEDICAL PHYSIOLOGY, PATHOPHYSIOLOGY, AND PHARMACOLOGY 3 credits
Prerequisites: Admission to M.S.N. program, or 300, 551, 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.

62. CYTOLOGY 3 credits
Prerequisites: 318. Structural and functional organization of cells at the ultrastructural level. Three lectures; four hours a week.

63. ANIMAL CELL CULTURE 4 credits
Prerequisites: 317. Tissue culture techniques, biology and physiology of animal cells and tissues under in vitro conditions, including application of these techniques to radiobiology, cancer chemotherapy and animal cell genetics. Laboratory.

64. PRINCIPLES OF TRANSMISSION ELECTRON MICROSCOPY 3 credits
Prerequisites: 317 or equivalent. Modern cytological methods: transmission electron microscopy. A required laboratory section is devoted to demonstrating proficiency in fixation techniques, use of ultramicroscopes, light and electron microscopes and darkroom techniques.

65. PRINCIPLES OF SCANNING ELECTRON MICROSCOPY 3 credits
Prerequisites: 317 or 651 or equivalent. An introduction to modern cytological methods using the scanning electron microscope. A required laboratory section is devoted to demonstrating proficiency in fixation techniques, use of supplemental equipment such as the cold-calcium dip, applying the sputter-coating apparatus and the efficient use of the scanning electron microscope.

66. SPECIAL TOPICS: BIOLOGY 1-2 credits
(May be repeated). Prerequisite: permission. Special courses offered once or on a semestral basis. Open to original research. Required of all thesis option students who shall present their thesis research.

67. MASTER’S THESIS 16 credits
(May be repeated). A minimum of six credits is required for thesis option students.
506 STATE AND LOCAL PUBLIC FINANCE  3 credits
Prerequisite: 441, recommended 408. Examines economic rationale and problems for provision of goods and services by different governmental units. Considers alternative revenue sources and special topics.

526 ECONOMETRIC METHODS AND APPLICATIONS  3 credits
Prerequisite: 340.460 or 340.461. Application of statistical methods in economics and other social sciences. Topics include regression, hypothesis testing, maximum likelihood, and time series analysis. Application of computer is integral.

527 ECONOMETRIC FORECASTING  3 credits
Prerequisite: 230 or 330. Intensive study of current market business policies; issues such as discrimination, poverty, the changing industrial structure, and the economics of education are examined.

535 THE DEVELOPMENT OF AMERICAN CORPORATE STRUCTURE  3 credits
Prerequisite: 360.100 or 244. Topics include the evolution of American business structure to present and the changing dimensions of corporate structure and responsibility of the government. Case studies are utilized.

538 SPECIAL TOPICS: ECONOMICS  3 credits
Prerequisite: permission. Opportunity to study special topics and current issues in economics.

550 COMPARATIVE ECONOMIC SYSTEMS  3 credits
Prerequisites: 200 and 201 or permission of instructor. Systems of economic development, ranging from the theoretical extremes of a perfectly free market economy to the socialist varieties. Historical evolution of economic systems covering problems in theory and practice.

560 ECONOMIC DEVELOPMENT AND PLANNING FOR UNDERDEVELOPED COUNTRIES  3 credits
Prerequisites: 200 and 201 or 244. A basic problems in economic development. Theories of development. Government planning for development. Trade development and underdeveloped countries. Credit not available to students with credit for 5250.664.

561 PRINCIPLES OF INTERNATIONAL ECONOMICS  3 credits
Prerequisites: 200 and 201 or 244. International trade and foreign exchange, policies of free and controlled trade, international monetary problems.

575 DEVELOPMENT OF ECONOMIC THOUGHT  3 credits
Prerequisites: 200 and 201 or 244. Evolution of theory and method, relation of ideas of economists contemporary to conditions.

581 MONETARY AND BANCING POLICY  3 credits
Prerequisites: 340.460. Control over currency and credit, policies of control by central banks and governments, United States Treasury and Federal Reserve System.

587 URBAN ECONOMICS: THEORY AND POLICY  3 credits
Prerequisites: 200 and 201 or permission of instructor. Analysis of urban issues from an economic perspective. Emphasis on urban growth, land-use patterns, housing, income distribution, poverty and urban fiscal policy.

591 WORKSHOP IN ECONOMICS  1-2 credits
May be repeated. Group studies of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only.

600 FOUNDATIONS OF ECONOMIC ANALYSIS  3 credits
Prerequisite: graduate standing. Determination of national income, employment and price level. Aggregate consumption, investment and asset holding; decision problems faced by household and firm; Partial equilibrium analysis and comparison of monopoly and perfect competition. Applied exercises for students with credit for 682, 683, 671. If offered, applied the 30 graduate credits required for M.A. in economics.

602 MACROECONOMIC ANALYSIS I  3 credits

603 MACROECONOMIC ANALYSIS II  3 credits
Prerequisite: 602. Macroeconomic dynamics and stability analysis of closed and open Keynesian models. Study of transcendence for 682, 683, 671. If offered, applied the 30 graduate credits required for M.A. in economics.

606 ECONOMICS OF THE PUBLIC SECTOR  3 credits
Prerequisite: 602. Microeconomic analysis and public policy. Analysis of the market and non-market sectors. The incentive effects of government programs such as social insurance, education, and welfare programs. The effect of government programs on market outcomes.

610 FRAMEWORK OF ECONOMIC ANALYSIS  3 credits
Prerequisite: 611 or permission. A development of theoretical and analytical frameworks for a modern microeconomic and general equilibrium model. Discussion of applications of the framework to situations concerning demand, cost, supply, production, price, employment, and wage.

611 MICROECONOMIC THEORY I  3 credits
Prerequisites: 611 or permission. Modern theory of consumer behavior and of the firm. Determination of market prices. Optimization models, a foundation for competitive, allocative and productive efficiency.

612 MICROECONOMIC THEORY II  3 credits
Prerequisite: 611 or permission. Covers multiple equilibrium, general equilibrium and welfare economics. Extends the application of the microeconomic model to public policy and applied public policy theory.

615 INDUSTRIAL ORGANIZATION  3 credits
Prerequisite: 611 or permission. Examines link between market structure, firm conduct and economic performance. Measurement and effects of monopoly power; industrial concentration; and change.

617 THE ECONOMICS OF REGULATION  3 credits
Prerequisite: 615 or permission of instructor. Examines rationale, methods and success of government regulations of public utility, transportation and communications industries.

620 APPLICATIONS OF MATHEMATICAL MODELS TO ECONOMICS  3 credits
Prerequisites: courses in calculus, intermediate microeconomics or permission of the instructor. Review of selected topics from differential and integral calculus and their application to economics. Theory of optimization in production and consumption, static macroeconomic models. Analysis of growth and stability.

621 APPLICATION OF LINEAR MODELS IN ECONOMIC ANALYSIS  3 credits
Prerequisites: courses in matrix algebra, applied statistics, or permission of the instructor. Review of selected topics from matrix algebra, application to economic theory. Static and dynamic models, consumption technology and theory of demand, linear programming, general equilibrium analysis.

626 STATISTICS FOR ECONOMICSTICS  3 credits
Prerequisites: courses in elementary differential and integral calculus. 6300, 321, 202 or equivalent. A review of statistical theory and its application to economic analysis. Emphasizes on estimation and hypothesis testing at a prelude to econometrics.

631 ECONOMETRICS  3 credits
Prerequisite: 626 or equivalent. Formulation of functional relations among economic variables to provide a framework for statistical estimation from observational data and construction of multiplet equation models and methods of estimation.

633 SEMINAR IN RESEARCH METHODS  3 credits
Prerequisite: permission of instructor. A seminar in the research use of applied mathematical economics or econometrics. Emphasizes on individual development of a theoretical proposition or research statement, empirical examination and policy implications.

634 THEORY OF WAGES AND EMPLOYMENT  3 credits
Analytical approach to integration of economic theory with observed labor market phenomena. Discussion of wage and employment theories, effects of unions, collective bargaining theorems and effects of government regulation.

639 PUBLIC SECTOR LABOR MARKETS  2 credits
Prerequisite: 635 or permission of instructor. Examination of unique problem of public employees and collective bargaining agreements. Focus on legal framework, implicit nature of negotiations and special situation facing public employees.

644 SEMINAR ON ECONOMIC GROWTH AND DEVELOPMENT  2 credits
Prerequisite: 200 or 244. Review of main theories of economic growth since the age of classical economists. Problems in developing countries. Discussion of aggregate macroeconomic models of capital formation, investment, technology and external trade.

666 SEMINAR ON REGIONAL ECONOMIC ANALYSIS AND DEVELOPMENT  2 credits
Study of a particular national or international regional development. Any one or a combination of following regions may be considered: Middle East, North Africa, areas within Latin America, Southern Europe, Southeast Asia or Eastern Europe.

670 INTERNATIONAL MONETARY ECONOMICS  3 credits

671 INTERNATIONAL TRADE  3 credits
Traditional trade theory. Recent developments in trade policy, policy implications in trade relations among developed and developing economies.

683 MONETARY ECONOMICS  3 credits
Intensive study of important areas of monetary theory. Emphasis on integration of monetary and fiscal theory with other areas of contemporary economic policy issues.

693 READING IN ADVANCED ECONOMICS  1-2 credits each
A maximum of six credits may be applied toward the master's degree in economics. Intensive study of a selected problem area. An advanced economics course under supervision of instructor. Since the subject matter is dictated upon each case, the course may be taken repeatedly for credit.

699 DISSERTATION 3 credits
(May be repeated for a total of six credits)

ENGLISH 3300:

500 ANGLO SAXON  3 credits
Prerequisite: Completion of 100.111, 100.112, or their equivalents, or permission of the instructor. Studies in Old English language and Old English prose and poetry, including Beowulf.

503 DEVELOPMENT OF THE ARTHURIAN LEGEND  3 credits
Prerequisite: Completion of 100.111, 100.112 or their equivalents, or permission of the instructor. Traces evolution of Arthurian material from 540 to 1500 and beyond, with emphasis on characters, themes, events and treatments.

505 CHAUCER  3 credits
Prerequisite: Completion of 100.111 and 100.112 or their equivalents, or permission of the instructor. Close study of Chaucer's major works—The Canterbury Tales and Troilus and Criseyde in Middle English.

521 SWIFT AND POPE  3 credits
Prerequisite: Completion of 100.111 and 100.112 or their equivalents, or permission of the instructor. Study of the major British satirists, primarily those of post-World War II. Focus is on Spenser, Galsworthy, O’Casey, Osborne and Pinter.

600 HISTORY OF ENGLISH LANGUAGE  3 credits
Prerequisite: Completion of 100.111 and 100.112 or their equivalents, or permission of the instructor. Study of major British dramatists, particularly those of post-World War II. Focus is on Spenser, Galsworthy, O’Casey, Osborne, Arden and Pinter.

607 U.S. DIACLCTS: BLACK AND WHITE  3 credits
Prerequisite: Completion of 100.111 and 100.112 or their equivalents, or permission of the instructor. Development of English language from its beginnings; sources; shifts of vocabulary, its sounds, its rules, semantic change, political and social influences on changes; changes in phonology.

617 SYNONYMS  3 credits
Prerequisites: 341, and Completion of 100.111 and 100.112 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.

625 SEMINAR IN TEACHING ESL: THEORY AND METHOD  3 credits
Prerequisite: Completion of 100.111 and 100.112 or their equivalents, or permission of the instructor. Theoretical issues in linguistic description and language acquisition as related to learning of a second language. Elaboration of principles for the teaching of English as a second language based on research in linguistics, psycholinguistics and second language pedagogy.
GEOLOGY

3370:

505 ARCHAEOLOGICAL GEOLOGY 3 credits
Prerequisite: 101 by permission of instructor. Provides background in geologic principles and techniques relevant to archaeologists. Topics include stratigraphy, artifact dating, locality assessment, paleoecology, lithic and ceramic analysis. Required lab.

510 REGIONAL GEOLOGY OF NORTH AMERICA 3 credits
Prerequisites: 101, 102, 230 or permission. Recommended: 350. Examination of prehistoric provincial geology of North America, including structural, stratigraphic, and geochemical techniques. Responsible for landslides in each province. Laboratory.

511 GLACIAL GEOLOGY 3 credits
Prerequisite: 230 or permission. Causes of and effects of Pleistocene expansion of polar ice masses with emphasis on glacial deposits and world climate changes.

521 COASTAL GEOLOGY 3 credits
Prerequisites: 101, 230 or permission. Study of the origins and evolution of coasts and coastal deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated marine sediments.

525 PRINCIPLES OF SEDIMENTARY BASIN ANALYSIS 3 credits
Prerequisites: 101, 230, 231, or permission. Primarily the study of depositional systems, regional and global stratigraphic cycles, and sedimentation and paleoecology.

532 OPTICAL MINERALOGY-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. Instructor.

535 PETROLEUM GEOLOGY 3 credits

536 COAL GEOLOGY 3 credits
Prerequisites: 101, 230. 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: 101, 230 or equivalent. Study of metallic and nonmetallic mineral deposits emphasizing the paragenesis and exploration Laboratory.

541 FUNDAMENTALS OF GEOPHYSICS 3 credits
Prerequisites: 3430/223 or permission and 3650/292. Fundamental concepts in solid earth geophysics, particularly gravity, geoid, and geomagnetism. Contributions of geophysics to recent major developments in geoscience.

546 EXPLORATION GEOPHYSICS 3 credits
Prerequisites: 3430/223, 3650/292 or permission. Basic principles and techniques of geophysical exploration with emphasis on geophysical well logging, with emphasis on electrical, radio, and sonic methods and their quantitative evaluation. Applications in oil, gas, and groundwater exploration. Laboratory.

549 BOREHOLE GEOPHYSICS 3 credits
Prerequisite: permission of instructor. Basic principles and techniques of geophysical well logging and geophysical exploration with emphasis on geophysical well logging.

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: 330 and 360 lab. Provides advanced training in paleontological subjects. Topics will include paleoenvironmental analysis, biostratigraphic correlation, fossil preservation, diversification and extinction patterns and geochronology of fossils.

563 MICROPALAEONTOLOGY 3 credits
Prerequisite: 230 or permission. Introduction to techniques of microfossil evolution and paleoecology of selected microfossil groups. Laboratory.

570 GEOCHEMISTRY 3 credits
Prerequisites: 101, 230, 231, 350/321, 133, or permission. Application of chemical principles to the study of geologic processes. Laboratory.

572 STABLE ISOTOPE GEOCHEMISTRY 3 credits
Prerequisites: 3150/151, 102, 103, 3430/221, 3650/291, 370/201, 102. Application of stable isotope geochemistry to the study of the hydrologic and carbon cycles, modern sedimentary environments, and the interpretation of sedimentary rocks.

574 GROUNDWATER HYDROLOGY 3 credits
Prerequisites: 101, 230, and 231. A survey of analytical methods used to solve geologic problems with emphasis on methods for the determination of the origin and distribution of water. (4 credits; credits may be used to the degree requirements. Credits/Noncredit)

581 ANALYTICAL METHODS IN GEOLOGY 2 credits
Prerequisites: 230 and 231. A survey of analytical methods used to solve geologic problems with emphasis on methods for the determination of the origin and distribution of water. (4 credits; credits may be used to the degree requirements. Credits/Noncredit)
MATHEMATICS

3450:

501 HISTORY OF MATHEMATICS

Preliminary 225. Origin and development of mathematical ideas. Credit, not degree applicable. (Offered irregularly)

516 ADVANCED LINEAR ALGEBRA

Preliminary 335. Vector spaces, linear transformations, matrices, determinants. Credit, not degree applicable.

511 ALGEBRA I

Preliminary 225. Groups, rings, fields, integral domains, field extensions, isomorphism theorems, Chevalley's basis theorem, field of fractions.

512 ALGEBRA II

Preliminary 336. Introduction to algebraic number theory, Galois theory, representation theory. (Credit, not degree applicable)

513 THEORY OF NUMBERS

Preliminary 336. Dirichlet's theorem on primes in arithmetic progressions, construction and applications of algebraic number fields, and the theory of quadratic forms. (Credit, not degree applicable)

514 VECTOR ANALYSIS


515 COMBINATORICS AND GRAPH THEORY

Preliminary 336. Permutation, combination, and graph theory, including the theory of matroids, matching theory, and graph coloring. (Credit, not degree applicable)

521 ADVANCE CALCULUS I

Preliminary 336. Vector analysis, differentiation, and integration of vector functions, including vector differential and integral calculus, and applications to the theory of differential equations.

522 ADVANCE CALCULUS II

Preliminary 336. Vector analysis, differentiation, and integration of vector functions, including vector differential and integral calculus, and applications to the theory of differential equations.

523 COMPLEX VARIABLES

Preliminary 336. Complex analysis, including the theory of functions of a complex variable, and applications to the theory of differential equations.

527 APPLIED NUMERICAL METHODS


528 APPLIED NUMERICAL METHODS II


529 NUMERICAL SOLUTIONS FOR ORDINARY DIFFERENTIAL EQUATIONS


530 NUMERICAL SOLUTIONS FOR PARTIAL DIFFERENTIAL EQUATIONS


532 PARTIAL DIFFERENTIAL EQUATIONS


535 SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS


536 MATHEMATICAL MODELS

Preliminary 336. Applications of mathematical methods to problems in the physical, biological, and social sciences.

538 ADVANCED ENGINEERING MATHEMATICS I


539 ADVANCED ENGINEERING MATHEMATICS II


541 CONCEPTS IN GEOMETRY

Preliminary 336. Foundations of geometry, including the theory of geometric transformations and the theory of geometric constructions.

545 INTRODUCTION TO TOPOLOGY

Preliminary 336. Introduction to the theory of topological spaces, including the theory of connected and compact spaces.

589 TOPICS IN MATHEMATICS

Preliminary 336. Topics in mathematics or special topics in mathematics, as specified by the instructor. Credit, not degree applicable.
501 FUNDAMENTALS OF DATA STRUCTURES
3 credits
Prerequisite: Programming experience in C. Basic data structures and algorithms: stacks, queues, linked lists, traversal, tree traversal, sorting and searching, recursion, introduction to data abstraction and algorithm analysis. (Not an approved major, minor, or certificate elective in computer science)

506 INTRODUCTION TO C AND UNIX
3 credits
Prerequisite: Programming experience. C language programming. UNIX shell programming. File system structure, backup, and interprocess communication. (Not an approved mathematical sciences major, minor, or certificate elective.)

508 WINDOWS PROGRAMMING
3 credits
Prerequisites: 201 or 210 or 408 or 508. Windows operating systems, integrated development environment, event-driven programming, and search algorithms. Introduction to object-oriented design, using object libraries, component object model, object linking and embedding, client-server networking.

518 INTRODUCTION TO DISCRETE STRUCTURES
3 credits
Prerequisite: 210 or permission. Introduction to a number of structures in algebra of particular use to student in computer science. Topics include algorithms and flow chart language, graphs and digraphs, trees, trees, laces, codes.

520 STRUCTURED PROGRAMMING
3 credits
Prerequisites: 316 and 468/518. Techniques of book programming using a structured program language: paragraph composition, program organization, program design.

521 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING
3 credits
Prerequisite: 316. Object-oriented design, analysis, and programming using different development methods. Comparison with other programming paradigms.

526 OPERATING SYSTEMS
3 credits
Prerequisites: 306 and 316, or equivalent. Introduction to various types of operating systems: batch processing, multiple processing systems, multiprogramming systems and interacting processes; storage management; processes and resource control; deadlock problem. Course is independent of any particular operating system.

528 UNIX SYSTEM PROGRAMMING
3 credits
Prerequisites: 316 and knowledge of C. An overview of the UNIX operating system. Shell programming, process management, processor management, storage management, scheduling algorithms, resource protection, and system programs.

530 THEORY OF PROGRAMMING LANGUAGES
3 credits
Prerequisite: 316. Advanced concepts underlying programming languages and their applications, formal definitions of programming languages. Backus Normal Form, semantics. Alternative programming paradigms including functional programming.

535 ANALYSIS OF ALGORITHMS
3 credits
Prerequisites: 316 and 468/518. Design and analysis of efficient algorithms for random access machines: derivation of pattern classification algorithms.

540 COMPILER DESIGN
3 credits
Prerequisites: 307 and 316. Techniques used in writing and modifying compilers including translation, lexical analysis, symbol tables and storage allocation; compilation of simple expressions and statements. Organization of a compiler for handling lexical scan, syntax scan, object code generation, logical symbol tables. Use of compiler tools in writing languages and back-translation. The course requires a project involving compiler writing.

555 DATA COMMUNICATIONS AND COMPUTER NETWORKS
3 credits
Prerequisites: 310 or 405/501. ISO-OSI. TCP/IP. SNA data switching, protocols, flow and error control, routing, topology, network protocols, network taxation, and socket-based programming.

557 COMPUTER GRAPHS
3 credits
Prerequisites: 316 and knowledge of C. Topics in vector graphics, scan line graphics, representation and languages for graphics.

560 ARTIFICIAL INTELLIGENCE AND HEURISTIC PROGRAMMING
3 credits
Prerequisite: 306. Study of program which employs some intelligent behavior. Exploration of level in which computers can display intelligence.

565 COMPUTER ORGANIZATION
3 credits
Prerequisite: 306. An introduction to the hardware organization of the computer at the microprocessor level. An in-depth study of the architecture of a particular computer systems family.

567 MICROPROCESSOR PROGRAMMING AND INTERFACING
3 credits

570 AUTOMATA, COMPUTABILITY AND FORMAL LANGUAGES
3 credits
Prerequisite: 410/530. Presentation of theory of formal languages and their relation to automata. Topics include description of languages, regular context-free and context-sensitive grammars, finite, pushdown and linear bounded automata, Turing machines, closure properties, computational complexity, stack automata and decidability.

575 DATA BASE MANAGEMENT
3 credits
Prerequisite: 306. Fundamentals of database organization, data manipulations and representation, data integrity issues.

577 INTRODUCTION TO PARALLEL PROCESSING
3 credits
Prerequisites: 306 and knowledge of C. Commercial processors: past and present. Parallel languages, models of parallel computation. Emphasis on parallel algorithm design and performance evaluation. A broad study of parallel paradigms with relation to real-world applications.

580 INTRODUCTION TO SOFTWARE ENGINEERING AND FORMAL METHODS
3 credits
Prerequisite: 306. Introduction to software development and maintenance. Introduction to methodologies and tools of design, development, validation, and maintenance.

589 TOPICS IN COMPUTER SCIENCE
3 credits
(May be repeated for a total of six credits.) Prerequisite: Permission of instructor. Selected topics in computer science at an advanced level.

591 WORKSHOP IN COMPUTER SCIENCE
1-3 credits
Group studies of special topics in computer science. May not be used to meet graduate or undergraduate requirements in computer science.

597 INDIVIDUAL READING IN COMPUTER SCIENCE
1-3 credits
(May be repeated.) Prerequisite: Permission. Computer science major only. Directed studies designed as an introduction to research problems, under guidance of designated faculty member.

610 SYMBOLIC AND NUMERICAL METHODS
3 credits
Prerequisites: 3450/523 and 3450/528, or 405/501 and 3450/330 (or knowledge of LISP). Computer applications in mathematical logic and the symbolic manipulation of mathematical objects. Introduction to MACSYMA, LISPlevel programming for MACSYMA. Theoretical and practical aspects of combining symbolic and numerical methods.

626 ADVANCED OPERATING SYSTEMS
3 credits
Prerequisite: 3450/526 or equivalent. Advanced topics in operating system design: scheduling mechanisms, performance evaluation, security, distributed operating systems.

630 ADVANCED THEORY OF PROGRAMMING LANGUAGES
3 credits
Prerequisites: 3450/530 and 405/516. In-depth study of various aspects of the design and implementation of programming languages, such as formal type systems, operational semantics, and environment models. Prerequisite: 3450/530 or equivalent.

635 ADVANCED ALGORITHMS AND COMPLEXITY THEORY
3 credits
Prerequisite: 3455/535 or equivalent. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theory, complexity hierarchies, NP-complete and intractable problems, approximation techniques.

640 ADVANCED COMPILER DESIGN AND CONSTRUCTION
3 credits
Prerequisite: 3455/541 or equivalent. Compilation of 440/450. Theory of LL(1) and LR(1) parsing, compiler writing tools and environments, code optimization, implementation of advanced language features. Major programming project required.

655 COMPUTER NETWORKS AND DISTRIBUTED PROCESSING
3 credits
Prerequisites: 455/565 and 350/550. Interconnection technologies, protocol layering models, datagram and stream transport services, client-server paradigm, principles and protocols of interconnected networks operating as unified systems, and TCP/IP technology.

656 ADVANCED COMPUTER GRAPHICS
3 credits
Prerequisite: 475/585 knowledge of C and UNIX. Topics include 3D viewing and projections, image manipulation, 3D transformations, color shading, clipping and animation using raster, vector, and graphics primitives. Prerequisites: 455/565 or equivalent. Fundamentals of computer analysis and design with emphasis on cost/performance tradeoffs. Studies of processor, vector, RISC, and multiprocessor architectures.

670 ADVANCED AUTOMATA AND COMPUTABILITY
3 credits
Prerequisite: 410/510 or equivalent. An in-depth study of concepts related to computability. Topics include nondeterministic automata, recursive function theory, the Chomsky hierarchy, Turing machines and undecidability.

675 ADVANCED DATABASE MANAGEMENT
3 credits
Prerequisite: 455/575 or equivalent. Relational database theory, including formal query languages, query processing and optimization techniques, reliability techniques including recovery, concurrency, security and integrity, current trends in database technology.

677 PARALLEL PROCESSING
3 credits
Prerequisite: 475/577 Advanced computer architecture, theories of parallel computing, system resources optimization, efficient programming languages and application requirements of high performance computer systems. Classical results and practical insights into implementing parallel algorithms on actual parallel machines.

680 SOFTWARE ENGINEERING
3 credits
Prerequisites: 201 and 316. Introduction to current methodologies and technologies used in software design, development, validation, and maintenance.

689 ADVANCED TOPICS IN COMPUTER SCIENCE
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.

692 SEMINAR IN COMPUTER SCIENCE
3 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.

695 PRACTICUM IN COMPUTER SCIENCE
3 credits
Prerequisite: Graduate teaching assistant or permission. Training and experience in college classroom teaching of computer science under the supervision of an experienced faculty member. May not be used to meet degree requirements. May be taken only on a credit/no credit basis.

697 MASTER’S RESEARCH
3 credits
(May be repeated.) Prerequisite: Consent of advisor. Research in suitable topics in computer science culminating in a research paper. No more than two credits applicable to major requirements.

699 MASTER’S THESIS
2 credits
Prerequisite: Permission. (May be repeated for a total of four 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.

STATISTICS
3470:

550 PROBABILITY
3 credits
Prerequisites: 3450/521. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes.

551.2 THEORETICAL STATISTICS I AND II
3 credits
Prerequisite: 3450/523. Elementary combinatorial probability theory, probability distributions, mathematical expectation: functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, introduction to experimental designs.

560 STATISTICAL METHODS
4 credits
Application of statistical methods to the social sciences including design of experiments, statistical inference, parametric and nonparametric categorical data analysis, linear regression, correlation, computer applications. May not be used to meet Mathematical Studies Group degree requirements.

561 APPLIED STATISTICS I
4 credits
Prerequisite: 3450/522 or 225 or equivalent. Applications of statistical theory to natural and physical sciences and engineering designed to consider probability distributions, interval estimation, hypothesis testing, parametric and nonparametric, and simple linear regression and correlation.

562 APPLIED STATISTICS II
4 credits
Prerequisite: 4650/561 or equivalent. Applications of the techniques of regression and multivariate analysis of variance.
695 PRACTICUM IN STATISTICS AND MATHEMATICS 13 credits
Prerequisites: graduate teaching assistant or permission. Training and experience in college teaching of statistics. May not be used to meet degree requirements. May be taken on a credit/no credit basis.

697 INDIVIDUAL READING 1-2 credits
(May be repeated for a total of four credits) Prerequisites: graduate standing and permission. Directed studies in statistics under guidance of selected faculty member.

698 MASTER'S RESEARCH 16 credits
May be repeated. Prerequisite: permission of advisor. Research in suitable topics in statistics culminating in a research paper. No more than 2 credits applicable to major requirements.

699 MASTER'S THESIS 2 credits
(May be repeated for a total of 4 credits) Prerequisite: permission. Property quality and number of credits for master's degree may obtain 2-4 credits for research experience which culminates in presentation of faculty-supervised thesis.

ENGINEERING
APPLIED MATHEMATICS
3490:

790 ADVANCED SEMINAR IN APPLIED MATHEMATICS 14 credits
Prerequisite: Permission. (May be repeated for a total of 12 credits) For students seeking graduate degrees in Applied Mathematics. Advanced projects and studies in various areas of applied mathematics.

798 PRELIMINARY RESEARCH 1-15 credits
Prerequisite: Permission. (May be repeated) Completion of qualifying examination and approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation topic.

800 DOCTORAL DISSERTATION 1-15 credits
Prerequisite: Permission. (May be repeated) Completion of candidacy examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.

MODERN LANGUAGES
3500:

590 WORKSHOP 2 credits
(May be repeated) Group studies of special topics in modern languages.

FRENCH
3520:

502 ADVANCED FRENCH GRAMMAR 3 credits
Prerequisite: 302 or equivalent. Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.

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.

515 18TH CENTURY FRENCH LITERATURE 4 credits
Prerequisite: 305 or 306 or equivalent. Reading and discussion of selected authors. Emphasis on the philosophes. Conducted in French.

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: 302 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.

540 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.

571 FRENCH LANGUAGE READING PROFICIENCY 4 credits
Designed to develop proficiency in reading comprehension. Prepares students for graduate reading examination. Does not count toward French major.

579 INDIVIDUAL READING IN FRENCH 1-14 credits
Prerequisite: 302 or permission of the French section. Individual reading in French, offered at the graduate level. (May be repeated for a total of eight credits.)

600 SELECTED TOPICS IN THE MOVEMENT OF IDEAS IN FRENCH LITERATURE 4 credits each
Study of ideas instrumental in shaping French thought and culture.

661 FRENCH TEACHING PRACTICUM 2 credits
Prerequisites: teaching assistantship or permission. Orientation and practice of particular aspects of teaching language and culture. Periodical review and evaluation. Credits may not be applied toward degree requirement.

697 INDIVIDUAL READING AND RESEARCH IN FRENCH 14 credits each
Prerequisites: 202 and permission of Department Chair. Independent study and research in specific areas. Considerable reading and writing required.

699 MASTER'S THESIS 4 credits
GERMAN

3530:
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.)

571 GERMAN LANGUAGE READING PROFICIENCY 4 credits
Designed to develop proficiency in reading comprehension.

592B 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.)

SPANISH

3580:
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 408 or permission of instructor. Comparative study of representative artistic and literary works of the Medieval and Renaissance periods. Conducted in Spanish.

511 SPAIN DURING THE BAROQUE PERIOD 4 credits
Prerequisite: 407 or 408 or permission of instructor. 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 408 or permission of instructor. Reading and analysis of Don Quixote as the first modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.

515 THE AGE OF REASON AND THE ROMANTIC REBELLION IN SPAIN 4 credits
Prerequisite: 407 or 408 or permission of instructor. Study of the Enlightenment and the Romantic movement as reflected in the works of the major artists and writers of these periods. Conducted in Spanish.

516 REPRESENTING REALITY IN 19TH CENTURY SPAIN 4 credits
Prerequisite: 407 or 408 or permission of instructor. A comparative study of the major literary and artistic movements in Spain from Realism to Modernism. Conducted in Spanish.

517 20TH CENTURY SPAIN: THE ADVANTAGE IN LITERATURE AND ART 4 credits
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.

519 THE SPANISH CIVIL WAR AND ITS CULTURAL IMPACT 4 credits
Prerequisite: 305 or permission of instructor. Study of the impact of the Civil War on Spanish culture.

522 SPECIAL TOPICS IN SPECIALIZED LANGUAGE SKILLS OR CULTURE OR LITERATURE 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.

523 SPANISH-AMERICAN LITERATURE BEFORE 1900 4 credits
Prerequisite: 407 or 408 or permission of instructor. Reading of representative Spanish-American literature from the discovery to 1900. Oral and written reports. Conducted in Spanish.

524 RACE AND ETHNICITY: INDIGENOUS CULTURES IN 20TH CENTURY SPAIN \& AMERICA 4 credits
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.

525 20TH CENTURY SPANISH-AMERICAN NOVEL 4 credits
Prerequisite: 407 or 408 or permission of instructor. Reading and discussion of representative contemporary Latin America novels. Conducted in Spanish.

527 LATINO CULTURES IN THE USA 4 credits
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.

529 CULTURE AND LITERATURE OF THE HISPANIC CARIBBEAN 4 credits
Prerequisite: 407 or 408 or permission of instructor. Emphasis on customs, traditions and literature, including lectures, films, slides, and analysis of selected works by contemporary Hispanic authors from the Caribbean. Conducted in Spanish.

530 WOMEN IN 20TH CENTURY HISPANIC LITERATURE 4 credits
Prerequisite: 407 or 408 or permission of instructor. Reading and analysis of selected works from the 20th Century that depict women in Hispanic countries. Methodologies of feminist criticism will be studied. Conducted in Spanish and English.

531 HISPANIC CULTURE: SPAIN 4 credits
Prerequisite: 302 or permission. Study of society, customs, history, art, music, etc. of Spain.

532 HISPANIC CULTURE: SOUTH AMERICA 4 credits
Prerequisite: 302 or permission. Study of society, customs, history, art, music, etc. of South America, from a Hispanic perspective. Conducted in Spanish.

533 HISPANIC CULTURE: MEXICO AND CENTRAL AMERICA 4 credits
Prerequisite: 302 or equivalent. Study of society, history, and culture of Mexico, Central America and the Hispanic Caribbean, from a Hispanic perspective. Conducted in Spanish.

571 SPANISH LANGUAGE READING PROFICIENCY 4 credits
Designed to develop proficiency in reading comprehension.

PHILOSOPHY

3600:
511 PLATO Prerequisite: 211 or permission of instructor. Detailed study of the origin and development of Plato's Theory of Forms and the related theories of knowledge, ethics, and politics. 3 credits

518 ANALYTIC PHILOSOPHY Prerequisite: one course in philosophy or permission of instructor. Study of ideal and ordinary language movements in 20th Century British and American philosophy. Deals with such figures as Russell, Carnap, Ayer, Moore, Wittgenstein, Ryle and Austin. 3 credits

519 BRITISH EMPIRICISM Prerequisite: one introductory course and 33 or permission of instructor. Intensive analysis of selected major writings of Locke, Berkeley, Hume, and Kant. 3 credits

521 PHILOSOPHY OF LAW Prerequisite: one course in philosophy or permission of instructor. Philosophical inquiry into the nature of law and legal institutions. 3 credits

522 CONTINENTAL RATIONALISM Prerequisite: one introductory course 33, or permission of instructor. Intensive analysis of selected major writings of Descartes, Spinoza and Leibniz. 3 credits

523 EXISTENTIALISM Prerequisite: one introductory course in philosophy, 33, or permission of instructor. In-depth inquiry into the thought of Kierkegaard, Jaspers, Heidegger, Sartre, Tillich and other existentialists with their concern for the human condition. 3 credits

526 PHENOMENOLOGY Prerequisite: one introductory course in philosophy, 33, or permission of instructor. In-depth inquiry into the thought of Husserl and Heidegger and their influence upon Western European and American thought. 3 credits

532 ARISTOTLE Prerequisite: 211 or permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of mankind and ethics. Taught in alternate years. 3 credits

534 KANT Prerequisite: 33 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. 3 credits

562 THEORY OF KNOWLEDGE Prerequisite: one course in philosophy or permission of instructor. Examination of major theories of knowledge: theories of perception, conception and truth, problem of education and relation of language to knowledge. 3 credits

564 PHILOSOPHY OF SCIENCE Prerequisites: 101, 170 or permission of instructor. Nature of scientific inquiry, types of explanations, laws and causality, theoretical concepts and reality. Also considers ethical implications. 3 credits

571 METAPHYSICS 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. 3 credits

580 SEMINAR (May be repeated) Prerequisite: permission of instructor. 3 credits

581 PHILOSOPHY OF LANGUAGE Prerequisites: 101 and 170 or permission of instructor. Contemporary philosophies about the nature of language and its relation to reality and human thinking. Includes discussion of views of linguistics such as Chomsky. 3 credits

597 INDIVIDUAL STUDY 10 credits
Prerequisite: permission of instructor and department chair. Directed independent study of philosophy, or philosophical problem under guidance of selected faculty member. Subject matter determined by selected faculty member in consultation with student. Graduate credit requires significant additional work which may include additional research paper. 10 credits
3650:

500 HISTORY OF PHYSICS
3 credits
Prerequisites: 262 or 292. Study of origin and evolution of major principles and concepts characterizing contemporary physics.

506 PHYSICAL OPTICS
3 credits
Prerequisites: 320 and 3450:335. Propagation, reflection, and refraction of electromagnetic waves, superposition, polarization, interference and diffraction, Fresnel and Fraunhofer diffraction, Fourier optics, coherence theory, and quantum optics.

510 VACUUM SCIENCE AND TECHNOLOGY
3 credits
Prerequisite: 301. An interdisciplinary course stressing the fundamentals and applications of vacuum science, including selection of materials, pressure measurement and vacuum attainment, safety precautions, etc.

531 MECHANICS I
3 credits
Prerequisites: 252 and 3450:335. Mechanics at intermediate level: Newtonian mechanics, motion of a particle in one dimension, central field problem, system of particles, conservation laws, rigid bodies, gravitation.

532 MECHANICS II
3 credits
Prerequisite: 4350:335. Advanced mechanics at the senior or beginning graduate level, moving coordinate systems, mechanics of continuous media, Lagrange's equations, tensor algebra and stress analysis, rotation or rigid bodies, vibration theory.

536 ELECTROMAGNETISM I
3 credits
Prerequisites: 292, 3450:335 or permission of instructor. Electricity and magnetism at intermediate level: Electrostatics and magnetostatics, electric field, scalar potential, dielectrics, Laplace's and Poisson's equations, current, magnetic field, vector potential, magnetic materials, induction.

537 ELECTROMAGNETISM II
3 credits
Prerequisite: 4350:335. Special relativity, vectors, Maxwell's equations in covariant form, propagation, reflection and refraction of electromagnetic waves, multiple reflection.

541 QUANTUM PHYSICS I
3 credits

542 QUANTUM PHYSICS II
3 credits
Prerequisite: 4450:541. Applications of quantum mechanics to atomic, nuclear and solid state physics. Tunneling and alpha decay, periodic potential, Hydrogen and Helium atoms, atomic forces, quantum statistics.

561 ADVANCED LABORATORY I
3 credits
Prerequisite: 323 or permission of instructor. Experimental techniques applicable to research projects in contemporary physics. Fourier transform, optical spectroscopy, lasers, SPM, and financial growth and characterization.

562 ADVANCED LABORATORY II
3 credits
Prerequisite: 323 or permission of instructor. Experimental projects applicable to contemporary physics. Diode and dye lasers, laser feedback, shock, NMR, electron tunneling, and fiber optics.

568 TECHNIQUES OF PHYSICS INSTRUCTION
1 credit
Teaching students are introduced to current research in learning physics, shown applications for their labroom, and trained in skills needed as a laboratory teaching assistant.

569 DIGITAL DATA ACQUISITION
3 credits
Prerequisites: 262 or 292. Designed to introduce science and mathematics students to use of digital techniques of interfacing instruments to microprocessors. Physical measurements and device control are emphasized.

570 INTRODUCTION TO SOLID-STATE PHYSICS
3 credits
Prerequisite: 441 or permission of instructor. Introduction to basic physical processes occurring in solids, with emphasis on fundamental relation between these processes and periodicity of crystal lattice.

581.2 METHODS OF MATHEMATICAL PHYSICS I AND II
3 credits each
Prerequisites: 292, 3450:335 and senior or graduate standing in a physical science or engineering major. Basic knowledge of algebra, complex numbers, ordinary differential equations, partial differential equations, special functions, complex variables, analytic functions. Green's functions, integral equations.

586 ELECTROSTATIC PHYSICS
1 credit
May be repeated. Prerequisite permission. Consideration of selected topics, techniques, materials or apparatus of current interest in physics.

590 WORKSHOP
1 credit
May be repeated. Prerequisite permission. Further investigations of various selected topics in physics, under guidance of faculty member.

597 INDEPENDENT STUDY
1 credit
May be repeated. Prerequisite permission. Further investigations of various selected topics in physics, under guidance of faculty member.

599 PHYSICS COLLOQUIUM
1 credit
Lectures and current research topics in physics by invited speakers. May be repeated, but not more than one credit toward M.S. degree. Credit/No credit.

605 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS I
3 credits
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.

606 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS II
3 credits
Prerequisite: 405 or permission. Data reduction, coding, plotting, comparison of theoretical models with data, linear and non-linear least squares curve fitting. May accommodate scientific problems of individual interest.

610 SURFACE PHYSICS
3 credits
Prerequisite: 410. An interdisciplinary course stressing the fundamentals and applications of physics at surfaces, including crystallography, analysis, adhesion, and tribology.

615 ELECTROMAGNETIC THEORY I
3 credits
Prerequisite: 437:537 or permission of instructor. Electrostatics and magnetostatics at advanced level for graduate students, boundary value problems, dielectrics, multipole expansions, analyzing fields. Maxwell's equations and electromagnetic waves, reflection, refraction, wave guides and cavities.

616 ELECTROMAGNETIC THEORY II
3 credits
Prerequisite: 416. Scattering theory, plasma physics, special theory of relativity, behavior of relativistic particles in fields, collisions of charged particles, radiation from moving charges, bremsstrahlung, multiple fields.

625 QUANTUM MECHANICS I
3 credits
Prerequisites: 4450:541 or permission of instructor. Basic concepts of quantum mechanics, representation theory, particle in a central field, addition of angular momenta and spins, Clebsch-Gordan coefficients, perturbation theory, scattering, transition probabilities.

626 QUANTUM MECHANICS II
3 credits

641 LAGRANGIAN MECHANICS
3 credits
Prerequisite: 432:532 or permission of instructor. Fundamental laws and Lagrangian equations of motion, conservation laws, integration of equation of motion, torsions, small oscillations, Hamilton's equations, canonical transformations.

661 STATISTICAL MECHANICS
3 credits
Prerequisites: 442:542 or permission of instructor. Fundamental principles of statistical mechanics. Gibbs, Fermi and Bose Statistics, solids, liquids, gases, phase equilibrium, thermodynamic relations.

669 CRITICAL PHENOMENA AND PHASE TRANSITIONS
3 credits

686 SOLID-STATE PHYSICS I
3 credits
Prerequisites: 470, 675 or permission of instructor. Theory of physics of crystalline solids, properties of reciprocal lattice and Bloch's theorem. Lattice dynamics and specific heat. Electron states, cellular method, tight-binding method, Green's function method.

688 SOLID-STATE PHYSICS II
3 credits

697 SPECIAL PROBLEMS IN THEORETICAL PHYSICS I
3 credits
May be repeated. Prerequisite: permission. Intended to facilitate expansion of particular areas of interest in theoretical physics, by consultation with faculty member and independent study beyond available course work.

698 SPECIAL PROBLEMS IN THEORETICAL PHYSICS II
3 credits
May be repeated. Prerequisite permission. Intended to facilitate expansion of particular areas of interest in theoretical physics, by consultation with faculty member and independent study beyond available course work.

700 MASTER'S THESIS
1-3 credits
Prerequisite: permission. One credit may be earned by candidate for M.S. degree upon satisfactory completion of a master's thesis.

705 DOCTORAL RESEARCH
1-3 credits
May be repeated. Prerequisite: approval of the student and his advisor. May be repeated. Prerequisite: approval of the student and his advisor. One credit may be earned by a Ph.D. candidate in various disciplines under the guidance of physics faculty.

719 PHYSICS TUTORING
1 credit
Prerequisite: permission of department. One credit may be earned by a Ph.D. student in physics by tutoring in the general physics laboratory, receiving written feedback, and participating in discussions.

725 PHYSICS COLLOQUIA
1 credit
Lectures and current research topics in physics by invited speakers. May be repeated, but not more than one credit toward the doctoral degree. Credit/No credit.

735 ADVANCED THEORETICAL PHYSICS
3 credits
Prerequisite: 675 or 725. Spectroscopy, lasers, SPM, and fiber optics. May be repeated to acquire knowledge in these areas.

770 POLITICAL SCIENCE 3700:

502 POLITICS AND THE MEDIA
3 credits
Examination of relationships between the press, the news media and political decision making.

505 POLITICS IN THE MIDDLE EAST
2 credits
The rise of the state system in the Middle East after World War I; an analysis of the sociopolitical, ideological forces influencing the political behavior of the people of the Middle East in determining the study of selected political systems.

510 INTERNATIONAL DEFENSE POLICY
3 credits
Prerequisite: At least one of the following: 220, 310, 340, 340 340, 345, 454, or permission. Introduction to public policy and military forces. Major focus on international, domestic, and ethical dilemmas confronted in implementing and maintaining defense policy.

512 GLOBAL ENVIRONMENTAL POLITICS
3 credits
Prerequisites: 300, 300 or permission of instructor. Examines the general parameters of the global environmental challenge, including the roles played by technology and the structure of the world system.

513 COMPARATIVE FOREIGN POLICY
3 credits
Prerequisite: 306 or permission. Study of foreign policies of selected nations, with special attention to processes and instruments of decision making of the major powers.

540 SURVEY RESEARCH METHODS
2 credits
Prerequisites: 101 or permission. Study of the survey research methods as applied to the analysis of public opinion, political behavior and public policy formation.

541 THE POLICY PROCESS
3 credits
Prerequisite: eight credits in political science. Intensive study of policy-making process, emphasizing roles of various participants in executive and legislative branches as well as individuals and groups.

570 METHODS OF POLICY ANALYSIS
2 credits
Prerequisite: 201. Examine variety of methods available for analyzing public policy. Techniques of cost benefit analysis, evaluation research, case experimentation, are covered as well as consideration of ethical questions in policy analysis, the practical problems facing policy analysts.

573 POLITICAL SCANDALS AND CORRUPTION
3 credits
This course will provide an overview of major political scandals, including media coverage, public opinion, the role of special prosecutors, and the impacts of scandals.

575 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 judicial review.

576 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.
670 SPECIAL TOPICS IN POLITICAL SCIENCE
3 credits
Prerequisites: Six credits of political science or permission. Reading and research on selected topics, including processes of opinion formation and change. Attention given to the effect of opinion change on electoral outcomes.

695 AMERICAN POLITICAL PARTIES
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.

570 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: 300. Study of various political dimensions underlying the study of politics and policing in the context of police reform, crime, and the community.

582 CURRENT ISSUES (CJ TOPIC)
3 credits
Prerequisite: 300. Study of various political issues, programs, and policies relating to political science and criminal justice at the federal or state level.

587 CONSTITUTIONAL PROBLEMS IN CRIMINAL JUSTICE
3 credits
Prerequisite: 100. Analysis of policy-making regarding problems of criminal justice, including search and seizure, self-incrimination, right to counsel, jury selection, and post-appeal prisoner rights.

600 SCOPE AND THEORIES OF POLITICAL SCIENCE
3 credits
Prerequisite: Six credits of political science or permission. An introduction to various theories of political science. Emphasis on the nature, scope, and content of political theory; theory development and construction in political science.

601 RESEARCH METHODS IN POLITICAL SCIENCE
3 credits
Prerequisites: Six credits of political science, including 440 (or satisfactory equivalent) or permission of instructor. Techniques of quantitative research methodology in political science: utility and limitations of quantitative analysis.

610 SEMINAR IN INTERNATIONAL POLITICS
3 credits
Prerequisite: Six credits of political science or permission. Analysis of current problems in the theory and practice of politics and organization.

620 SEMINAR IN COMPARATIVE POLITICS
3 credits
Prerequisite: Six credits of political science or permission. Research selected topics in comparative politics. Comparative method.

621 SEMINAR IN POLITICS OF DEVELOPING NATIONS
3 credits
Prerequisite: Six credits of political science or permission. Selected topics investigated. Emphasis on theories of political development.

630 SEMINAR IN NATIONAL POLITICS
3 credits
Prerequisite: Six credits of political science or permission. Reading and research on formulation, development, and implementation of national policy in one or more areas of contemporary society.

650 SEMINAR ON CIVIL LIBERTIES AND THE JUDICIAL PROCESS
3 credits
Prerequisite: Six credits of political science or permission. Civil liberties and judicial process viewed in history and context. Reading and research on selected topics.

668 SEMINAR IN PUBLIC POLICY AGENDAS AND DECISIONS
3 credits
Prerequisites: Six credits of political science or permission. Reading and research on the development of public policy issues and modes of decision making used by policy makers.

672 SEMINAR: POLITICAL INFLUENCE AND ORGANIZATIONS
3 credits
Prerequisites: Permission. Examination of how public concerns and demands are resolved or diffused. A theoretical and applied look at parties, interest groups, public opinion, media, and protest.

690 SPECIAL TOPICS IN POLITICAL SCIENCE
1-3 credits
Prerequisites: Six credits of political science or permission. Graduate-level examination of selected topics in American politics, comparative politics, international politics, international political science, or political theory.

695 INTERNSHIP IN GOVERNMENT AND POLITICS
1-3 credits
May be repeated for a total of 10 credits. Prerequisites: Permission of advisor. Supervised individual placement with political office holder, party group, governmental agencies, or political organizations providing professional-level work.

697 TOPICS IN MASTER'S RESEARCH
1-3 credits
Prerequisite: Permission of advisor. May be repeated for a total of 10 credits. No more than two credits may apply toward degree requirements. Research in durable topics in political science or related political science culminating in a research paper. Graded Credit/Noncredit.

697 INDEPENDENT RESEARCH AND READINGS
1-4 credits
May be repeated, but no more than six credits toward the master's degree in political science. Prerequisite: Permission.

698 POLITICAL SCIENCE PRACTICUM
3 credits
Prerequisite: Permission of instructor. Professional seminar required of new graduate students. Grades are applied toward degree requirements. Covers discussion, study skills, teaching, research practices, career tracks, and program selections. Graded Credit/Noncredit.

698 MASTER'S THESIS
2-4 credits
Prerequisite: Permission. Preparation, research, and practice in campaign management.

698 CAMPAIGN MANAGEMENT III
3 credits
Prerequisite: CAMPAIGN MANAGEMENT II. Preparatory course for campaign management. Focus is on tactical coalition building, candidate positioning, event planning, internal organization, and other elements of campaign strategy.

698 CAMPAIGN FINANCE
3 credits
Prerequisite: Permission. Reading and research in financial decision making in political campaigns.

698 ACCESS TO CONTACT AND ELECTIONS
3 credits
Prerequisite: Permission. Theoretical and practical approaches to gaining votes in all types of political campaigns.

698 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.

698 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.

698 INDEPENDENT STUDY
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.
PERSONNEL PRACTICE 14 credits
May be repeated. Prerequisites: 660, graduate standing in psychology, 14 credits of graduate psychology, and permission of the instructor. Supervised field experience in industrial/organizational psychology in selected businesses and/or local governmental organizations. The field experience requires the application of industrial/organizational psychological theories and techniques. Credit/Noncredit.

APPLIED INTELLIGENCE PRACTICE 14 credits
May be repeated. Prerequisites: 727, graduate standing in psychology, 14 credits of graduate psychology and permission of the instructor. Supervised field experience in applied cognitive psychology to provide students with the opportunity to apply skills and knowledge acquired in the academic setting and to obtain knowledge about community programs and organizational training that focus on developmental processes. Credit/Noncredit.

EXTERNSHIP 1174 PERSONNEL 
733 APPUED COGNITIVE
677 DEVELOPMENTAL
(5 credits)
Prerequisites: 660, external psychology and permission of the instructor. Supervised field experience in applied cognitive psychology. May be repeated for a maximum of 16 credits. Prerequisites: permission of area chair.

MASTER'S THESIS 4 credits
May be repeated. Prerequisites: 630 or instructor's permission. Research analysis of data and preparation of thesis for master's degree.

SURVEY OF PROFESSIONAL TECHNIQUES 4 credits
Prerequisite: 630 or instructor's permission. Internet, computer software packages, and their applications for counseling therapists, counselors, and psychologists. Credit/Noncredit.

PSYCHOLOGICAL ASSESSMENT 4 credits
Prerequisites: 721, 751, and/or 756. Application of psychological assessment to problems of diagnosis and evaluation. Practical experience in administration, scoring, and interpretation. Integration of projective data with other assessment techniques in various settings.

SUPERVISION IN COUNSELING 4 credits
Prerequisites: Doctoral standing or permission of instructor. Instructor and experience in supervising a graduate student in counseling.

THEORIES OF COUNSELING AND PSYCHOTHERAPY 4 credits
Prerequisites: 630 or permission of the instructor. Theories of counseling and psychotherapy with an emphasis on the theoretical basis for selecting counseling techniques and the use of research in the counseling process. Credit/Noncredit.

VOCATIONAL BEHAVIOR 4 credits
Prerequisite: 630 or permission of instructor. Theories and research on vocational behavior and counseling. Topics include job satisfaction, vocational interests, and counseling-related aspects of career development. Credit/Noncredit.

PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING 4 credits
Prerequisites: 650 or graduate standing in psychology, and instructor's permission. History, principles, and methodology of objective testing; supervised practice in administration, scoring, and interpretation of individual intelligence tests for children and adults.

PROFESSIONAL, ETHICAL, AND LEGAL ISSUES IN COGNITIVE PSYCHOLOGY 4 credits
Prerequisite: Doctoral standing or permission of the instructor. Research and issues in cognitive psychology that pertain to professional practice and legal considerations.

ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY 4 credits
Prerequisites: 630, one semester of practicum work. Critical examination and application of research on diversity in counseling. 

HISTORY AND SYSTEMS IN PSYCHOLOGY 2 credits
Prerequisite: 633. Philosophical and scientific antecedents of psychology and details of the development of systematic viewpoints in the 19th and 20th centuries.

PSYCHOLOGY OF ADULTHOOD AND AGING 4 credits
Prerequisites: 630, graduate standing in psychology, or permission of the instructor. Application of psychological principles to the development, aging with disabilities, life-span development, and intervention approaches.

APPLIED COGNITIVE AGING PSYCHOLOGY: SOCIAL DEVELOPMENT 4 credits
Prerequisites: 727, graduate standing in psychology. Permission of instructor. Study of factors influencing social development in adulthood. Topics covered include: social support, self-esteem, health, well-being, and quality of life.

APPLIED COGNITIVE AGING PSYCHOLOGY: INFORMATION PROCESSING 4 credits
Prerequisite: 727, graduate standing in psychology, or permission of instructor. Perception, learning, motivation, attention, and problem solving in adulthood and their effects on activities such as work, leisure, and daily living.

APPLIED COGNITIVE AGING PSYCHOLOGY: HIGHER PROCESSES 4 credits
Prerequisites: 727, graduate standing in psychology, or permission of instructor. Memory, perception, decision-making processes, and knowledge and their relevance to everyday functioning in areas such as dementia, communication, judgment, awareness, expertise, wisdom, and creativity.

APPLIED COGNITIVE AGING PSYCHOLOGY: NEURAL MECHANISMS 4 credits
Prerequisite: 727, graduate standing in psychology, or permission of instructor. Examination of the biological bases of neurocognitive processes. Credit/Noncredit.

APPLIED DEVELOPMENTAL PSYCHOLOGY 4 credits
Prerequisite: 727, graduate standing in psychology, or permission of instructor. Examination of methodologies, evaluation, and treatment. Early intervention, day care, rehabilitation, social networks, subspecialty areas, and aging.

INDUSTRIAL EMERGENTOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Study of age-related issues in work involving adult and older adult workers. Topics include personnel selection, recruitment and motivation, among older employees, health and safety, job design, vocational guidance, and retirement.

ADVANCED PSYCHOLOGICAL TESTS AND MEASUREMENTS 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Review of test construction techniques and statistical analyses of tests with a review of published tests and measurement used in psychology. Study of psychometric theory and principles.

ORGANIZATIONAL PSYCHOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Emphasis on the general systems theory framework for the study of the relationships between organizational characteristics and human behavior. The internal processes of organizations, and the relationships between organizations and their environment.

PERSONNEL SELECTION AND PERFORMANCE EVALUATION 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Review of strategies employed by industrial/organizational psychologists for personnel selection, placement and promotion. Survey of objective and subjective criteria used in performance evaluation, including test validation and training effectiveness.

TRAINING 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Review of current training methods and learning theories. Application of techniques to evaluate programs.

RESEARCH METHODS IN PSYCHOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Scientific method and its application to psychology. Topics include data collection, validity, reliability, use of general linear model and its alternatives, and power analysis.

COMPUTER APPLICATIONS IN PSYCHOLOGICAL RESEARCH 4 credits
Prerequisite: Graduate standing in psychology or permission of instructor. Practical applications of computers to psychological research, including data collection, analysis and interpretation. Course also covers computer assisted instruction and the use of different models.

ROLE OF ATTITUDES AND VALUES IN INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Consideration of the role of attitudes and values and the practice of behavior within consumer psychology: examining attitude changes, measurement, and the use of survey methodology.

ORGANIZATIONAL MOTIVATION AND LEADERSHIP 4 credits
Prerequisites: 660, graduate standing in psychology, or permission of instructor. Survey of theories and strategies of motivation, the prediction of behavior, influence, and control of behavior. Leader behavior and the leadership process and its relation to motivation, group performance and satisfactions.

JOB EVALUATION AND EQUAL PAY 4 credits
Prerequisite: 660. Major job evaluation systems will be reviewed and criticized. Issues such as minimum qualifications for a job will be reviewed. Advantages and disadvantages of various job evaluation systems will be compared. Issues concerning equal pay and the Equal Pay Act, comparable worth and other issues will be discussed. Regression approaches to evaluation and application will be evaluated.

ORGANIZATIONAL CHANGE AND TRANSFORMATION 4 credits
Prerequisites: 660 or permission of instructor. Study of theories and methodologies for organizational change and transformation. Emphasis used to increase organizational effectiveness and improve employee quality of work life.

INFORMATION PROCESSING AND INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY 4 credits
Prerequisite: 660. Coverage of current theories in cognitive psychology applied to transoceanic concerns of industrial/organizational psychology such as performance appraisal, motivation, and training.

PERSONNEL PSYCHOLOGY AND THE LAW 4 credits
Prerequisite: 660. Issues in personnel psychology which have legal implications are reviewed. The impact of recent court decisions will be examined in relation to job classification and occupational discrimination.

GRADUATE SEMINAR IN PSYCHOLOGY 14 credits
May be repeated. Prerequisite: Graduate standing in psychology. Special topics in psychology. Credit/Noncredit.

ADVANCED CONSULTING PRACTICE 4 credits
May be repeated. Prerequisites: 671, 672, 673, and permission of instructor. This course provides graduate students in counseling with actual client contacts and supervises experience in a variety of settings.

COUNSELING PSYCHOLOGY PRACTICUM 4 credits
May be repeated. Prerequisites: 795, 796, 797, and/or 798. Advanced counseling psychology students will have supervised training with clients in a variety of settings and will focus on supervised development of specialized theoretical applications. Credit/Noncredit.

INDEPENDENT READING AND/OR RESEARCH 13 credits
May be repeated. Prerequisites: permission of the individual instructor. Readings and/or research on a topic under supervision of faculty member with whom specific arrangements have been made.

DOCTORAL DISSERTATION 10 credits
Prerequisites: open to properly qualified students. Required minimum 12 credits, maximum 4 credits to complete thesis approval. Supervised research or topic deemed suitable by the dissertation committee.

SOCIOLOGY 3850:

SOCIAL STRUCTURES AND PERSONALITY 3 credits
Prerequisites: 100 or permission. Interrelationships between position in society, personality characteristics, personality treated as both result and determinant of social structure and processes. Lecture.

SOCIAL INTERACTION 3 credits
Prerequisite: 100 or permission. Intensive study of advanced theories and research in social psychology. Emphasis on particularly how social interaction and self-identification affect one another. Lecture.

SOCIALIZATION: CHILD TO ADULT 3 credits
Prerequisite: 100 or permission. Theoretical and empirical analysis of processes by which infants, children, adolescents and adults acquire roles and social and cultural norms and behaviors required in new roles, changing roles and society in general.
531 COMPUTER APPLICATIONS IN SOCIAL SCIENCES 3 credits
Prerequisite: Consent of instructor. Analysis of state-of-the-art techniques in the social sciences of sociological significance and research. Seminar. (Same as KSP 723431 Seminar.)

532 COMPLEX JUVENILE CORRECTIONS 3 credits
Prerequisite: Consent of instructor. Examination of juvenile justice system, from a variety of perspectives emphasizing both historical and contemporary issues. Lecture/discussion.

528 THE VICTIM IN SOCIETY 3 credits
Prerequisite: Consent of instructor. Study of the nature, causes, and consequences of victimization with special focus on crime victimization.

529 JUVENILE DELINQUENCY 3 credits
Prerequisite: Consent of instructor. Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/discussion.

530 CRIMINAL BEHAVIOR 3 credits
Prerequisite: Consent of instructor. Theories, beliefs and practices of community and institutional corrections systems. The second semester will be included for students who are required to complete both parts of the course. Seminar. (Same as KSP 8305 471.)

533 SOCIETY OF DELINQUENCY 3 credits
Prerequisite: Consent of instructor. The social history of the mental hospital, theory and methodology of mental illness, community-based treatment models, the organization of mental health services, the role of personal social networks and network support groups. Seminar.

534 SOCIOLOGICAL METHODS 3 credits
Prerequisite: Consent of instructor. Theory, and methods of social psychological research. Topics considered may include non-experimental causal analysis such as recursive and nonrecursive path analysis, time series, nonparametric analysis and measurement validation. Seminar. (Same as KSP 722181 Seminar.)

536 SOCIAL POPULATION AND PROGRAM IMPROVEMENT 3 credits
Prerequisite: Consent of instructor. Examination of advanced social psychological concepts and methods as tools to aid in the analysis of health and health care in the contemporary urban United States. (Same as KSP 72323.)

537 URBAN HEALTH CARE 3 credits
Prerequisite: Consent of instructor. Analysis of the role of urban social structures and processes in the organization and functioning of healthcare delivery systems in urbanized nations. Seminar.

538 DEVIANCY AND DISORGANIZATION 3 credits
Prerequisite: Consent of instructor. Examination of deviant behavior and relevant empirical research. Special emphasis given to interaction processes and social control. Lecture.

539 SOCIOLICAL THEORY 3 credits
Prerequisite: Consent of instructor. An overview and examination of theoretical issues in sociology, through the study of both theoretical and historical readings.

540 FUNDAMENTALS OF SOCIOLOGY 3 credits
Prerequisite: Consent of instructor. An introduction to knowledge about contemporary sociology. Emphasis given to understanding the social context of sociology.

541 SOCIAL SCIENCE RESEARCH 3 credits
Prerequisite: Consent of instructor. Advanced methods of research including advanced statistical techniques. Lecture/laboratory.

542 SOCIAL SCIENCE DEGREE 3 credits
Prerequisite: Consent of instructor. An introduction to knowledge about contemporary sociology. Emphasis given to understanding the social context of sociology.

543 SOCIAL SCIENCE RESEARCH DESIGN 3 credits
Prerequisite: Consent of instructor. Advanced methods of research including advanced statistical techniques. Lecture/laboratory.

544 SOCIAL SCIENCE RESEARCH METHODS 3 credits
Prerequisite: Consent of instructor. An introduction to knowledge about contemporary sociology. Emphasis given to understanding the social context of sociology.
725.  SOCIOLOGY OF HEALTH BEHAVIORS 3 credits  
Sociological analysis of the major theories and research on health and illness and the utilization of health services. (Same as 72309)

726.  STRATIFICATION AND HEALTH 3 credits  
Race, class, and gender differences in physical and mental health status, help-seeking behavior, and health care. Race, class, and gender stratification of health care workers. (Same as 72328)

727.  SOCIOLOGY OF OCCUPATIONS, PROFESSIONS AND HEALTH CARE 3 credits  
Sociological examination of the organization of work in the health care field with emphasis on care, medical care delivery, and health care work. (Same as 72327)

728.  SOCIOLOGY OF MENTAL HEALTH AND MENTAL DISORDERS 3 credits  
Sociological examination of the social processes that affect mental health, that form cultural ideas of normality and illness, and that define clinical pathology. (Same as 72326)

729.  CONTEMPORARY TRENDS IN SOCIAL PSYCHOLOGY 3 credits  
Selected topics on significant contemporary issues, theories and methodological developments in social psychology. (Same as 72429)

730.  RESEARCH IN SOCIAL PSYCHOLOGY 1 credit  
Prerequisite: ESI. Design and development of a research project oriented to empirically examining selected concepts in social psychology or to testing selected propositions in social psychological theory. (Same as 72429)

747.  URBAN SOCIOLGY 3 credits  
Analysis of theories of urban process and review of major contributions to empirical analysis of urban life. (Same as 72609)

750.  SPECIAL TOPICS IN SOCIAL ORGANIZATION 1-3 credits  
Open course to cover content area not readily subsumable under other courses. Content of course to be determined by instructor. (Same as 72695)

757.  SPECIAL TOPICS IN DEViance AND DISORGANIZATION 1-3 credits  
Prerequisite: permission of instructor. Designed to meet needs of students in social deviance and deviant behavior. Content of course to be determined by instructor. (Same as 72696)

758.  INDIVIDUAL INVESTIGATION 1-3 credits  
Prerequisites: one semester of graduate work, permission of instructor, advisor, and chair of department. Reading and research supervised by member of graduate faculty. (Same as 72698)

899.  DOCTORAL DISSERTATION 1-4 credits  
Must be repeated for a minimum of 30 credits. Dissertation. (Same as 82698)

ANTHROPOLOGY

3870:

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

507.  CULTURE AND MEDICINE 3 credits  
Prerequisite: permission of instructor. Analyzes various aspects of Western and non-Western medical systems from an anthropological perspective. Compares traditional medical systems around the world.

550.  QUALITATIVE METHODS: BASIS OF ANTHROPOLOGICAL RESEARCH 3 credits  
Provides hands-on experience in qualitative methods, including key informant interviewing, focus groups and other methods. Includes the use of computerized programs for rapid appraisal strategies.

593.  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, reciprocity, expectation, nomenclature, and other kinship patterns. Includes study of selected non-Western societies.

573.  SPECIAL TOPICS: ANTHROPOLOGY 3 credits  
May be repeated. Prerequisite: 150 or permission. Designed to meet the needs of students with interests in selected topics in anthropology. Offered regularly when resources and faculty permit. May include archaeological field school, laboratory research or advanced course work not presently offered by department on regular basis.

594.  WORKSHOP IN ANTHROPOLOGY 1-3 credits  
May be repeated. Group studies of special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only.

651.  SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS 3 credits  

657.  INDIVIDUAL INVESTIGATION 1-3 credits  
Prerequisites: permission of instructor and chair of department. Intensive reading and research in student's chosen field of interest. Regular conferences with instructor. Preparation of a research paper.

PUBLIC ADMINISTRATION AND URBAN STUDIES

3980:

596.  WORKSHOP 1-3 credits  
May be repeated. Group studies of special topics in urban studies. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only.

600.  BASIC QUANTITATIVE RESEARCH 3 credits  
Prerequisite: permission. Examines basic frameworks of social science research methodologies and basic complementary statistical techniques, including probability sampling and hypothesis testing.

601.  ADVANCED RESEARCH AND STATISTICAL METHODS 3 credits  
Prerequisite: 600. Extends study of basic sociological techniques to include more advanced research designs and multivariate statistical techniques.

602.  HISTORY OF URBAN DEVELOPMENT 3 credits  
Examination of major literature on processes of urbanization in United States and selected facets of urban institutional development.

610.  LEGAL FOUNDATIONS OF PUBLIC ADMINISTRATION 3 credits  
Prerequisite: permission. Introduction to the legal foundations and context of public administration, including the interaction of the course, public organizations, public administration and the public.

611.  INTRODUCTION TO THE PROFESSION OF PUBLIC ADMINISTRATION 3 credits  
Prerequisite: permission. Introduction to the theory and practice of the field of public administration. Foundation course for later MPA study.

612.  NATIONAL URBAN POLICY 3 credits  
Prerequisite: permission. Major federal policies that relate to urban problems examined in relation to legislative and policy-making processes, implementation and impact.

613.  INTERGOVERNMENTAL RELATIONS 3 credits  
Prerequisite: permission. Examination of the field of intergovernmental relations as it applies to the administration of American government.

614.  ETHICS AND PUBLIC SERVICE 3 credits  
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 and private sectors and the professional role are studied.

615.  PUBLIC ORGANIZATION THEORY 3 credits  
Prerequisites: ESI and 199 or equivalent. Examinations of public organizational theory and the current status of theoretical developments in the field of public administration.

616.  PERSONNEL MANAGEMENT IN THE PUBLIC SECTOR 3 credits  
Fundamental issues and examination of public sector personnel administration, including recruitment, selection, training, motivation, supervision, evaluation, labor relations and affirmative action.

617.  LEADERSHIP AND DECISION-MAKING 3 credits  
Prerequisite: permission. Examination of the process of public organizational management including relevant organizational theories, strategic management and planning and public sector leadership.

618.  CITIZEN PARTICIPATION 3 credits  
Prerequisite: permission. The fundamental theory, background, techniques, and issues of citizen participation in urban policymaking.

620.  SOCIOLOGICAL PERSPECTIVES ON URBAN POLICIES 3 credits  
Prerequisite: permission. In-depth analysis of the social policies and planning function and their impact in the United States and selected countries.

621.  URBAN SOCIETY AND SERVICE SYSTEMS 3 credits  
Prerequisite: permission. Analysis of social bases of urban society, hierarchies, social problems, relationships to planning, public services.

622.  URBAN PLANNING AND HEALTH CARE 3 credits  
Basic knowledge of the health service delivery system is provided for planners and administrators in the public sector.

623.  PUBLIC WORKS ADMINISTRATION 3 credits  
Prerequisite: permission. Examines the building, maintenance and management of public works.

626.  PARKS AND RECREATION 3 credits  
Prerequisite: permission. Deals with theory, practice, evaluation of recreational administration, planning.

640.  DISASTER MANAGEMENT 3 credits  
Prerequisite: permission. Analysis of the process of urban and regional planning.

641.  URBAN ECONOMIC GROWTH AND DEVELOPMENT 3 credits  
Prerequisite: permission. Analysis of urban economic growth and its susceptibility to social, economic, political and physical change.

642.  PUBLIC BUDGETING 3 credits  
Prerequisite: permission. Current professional practice and theoretical issues in public budgeting and management of capital and operating budgets.

643.  INTRODUCTION TO PUBLIC POLICY 3 credits  
Prerequisite: permission. Introduction to public policy, public sector applications of quantitative methods, identification of major policy issues and the analysis of policy implementation and policy impact.

650.  COMPARATIVE URBAN SYSTEMS 3 credits  
Prerequisite: permission. Comparative schemes and methodology for comparative urban analysis and surveying the development of urban societies in the world.

670.  RESEARCH FOR FUTURE PLANNERS 3 credits  
Prerequisites: 650 or 651 or equivalent. Examination of the professional role of planners, and the role of the planning movement in society.

671.  PROGRAM EVALUATION IN URBAN STUDIES 3 credits  
Prerequisite: permission. Introduction to microcomputer application in urban studies, including data entry, statistical analysis, report writing, graphical representation and spreadsheets.

674.  ANALYTICAL TECHNIQUES FOR PUBLIC ADMINISTRATORS 3 credits  
Prerequisite: permission. Analysis of various urban problems, and current develop- ment of urban studies. Examination of the major components of public organization and public policy and their implementation.

680.  SELECTED TOPICS IN URBAN STUDIES 3 credits  
Prerequisite: permission. Selected topics in specific areas of urban planning, in various developmental processes of cities, or in various urban policy and administrative issues. A maximum of 27 credits may be earned in 680 and 681.

690.  URBAN STUDIES SEMINAR 3 credits  
Prerequisites: 15 credits of urban studies courses plus quantitative methods. Urban planning research methods applied to specific urban research areas. Comprehensive paper required.

695.  INTERNSHIP 3 credits  
May be repeated for a total of three credits. Prerequisite: permission. Faculty-supervised work experience in which the student participates in policy planning, administrative operations in selected urban, state and federal governments and urban agencies.

697.  INDIVIDUAL STUDIES 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 15 credits  
Prerequisite: permission. Supervised thesis writing. (May be repeated for a total of nine credits.)
101 Courses of Instruction

College of Engineering

CHEMICAL ENGINEERING

4200:

561 SOLIDS PROCESSING
Prerequisites: 320 and 353 or permission. Comprehensive problems in segregation, fluidization, drying and other operations involving mechanics of particulate solids in liquid and gas continua.

563 POLLUTION CONTROL
Prerequisite: 353 or permission. Air and water pollution sources, and problems. Engineering aspects and methodology.

566 DIGITIZED DATA AND SIMULATION
Prerequisite: permission. Data acquisition and analysis by digital devices, digital control applications, and design.

570 ELECTROCHEMICAL ENGINEERING
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
Prerequisite: 353. Introduction to the separation and purification techniques pertinent to biochemical processes, with emphasis on the engineering considerations for large-scale operations.

600 TRANSPORT PHENOMENA
Prerequisites 322 or permission. Systematic presentation of conservation of momentum, energy, and mass at microscopic and macroscopic levels in conjunction with illustrative examples and analogies.

605 CHEMICAL REACTION ENGINEERING
Prerequisite: 300 or permission. Kinetics of homogeneous and heterogeneous systems. Reactor design for ideal and non-ideal flow systems.

610 CLASSICAL THERMODYNAMICS
Prerequisite: 225. Discussion of thermodynamics and their application. Prediction and evaluation of thermodynamic data. Phase and reaction equations.

622 BIOCHEMICAL ENGINEERING
Application of chemical engineering principles to biological processes which produce desirable compounds or destroy unwanted or hazardous substances.

630 CHEMICAL PROCESS DYNAMICS
Prerequisite: 600. Development and solutions of mathematical models for chemical processes, including modes based on transport phenomena principles, population balance methods and systems analysis.

631 CHEMICAL ENGINEERING ANALYSIS
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
Prerequisites: 3540, 323. Description and analysis of the complex behavior exhibited by nonlinear equations. Emphasis is on the numerical methods to quantify chaos.

634 APPLIED SURFACTANT SCIENCE
Prerequisite: 610. The basics of surfactant science, the chemical engineering application of surfactants including use in polymerization media, separations, emulsions, microemulsions and foams.

635 ADVANCED POLYMER ENGINEERING
Prerequisites: 320, 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer modification.

640 ADVANCED PLANT DESIGN
Prerequisite: permission. Principles of process and equipment design, scale-up, optimization, process synthesis, process economics. Case problems.

645 HETEROGENOUS CATALYSIS
Prerequisites: 230. Kinetics and mechanisms of heterogeneous and homogeneous catalytic reactions, characterization and design of heterogeneous catalysts.

698 TOPICS IN CHEMICAL ENGINEERING
Prerequisite: 610. Topics selected from new and developing areas of chemical engineering, such as chemical engineering of coal and synfuels, processing, bioengineering, simultaneous heat and mass transfer processes, adsorption, and new separation techniques.

698 MASTER'S RESEARCH
Prerequisite: Permission of advisor. Master's research on a suitable topic in chemical engineering culminating in a master's thesis.

699 MASTER'S THESIS
Prerequisite: Approval of master's degree advisor. Supervised student research in specific area of chemical engineering selected on basis of availability of staff and facilities.

701 ADVANCED TRANSPORT PHENOMENA
Prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multiphase reactive transport and multiphase transport. Illustrative practical examples presented.

702 MULTIPHASE TRANSPORT PHENOMENA
Prerequisite: 600. General transport phenomena, kinematics, Cauchy's lemma and the jump boundary conditions are developed followed by the theory of volume averaging. The technique for using these equations and their practical significance is also covered.

706 ADVANCED REACTION ENGINEERING
Prerequisites: 605. Kinetics of heterogeneous systems, steady and unsteady state phenomena, stoichiometric and catalytic modeling of chemical reactors, fluidization and additional topics drawn from current literature.
CIVIL ENGINEERING

4300:

514 DESIGN OF EARTH STRUCTURES 3 credits
Prerequisite: 314 or permission. Design of earth structures; dams, highway fills, embankments, etc. Embankment construction techniques, quality control, embankment analysis, instrumentation, foundation soil stabilization, seepage analysis and control. Design problem. Graduates will perform more advanced analysis and design.

518 SOIL AND ROCK EXPLORATION 3 credits
Prerequisite: 314 or permission. Site exploration criteria and planning. Conventional boring, sampling and in situ testing methods. Theory and application of geophysics and geophysical methods including seismic, electrical resistivity, gravity, magnetic and radiological measurements. Air photo interpretation.

523 CHEMISTRY FOR ENVIRONMENTAL ENGINEERS 3 credits (2 lecture – 1 lab)
Prerequisite: One year of college chemistry. General, physical, organic, biochemistry, equilibrium, and colloid chemistry concepts applied to environmental engineering. Concepts are used in water and wastewater laboratory.

529 ENVIRONMENTAL ENGINEERING DESIGN 3 credits
Prerequisite: 323. An introduction to the physical, chemical and biological processes utilized in the treatment of water and wastewater, with design parameters emphasized.

527 WATER QUALITY MODELING AND MANAGEMENT 3 credits
Prerequisite: 323. Analysis and simulation of the physical, chemical and biochemical processes affecting surface water quality. Development of management strategies based upon the application of water quality modeling techniques to environmental systems.

528 HAZARDOUS AND SOLID WASTES 3 credits
Prerequisite: 314 or permission. Hazardous and solid waste properties and sources are presented. Handling, processing, storage and disposal methods are discussed with non-technical constraints outlined.

531 APPLIED HYDRAULICS 3 credits
Prerequisite: 314. Review of design principles, urban hydraulics, steam channel mechanics, sedimentation, coastal engineering.

532 COMPUTER METHODS OF STRUCTURAL ANALYSIS 3 credits
Structural analysis using computers. Finite element software, interactive graphics, beam stiffness concepts and matrix formulation; simple and complex structural systems modeling, vibration analysis.

553 OPTIMUM STRUCTURAL DESIGN 3 credits
Prerequisite: 306. Basic concepts in structural optimization. Mathematical programming methods including unconstrained minimization, multidimensional minimization and constrained minimization.

554 ADVANCED MECHANICS OF MATERIALS 3 credits
Prerequisite: 202 or equivalent. Three-dimensional state of stress and strain analysis. Unsymmetric bending of straight and curved members with shear deformation. Beams on elastic foundations. Saint-Venant’s torsional problems. Inelastic analysis of bending and torsional members. Introduction to energy methods. Instability behavior of prismatic members.

555 TRANSPORTATION PLANNING 3 credits
Prerequisite: 361. Theory and techniques for development, analysis and evaluation of transportation systems. Emphasis on understanding and using tools and professional methods available to solve transportation planning problems, especially in urban areas.

556 HIGHWAY DESIGN 3 credits
Prerequisite: 361. Study of modern design of geometrical and pavement features of highways. Design problems and computer use. Graduate students will produce a more complete design.

558 ENGINEERING MATERIALS 3 credits
Prerequisite: 356. Theories of elasticity, viscoelasticity and of layered systems as applied to pavements. Pavement materials characterization, pavement design, pavement restoration for rigid and flexible pavements.

566 TRAFFIC ENGINEERING 3 credits
Prerequisites: 361. Vehicle and urban traffic characteristics, traffic flow theory, traffic studies, accidents and safety, traffic signs and marking, traffic signal planning, traffic control and transportation administration.

557 ADVANCED HIGHWAY DESIGN 3 credits
Prerequisites: 365. Permission. Computer-aided geometric design of highways including survey data input, data transfer, template use, handover, vertical and horizontal roadway design, earthwork computations, and advanced topics.

568 HIGHWAY MATERIALS 3 credits
Prerequisites: 381, 260 or permission. Properties of aggregates, manufacture and properties of portland cement concrete, asphaltic and portland material, design and rating of asphalt pavement mixes and of surface treatments. Laboratory preparation of specimens and determination of properties. Graduate student requirement. Undergraduate students will be required to perform an additional term project. (3 credits)

574 UNDERGROUND CONSTRUCTION 3 credits
Prerequisite: 363. Describes construction, excavation of proper method for individual job. Design of underground structures, supports, and linings.

604 DYNAMICS OF STRUCTURES 3 credits

605 STRUCTURAL STABILITY 3 credits

606 ENERGY METHODS AND ELASTICITY 3 credits

607 PRESTRESSED CONCRETE 3 credits
Prerequisite: 404. Basic concepts. Design of double-tie roof girder. Shear, deformation, length, column, piers. Design of highway bridge girders, prestressed, post-tensioned, continuous girders, arches, cable-stayed bridges, box girders.

510 MULTISTORY BUILDING DESIGN 3 credits
Prerequisite: 409. Poor systems; staggered truss system; broad frame design; uninframed design; drift indexes; monocoque tube and partial slab systems; earthquake design fire protection. Analysis, by STRUDEL.

599 FINAL EXAMINATION 3 credits
Prerequisite: 554 or equivalent. Preparation of final examination, including practice exams. Subject review.

101 INTRODUCTION TO COMPOSITE MATERIALS 3 credits
Prerequisite: 554 or equivalent. Fundamental concepts of composites, composite mechanics, fiber-reinforced composites, laminate theory, fiber orientation and mechanical properties of laminates. Stress analysis and stiffness and strength of composite materials. Anisotropy, homogenization, and thermally induced stress.

521 ENVIRONMENTAL GEOTECHNICAL TESTING 3 credits
Prerequisites: 518, 612. Theory and practice of static and dynamic in situ and laboratory soil testing. Testing procedures, equipment, applications. General evaluation of geotechnical parameters for routine and special purposes. One lecture, two laboratories per week.

522 FOUNDATION ENGINEERING I 3 credits
Prerequisite: 312 or permission. Foundation bearing capacity and settlement analysis. Design of foundations for shallow and deep foundation systems. Design of driven and cast-in-place piles. Foundation design for discrete foundations and subjected to varying loads, live and dead loads. Design of foundations for geotechnical and mechanical properties.

523 FOUNDATION ENGINEERING II 3 credits
Prerequisites: 392 and 394. Soil-structure interaction theory and application to load-bearing structures. Geotechnical design and load-bearing structures including tunnels, embankments and substructures.

559 SOIL IMPROVEMENT 3 credits
Prerequisite: 322. Admixture stabilization, compaction analysis with vertical sands. Blasting, vibratory compaction, injection and grouting, thermal methods, electro-osmosis, soil reinforcement, case studies.

560 NUMERICAL METHODS IN GEOTECHNICAL ENGINEERING 3 credits
Prerequisites: 326 and 314. Steady-state and transient flow through soils, consolidation, soil structure interaction, piping, stress-distribution analysis of earth structures.
618 ROCK MECHANICS 3 credits
Prerequisite: 554 or permission. Mechanical nature of rocks, linear elasticity and application to rock mechanics, rock stresses, time dependent effects of pore pressure, experimental characterization of rock properties, failure theory and crack propagation.

620 SANITARY ENGINEERING PROBLEMS 2 credits
Prerequisite 233. Application of both laboratory methods and theory to solution of sanitary engineering problems involving water pollution, stream erosion, special industrial wastes, detergents and others.

621 ENVIRONMENTAL ENGINEERING PRINCIPLES 4 credits
Corequisite: 503. Principles of chemical reaction engineering, microbiology, air and water pollution regulations, and contaminant migration required for the understanding and solving of environmental problems.

623 PHYSICAL/ChemICAL TREATMENT PROCESSES 3 credits
Prerequisite or corequisite: 211. Theory, current research associated with physical/chemical processes, the impact on design-configuration/operation, sedimentation, filtration, absorption processes emphasized.

624 BIOLOGICAL TREATMENT PROCESSES 3 credits
Prerequisite or corequisite: 211. Theory, current research associated with biological processes, related biological processes, the impact on design-naturalized sludge, fixed film processes, gas transfer, sludge stabilization, sludge dewatering processes emphasized.

625 WATER TREATMENT PLANT DESIGN 3 credits
Prerequisite: 223. Design of water treatment plants for potable, industrial and commercial uses. Development of water sources, treatment methods and financing used to design best practical designs.

626 WASTEWATER TREATMENT PLANT DESIGN 3 credits
Prerequisite: 224. Application of theory and fundamentals to design of wastewater treatment plants. System design methods used for biochemical and chemical stabilization of wastewater to meet water quality criteria. Economic analyses made to determine best practical designs to be utilized.

627 ENVIRONMENTAL OPERATIONS LABORATORY 2 credits
Prerequisite: 626 or permission. Conduct of laboratory experiments related to the design and operation of water and wastewater treatment processes. Experimental design, data collection, analysis and report preparation.

631 SOIL REMEDIATION 3 credits
Prerequisite: 621 or permission. Provide a thorough understanding of site characterization, traditional soil remediation technologies, as well as present new and emerging remediation technologies.

640 ADVANCED FLUID MECHANICS 3 credits

644 OPEN CHANNEL HYdraulICS 3 credits
Applications of basic principles of fluid mechanics to flow in open channels. Criteria for analysis of uniform, gradually varied and rapidly varied flows. Study of movement and transport of sediments. Design problems utilizing numerical techniques.

645 APPLIED HYDROLOGY 3 credits
Discussion of water cycle such as precipitation, evaporation, stream flows, infiltration, Methods of analysis and their application to studies of water demand, storage, transportation including mathematical modeling of urban runoff and statistical hydrology.

646 COASTAL ENGINEERING 3 credits
Characteristics of linear and nonlinear wave theories. Interaction of structures, waves, design analysis of shore, offshore structures. Movement, transportation of sediments in lake shore areas.

681 ADVANCED ENGINEERING MATERIALS 3 credits
Selected topics on governing mechanical behavior of materials with respect to elastic, plastic and creep responses, stress rupture, low and high cycle and thermal fatigue. Failure theories and fracture phenomena in brittle and ductile materials. Crack propagation and life prediction of engineering materials.

682 ELASTICITY 3 credits

683 PLASTICITY 3 credits

684 STRENGTH OF CONCRETE DESIGN 3 credits

685 ADVANCED STEEL DESIGN 3 credits
Prerequisite: 405. Properties of steel, fasteners, bearing, friction joints, Gusset plates, bolts for tension, end plates, weld joints, cyclic loads. Fatigue analysis, types of detail, toner, stability design.

686 EXPERIMENTAL METHODS IN STRUCTURAL MECHANICS 3 credits

687 LIMIT ANALYSIS IN STRUCTURAL ENGINEERING 3 credits
Prerequisites: 504554, 682. Fundamental theorems of limit analysis. The lower bound and upper bound theorems. Applications to plates and plane stress and plane strain problems. Design considerations. Mathematical programming and computer implementation.

689 ADVANCED SEMINAR IN CIVIL ENGINEERING 3 credits
Prerequisite: permission. Advanced projects, reading, studies, or experimental in various areas of civil engineering.

697 ENGINEERING REPORT 2 credits
Prerequisite: Permission of advisor. A relevant problem in civil engineering for students, electing the non-thesis option. The final engineering report must be approved by the advisor and the advisory committee.

698 MASTER'S RESEARCH 16 credits
Prerequisite: Permission of advisor. May be repeated. Research on a suitable topic in civil engineering culminating in a master's thesis.

699 MASTER'S THESIS 16 credits
Prerequisite: permission. Research and thesis on a suitable topic in civil engineering as approved by department. Defense of thesis is by final examination.

701 EARTHQUAKE ENGINEERING 3 credits

702 PLATES AND SHELLS 3 credits

703 VISCOELASTICITY AND VISCOPLASTICITY 3 credits

704 FINITE ELEMENT ANALYSIS II 3 credits
Prerequisite: 608 and 702 or permission. Curved, plate, shell brick elements. Quasi-analytical elements. Quadrature formulas. Substructuring for static and dynamic analyses. Solution algorithms for linear and nonlinear static and dynamic analyses. Computer program formulation. Review of large-scale production programs.

710 ADVANCED COMPOSITE MECHANICS 3 credits

712 DYNAMIC PLASTICITY 3 credits
Prerequisite: 683 or 702. Impulsive and transient loading of structural elements, beams, plates, shells, etc. in which inelastic deformation occurs. Topics include longitudinal and transverse plate wave propagation in the in-plane, propagation of plastic hinges, rate-dependent viscoplastic waves, transverse impact on beams and plates, high-rate forming, blast loading, plate perforation. Shock waves in solids.

717 SOIL DYNAMICS 3 credits
Prerequisites: 6500:310 or permission. Vibration and wave propagation theory relating to soil and rock, stress-strain relations and typical elements for soil and macropore structures. Dynamic behavior of soils. Design of foundations for dynamic loading impact, pulsing and blast loads.

719 SOIL REMEDIATION 3 credits
Prerequisite: 621 or permission. Provide the fundamentals required for understanding and successfully implementing the biodegradation of hazardous compounds coupled with the understanding of operational techniques of bioremediation systems.

745 SEEPAGE 2 credits
Discussion of parameters determining permeability of various soils. Analytical, numerical and experimental methods to determine two or three-dimensional movement of groundwater. Unsteady flows.

789 PRELIMINARY RESEARCH 1-8 credits
May be repeated for a total of 15 credits. Prerequisite: approval of dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the interdisciplinary Doctoral Committee.

890 DOCTORAL DISSERTATION 1-8 credits
May be taken more than once. Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student.

ELECTRICAL ENGINEERING 4400:

549 DIGITAL COMMUNICATION 3 credits
Prerequisite: 341. Introduction to digital communication theory and systems; coding of analog and digital information; digital modulation techniques. Introduction to information theory.

553 ANTENNA THEORY 3 credits
Prerequisites: 354 or equivalent. Theory of EM radiation. Wave antennas, arrays, receiving antennas, reciprocity. Integral equations for induced currents, self and mutual impedances. Equivalent principle, radiation from aperture antennas.

555 MICROWAVES 4 credits
Prerequisite: 354 or equivalent. Dynamic fields, Maxwell's equation and wave equations. Field analysis of wave guides, microwave components, techniques and systems.

563 PROGRAMMABLE LOGIC 4 credits
Prerequisite: 354 or equivalent. Digital circuits, computer engineering, digital electronics. Programming and implementation.

565 MICROPROCESSOR INTERFACING 3 credits
Microprocessor structure, bus interface, digital controller devices and their relationship to both the microcomputer and physical environment.

572 CONTROL SYSTEMS II 3 credits
Prerequisite: 371. State variable analysis, design of control systems. Discrete systems, analysis, digital computer control. Experiments include hybrid, AC control system, digital computer control system design.

583 POWER ELECTRONICS I 3 credits
Prerequisite: 332. Elements of power electronics circuits. Rectifiers, converters, inverters and control of power systems.

584 POWER ELECTRONICS LABORATORY AND DESIGN PROJECT 2 credits
Prerequisite: 483,653 or equivalent. Experiments on different types of power electronic converters: AC/DC, DC/AC, DC/DC, and AC/AC. Design project to include design, simulation, building and testing of a power electronic circuit.

585 ELECTRIC MOTOR DRIVES 3 credits
Prerequisite: 381. Application of electrical machines, choice of motor for particular drive. Application of power semiconductor circuits in electric machinery.

598 TOPICS IN ELECTRICAL ENGINEERING 1-2 credits
May be taken more than once. Prerequisite: permission of department chair. Special topics in electrical engineering.

600 ADVANCED MICROCOMPUTER SYSTEMS 3 credits
Prerequisite: 365 or permission. Discussion of multiprocessing, numerical array processors, microtasking, system bus architectures, microcomputer systems, multiprocessor architectures, multi-level protection and virtual memory, as supported by commercial microprocessors.

631 CIRCUIT ANALYSIS 3 credits
Prerequisite: Graduate standing. Operational methods, time domain analysis, state variable methods and matrix techniques applied to circuit analysis. Realizability and synthesis of driving point impedance and transfer functions.
641 RANDOM SIGNAL ANALYSIS  3 credits
Prerequisite: 441 Analysis, interpretation and smoothing of engineering data through application of statistical and probability methods.

643 INFORMATION THEORY AND CODING  3 credits
Prerequisites: 641 or permission. Source, channel, topic to transmission rates, measure of uncertainty, entropy, mutual information, source coding theorem and channel coding theorem. Channel coding theorem for waveform channels. Introduction to intersymbol distortion theory.

644 CHANNEL CODING  2 credits
Prerequisite: 541 or permission. Jieibeic structure of error control codes, techniques for encoding and decoding. Coverage of the major classes of linear block codes and convolutional codes.

645 DIGITAL SIGNAL PROCESSING I  2 credits
Prerequisite: 433. Relations between continuous and discrete-time Fourier transforms. Sampling, aliasing, simple change conversion. Operator concepts in signal processing. 15-pass system design. FFT, digital filter design.

646 DIGITAL SIGNAL PROCESSING II  3 credits
Prerequisites: 641 or permission of instructor. Methods and theory of spectral analysis and signal modeling. Prerequisite: 641 or permission.

647 DETECTION AND ESTIMATION THEORY  3 credits

650 ELECTROMAGNETIC THEORY I  3 credits

651 ELECTROMAGNETIC THEORY II  3 credits
Prerequisite: 650 or permission of course instructor. Scattering, TEM waves, guided wave theory, transmission lines, guided wave theory, transmission lines, guided wave theory, guided wave theory, guided wave theory, guided wave theory, guided wave theory, guided wave theory, guided wave theory, guided wave theory, guided wave theory.

652 ADVANCED ELECTROMAGNETICS  3 credits

653 ADVANCED ANTENNA THEORY AND DESIGN  3 credits

657 WIRELESS COMMUNICATIONS  3 credits
Prerequisite: 541 or permission. Analysis and simulation of wireless communications systems. Topics include: wave propagation, multiple access, modulation, nondetection, multipath channel characterization, diversity, cellular, and PCS services and standards.

658 DESIGN OF DIGITAL SYSTEMS  3 credits
Prerequisite: 465. Applicances of logic circuits in modern digital electronic computer and digital communication systems. Computer organization and control, input-output devices and interface standards, advanced topics in computers.

662 TOPICS IN ELECTRONICS  3 credits
Prerequisite: permission of department chair. Discussions of recent advances in electronics.

663 VLSI CIRCUITS AND SYSTEMS  3 credits
Prerequisite: graduate status in Electrical Engineering. Basic properties and recent advances of monopoles, dipoles, waveguide, Analysis and design of reflector antennas. Analysis and synthesis of linear and planar antenna arrays.

666 INTEGRATED CIRCUITS  3 credits
Prerequisite: 352, 559, or equivalent. Development of physical and analytical descriptions of solid-state electronic devices. Introduction to the mathematical equations and models of Shockley and Poole diodes and field-effect and bipolar transistors.

671 DISCRETE CONTROL SYSTEMS  3 credits
Prerequisite: 412/512 or permission. Theory, techniques for analysis, design of discrete control systems. Z-domain transform, stability analysis, frequency response, optimization, digital computer control.

673 NONLINEAR CONTROL  3 credits
Prerequisite: 672 or permission of instructor. Designed to provide students with qualitative insights into nonlinear systems as well as techniques for controlling such systems. Topics include: describing functions, Popov and circle criteria, jump resonances, phase plane, control systems, Lyapunov theory, bifurcation of attractors, and routes to chaos.

674 CONTROL SYSTEM THEORY  3 credits
Prerequisite: 371 or permission. Advanced modern control theory for linear systems. Controllability, observability, minimal realizations of multivariable systems, stability, state variable feedback, estimation, and an introduction to optimal control.

675 SYSTEM SIMULATION  2 credits
Prerequisite: 472 or permission of the instructor. The course is designed to provide the control engineer with tools necessary to simulate continuous systems on a digital computer. Topics include: linear multivariable systems, nonlinear systems, stability, operation, and reliability.

677 RANDOM PROCESS ANALYSIS  3 credits
Prerequisite: 634. Analysis of the behavior of control systems with stochastically defined input to estimation theory filters.

678 OPTIMAL CONTROL I  3 credits
Prerequisite: 634. Formulation of optimization problems, application of variational calculus, maximum principle and optimality principle to control problems. Computational techniques in optimization.

680 DYNAMICS AND CONTROL OF POWER ELECTRONIC CIRCUITS  3 credits
Prerequisites: 436/536. Analysis of the behavior of control systems with stochastically defined input to estimation theory filters.

681 POWER SYSTEM ANALYSIS  3 credits
Prerequisite: 480. Short circuit and load flow analysis of power systems with emphasis on computer solutions. Solution of large systems.

682 POWER SYSTEM STABILITY  2 credits
Prerequisite: 681. Steady state and transient stability of power systems with emphasis on computer solutions.

683 ECONOMICS OF POWER SYSTEMS  2 credits
Prerequisite: 661. Analysis and operation of power systems for economic dispatching using a computer.

684 PROTECTIVE RELAYING  3 credits
Prerequisite: 460. Principles and application of relaying as applied to protection of power systems.

685 SURGE PROTECTION  3 credits
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  3 credits
Prerequisite: graduate student in Electrical Engineering. Voltage and magnetic differential equations of electric machines, analytical and numerical methods for solution of a system of machine differential equations.

687 POWER ELECTRONICS  3 credits
Prerequisites: 480/580 or equivalent. Effects of the nonidealities of the power circuits, elements, magnets, bars, and gate drives, thyristor commutation circuits, heat transfer and thermal analyses and design of advanced power circuits.

688 CONTROL OF SEMICONDUCTOR DEVICES  3 credits
Prerequisite: graduate student in Electrical Engineering. Structure and physics of power semiconductor devices and bipolar junction transistors, MIBT's, Thyristors. Power MOS-Bipolar devices (GOTM). Emphasis on the devices that characterize these devices from the lower power semiconductor devices.

691 ADVANCED SEMINAR  1-2 credits
May be taken more than once. May be repeated. Research in a graduate field of investigation. 1-2 credits depend upon nature and extent of project.

693 RESEARCH PROJECT  1-2 credits
May be repeated. Research in a graduate field of investigation. 1-2 credits depend upon nature and extent of project.

4450: COMPUTER ENGINEERING

501 OBJECT-ORIENTED DESIGN  3 credits
Prerequisites: 350208 or equivalent. Introduction to object-oriented design paradigm and the design implementation with the Object-oriented programming language "C++"

502 INTEGRATED SYSTEM DESIGN  3 credits
Prerequisite: 470/44000. Introduction to computer systems, design methods and development tools for VLSI systems, RISC design, and software engineering. Assembly language and tools and object-oriented design.

503 SPECIAL TOPICS: COMPUTER NETWORKS  3 credits
(1) May be taken more than once. Prerequisite: permission of department chair. Special topics in computer engineering.

601 COMPUTER ARCHITECTURE  3 credits
Prerequisite: 350208 or equivalent. Historical development of computer architecture. Design methodologies. Processor organization and design of instruction sets. Parallel processing. Central control implementation. Memory and operating system configuration. Department Design.

602 PARALLEL COMPUTER ARCHITECTURE  3 credits
Prerequisite: 3604 or equivalent. Parallel computer architectures, parallel processor interconnection structures, and parallel processing on a single instruction, multiple data (SIMD) computer.

The University of Akron 2019-2000
Courses of Instruction

560 THERMAL SYSTEM COMPONENTS 3 credits
Prerequisites: 320, 330, or 350 or permission. Performance analysis and design of basic components of thermal energy exchange and conversion systems. Components studied include heat exchangers, compressors, turbines, and expansion engines.

561 HEATING AND AIR CONDITIONING 3 credits
Prerequisite: 320 or permission. Entrance and operation of heating and air conditioning equipment. Control of gas burners, heating, cooling, and humidity.

564 COMPRESSIBLE FLUID MECHANICS 3 credits

555 EXPERIMENTAL METHODS 3 credits
Prerequisite: 320 or permission. Introduction to experimental methods of determining stress or strain. Use of data reduction equipment. Application to seismic problems and other topics in advanced dynamics.

556 INTRODUCTION TO AERODYNAMICS 3 credits
Prerequisite: 320. Introduction to aerodynamic concepts. Formal transformations, theory of thin airfoils, 2-dimensional airfoil theory, wings of finite span, lifting line theories, lumped vortex, vortex sheets, and panel methods.

557 INTRODUCTION TO AEROSPACE PROPULSION 3 credits
Prerequisite: 320. Introduction to propulsion systems currently utilized in aerospace fields. Propulsion principles for turboshaft, turbojet, and rocket propulsion systems.

559 ENERGY CONVERSION 3 credits
Prerequisite: 320 or permission. Entrance and operation of heating and air conditioning equipment. Control of gas burners, heating, cooling, and humidity.

572 EXPERIMENTAL STRESS ANALYSIS I 3 credits
Prerequisite: 320 or permission. Experimental methods of determining stress or strain. Transient strain, strain gages, photoelasticity, full-field thermal techniques.

573 MACHINE DYNAMICS 3 credits
Prerequisite: 320 or permission. Static and dynamic forces in machines, products of inertia, moments of inertia, moment of force, dynamic equalization, free vibrations, balance of rotating, reciprocating, cyclic plane motion. Computer simulation of transient mechanical systems. Other topics in advanced dynamics.

574 FUNDAMENTALS OF MECHANICAL VIBRATIONS 3 credits
Prerequisites: 320 or permission. Introduction and advanced topics in the study of vibrations. Application to vehicles and structures.

575 VEHICLE DYNAMICS 3 credits

580 SYSTEMS AND CONTROL 4 credits

591 CONTROL SYSTEMS DESIGN 3 credits
Prerequisites: 340 or permission. Methods of feedback control design such as minimum error. Root locus, frequency domain. Compensation techniques. Multivariable and nonlinear design techniques and computer-aided control design.

593 INDUSTRIAL AUTOMATIC CONTROL 3 credits
Prerequisite: 3 or permission. Operation of basic control mechanisms. Study of mechanical, hydraulic, pneumatic, fluidic control systems, including application areas. Tuning of control elements for maximum performance of the system. Error analysis and design. Computer-aided design techniques.

594 OPTIMIZATION METHODS IN MECHANICAL ENGINEERING 3 credits
Prerequisites: 400 or permission. Techniques for optimization of engineering systems and the use of computer software packages. Techniques for optimization of engineering systems and the use of computer software packages.

595 INTRODUCTION TO COMPUTATIONAL FLUID FLOW AND CONVECTION 3 credits
Prerequisites: 325 or permission. Study of convective heat transfer and fluid flow. Use of advanced heat transfer/fluid flow graphics packages.

596 FRACTION VESSEL DESIGN 3 credits
Prerequisite: 330 or permission. Introduction to modern pressure vessel technology. Topics include basic structural considerations, failure analysis and design, and the pressure vessel design process.

598 COMPUTER Aided Design and Manufacturing 3 credits
Prerequisites: 300 or permission. Use of computer-aided design and manufacturing software. Design and manufacturing processes. Computer-aided design and manufacturing applications.

600 GAS DYNAMICS 3 credits
Prerequisites: 415 or permission. Application of mathematical modeling of fluid systems. Numerical solution of the momentum and energy equations. Use of advanced heat transfer/fluid flow graphics packages.

603 EXPERIMENTAL STRESS ANALYSIS II 3 credits
Prerequisite: 325 or permission. Study of experimental stress analysis techniques. Use of advanced heat transfer/fluid flow graphics packages.

606 CONVECTION HEAT TRANSFER 3 credits
Prerequisite: 325 or permission. Study of convection heat transfer. Use of advanced heat transfer/fluid flow graphics packages.

608 CONSTRUCTION REPORTING AND RESPONSIBILITY 3 credits
Prerequisite: 325 or permission. Study of construction reporting and responsibility. Use of advanced heat transfer/fluid flow graphics packages.

625 MACHINERY FABRICATION 3 credits
Prerequisite: 325 or permission. Study of machinery fabrication. Use of advanced heat transfer/fluid flow graphics packages.

629 FUNDAMENTALS OF THEORETICAL MECHANICS 3 credits
Prerequisite: 325 or permission. Study of theoretical mechanics. Use of advanced heat transfer/fluid flow graphics packages.

630 VIBRATIONS 3 credits
Prerequisites: 325 or permission. Study of vibrations. Use of advanced heat transfer/fluid flow graphics packages.

631 NUMERICAL METHODS IN ENGINEERING 3 credits
Prerequisites: 325 or permission. Study of numerical methods in engineering. Use of advanced heat transfer/fluid flow graphics packages.

632 RELIABILITY IN DESIGN 3 credits
Prerequisites: 337 or permission. Study of reliability in design. Use of advanced heat transfer/fluid flow graphics packages.

633 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

635 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

636 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

637 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

638 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

639 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

640 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

641 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

642 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

643 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

644 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

645 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

646 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

647 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

648 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

649 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

650 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.

651 ENGINEERING PROBLEMS AND DESIGN 3 credits
Prerequisite: 325 or permission. Study of engineering problems and design. Use of advanced heat transfer/fluid flow graphics packages.
803 SPECIAL TOPICS IN MECHANICAL SYSTEMS
Prerequisite: Permission of instructor. Advanced topics in mechanical systems. Development and application of system optimization, controls, and analysis techniques.

856 BIOMEDICAL ENGINEERING
4 credits
Prerequisite: 4800:220, 300:208, 4800:335, 4800:220. or permission of instructor. Principles of biomedical imaging systems, with emphasis on digital radiography, computed tomography, nuclear medicine, ultrasound, and magnetic resonance imaging.

537 PHYSICAL PRINCIPLES OF MEDICAL IMAGING
3 credits
Prerequisite: 4800:220, 300:208, 4800:335, 4800:220. Physical principles of medical imaging modalities with emphasis on the properties of radiographic beams, computed tomography, magnetic resonance imaging, ultrasound, and nuclear medicine imaging.

560 EXPERIMENTAL TECHNIQUES IN BIOMECHANICS
3 credits
Prerequisite: 4305:225, 3105:133, 4800:220. Principles of experimental techniques commonly used for cell and tissue studies. Laboratory techniques for the maintenance and study of isolated muscle, nerve, and connective tissue.

4800: BIOMEDICAL ENGINEERING
4 credits
Prerequisite: 200:151, 200:152, 4400:202 or 4400:220. Clinical instrumentation to measure, display, and analyze physiological and anatomic parameters. Basic concepts of instrumentation including design, operation, and data analysis. Practical experience gained through the use of instrumented mammalian models.

BIOMEDICINE AND MEDICAL SCIENCE
4 credits
Prerequisite: 4300:211 or equivalent. Development of appropriate solution techniques including finite elements, methods of least squares, and advanced numerical techniques for solving systems of linear and nonlinear equations.

723 APPLIED STRESS ANALYSIS
3 credits
Prerequisite: 622. Development of approximate solution techniques and finite element methods for analyzing structures with traditional and nontraditional boundary conditions. Applications to structural and mechanical systems.

636 NONLINEAR CONTINUUM MECHANICS
3 credits
Prerequisite: 622. Application of nonlinear analysis to the study of structures, constitutive relations, and nonlinear equations of motion. Solutions of nonlinear deformation problems in finite elasticity, coupled thermomechanical problems, and plasticity and elasto-plasticity and mesoscopic theories.

720 VIBRATIONS OF CONTINUOUS SYSTEMS
3 credits
Prerequisite: 630. Continuum analysis of continuous vibrating systems, using separation of variables, energy, and time. Development of approximate solution techniques and finite element methods for analyzing structures with traditional and nontraditional boundary conditions.
**College of Education**

**EDUCATIONAL FOUNDATIONS AND LEADERSHIP**

**5100:**

512 DESIGN AND PRODUCTION OF INSTRUCTIONAL MATERIALS 3 credits
Design, adaptation and production of instructional materials using graphics, transparent production, video equipment, computer authoring software, mounting and terminating processes, photographers and other procedures.

514 ORGANIZING AND SUPERVISING EDUCATIONAL MEDIA PROGRAMS 3 credits
Prerequisite: 310 or permission of the instructor. Procedures for planning, organizing and evaluating educational media programs, including media facilities and services.

520 INTRODUCTION TO INSTRUCTIONAL COMPUTING 3 credits
Examination of the use of word processing, spread sheets, databases, graphics, telecommunications and authoring software in basic educational and business settings and evaluates instructional and applications software.

590.1W WORKSHOP 10 credits
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

594 EDUCATIONAL INSTITUTES 14 credits
Special-course designed as in-service upgrading programs, frequently provided with the support of curriculum units.

600 PHILOSOPHIES OF EDUCATION 3 credits
Examination of basic philosophical problems underlying educational questions that confront society, from the foundations of understanding of questions of modern society and education.

602 COMPARATIVE AND INTERNATIONAL EDUCATION 3 credits
Comparative study of selected national school systems, reference to factors that shape their characteristics. Different theoretical approaches used in study of comparative education also investigated.

604 TOPICAL SEMINAR IN THE CULTURAL FOUNDATIONS OF EDUCATION 3 credits
May be repeated for a total of six credits. Topics and subjects related to study of educational institutions, policies, and areas. Different topics will be offered from section to section.

610 PLANNING FOR TECHNOLOGY 3 credits
Prerequisite: 500 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 for computer use.

616 ADULT EDUCATION 2 credits
Survey course for teachers and administrators. Historical background including influence and their role in developments in the field. Emphasis on background and social value of current programs.

620 PSYCHOLOGY OF INSTRUCTION FOR TEACHING AND LEARNING 3 credits
Prerequisite: 200/211 or equivalent. Current theories and research in the areas of cognition and learning, development, and motivation that underlie approaches to teaching in any context.

624 SEMINAR: INSTRUCTIONAL PSYCHOLOGY 2 credits
May be repeated for a total of six credits. Topics of current interest and need will be emphasized. The student will develop extended competency with contemporary measurement and evaluation techniques.

630 TOPICAL SEMINAR IN COMPUTER-BASED EDUCATION 3 credits
May be repeated for a total of six credits. Advanced topics related to development, implementation, research and evaluation in C.B.E. Student involvement emphasized, required, knowledge of programming language recommended.

650 TOPICAL SEMINAR IN EDUCATIONAL TECHNOLOGY 3 credits
Repeatablity for up to nine credits. Current trends and practices in educational technology; current software, tools and processes for instructional video production, presentation systems.

690 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.

692 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 competency with contemporary measurement and evaluation techniques.

694 MULTICULTURAL COUNSELING 3 credits
Prerequisite: 5600/565 or permission of instructor. An examination of multicultural counseling theory and research necessary to work effectively with culturally diverse clientele.

698 INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN 3 credits
An exploration of individual and family development. Emphasis will be placed on understanding the relationships between the individual and the family.

699 FIELD EXPERIENCE: MASTER'S 1-3 credits
Prerequisite: permission of department chair and instructor. Area determined in accordance with student's program and professional goals.

700 MASTER'S TECHNOLOGY PROJECT 3 credits
Prerequisite: permission of department chair and instructor. Project designed to answer a defined research question.

707 EMPLOYMENT STIPEND 2 credits
Prerequisite: permission of department chair and instructor. Stipend allows students to work in supportive positions to earn income.

698 MASTER'S PROJECT 2 credits
Prerequisite: permission of advisor. In-depth study of research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with problems in educational foundations.

699 MASTER'S THESIS 4-6 credits
Prerequisite: permission of department chair and instructor. Independent study of research problem within humanistic and behavioral foundation.

701 HISTORY OF EDUCATION IN AMERICAN SOCIETY 3 credits
Prerequisite: 500 or equivalent. Historical development of education in American social order with special emphasis on social political and economic setting.

703 SEMINAR: HISTORY AND PHILOSOPHY OF HIGHER EDUCATION 3 credits
Prerequisite: 500 or equivalent. Historical and philosophical development of higher education in the United States, with special emphasis on higher education developments in the United States and other countries.

710 ADULT LEARNING, DEVELOPMENT, AND MOTIVATION 3 credits
Emphasis on theories of intelligence, styles of adult learning, stage theories of adult cognitive, conceptual and moral development; life cycle development; adult life transitions.

711 LEARNING PROCESSES 3 credits
Study of principles underlying classroom learning processes with particular emphasis on teaching all aspects of modifying pupil behavior. Cognitive, motor, social and affective.

723 TEACHER BEHAVIOR AND INSTRUCTION 3 credits
Prerequisite: 500. Effective survey of historical and philosophical literature involving teacher and conditions of instruction. A study of research theory, empirical research and applications in areas of individual interests.

740 RESEARCH DESIGN 3 credits
Topics include problem statement, research questions, literature review, choosing a sample, selecting an appropriate research design and data collection method, and analysis and legal issues.

741 DATA COLLECTION METHODS 3 credits
Emphasis on selecting, developing, and administering common data collection methods: in the social sciences involving non-parametric and parametric descriptive methods, attitude inventories, questionnaires, interviews, focus groups, observations, and content analysis.

742 STATISTICS IN EDUCATION 3 credits
In-depth study of methods and techniques used in educational measurement and in educational research. Emphasis on hypothesis testing.

743 ADVANCED EDUCATIONAL STATISTICS 3 credits
Prerequisite: 742. Emphasis on understanding advanced statistics in education and the social sciences.

788 RESEARCH PROJECT IN SPECIAL AREAS 1-3 credits
Prerequisite: permission of department chair and instructor. Critical and indepth study of specific problems in educational foundations.

801 RESEARCH SEMINAR 3 credits
Prerequisite: 500 or permission of instructor. Intensive study of research methods applicable to education. Emphasis on developing a dissertation proposal.

809 INDEPENDENT STUDY 1-3 credits
Prerequisite: 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:**

590.1,2,3 WORKSHOP 13 credits
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

594 EDUCATIONAL INSTITUTES 14 credits
Special-course designed as in-service upgrading programs, frequently provided with the support of curriculum units.

591 PRINCIPLES OF EDUCATIONAL ADMINISTRATION 3 credits
Prerequisite: 3100/610. A perspective on educational leadership and the context in which it operates, with emphasis on the processes, tasks, roles, and relationships involved. Field based research required.

601 MANAGEMENT OF PHYSICAL RESOURCES 3 credits
A comprehensive view of the principles, practices, and new dimensions involved in planning and management of educational facilities.

602 MANAGEMENT OF HUMAN RESOURCES 3 credits
An introduction to the major dimensions of the personnel function.

603 SCHOOL-COMMUNITY RELATIONS 3 credits
Prerequisites: 5010 and 5100/640. An analysis of the principles, practices and methods that facilitate the interaction between the school's internal and external publics. Field based research required.

606 EVALUATION IN EDUCATIONAL PROFESSIONS 3 credits
Prerequisites: 501 and 5100/640. An examination of the general concepts, models, practical applications and considerations involved in the evaluation of educational organizations.

607 SCHOOL LAW 3 credits
Prerequisites: 501 and 5100/640. An examination of the legal principles underlying education in the United States as reflected in statutory provisions, court decisions and administrative bodies. Field based research required.

610 SCHOOL FINANCE AND ECONOMICS 3 credits
A study of financial operations of school systems, including taxes, other sources of revenue, expenditures, budgeting and financial effects of economic factors.

611 PRINCIPLES OF CURRICULUM DEVELOPMENT 3 credits
Prerequisites: 501 and 5100/640. This course is designed to help the student develop the professional competencies necessary to engage in curriculum decision making.

616 PRINCIPLES OF EDUCATIONAL SUPERVISION 3 credits
Prerequisites: 501 and 5100/640. An introduction to the school functions that improves instruction through direct assistance, curriculum, staff and group development and action research.
ADVANCED PRINCIPLES OF EDUCATIONAL ADMINISTRATION

Study of organizations and strengths and weaknesses of common methods of administering them. Practical methods by which overcoming bureaucratic weaknesses of bureaucracies are offset or lessened by education administrators.

DECISION MAKING IN EDUCATIONAL ADMINISTRATION

Decision making is portrayed as a central function of the educational administrator with a unit presentation of the theory, research, and practice of decision making.

THE SUPERINTENDENCY

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.

ECONOMICS IN EDUCATION

Issues related to the changing marketplace of public, private, schooling and higher education institutions as they relate to an urban environment.

ADVANCED PRINCIPLES OF CURRICULUM DEVELOPMENT

A second course in curriculum development with an emphasis on the performance competencies needed to engage in curriculum planning and decision making.

ADVANCED SCHOOL LAW

An in-depth study of the law as it pertains to the function and role of the administrator as an instructional leader, disciplinarian, building, faculty, and auxiliary services manager.

ADVANCED EVALUATION OF EDUCATIONAL ORGANIZATIONS

An evaluation course to help educational leaders plan and assess educational priorities and development of common perceptions about school administration.

SEMINAR IN EDUCATIONAL POLICIES

A course in educational policy making and implementation. Critical and analytical skills concerned with policy development and implementation are required.

INDEPENDENT RESEARCH PROJECT

(3 credits) A study of the law as it pertains to the function and role of the administrator as an instructional leader, disciplinarian, building, faculty, and auxiliary services manager.

THE AMERICAN COLLEGE STUDENT

Introduction to the sociological literature concerning the impact of college on students and student development theory.

HIGHER EDUCATION CURRICULUM AND PROGRAM PLANNING

Study of curriculum planning at the college and university level, factors influencing curriculum design, theories and practices of curriculum change and innovation are also explored.

WORKSHOP

(36 credits) May be repeated for a total of six credits. Emphasis of the development and demonstration of leader behavior appropriate to the college or university setting.

ADVANCED ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION

May be repeated. Examination of selected perspectives and topics which pose concerns to participation students.

INTERNSHIP IN HIGHER EDUCATION

May be repeated for a total of six credits. May 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.

FINANCE AND HIGHER EDUCATION

(3 credits) Focuses on the financial aspects of the college and university environment.

ORGANIZATION AND POLICY DEVELOPMENT IN HIGHER EDUCATION

Facilitates students' understanding of how American Higher Education is financed, performs functions and responsibilities of college and university administrators.

INSTRUCTIONAL STRATEGIES AND TECHNIQUES FOR THE COLLEGE CLASSROOM

(3 credits) Selected topics in instructional techniques, strategies and approaches which are appropriate to the college classroom and teaching situations.

INDEPENDENT STUDY IN HIGHER EDUCATION

(1-3 credits) Selected areas of independent investigation in an area of higher education as determined by the advisor and student in relation to student's academic needs and career goals.

TECHNICAL AND VOCATIONAL EDUCATION 5400:

POSTSECONDARY LEARNER

Prerequisite: 501 or permission of instructor. Describes characteristics of the postsecondary learner, studies issues, factors, and strategies pertinent to successful planning of learning in a variety of postsecondary education environments.

LEARNING WITH TECHNOLOGY

An overview of educational technology and research methodologies used and applied in workforce training and education by practitioners and researchers in learning, research, and evaluation.

WORKPLACE EDUCATION FOR YOUTH AND ADULTS

Prerequisite: 501 or permission of instructor. History and operation of current workforce education for youth and adults. Includes study of social, economic, and political influences that have shaped and continue to influence workforce education today.

TRAINING IN BUSINESS AND INDUSTRY

Examines the role and mission of the training function in the modern industrial setting. Foundation for students interested in industrial training or supervision positions.

SYSTEMATIC CURRICULUM DESIGN FOR TECHNICAL INSTRUCTION

Prerequisites: 501 and 550, or permission of instructor. Procedure of breaking down an occupation to determine curriculum for laboratory and classroom activities involved. The development of an occupational sequence of instruction is presented as an instructional design.

INSTRUCTIONAL TECHNIQUES IN TECHNICAL EDUCATION

Prerequisites: 501, 530, 510, 520, program in education or permission of instructor. Selects instructional techniques appropriate to postsecondary technical education. Emphasis on instructional methodology in classroom, laboratory, and workshop.

EDUCATIONAL GERONTOLOGY SEMINAR

Designed for persons preparing in field of gerontology or preparing for a specialization in educational gerontology, including person responsible for development of curricula, selection of courses, selection of training programs and workshops for older adults.

HOME ECONOMICS JOB TRAINING

Prerequisites: senior standing and permission of instructor. Concept development in vocational home economics. Job training, program development, occupational procedures, and knowledge identification, training materials, job description and analysis, and evaluated study guides. In-school and on-the-job observation.

SPECIAL TOPICS: WORKFORCE EDUCATION/TRAINING

May be repeated for a maximum of 6 credit hours with a change in topic. May be repeated for a maximum of 6 credit hours with a change in topic. May be repeated for a maximum of 6 credit hours with a change in topic. May be repeated for a maximum of 6 credit hours with a change in topic.

EDUCATIONAL INSTITUTES

Special courses designed to in-service upgrading programs, frequently provided with the support of national foundations.

THE TWO-YEAR COLLEGE

Prerequisite: 501 or permission of instructor. An in-depth study of the history, purpose and philosophy of the two-year college, types of institutions offering two-year programs, management, issues, and techniques.

ADVANCED SYSTEM DESIGN: NEEDS ASSESSMENT AND EVALUATION

Prerequisites: 501, 530, 520, and 510, 520, 530. An examination of the instructional design in workforce education and training and supporting research in effective performance-based program needs assessment and evaluation processes.

SUPERVISION OF TECHNICAL INSTRUCTION

Prerequisites: 501, 530, 520, and 510, 520. An examination of the role of supervisor of technical instruction, facilitation and evaluation of technical instructors, professional development, as well as related leadership and management issues.
CURRICULAR AND INSTRUCTIONAL STUDIES

5500:

52 DEVELOPMENTAL READING IN THE CONTENT AREAS—ELEMENTARY 3 credits
Prerequisite: 5200:335, 336, 337. Development of reading skills relating to content subjects. Methods and materials needed to promote reading achievement in content subjects by the elementary classroom teacher.

524 TEACHING READING TO CULTURALLY DIVERSE LEARNERS 3 credits
Prerequisite: 5200:337 or permission of instructor. Knowledge, skills, and attitudes to employ effective methods of teaching reading to diverse populations and/or learners whose language patterns are nonstandard.

540 PRINCIPLES OF BILINGUAL/MULTICULTURAL EDUCATION 3 credits
An introduction to the theoretical, cultural, sociolinguistic bases of bilingual/multicultural education, history, its role in education, and present-day needs for bilingual education.

541 TEACHING READING AND LANGUAGE ARTS TO BILINGUAL STUDENTS 4 credits
Prerequisite: Permission of instructor. Course applies methodologies for teaching reading, language arts, and the bilingual/multicultural classroom. The bilingual student's native language and culture are stressed.

542 TEACHING MATHEMATICS, SOCIAL STUDIES AND SCIENCE TO HISPANIC STUDENTS 3 credits
Prerequisite: 5500:333, 336, 337. Secondary education majors. 5500:331 (science-social studies) 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 IN TEACHING ENGLISH AS A SECOND LANGUAGE IN THE BILINGUAL CLASSROOM 4 credits
Prerequisite: 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 materials.

565 VOCATIONAL BUSINESS EDUCATION 3 credits
Prerequisite: senior status or permission. Principles of program construction, organization, implementation, evaluation, supervision, and development of programs of both restrictive and cooperative vocational educational enterprises.

570 MULTICULTURAL EDUCATION IN THE UNITED STATES 3 credits
In-depth study of the cultural dimensions of American education. Correlations of urban, suburban, and rural educational settings with reference to sociocultural differences.

571 CHARACTERISTICS OF CULTURALLY DIVERSE POPULATIONS 3 credits
Characteristics of culturally diverse populations with focus on youth in low-income schools. Emphasis on current social, economic, and educational considerations and their implications.

572 PREPARATION FOR TEACHING CULTURALLY DIVERSE POPULATIONS 3 credits
Gain knowledge of learning styles, motivation, instruction, and management techniques, and appropriate instructional materials for diverse populations.

585 MICROCOMPUTER APPLICATIONS FOR ELEMENTARY TEACHERS 3 credits
Prerequisite: 5100:120 or permission of instructor. Focus is on developing student competence in the use of elementary education computer technology to enhance both the teacher's personal and professional productivity.

586 MICROCOMPUTER APPLICATIONS FOR SECONDARY TEACHERS 3 credits
Prerequisite: 5100:120 or permission of instructor. Development of student competence in the use of secondary education computer technology to enhance both the teacher's personal and professional productivity.

590 WORKSHOP 1-3 credits
Workshop for educators to improve teaching skills in a specific area of the curriculum.

594 EDUCATIONAL INSTITUTES 1-3 credits
Special courses designed as in-service upgrading programs. Frequently provided with support of national foundation.

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 classroom setting.

605 SEMINAR IN TRENDS AND ISSUES IN CURRICULUM AND INSTRUCTION 3 credits
Prerequisite: 5200:500. A study of current research and theory in curriculum and instruction with special attention to applications in educational decision making.

619 EDUCATION AND THE YOUNG CHILD 3 credits
Content centered on educational settings of young children from birth through five years.

615 PHILOSOPHY AND ORGANIZATION OF MIDDLE SCHOOLS 3 credits
Prerequisite: theory, research, curriculum 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 LITERACY SEMINAR 3 credits
The course should be taken at the beginning of the Master's Writing program as an introduction to curriculum and the didactics of teaching.

618 ADVANCED INSTRUCTIONAL METHODS 3 credits
Prerequisite: 5100:517 Methods of a teaching a specific area of the middle and secondary curriculum for students in the Master's with Literacy program.

619 INSTRUCTIONAL AND MANAGEMENT PRACTICES 3 credits
Prerequisite: 5100:517. Students apply and analyze instructional methods and management strategies to become effective in instruction. Also included are educational issues that relate to effective management and instruction.

620 LITERATURE FOR YOUNG CHILDREN 3 credits
Literature for children ages two through six examined in depth in terms of style and purpose. Preparing to teach in prekindergarten, kindergarten, and primary grades.

621 CHILDREN'S LITERATURE IN THE CURRICULUM 3 credits
Examination of literary genre with emphasis on methods and techniques for presenting literature to children in prekindergarten, elementary, and middle grades.

625 ADVANCED ISSUES IN READING INSTRUCTION 3 credits
Prerequisite: 5200:335 or permission of instructor. Survey course exploring current research in reading and writing as concomitant processes of meaning making.

626 DIAGNOSIS AND CONFERENCE FOR SCHOOL PSYCHOLOGISTS AND SUPPORT PERSONNEL 3 credits
Prerequisite: 5500:600 or permission of instructor. This course will survey developmental reading and its relationship to reading difficulties. Formal and informal procedures for diagnosing disabled readers and a discussion of predictive strategies will be included.

627 SPECIAL TOPICS IN LITERACY EDUCATION 3 credits
May be repeated for a maximum of six credits. Independent study of an instructional or curricular problem in workforce education or training. Student must be able to demonstrate needed analysis, evaluation, and basic research skills. Credit/No credit.

628 MASTER'S PROBLEM 3 credits
( May be repeated for a total of six credits.) Prerequisite: permission of advisor. Independent study of an instructional or curricular problem in workforce education or training. Student must be able to demonstrate needed analysis, evaluation, and basic research skills. Credit/No credit.

629 MASTER'S THESIS 3 credits
( May be repeated for a total of six credits.) Prerequisite: permission of advisor. Opportunity to conduct a major research or an instructional study. Area of study determined by advisor and department. (May be repeated for a total of six credits.) Prerequisite: permission of advisor. Independent study. Area of study determined by advisor. Opportunity to conduct a major research or an instructional study. Area of study determined by advisor and department. 1-3 credits
OUTDOOR EDUCATION 5560:

550 APPLICATION OF OUTDOOR EDUCATION TO THE SCHOOL CURRICULUM 4 credits
Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.

552 RESOURCES AND RESOURCE MANAGEMENT FOR THE TEACHING OF OUTDOOR EDUCATION 4 credits
Resources and institutional techniques which are applicable to outdoor education, and in-depth study of methods and designs, unique to the process of teaching.

556 OUTDOOR PURSUITS 4 credits
Investigation and participation in practical experiences in outdoor pursuits.

590 WORKSHOP: OUTDOOR EDUCATION 13 credits
Practical application of contemporary ideas, methodologies, knowledge relevant to outdoor education. Emphasis on participant involvement in educational practices, utilizing the natural environment.

594 EDUCATIONAL INSTITUTES: OUTDOOR EDUCATION 14 credits
Practical experience with current research or curricular practices involving expert resource persons in outdoor education.

600 OUTDOOR EDUCATION: RURAL INFLUENCES 3 credits
Prerequisite: 550 or 552. Utilization of resources of rural area as a learning/teaching environment. Content and methodology appropriate for teaching school-age children in rural setting.

605 OUTDOOR EDUCATION: SPECIAL TOPICS 2-4 credits
(May be repeated with change in topic) Prerequisite: permission of instructor. Group and individual study of special topics of contemporary concern in outdoor education.

690 PRACTICUM IN OUTDOOR EDUCATION 2-4 credits (60-020 field hours)
Prerequisites: 550, 552 and permission of advisor. Supervised practical experience with existing outdoor education programs. In conjunction with practical work student meets regularly with advisor.

695 FIELD EXPERIENCE: MASTER'S 2-4 credits (60-080 field hours)
Prerequisite: permission of advisor. In-depth analysis of current practices or problems related to outdoor education. Development of study required.

696 MASTER'S PROBLEM 2-4 credits
Prerequisite: permission of advisor. Research to investigate a problem in outdoor education or related discipline.

698 MASTER'S THESIS 4-6 credits
An original composition demonstrating independent scholarship in a discipline related to outdoor education.

COURSES OF INSTRUCTION 111

PHYSICAL EDUCATION 5550:

536 FOUNDATIONS AND ELEMENTS OF ADAPTED PHYSICAL EDUCATION 3 credits
Prerequisite: permission of advisor providing motor activities for handicapped students via application of a neuromotor-developmental and alternative methods. Three hour lecture.

541 ADVANCED ATHLETIC INJURY MANAGEMENT 4 credits (20 clinical hours)
Prerequisites: 2020/2020/3. 5550:240. Advanced athletic training techniques for the student desiring to become a certified athletic trainer according to the regulations of the National Athletic Trainers Association.

542 THERAPEUTIC MODALITIES AND EQUIPMENT IN SPORTS MEDICINE 3 credits (20 clinical hours)
Prerequisites: 2020/2020/3. 5550:240. Purpose is to develop techniques and skills among sports medicine personnel in the selection and implementation of therapeutic modalities and the equipment used in the rehabilitation of injuries to athletes.

551 ASSESSMENT AND EVALUATION IN ADAPTED PHYSICAL EDUCATION 3 credits (20 clinical hours)
Prerequisite: Permission of advisor/Investigation analysis, and selection of appropriate assessment instruments, as well as methodology for determining instructional objectives and activities for handicapped students. Three hour lecture.

553 PRINCIPLES OF COACHING 3 credits
Prerequisites: permission and concentration in physical and leisure activities. Focus on effective practices for learning and advanced skills teaching for coaches.

562 LEGAL/Ethical ISSUES IN PHYSICAL AND LEISURE ACTIVITIES 2 credits
Legal and contemporary issues of greatest concern to those involved in physical and leisure activities risk management, playground safety, blood-borne pathogens, ethics.

590,1 WORKSHOP 13 credits
Practical, intensive, and concentrated involvement with current curricular practices in areas related to physical education.

593 EDUCATIONAL INSTITUTES AND FOUNDATIONS 14 credits
Prerequisites: 2001/2002/2. 5550:240. Practical experience with current research or curricular practices or problem solving preferred in school education, and individual study of special topics up to a degree.

591 SPORTS ADMINISTRATION AND SUPERVISION 3 credits
Organizational and administrative efficiency in implementing sports programs (event management, advertising, public relations, objective, and effective procedures for evaluation of personnel). Periodic program reviews.

592 MOTOR BEHAVIOR APPLIED TO SPORTS 3 credits
Coaching is the principle of motor development and motor skill learning. Focus on effective practices for learning and skilled teaching for coaches.

593 TACTICS AND STRATEGIES IN THE SCIENCE OF COACHING 3 credits
Coaching is the principle of motor development and motor skill learning. Focus on effective practices for learning and skilled teaching for coaches.

594 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.

595 PHYSIOLOGY OF MUSCULAR ACTIVITY AND EXERCISE 3 credits
Prerequisite: 5500:460. Research methods/designs, statistics application and interpretation, use of computers and appropriate software as they relate to various disciplines in the area of physical activity.

596 MOTIVATIONAL ASPECTS OF PHYSICAL ACTIVITY 3 credits
Analysis of theories, techniques, and principles related to student's motivation to participate in physical activity. Objective and effective procedures for evaluation of motivational aspects.

597 SPECIAL TOPICS IN HEALTH AND PHYSICAL EDUCATION 2-4 credits
(May be repeated) Prerequisite: permission of instructor. Group study of special topics in health and physical education and sports medicine.

598 FIELD EXPERIENCE: MASTER'S 16 credits
Prerequisite: permission of advisor. Participation in a work experience related to physical education. Experience may not include part of student's current employment. Documentation of project required.

599 INDEPENDENT STUDY 13 credits
Prerequisite: Permission of advisor. In-depth analysis of current practices or problems related to physical education. Documentation of the study required.

600 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 the capability of dealing with a problem in physical education.

698 MASTER'S THESIS 4-6 credits
Prerequisite: permission of advisor. In-depth research investigation. Student must be able to demonstrate the capability of dealing with a problem in physical education.

EDUCATIONAL GUIDANCE AND COUNSELING 5600:

550 COUNSELING PROBLEMS RELATED TO LIFE-THREATENING ILLNESS AND DEATH 3 credits
Prerequisite: permission. Consideration of the global issues, current research, coping behaviors, and implications for support systems and family and individual needs in regard to life-threatening situations.

590,1 WORKSHOP 13 credits
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

593 WORKSHOP 14 credits
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

594 COUNSELING INSTITUTE 14 credits
In-service programs for counselors and other helping professionals.

600 SEMINAR IN COUNSELING 1 credit
Prerequisite: counseling majors must elect 600 prior to electing 610 and/or within the first 10 credits of 5600 course work. Structured group experience designed to help a student assess selection of counseling as a profession.

602 INTRODUCTION TO COUNSELING 2 credits
Understanding guidance and counseling principles including organization, operation and evaluation of guidance programs (designed for non-counseling majors).

610 COUNSELING SKILLS FOR TEACHERS 3 credits
Prerequisites: 611 or 633 or permission. The study and practice of selected counseling techniques that can be applied by teachers in working with students, parents and colleagues.

620 TOPICAL SEMINAR 14 credits
Prerequisite: permission of instructor. Seminar on a topic of current interest in the profession. Staffing will be by department faculty and professional counselors and related fields. A maximum of eight credits may be applied to a degree.

631 ELEMENTARY SCHOOL GUIDANCE 3 credits
Introductory course. focuses on grades and counseling practices.

632 SECONDARY SCHOOL GUIDANCE 3 credits
Introductory course. covers guidance and counseling practices.

635 COMMUNITY COUNSELING 2 credits
Overview of community and college counseling services, their evaluation, philosophy, organization and administration.
643  COUNSELING THEORY AND PHILOSOPHY
Examination of major counseling theories, including their interrelationships, philosophical and theoretical dimension stressed.
3 credits

645  TESTS AND APPRAISAL IN COUNSELING
Prerequisites: 390, 610.  Study of nature and tests and appraisal in counseling with emphasis on validity, test construction and selection, administration, scoring, and the basic interpretation of test data.
4 credits

669  MULTICULTURAL COUNSELING
Prerequisites: 643 or permission of instructor. An examination of multicultural counseling theory and research necessary to work with culturally diverse people.
3 credits

670  CAREER DEVELOPMENT AND COUNSELING ACROSS THE LIFE SPAN
Overview of career development, counseling. Emphasis is placed on the nature of individual and family development. Theories, factors and processes that affect choice, career, choice, and implementation are discussed.
3 credits

685  INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN
An exploration of individual and family development. The relationship between the individual and his/her family will be studied.
3 credits

697  COUNSELING AND PERSONNEL SERVICES IN HIGHER EDUCATION
Prerequisites: 625 or permission of instructor. Counseling services as related to psychological needs and problems of the college student.
3 credits

698  TECHNIQUES OF COUNSELING
Prerequisites: 643 or permission of instructor. Study of and practice of selected counseling techniques and their effects on the counselor as a professional and as a person, and issues, problems and trends in counseling.
3 credits

657  ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES
Prerequisites: 631 or 633 or permission of instructor. Development of a comprehensive ancillary guidance and counseling program.
3 credits

669  SEMINAR IN SCHOOL COUNSELING
Prerequisites: 633, 643, 645 and 647. Study of specific guidance techniques and materials useful to counselors working with secondary school students, teacher and parent.
3 credits

675  SEMINAR: COUNSELING PRACTICE
Prerequisite: 635 or permission. Study of topics of concern to a student specializing in community and college counseling. Topics may cover such area as counseling methods and techniques or other areas significant to community counseling.
3 credits

676  MASTERY THERAPY
Prerequisite: 655. In-depth study of theories and interventions which focus on the nature and treatment of mental disorders. 3 credits

679  SYSTEMS THEORY IN FAMILY THERAPY
Prerequisite: 655. In-depth exploration of systems theory in family therapy. Major assumptions of systems theory will be examined and the implications for interventions will be explored.
3 credits

710  ADDICTION COUNSELING THEORY AND PRACTICE
Prerequisite: 650 graduate course in research and counseling techniques or equivalent with instructor's permission. This course is designed to familiarize the student with the history, theoretical models, and the empirical foundations for addiction counseling.
3 credits

715  PRACTICUM IN COUNSELING I
Prerequisite: 653. Supervised counseling experience with individuals and small groups.
5 credits

716  PRACTICUM IN COUNSELING II
Prerequisite: 675. Advanced supervised counseling experience.
2-5 credits

719  INTERNSHIP
May be repeated for a total of 7 credit hours. Prerequisite: 675. Paid or unpaid supervised counseling experience in a school or community counseling setting. 1-4 credits

720  FIELD EXPERIENCE: MASTER'S
Prerequisites: permission of advisor and department chair. Placement in selected setting for purpose of acquiring expertise and/or demonstration skills required for student's counseling program.
1-3 credits

727  INDEPENDENT STUDY
Prerequisite: 635 or permission of advisor or department chair. May be repeated for a total of nine credits. Prerequisites: permission of advisor and department chair. Specific area of investigation determined in accordance with student's needs.
1-9 credits

728  MASTER'S PROJECT
Prerequisite: 655 graduate course in research and counseling techniques or equivalent with instructor's permission. This course is designed to familiarize the student with the history, theoretical models, and the empirical foundations for addiction counseling.
3 credits

732  ADVANCED COUNSELING PRACTICUM
(5 credits) May be repeated for a total of 12 credits. Prerequisite: doctoral residency or permission of advisor and department chair. Examination of theories of individual group age level counseling along with supervised counseling experience in selected settings.
5 credits

733  SUPERVISION IN COUNSELING PSYCHOLOGY I, II
Prerequisites: 635, 650, 675. Subsequent credit provided when written term paper and projects are submitted. 3 credits each

740  THEORIES OF COUNSELING AND PSYCHOTHERAPY
Prerequisite: 3750:630 or departmental permission. Major systems of individual psychotherapy explored within a philosophy of science framework. Freudian, behavioral, humanistic, cognitive and other. Includes research, contemporary problems and ethics.
4 credits

741  VOCATIONAL BEHAVIOR
Prerequisite: 3750:630 or departmental permission. Theories and research on vocational behavior and vocational counseling. Emphasis is placed on the relationship between the individual and his/her environment. 4 credits

742  PRINCIPLES AND PRACTICE OF INSTITUTIONAL INTELLIGENCE TESTING
Prerequisites: 630 or permission of instructor. Historical, philosophical and methodological aspects of institutional intelligence testing, including interpretation of test data within the context of counseling and administration. 4 credits

743  PROFESSIONAL, ETHICAL AND LEGAL ISSUES IN COUNSELING PSYCHOLOGY
Prerequisite: doctoral residency or permission. Examination of major issues in the field such as the counselor as a professional and as a person, and issues, problems and trends in counseling.
4 credits

714  OBJECTIVE PERSONALITY EVALUATION
Prerequisites: completion of 3750:6501, 3750:4205, 520, and 3750:750 or 5650:6450. Credit for Research in Counseling: 2 credits

715  RESEARCH DESIGN IN COUNSELING I
Prerequisites: research course and permission. Study of research designs, evaluation procedures and review of current research.
3 credits

716  RESEARCH DESIGN IN COUNSELING II
3 credits

717  ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY
Prerequisites: 310, 630. One semester of practicum work. Critical examination and application of research and theory in counseling diverse populations, focusing on race/ethnicity, age, gender, sexual orientation, disability, and other issues.
4 credits

718  HISTORY AND SYSTEMS OF PSYCHOLOGY
Prerequisite: 635 or permission. In-depth study of the history and systems of psychology and its emphasis on the development of systematic viewpoints in the 19th and 20th centuries.
2 credits

720  TOPICAL SEMINAR: GUIDANCE AND COUNSELING
Prerequisites: permission of instructor. A topical study with a variety of disciplines. Staffing will be by department faculty and other professionals in counseling and related fields.
3 credits

721  ADDICTION COUNSELING II: ASSESSMENT AND TREATMENT PLANNING
Prerequisite: 655 graduate course in research and counseling techniques, and 670, or equivalent with instructor's permission. This course is designed to teach the student proficiency in the process of diagnosis and treatment planning utilizing a comprehensive biopsychosocial model.
3 credits

722  ADDICTION COUNSELING III: MODELS AND STRATEGIES OF TREATMENT
Prerequisite: 655 graduate course in research and 670, or equivalent with instructor's permission. This course is designed to teach the student to utilize a broad range of treatment interventions matched to the full spectrum of client problems.
3 credits

740  ASSESSMENT METHODS AND TREATMENT ISSUES IN MARRIAGE AND FAMILY THERAPY
Prerequisite: 635 graduate course in research. Provides advanced counseling students with the knowledge and skills in assessment methods, techniques and instruments relevant to the practice of marriage and family therapy.
3 credits

755  OUTCOME RESEARCH IN MARRIAGE AND FAMILY THERAPY
Prerequisite: 665. 6500:6494 or 698 course will provide an indepth examination of marriage and family therapy research.
3 credits

756  COUNSELING PRACTICUM
Prerequisites: 635 or permission. An intensive supervised counseling experience with the individual or group. (May be repeated) 3 credits

757  INDEPENDENT READING AND/OR RESEARCH IN COUNSELING PSYCHOLOGY
May be repeated. Prerequisite: permission of instructor. Independent readings and/or research in an area of counsel psychology under the direction of a faculty member.
1-5 credits

759  FIELD EXPERIENCE: DOCTORAL
May be repeated. Prerequisite: doctoral candidate status. Placement in selected setting for purpose of acquiring expertise and/or demonstration skills required for student's doctoral program.
1-6 credits

761  RESEARCH PROJECTS IN SPECIAL AREAS
Prerequisites: 665, 6500:6494, or 698. May be repeated. Prerequisites: permission of advisor and department chair. Study, analysis and reporting of counseling problem.
1-2 credits

799  DOCTORAL DISSERTATION
Prerequisite: permission of major advisor and department chair. Study, analysis and design of counseling problem.
1-2 credits

SPECIAL EDUCATION

540  DEVELOPMENTAL CHARACTERISTICS OF EXCEPTIONAL INDIVIDUALS
Prerequisite: admission to a College of Education Teacher Preparation Program or permission of instructor. A survey course covering the classification, developmental characteristics, and intervention strategies for exceptional children and youth in each educational and community setting.
3 credits

541  DEVELOPMENTAL CHARACTERISTICS OF INTELLECTUALLY GIFTED INDIVIDUALS
Prerequisite: 440540. Survey of the nature, classification, and developmental characteristics of intellectually gifted individuals.
3 credits

542  DEVELOPMENTAL CHARACTERISTICS OF INDIVIDUALS WITH MODERATE/INTENSIVE EDUCATIONAL NEEDS
Prerequisites: 390:265 and 5610:440/540. Survey of the nature, classification, and developmental characteristics of individuals with moderate/intensive educational needs.
4 credits

543  SPECIAL EDUCATION PROGRAMMING: EARLY CHILDHOOD
Prerequisites: admission to a College of Education Teacher Preparation Program 440540, 3900:265, or permission of instructor. Developmental patterns of young children with various types and developmental/behavioral atypicality appropriate practices with respect to programming and instruction.
4 credits

544  SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE
Prerequisite: admission to a Special Education Licensure Program, 440550, 44754, 5200:245, 345, 342, or permission of instructor. Educational implications regarding assessment, teaching strategies, adaptive materials, and special methods for students with mild/moderate educational needs.
4 credits

545  SPECIAL EDUCATION PROGRAMMING: SECONDARY/TRANSITION
Prerequisites: 4474 or 448. Study of special education's service delivery systems designed to accommodate developmental patterns of secondary level students with exceptions.
553 SPECIAL EDUCATION PROGRAMMING: MODERATE/INTENSIVE I 4 credits
Prerequisite: 448 Development of the programming strategies including assessment, interdisciplinary models, family involvement, ifsp/mepf development, instructional policies based upon legal principles for individuals with moderate/intensive educational needs.

554 SPECIAL EDUCATION PROGRAMMING: MODERATE/INTENSIVE II 4 credits
Prerequisites: 448 and 450. Course planning and instruction for programming intervention for individuals with moderate to intensive educational needs. Focus is on developing a comprehensive educational program which will facilitate optimum functions and independence.

555 EDUCATIONAL ADJUSTMENT FOR INCAPACITATED STUDENTS 3 credits
Prerequisite: 444/446. Study of programs, services and educational experiences designed to accommodate the needs of MSPR orthopedically handicapped individuals.

556 DYNAMICS OF MANAGEMENT AND SUPERVISION 3 credits
Prerequisite: 444. Study of programs, services and educational experiences designed to accommodate the needs of moderately handicapped individuals.

557 INTERDISCIPLINARY PROGRAMMING IN SPECIAL EDUCATION 3 credits
Prerequisite permission of instructor. A study of the programs, interdisciplinary services, educational techniques designed to accommodate the needs of MSPR multi-handicapped and orthopedically handicapped individuals.

559 COLLABORATION AND CONSULTATION IN SCHOOLS AND COMMUNITY 3 credits
Prerequisites: 440/540 and 441/541, or 445/545, or permission of instructor. Provides professionals with consultation skills in collaboration and consultation working with parents of exceptional individuals and other professionals within school/community settings.

561 FAMILY DYNAMICS AND COMMUNICATION IN THE EDUCATIONAL PROCESS 3 credits
Prerequisite: 444/446, or 445/545, or 448/548, or permission of instructor. A study of family theory and structure along with beginning techniques for working with families of students with exceptionalities, in educational and community settings.

563 ASSESSMENT IN SPECIAL EDUCATION 3 credits
Prerequisite: 440/446. Preparation student to select, administer and interpret formal and informal assessment procedures and use resulting data in planning educational programs for exceptional individuals.

564 RECREATIONAL PROGRAMS FOR INCAPACITATED STUDENTS 3 credits
Prerequisite: 444/446. Study of programs which examines crafts and outdoor recreational programming for exceptional individuals.

567 MANAGEMENT STRATEGIES IN SPECIAL EDUCATION 3 credits
Prerequisites: 5050:2217/2232/2233/330, 510:441/442/443/445/446. Content emphasizing the development of application strategies with a variety of behavioral management models for interaction with exceptional individuals.

568 ADVANCE BEHAVIOR MANAGEMENT 3 credits
Prerequisites: 563/663. Advanced techniques for remediation problem behavior; establishing effective repertoire and evaluating research relevant to classroom management will be covered. Behavior theory will be stressed.

570 CLINICAL PRACTICUM IN SPECIAL EDUCATION 3 credits
Prerequisite: permission of instructor: corequisite: 403 and 456. Provides pre-service teaching experience for students in the areas of assessment, program planning, instructional planning and presentation, classroom management, and collaboration with parents and other educational professionals.

571 CLINICAL PRACTICUM IN SPECIAL EDUCATION 3 credits
Prerequisite: 444/446. Supervised clinical experience with individuals or small groups designed to provide practice in diagnostic and instructional intervention with gifted students.

579 SEMINAR: INVITATIONAL STUDIES IN SPECIAL EDUCATION 2 credits
Prerequisite: 2 credits. Prerequisite: 444/446. (May be repeated for a total of four credits) Topic study with a varied array of disciplinary input. Seminars will be invited members of faculty and contributing professionals active in management of exceptional children.

601 SEMINAR SPECIAL EDUCATION CURRICULUM PLANNING 3 credits
Prerequisite: certification in an area of special education. Study of curriculum planning procedures relevant to special education programs and services. Appropriate curriculum objectives for selected areas of instruction as well as effective organizational programs examined.

602 SUPERVISION OF INSTRUCTION 3 credits
Prerequisite: 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
Prerequisite: 444/446, 445/455. Supervised clinical experience with individuals or small groups designed to provide practice in diagnostic and instructional intervention with gifted students.

605 INCLUSION MODES AND STRATEGIES 3 credits
Prerequisite: admission to graduate program in special education. History, theory, philosophy, legislative mandates, models, strategies, curriculum modifications, methods/techniques which support the inclusion of students with disabilities. Emphasis on collaboration and learning.

606 RESEARCH APPLICATIONS IN SPECIAL EDUCATION 3 credits
Prerequisite: admission to graduate program in special education and 500/650. An examination of alternative and qualitative methodologies and their utilization 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 5170/520 or permission of instructor. A culminating seminar for graduate students in special education designed to study, examine and reflect upon the legal aspects of historical and current trends, issues and practices.

612 SEMINAR: ETHICAL ISSUES IN SPECIAL EDUCATION 3 credits
Prerequisites: permission to graduate program in special education, 611, or permission of the instructor. A culminating seminar for graduate students in special education designed to study, examine and reflect upon the ethical aspects of historical and current trends, issues and practices.

613 STUDENT TEACHING IN SPECIAL EDUCATION 1 credit
Taken concurrently with Student Teaching. Review and discussion of issues raised during teaching experience.

614 STUDENT TEACHING: SCHOOL AULOGY 6 credits
Prerequisite: permission of advisor. Directed teaching under supervision of a special education teacher and a University supervisor.

615 STUDENT TEACHING: SPEECH LANGUAGE PATHOLOGY 6 credits
Prerequisite: permission of advisor. Directed teaching under supervision of a special education and University supervisors.

616 RESEARCH PROJECT IN SPECIAL AREA (SCHOLARLY PAPER) 3 credits
Prerequisite: culminating experience in master's program. An in-depth study of a identified topic in a scholarly paper.

617 FIELD EXPERIENCE: MASTER'S 1-3 credits
May be repeated for a total of 12 credits. Designed to provide on-the-job experience in a special education program on an individual basis.

619 INDEPENDENT STUDY 1-3 credits
May be repeated for a total of nine credits. Prerequisite: permission of advisor and supervisor of independent study. Specific area of investigation determined in accordance with student's needs.

620 MASTER'S PROJECT 2 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 special education.

621 MASTER'S THESIS 3 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:

590 WORKSHOP 1-3 credits
Prerequisite: permission of instructor. Opportunity to experience provided periodically as resources and as resources become available.

591 WORKSHOP 1-3 credits
Prerequisite: permission of instructor. Opportunity to experience provided periodically as resources and as resources become available.

594 SCHOOL PSYCHOLOGY INSTITUTES 3 credits
Prerequisite: permission of instructor. Specifically designed learning experience for program focusing on critical topic.

600 SEMINAR: ROLE AND FUNCTION OF THE SCHOOL PSYCHOLOGIST 3 credits
Prerequisite: permission of instructor. Seminar on role and function of school psychologist. Course, tailored to meet individual needs of trainees, is a consideration of professional standards of school psychology practice.

601 COGNITIVE FUNCTION MODELS FOR PRESCRIPTIVE EDUCATIONAL PLANNING 3 credits
Prerequisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.

602 BEHAVIORAL ASSESSMENT 2 credits
Prerequisite: permission of instructor. Overview of behavioral theory and its application focusing upon the role of the school psychologist as an agent of behavior change.

603 CONSULTATION STRATEGIES IN SCHOOL PSYCHOLOGY 3 credits
Prerequisite: permission of instructor. A consideration of consultant roles in the practice of school psychology as related to current consulting with and school and agency personnel.

610 EDUCATIONAL DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS 4 credits
Prerequisites: permission of instructor. Clinical study and application of current assessment approaches applicable in assessment of children's learning problems.

611 PRACTICUM IN SCHOOL PSYCHOLOGY 4 credits
Prerequisite: permission of instructor. Laboratory experience in psycho-educational study of individual children who have learning problems in school. (May be repeated for a total of eight credits)

630.1 INTERNSHIP IN SCHOOL PSYCHOLOGY FALL/Spring 3 credits each
Prerequisites: permission of instructor. Fulltime paid work assignment under supervision of a qualified school psychologist for academic year structured according to provisions of State Department of Education.

640 FIELD SEMINAR I: CURRENT PROFESSIONAL TOPICS/ISSUES IN SCHOOL PSYCHOLOGY 3 credits
Prerequisite: permission of instructor. Consideration of pertinent topics/issues in practice of school psychology with emphasis upon field-based concerns of a practicing school psychologist.

641 FIELD SEMINAR II: LOW INCIDENT/RELATED IRRITANT ISSUES 3 credits
Prerequisite: permission of instructor. Consideration of pertinent topics/ issues in practice of school psychology with emphasis on field-based concerns of a practicing school psychologist.

694 RESEARCH PROJECT IN SPECIAL AREAS 1-3 credits
Prerequisite: permission of advisor. Study analysis and reporting of school psychology problem.

695 FIELD EXPERIENCE: MASTER'S 1-3 credits
Prerequisite: permission of instructor. Practical school psychology-related experience in school setting.

697 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of advisor and supervisor of independent study. Documentation of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.

699 MASTER'S PROJECT 2 credits
Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in school psychology.

700 MASTER'S THESIS 4 credits
Prerequisite: permission of instructor. Through study, analysis and reporting of depth of an educational problem, field projects in special areas, synthesis of existing knowledge in relationship to a specific topic.
SPECIAL EDUCATIONAL PROGRAMS

5800:

590 WORKSHOP IN ECONOMIC EDUCATION OR IN SOCIAL STUDIES 1.3 credits
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

591 WORKSHOP IN ARITHMETIC OR IN PHYSICAL SCIENCE 1.3 credits
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

592 WORKSHOP IN READING 1.3 credits
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

593 WORKSHOP ON EXCEPTIONAL CHILDREN 1.3 credits
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

594 INTERNATIONAL SCHOOL STUDY 3.6 credits
On-the-scene study of education in foreign countries, usually by concentrating on the study of schools in one restricted geographical area.

ACCOUNTANCY

6200:

520 ADVANCED ACCOUNTING 3 credits
Prerequisites: 6200, 621 and 332. Examination of accounting theory emphasizing accounting for business combinations, partnerships, foreign operations, nonprofit entities and consolidated statements.

530 TAXATION I 2 credits
Prerequisite: 632 or 620. Federal tax law related to individuals, Master of Taxation students will not be able to take this course to satisfy tax electives in the Master of Taxation program.

531 TAXATION II 3 credits
Prerequisite: 430, 530 or permission. Federal income tax law related to partnerships, corporations, trusts and estates; also includes an overview of federal estate and gift tax law.

540 AUDITING 3 credits
Prerequisites: 6200, 625, 331, and 632. 6500, 622 and 454 must be taken prior to or concurrently. Examine auditing standards and procedures, used by independent auditors in determining whether a firm has fairly presented its financial position.

570 GOVERNMENTAL AND INSTITUTIONAL ACCOUNTING 3 credits
Prerequisites: 332 or 632. Theory and procedures involved in application of fund accounting, budgetary control, appropriations and various accounting systems to governmental units, educational, Medicaid and other nonprofit institutions.

580 ACCOUNTING PROBLEMS 3 credits
Prerequisite: 332. Independent research on advanced accounting problems in student's specific area of interest.

584 CPA PROBLEMS: AUDITING 2 credits
Prerequisite: 430 and/or permission of instructor. Preparation for auditing section of CPA examination, focusing on auditing principles, standards and ethics encountered by independent auditors.

585 CPA PROBLEMS: THEORY 2 credits
Prerequisite: permission of instructor. Preparation for theory section of CPA examination, focusing on current developments and use of basic accounting theory to solve advanced accounting problems.

590 SPECIAL TOPICS IN ACCOUNTING 1.3 credits
Prerequisite: Permission of instructor. Opportunity to study special topics and current issues in accounting. May be repeated with a change of subject but not to exceed 6 credits.

591 WORKSHOP IN ACCOUNTING 1.3 credits
May be repeated. Prerequisite: permission of instructor. Group study of accounting under faculty guidance. Not may be used to meet undergraduate or graduate accounting major requirements, but may be used for elective credit with permission of instructor or department.

601 FINANCIAL ACCOUNTING 3 credits
Introductory course for student with no accounting background. Examines accounting principles as applied to financial problems of firms.

603 BUSINESS SYSTEMS WITH PROCESSING APPLICATIONS 2 credits
Prerequisite: 603. Introduction to basic concepts in concepts in computer technology, steps in system development and logic of designing accounting systems by using a business-oriented language or related software.

610 ACCOUNTING MANAGEMENT AND CONTROL 3 credits
Prerequisite: 621 or equivalent. Investigation of role of accounting as management tool in areas of production, marketing, internal control and capital budgeting with focus on management planning.

621 CORPORATE ACCOUNTING AND FINANCIAL REPORTING I 3 credits
Prerequisite: 620. An examination of generally accepted accounting principles in theory and practice, as well as financial statement preparation.

622 CORPORATE ACCOUNTING AND FINANCIAL REPORTING II 3 credits
Prerequisite: 621. Examination of 620 and 621 which examines generally accepted accounting principles in theory and practice, as well as financial statement preparation.

627 SURVEY OF FEDERAL TAXATION 3 credits
Prerequisites: 621 or equivalent. An introduction to federal taxation for students who have not yet completed more than one undergraduate or graduate tax course. Examines individual and business federal taxation. Completion of this course will not count towards fulfilling the requirements of the Master of Taxation degree.

628 BASIC TAX RESEARCH 1 credit
Prerequisite: completion of M.Tax foundation courses. Designed to develop basic research competence involving federal income, estate, and gift tax laws.

631 CORPORATE TAXATION I 3 credits
Prerequisite: completion of M.Tax foundation courses. Detailed examination of tax problems of corporations and their shareholders. Formation, distribution, reinvestment, liquidation and penalties taxes covered.

632 TAXATION OF TRANSACTIONS IN PROPERTY 3 credits
Prerequisite: completion of M.Tax foundation courses. Examines federal tax implications of gains and losses derived from sales, exchanges and other dispositions of property.

633 ESTATE AND GIFT TAXATION 3 credits
Prerequisite: completion of M.Tax foundation courses. Analyzes provisions of federal estate and gift tax laws and tax consequences of testamentary and lifetime transfers.

637 ADVANCED ACCOUNTING THEORY 3 credits
Prerequisites: 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 3 credits
Prerequisite: 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.
FINANCE

6400:

591 WORKSHOP IN FINANCE 13 credits
May be repeated. Group studies or special topics. May not be used to meet undergraduate or graduate major or minor requirements in finance. May be used for elective credit only with permission of the instructor or department.

602 MANAGERIAL FINANCE 3 credits
Prerequisite: 6200:601 or equivalent. 6400:602 may be taken concurrently with 6200:601. Emphasis on financial decision making related to goals of firm, specifically, the investment decision, the financial 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.

631 FINANCIAL MARKETS AND INSTITUTIONS 3 credits
Prerequisite: 602 or equivalent. A study of major financial markets and financial institutions, with an emphasis on the decision-making processes within a rapidly changing, regulatory operating environment.

633 MANAGEMENT OF DEPOSITORY FINANCIAL INSTITUTIONS 3 credits
Prerequisites: 602 and 6500:602. Policy determination, administrative decision making in banks, savings, and loans using computer simulation games.

645 INVESTMENT ANALYSIS 3 credits
Prerequisite: 602 or equivalent. Study of the economic and market forces that influence market prices. Techniques of analysis used in evaluating limited income and equity securities.

647 OPTIONS, FUTURES AND SPECULATIVE MARKETS 3 credits
Prerequisites: 602 or equivalent. A study of the applications and practice of options, futures, and speculations markets.

649 PORTFOLIO MANAGEMENT 3 credits
Prerequisite: 645 or permission of instructor. Advanced techniques used by sophisticated individual professional managers of large portfolios.

650 TECHNIQUES OF FINANCIAL ANALYSIS 3 credits
Current techniques and methods of financial analyses are examined, including the use of financial models for short and long run profitability decisions.

655 GOVERNMENT AND BUSINESS 3 credits
Public policy with regard to business industries and issues are considered from an economic, legal, ethical, political framework.

674 FINANCIAL MANAGEMENT AND POLICY 3 credits
Prerequisites: 602 and 6500:602. Working capital management, controlling inventory investments, administering costs and funds, managing investment in plant and equipment, administering business income and forecasting for financial management.

676 MANAGEMENT OF FINANCIAL STRUCTURE 3 credits
Prerequisite: 602 or equivalent. Emphasizes determination of volume and composition of sources of funds. Primary attention directed to cost of capital for specific sources of financial resources.

678 CAPITAL BUDGETING 3 credits
Prerequisite: 602 or equivalent. Attempt to integrate various theories of capital budgeting into comprehensive conceptual scheme. Theoretical concepts and practical applications of investments 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. Considers management of working capital and permanent assets, return on investment and capital budgeting for the global firm.

690 SELECTED TOPICS IN FINANCE 3 credits
(May be repeated for a total of six credits) Prerequisite: 602 or equivalent. Provides study of contemporary issues and areas not covered in current finance graduate courses.

691 INTERNATIONAL MARKETS AND INVESTMENTS 3 credits
Prerequisite: 602 or equivalent. A study of international financial markets with an emphasis on international investments and risks in a rapidly changing global economy.

697 INDEPENDENT STUDY IN FINANCE 13 credits
(May be repeated for a total of six credits) Focus on special topics of study and research in finance on an independent basis.

699 INDEPENDENT STUDY: BUSINESS LAW 13 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:

508 ENTREPRENEURSHIP 3 credits
Prerequisites: uppercollege or graduate standing and 300 or 600 or equivalent. Examines the behavior and environment for entrepreneurship. Emphasizes classical and contemporary entrepreneurial theses and the important personal values and strategies. Case studies, field projects.

510 SELECTED TOPICS IN ENTREPRENEURSHIP 13 credits
Prerequisites: uppercollege or graduate standing and 300 or 600 or equivalent. Facilitates comparative international study of entrepreneurship, introduction of entrepreneurship to large organizations, or application of student's entrepreneurial skills. Six hour limit.

512 DEVELOPMENT OF MANAGEMENT THOUGHT 2 credits
Prerequisites: uppercollege or graduate standing and 300 or 600 or equivalent. Review of development of managerial theories from 5000 B.C. to present with consideration of their application to present organizational settings.

515 MANAGEMENT OF ARBITRATION: COMMERCIAL, INTERNATIONAL AND HUMAN RESOURCES 3 credits
Prerequisites: uppercollege or graduate standing and 300 or 600 or equivalent. A comprehensive study of management theories and practice for international, commercial, international and human resource environments.

571 MANAGEMENT PROJECT 3 credits
Prerequisite: 520. Student applies modern management principles, practices, theory to an actual problem in industry.
580 INTRODUCTION TO HEALTH-CARE MANAGEMENT 3 credits
Prerequisite: sophomore or graduate standing (Students who are required to take 609 or 630 or have completed equivalent or equivalent are ineligible to take this course. Introductory course for health professionals covering principles and concepts of management applicable to health services organizations. For those registered for graduate credit, a major paper is required.

582 HEALTH SERVICES OPERATIONS MANAGEMENT 3 credits
Prerequisite: 580 or 609 or equivalent or permission of instructor. Application of operations research and systems analysis to health services organizations and their relationships to problem solving and the organization of services. Topics covered: linear programming, dynamic programming, and the analysis and design of management information systems.

585 SPECIAL TOPICS IN HEALTH SERVICES ADMINISTRATION 3 credits
Prerequisite: permission of instructor. Special topics in health services administration (e.g., management focusing on health care and/or contemporary managerial organizational/strategic/issue related to health-care organizations and health-care systems. Selection topics will vary from semester to semester. For those registered for graduate credit, a major paper research paper is required.

600 MANAGEMENT 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: finite mathematics. Applies quantitative techniques to business decision making. Topics covered include probability estimation and hypothesis testing, simple and multiple regression and correlation analysis, analysis of variance and nonparametric statistics.

602 COMPUTER TECHNIQUES FOR MANAGEMENT 3 credits
Introduction to the use of integrated spreadsheet software, database management software and the analysis and design of management information systems.

640 MANAGEMENT INFORMATION SYSTEMS 3 credits
Prerequisite: 602 or equivalent. An introduction to systems design, management information systems, data base management, their relationships to problem solving and the organization of services. Topics covered include probability estimation and hypothesis testing, simple and multiple regression and correlation analysis, analysis of variance and nonparametric statistics.

641 DATA MANAGEMENT AND COMMUNICATION 3 credits
Prerequisite: 602. The effective management of the data resources of the firm are examined as well as how communications are changing the way businesses operate.

642 SYSTEMS SIMULATION 3 credits
Prerequisite: 602. Manufacturing or service sector systems are analyzed and modeled on a computer. Experiments designs, statistical significance of results, model verification and validation 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 MANAGERIAL DECISION SUPPORT AND EXPERT SYSTEMS 3 credits
Prerequisite: 600 or 602, 602, 622. An overview of business data systems and the application of artificial intelligence to business problems.

645 ADVANCED MANAGEMENT INFORMATION SYSTEMS 3 credits
Prerequisite: 602. A case-concept course which examines the problems of managing the Corporate Information Systems activity as regulated by the firm, general management and G management.

650 FUNDAMENTALS OF HUMAN RESOURCE ADMINISTRATION 3 credits
Prerequisite: 600 or 602. A broad-based analysis of the fundamentals of principles, research findings and services related to the acquisition, development, and utilization of a business firm's human resources.

651 PRODUCTIVITY AND QUALITY OF WORKPLACE ISSUES 3 credits
Prerequisite: 602 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: 602 or equivalent. Study of factors which influence human behavior in business organizations. Emphasis on theories of individual and group behavior, motivation, leadership, and communication in organizations.

653 ORGANIZATIONAL THEORY 3 credits
Prerequisite: 602 or equivalent. An examination of the structure, design and overall effectiveness of a business organization from a macroscopic perspective.

654 INDUSTRIAL RELATIONS 3 credits
Prerequisite: 600. Study of rights and duties of management in dealing with labor and economic consequences of union-management policies and practices.

655 COMPENSATION ADMINISTRATION 3 credits
Prerequisite: 602. A comprehensive approach toward the identification and resolution of pay and benefits problems facing business organizations and internal and external labor markets.

656 MANAGEMENT OF INTERNATIONAL OPERATIONS 3 credits
Prerequisite: 602 or equivalent. Deals with institutional environment of international business; parameters of international business system which hold the system together and on which individual business people cannot materially alter.

657 THE LEADERSHIP ROLE IN ORGANIZATIONS 3 credits
Prerequisite: 602 or equivalent. A broad overview of the federal legislation regulating the business firm's human resource management function.

660 APPLIED OPERATIONS RESEARCH 3 credits
Prerequisite: 602 or equivalent. Survey of basic techniques of operations research. Stresses application to functional areas of business.

663 DATA ANALYSIS FOR MANAGEMENT 3 credits
Prerequisite: 602 or equivalent. The course proceeds from problem recognition and formulation of effective data collection plan to quantitative data analysis and presentation of statistical/prognostic conclusions and recommendations.

664 APPLIED INDUSTRIAL STATISTICS 3 credits
Prerequisite: 602 or equivalent. Applications of multiple regression including determining "best" sets of independent variables, multivariable regression, compositional data, and non-linear models. Experimental designs including randomized block and Latin square designs.

665 MANAGEMENT OF TECHNOLOGY 3 credits
Survey of the principles and management practices of technology driven organizations are discussed with concepts, models and case studies for managers of technology intensive operations.

670 OPERATIONS MANAGEMENT 3 credits
Prerequisites: 600, 617, 602, or equivalent. An overview of the strategic, tactical and opera­tional aspects of the management of technology and operations.

671 ADVANCED OPERATIONS RESEARCH 3 credits
Prerequisite: 662. Designed to present in more depth and breadth certain topics surveyed in 662, with emphasis on application of these techniques to students own business situations.

674 ADVANCED QUALITY AND PRODUCTIVITY TECHNIQUES 3 credits
Prerequisite: 673. Examines advanced techniques in statistical process control, experimental design, determination of customer quality needs/customer service, product reliability, and management of quality systems.

675 MATERIALS MANAGEMENT 3 credits
Prerequisite: 673. Surveys functions and explores opportunities for profit improvement and cost reduction in those functions integrated under the organizational concept of material management.

676 MANAGEMENT OF PRODUCTION AND OPERATIONS 3 credits
Prerequisites: 600, 602, 622. Surveys the management of resources required to transform inputs into products or services. Addresses issues related to services, materials, people and systems required for production.

680 PROJECT MANAGEMENT 3 credits
Prerequisites: 600, 602. Presents working knowledge of tools and methodologies available to project managers including computerized analysis of network models to aid in the planning and control functions.

683 HEALTH SERVICES SYSTEMS MANAGEMENT 3 credits
Prerequisite: 680 or 600 or equivalent or permission of instructor. Study of health services organizations, comparative delivery systems, the roles of third-party payers and government policy in health care. Seminar format. Major research paper required.

684 HEALTH SERVICES RESEARCH PROJECT 3 credits
Prerequisite: 683 or permission of instructor. An in-depth study of contemporary issues in health services research. Includes examination of macro-social and micro-organizational issues. Major paper required.

688 INDEPENDENT STUDY IN HEALTH SERVICES ADMINISTRATION 3 credits
May not be repeated for more than three credits. Prerequisites: 680 or 600 or equivalent or permission of instructor. Independent study and research of a specific topic of interest in health services administration (e.g., management), chosen by the student in consultation with and under the supervision of the instructor.

690 SELECTED TOPICS IN MANAGEMENT 3 credits
May be repeated for a total of six credits. Focus on special topics of study and research in management on an independent basis.

MARKETING 6600:

540 PRODUCT PLANNING 3 credits
Prerequisite: 600. Examines the creation of new products and the management of existing products through the life cycle. (Graduate credit requires additional research paper)

540 STRATEGIC RETAIL MANAGEMENT 3 credits
Prerequisite: 600 or permission of instructor. Investigates retail innovation and retail tactics in retailing. The strategies, marketing management practices of firms selling to business organizations, government agencies, and institutions are also examined. (Graduate credit requires additional research paper)

545 BUSINESS TO BUSINESS MARKETING 3 credits
Prerequisite: 660 or permission of instructor. Studies industrial and organizational buyer behavior. The strategic marketing management practices of firms selling to business organizations, government agencies, and institutions are also examined. (Graduate credit requires additional research paper)

575 BUSINESS NEGOTIATIONS 3 credits
Prerequisites: 662. Surveys the management of resources required to transform inputs into products or services. Addresses issues related to services, materials, people and systems required for production.

576 BUSINESS NEGOTIATIONS 3 credits
Examines business negotiation principles and practices, and builds skills in the process of negotiating business agreements.

580 OPERATIONS MANAGEMENT 3 credits
Prerequisites: 662 or permission of instructor. Develops analytical and managerial skills through case studies and other learning activities relating to the organization selection, training, motivation, and control of a sales force. (Graduate credit requires additional research paper)

580 BUSINESS RESEARCH METHODS 3 credits
Prerequisite: 660 or 602. Covers the scientific method as well as the gathering and analysis of information to identify opportunities and solve problems within a business organization.
ART 7100:

500 ART IN THE UNITED STATES BEFORE WORLD WAR II 3 credits
Prerequisite: 19 or permission of instructor. Consideration of development of art in the United States from earliest evidences to approximately World War II.

501 SPECIAL TOPICS IN HISTORY OF ART 3 credits
Prerequisite: 20 or permission. A lecture course focusing on a particular movement, period, artist, or medium. (May be repeated when a different subject or level of instruction is selected.)

502 MUSEOLOGY 2 credits
Lecture course dealing with museum science, including museum history, staff structure, art handling, storage and presentation, and exhibition preparation.

505 HISTORY OF ART SYMPOSIUM 3 credits
(May be repeated for credit when a different subject is indicated. Prerequisite: one art history course beyond 201 or permission of instructor. Lecture, individual research and evaluation. Group discussion related to a specific time period or to an artistic problem)

509 WORKSHOP IN ART 3 credits
(May be repeated for credit when a different subject or level of instruction is indicated. 400-600 to maximum of eight credits; 590 to maximum of 12 credits.) Prerequisite: advanced standing in an art or permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum.

591 ARCHITECTURAL PRESENTATIONS I 3 credits
Prerequisites: Junior level or permission. Studio practice in architectural design and presentation methods in residential and commercial interiors.

592 ARCHITECTURAL PRESENTATIONS II 3 credits
Prerequisites: 4959 or permission. Continuation of concepts covered in Architectural Presentations I with advance work in color, rendering techniques, emphasis on a variety of rendering mediums.

597 INDEPENDENT STUDIES 3 credits
(May be repeated for credit when a different subject or level of instruction is indicated. 400-600 to maximum of eight credits; 590 to maximum of 12 credits.) Prerequisite: advanced standing in an art or permission of instructor. Investigation in depth of aesthetic and technical problems within a studio-selected area of specialization. Student must present in writing a proposed study plan and time schedule for instructor approval.

598 SPECIAL PROBLEMS IN HISTORY OF ART 3 credits
(May be repeated for credit when a different subject or level of instruction is indicated. Prerequisite: 14 credits in art history and permission of instructor. Individual research in an historical area centered around limited topic, such as specific time period, history of specific technique, a single artist or movement in art history. No more than 10 credits will be counted toward major.

FAMILY AND CONSUMER SCIENCES 7400:

500 NUTRITION COMMUNICATION AND EDUCATION SKILLS 4 credits
Prerequisite: 133 or 216. Theory and development of communication and education skills essential to dietetics practice; nutrition counseling, education techniques, media, and current technology.

501 FAMILY-LIFE PATTERNS IN THE ECONOMICALLY DEPRIVED HOME 2 credits
Study of family life orientation and life-style patterns among economically deprived with emphasis on impact of socioeconomic and psychological deprivation on family members throughout family life span.

503 ADVANCED FOOD PREPARATION 3 credits
Prerequisite: 211 or permission of instructor. Study of advanced techniques of food preparation, introduction to and interpretation of classic and foreign cuisines. Emphasis on individualized experience, skill development and evaluation of procedures and results.

504 ADOLESCENCE IN THE FAMILY CONTEXT 3 credits
Prerequisites: 203, 205 or permission of instructor. The influences of adolescent behavior on the family and the influence of the family environment on adolescent development.

506 FAMILY FINANCIAL MANAGEMENT 3 credits
Analysis of the family as a financial unit including financial problems and their resolution, decision-making patterns and financial practices behavior. Cases, exercises, problems and computer analysis.

518 HISTORY OF INTERIOR DESIGN I 4 credits
The study of furnishings, interiors, and architecture from antiquity through the eighteenth century with emphasis on the socio-cultural influences shaping their development.

519 HISTORY OF INTERIOR DESIGN II 4 credits
The study of nineteenth and twentieth-century furnishings and interiors, with emphasis on the socio-cultural influences shaping their development.

520 EXPERIMENTAL FOODS 3 credits

522 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: 216. Study of the physiological basis for nutritional requirements; interrelating factors which affect growth, development, maturation and nutritional status from conception through the elderly years.
525 ADVANCED TEXTILES
Credit hours: 3
Description: Prerequisite: 121. Evaluation of physical, aesthetic, comfort, care, and durability properties of textile products and testing procedures to determine suitability for desired end uses.

527 GLOBAL ISSUES IN TEXTILES AND APPAREL
Credit hours: 3
Description: Prerequisite: 139. Examines the global structure and scope of the textile and apparel industries emphasizing economic, social, environmental, and ethical concerns.

532 INTERIOR TEXTILES AND PRODUCT ANALYSIS
Credit hours: 3
Description: Prerequisite: 158. Examination, evaluation, and analysis of products for interiors with emphasis on trade classifications, market economics, and legislative concerns.

535 PRINCIPLES AND PRACTICES OF INTERIOR DESIGN
Credit hours: 3
Description: Prerequisite: 150 and 433 or 434. Study of the business aspect of interior design; business procedures, manufacturing of home furnishings, and psychology of marketing home furnishings.

536 TEXTILE CONSERVATION
Credit hours: 3
Description: Prerequisites: 121, 123, 127 Principles and practices of textile conservation with emphasis on procedures appropriate for conservation and small historical agencies.

538 HISTORIC COSTUME TO 1800
Credit hours: 3
Description: Study of costume and textiles from antiquity through the eighteenth century, with emphasis on social-cultural influences.

539 HISTORY OF FASHION SINCE 1780
Credit hours: 3
Description: Prerequisite: 31T. Study of nineteenth and twentieth-century fashions, textiles, and designers with emphasis on social-cultural influences.

540 FAMILY CRISIS
Credit hours: 3
Description: Study of family stress and crisis including internal and external variables and their influence on degree of dysorganization, coping and recovery. Includes theory, research and application techniques.

542 HUMAN SEXUALITY
Credit hours: 3
Description: Prerequisite: 201 or permission of instructor. Introduction to problems and values. Emphasis is on the role of values in understanding the diverse dimensions of sexual relations.

546 CULTURE, ETHNICITY AND THE FAMILY
Credit hours: 3
Description: Study of the role of culture and ethnicity in the family system. Program applications considered.

548 BEFORE AND AFTER SCHOOL CHILD CARE
Credit hours: 3
Description: Study of the development, implementation and evaluation of school-age child care programs for before and after school and vacation periods.

550 FLAT-FRAME DESIGN
Credit hours: 3
Description: Prerequisite: 123 or equivalent. Theory and experience in clothing design using flat pattern techniques.

551 CHILD IN THE HOSPITAL
Credit hours: 3
Description: Prerequisite: 125, comparable course or permission of instructor. Seminar dealing with special needs and problems of hospitalized child and family. Literature related to effects, separation, stress and stress. Examination of strategies for coping.

555 PRACTICUM ESTABLISHING AND SUPERVISING A CHILD-LIFE PROGRAM
Credit hours: 3
Description: Prerequisite: 451/551. Explores procedures for implementing and setting up child-life programs; critical analysis of current child-life program.

556 ORGANIZATION AND SUPERVISION OF CHILD-CARE CENTERS
Credit hours: 3
Description: 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
Credit hours: 3
Description: Provides an overview of Case Management basics in a multi-systems collaborative context. Includes roles, values, principles, and service systems and service coordination.

562 CASE MANAGEMENT FOR CHILDREN AND FAMILIES II
Credit hours: 3
Description: Prerequisite: 461/561. Provides in-depth exploration of Case Management principles and practices. Emphasis on process and functions, assessment, cross-system service planning and coordination; advocacy, and organizational diversity.

563 PRACTICUM IN CROSS-SYSTEMS CASE MANAGEMENT FOR CHILDREN AND FAMILIES
Credit hours: 3
Description: Prerequisites: 451/551, 461/561, 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, ethics, and survival skills, and supervision.

570 THE FOOD INDUSTRY: ANALYSIS AND FIELD STUDY
Credit hours: 3
Description: Prerequisites: 245 or equivalent. Role of technology in extending the food supply. Chemical and physical and biological effects of processing and storage, on-site tours of processing plants.

574 CULTURAL DIMENSIONS OF FOOD
Credit hours: 3
Description: An examination of cultural, historical and technological influences on development of food habits. Emphasis on evolution of diets, effects of religion, education, gender roles, media.

575 ANALYSIS OF FOOD
Credit hours: 3
Description: Prerequisite: 570/513. 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
Credit hours: 3
Description: Prerequisite: 246. Advanced study of the chemistry and physics of food components, affecting characteristics of foods. Critical evaluation of current basic and applied research emphasized.

580 COMMUNITY NUTRITION I-LECTURE
Credit hours: 3
Description: 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
Credit hours: 3
Description: Corequisite: 481 for CP student only. Socio-cultural aspects of community assessment, program implementation and evaluation, and rationales for nutrition services.

582 COMMUNITY NUTRITION II-LECTURE
Credit hours: 2
Description: Prerequisites: 450/550, 451/551. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutrition services.

583 COMMUNITY NUTRITION II-CLINICAL
Credit hours: 1
Description: Corequisite: 482/582. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutrition services.

584 ORIENTATION TO THE HOSPITAL SETTING
Credit hours: 2
Description: Prerequisite: 285, comparable course or permission of instructor. Focuses on hospital as a major social institution; introduces procedures and functions of the hospital, roles played by various hospital personnel plus career knowledge of medical technology, common child health diagnoses, disabilities and injuries.

585 SEMINAR IN FAMILY AND CONSUMER SCIENCES
Credit hours: 1
Description: Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas.

587 SPORTS NUTRITION
Credit hours: 3
Description: Prerequisites: 133, 350/367, 350/510 or 203 or permission of instructor. In-depth study of metabolism and applications in exercise, diet and training, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations are emphasized.

588 PRACTICUM IN DETECTICS
Credit hours: 3
Description: Prerequisite: at least junior standing. Investigation on current issue or topic in selected areas of home economics and family ecology. May be an off-campus study tour or an on-campus full-time group meeting.

594 PRACTICUM IN PARENT AND FAMILY EDUCATION
Credit hours: 3
Description: Prerequisites: 396, 405. Provides on-site opportunities to apply parent and family education skills. Includes a review of strategies, ethical considerations, and supervision by the on-site director.

595 PARENT EDUCATION
Credit hours: 3
Description: Prerequisite: 205, comparable course, or permission. Practical application that reviews and analyzes various parenting techniques with major emphasis on the evaluation of parent education programs.

596 FAMILY IN LIFE-SKIP PERSPECTIVE
Credit hours: 3
Description: Study of individual and family development across life span. Emphasis on adjustment patterns and interpersonal competence; implications for education theory research and social policy.

597 RELATIONSHIPS IN MIDDLE AND LATER YEARS
Credit hours: 2
Description: Study of family patterns and problems during middle and later years of life with emphasis on psychological and biological changes and economic and social adequacy. Research and trends in this area.

598 ORIENTATION TO GRADUATE STUDIES IN FAMILY AND CONSUMER SCIENCES
Credit hours: 1
Description: Introduction to the concepts and processes necessary for graduate study in the interdisciplinary field of Home Economics.

602 DEVELOPMENTAL PARENT/CHILD INTERACTIONS
Credit hours: 2
Description: Prerequisite: 255 or equivalent or permission. Study of reciprocal interactions formed between parent and child. Pathways of development in infancy and childhood.

610 CHILD DEVELOPMENT THEORIES
Credit hours: 2
Description: A comparative study of developmental theories of the child within the family context. Application of theories to child rearing in the family will be emphasized.

618 INFANT AND CHILD NUTRITION
Credit hours: 2
Description: Emphasizes current research trends in physiology of infant and young child in relation to nutritional requirements and feeding practices.

624 ADVANCED HUMAN NUTRITION I
Credit hours: 3
Description: Prerequisites: undergraduate or graduate-level courses in nutrition and biochemistry. In-depth study of human nutrition emphasizing metabolic, physiological, functional, and interrelationships of carbohydrates, proteins and lipids and the determinants of human energy requirements.

625 ADVANCED HUMAN NUTRITION II
Credit hours: 3
Description: Prerequisite: 624 or equivalent. In-depth study of human nutrition with emphasis in the utilization and interrelationships of carbohydrates, proteins and lipids.

623 PROBLEMS IN DESIGN
Credit hours: 1-3
Description: May be repeated, but no more than 6 credits will apply to M.A. Prerequisite: written program proposal approved by faculty advisor. Individual solution of a specific design problem within the student's area of clothing, textiles and interior specialization.

625 ADVANCED FOOD THEORY AND APPLICATIONS
Credit hours: 3
Description: Prerequisites: 250/520 or permission. Advanced study of the chemistry and physical properties of food components, testing of characteristics of foods, critical evaluation of current basic and applied research emphasized.

631 MATERIAL CULTURE STUDIES
Credit hours: 3
Description: Methods of studying clothing, textiles, and interiors from a cultural and historical perspective.

632 THEORIES OF FASHION
Credit hours: 3
Description: In-depth analysis of the theories underlying fashion and evaluation of current research related to fashion.

640 NUTRITION IN DIMINISHED HEALTH
Credit hours: 3
Description: Prerequisite: 428 or permission. Examination of concepts related to nutritional intervention associated with selected pathophysiologic and debilitating conditions throughout the life cycle. Emphasis on current literature.

651 FAMILY AND CONSUMER LAW
Credit hours: 3
Description: Cites laws which control individuals within families. Emphasis on current legal trends, legal rulings. Course taught by attorney.

652 PROFESSIONAL PREPARATION IN FAMILY AND CONSUMER SCIENCES
Credit hours: 3
Description: Introduces and explores home economics professional presentations. Emphasis on visuals, display, demonstrations, public relations materials, user manuals, conference management, portfolio development, and learning styles.

660 PROGRAMMING FOR CHILD-CARE CENTERS
Credit hours: 3
Description: Provides procedures involved in program development for child-care centers. Evaluation of current programs available for preschool children. Emphasis on literacy, creative arts, after-care, and child advocacy.

665 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD
Credit hours: 3
Description: Study of research and theoretical frameworks regarding infant and child development from conception through age five. Implications of guidance and education.

671 SOCIAL PSYCHOLOGY OF FAMILY AND THE ENVIRONMENT
Credit hours: 3
Description: Study of family and the environment as they relate to human behavior at the micro and macro levels.

680 HISTORICAL AND CONCEPTUAL BASES OF FAMILY AND CONSUMER SCIENCES
Credit hours: 3
Description: Study of the field of home economics and family ecology with emphasis on the leaders and the conceptual bases of the field.
608 SEMINAR IN MUSIC OF THE WESTERN HEMISPHERE 2 credits
Prerequisite: permission of instructor. Designed to develop understanding of popular cultures of the Western Hemisphere through study of music in five major areas. Research and writing.

609 PEDAGOGY OF JAZZ IMPROVISATION 2 credits
A detailed study of the methods and materials as they relate to the teaching of jazz improvisation.

611 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION 3 credits
Prerequisite: permission of instructor. Study of basic educational, philosophical, historical, sociological, and psychological concepts among which public school music programs function.

612 PRACTICES AND TRENDS IN MUSIC EDUCATION 3 credits
Prerequisite: permission of instructor. In-depth exploration of innovative practices and trends in music education. Readings of research and practice related to prevailing solutions in public school programs.

613 INSTRUCTIONAL PROGRAMMING IN MUSIC FOR THE MICROCOMPUTER 3 credits
Prerequisite: 450/553. Introduction to programming for the microcomputer with emphasis on doing BASIC, PASCAL, and Assembler. Programming will be directed towards music educational contexts.

614 MEASUREMENT AND EVALUATION IN MUSIC 2 credits
Prerequisite: permission of instructor. Study and application of principles of music aptitude, music achievement, and content evaluation; and research as a function of evaluation.

615 MUSICAL STYLES AND ANALYSIS I 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of Gregorian chant through music of Palestrina and others of late Renaissance.

616 MUSICAL STYLES AND ANALYSIS II 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of late Beethoven through Mahler and Strauss.

617 MUSICAL STYLES AND ANALYSIS III 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music in 20th Century.

619 THEORY AND PEDAGOGY 2 credits
Prerequisite: permission of instructor. Methodology of theory teaching in 20th Century. Focus on various philosophies of approach to theory instruction as noted from tests on recent innovations and techniques of teaching, such as programmed materials, computer assisted instruction tools, etc.

620 COMPUTER ANALYSIS IN MUSIC 2 credits
Prerequisite: a minimum of one course in the GS-GL series. A systematic study of analytical techniques in music which may enhance an understanding of the composition and historical development of music, as observed in scores, recordings, and performance practices. Instruments will be included in varied contexts.

621 MUSIC HISTORY SURVEY: MIDDLE AGES AND RENAISSANCE 2 credits
Prerequisite: permission of instructor. Study of music history from early Baroque, through the Renaissance, and into the Middle Ages. Topics include Western musical history, style, and structure; and analytical approaches normal to study of music history, selected readings related to each student's particular field of interest for project papers.

622 MUSIC HISTORY SURVEY: BAROQUE 2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of Baroque music. Study in depth of specific examples, from recordings, scores and live performances, composition and synthesis of approaches normal to study of music history, selected readings related to each student's particular field of interest for project papers.

625 GRADUATE BIBLIOGRAPHY AND RESEARCH IN MUSIC 3 credits
Prerequisite: graduate music degree equivalent. Examination of all types of printed music materials, research methods for thesis preparation and professional publishing. Field work will include library use, music libraries, computer music research.

626 COMPUTER STUDIO DESIGN 2 credits
The design and management of a computer lab. Emphasis on hardware and software setup to maximize function and minimize maintenance.

630 TEACHING AND LITERATURE: BRASS INSTRUMENTS 2 credits
Prerequisite: permission of instructor. Research in current trends and issues in brass teaching techniques and appropriate literature.

631 TEACHING AND LITERATURE: WOODWIND INSTRUMENTS 2 credits
Prerequisite: permission of instructor. Research in current trends and issues in woodwind teaching techniques and appropriate literature.

632 TEACHING AND LITERATURE: STRING AND HARPSTRICH 2 credits
Prerequisite: permission of instructor. The examination of piano and harpsichord literature in historically chronological order with special attention to its pedagogical value and stylistic differences.

634 TEACHING AND LITERATURE: STRING INSTRUMENTS 2 credits
Prerequisite: permission of instructor. Research in current trends and issues in string teaching techniques and appropriate literature.

640, 643 ADVANCED ACCOMPANYING I, II, III, IV 1-7 credits
Prerequisite: Graduate standing in keyboard performance and/or accompanying or permission of the instructor. Advanced study of principles of accompanying, sight-reading, standard repertoire, and transcription.

647 MASTER'S CHAMBER RECITAL 1 credit each
Prerequisite: permission of instructor. Composition student will present a recital of chamber music compositions at least one-half hour in length for graduation. Presentation of a recital and the written analysis of the program will be required.

655 ELECTRONIC MUSIC 3 credits

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 harmonic language vocabulary of the 18th, 19th, and 20th centuries.

527 GRADUATE MUSIC HISTORY REVIEW 2 credits
Prerequisite: Undergraduate music history course equivalent to four semesters of music history of 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
Prerequisite: Undergraduate permission to graduate students. Study of percussion instruments and techniques. Emphasis on research, literature, performance, and techniques from elementary through secondary levels.

535 INTRODUCTION TO MUSICOLOGY 2 credits
Prerequisite: 352. Comparative musicology, aesthetics, history of music theory, Western musicology.

553 MUSIC SOFTWARE SURVEY AND USE 2 credits
Prerequisite: 122 or permission of instructor. A survey and evaluation of available software in the various forms of musical instruction. Students will design a course suitable for submission to a programmer.

555 ADVANCED CONDUCTING: INSTRUMENTAL 2 credits (20 clinical hours)
Saiton 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 CONDUCTING: CHORAL 2 credits
Prerequisite: 150 or equivalent. Conduction techniques to the choral ensemble, including rehearsal, error detection, vocal development, stylistic accuracy, and analysis. One hour lab required.

565 REPETTORE AND PEDAGOGY: ORGAN 3 credits
Prerequisite: permission of instructor. Survey of organ literature of all eras and styles. A method of teaching organ; applying principles to literature.

566 REPETTORE AND PEDAGOGY: STRING INSTRUMENTS 2 credits
Prerequisite: permission of instructor. Study of the forty bowed string instruments, their teaching and use relationship. Despite obvious difference in physical application of the bow, and bowing, methods of bowing, sound production and coloring are closely related. Application of the instruments to solo, chamber and orchestral playing.

577 GUITAR PEDAGOGY 2 credits
Prerequisite: permission of instructor. A systematic analysis of teaching schools of guitar pedagogy. Sound production psychology. method books and special problems in teaching addressed.

581 GUITAR ARRANGING 2 credits
Prerequisite: permission of instructor. Comparative analyses of selected examples, student make original solo guitar arrangements of works written for solo string ensembles.

585 HISTORY AND LITERATURE OF THE GUITAR AND LUTE 2 credits
Prerequisite: permission of instructor. Study of plucked, fretted, string instruments from the 15th Century to the present. Construction, notation, literature and performance practices for medieval and modern recording, etc.

589 WORKSHOP IN MUSIC 1 credits
Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate students must fulfill additional requirements.

604 DEVELOPMENT OF ORGA 2 credits
Prerequisite: permission of instructor. Growth and development of organ from 1700 to present. Includes detailed examination of stylistic and structural changes as well as performance practices.

Courses of Instruction 119
MUSICAL ORGANIZATIONS

7510:

521 GUITAR CHAMBER MUSIC 1 credit
Prerequisite: Open to all upperclass instrumentalists and vocalists. Students must have taken Guitar Ensembles TRUEN Study, coaching, and performance of major works for guitar with other instruments or voice. Major conducted ensemble for guitar majors.

502 AKRON SYMPHONY CHORUS 1 credit
Open to University and community members by audition. Prospective members should contact School of Music two weeks before semester begins. Performs with Akron Symphony Orchestra.

503 UNIVERSITY SYMPHONY ORCHESTRA 1 credit
Membership by audition. Organization devoted to study of orchestral literature. Full-length concerts as well as special University appearances. Major conducted ensemble.

504 SYMPHONIC BAND 1 credit
Membership by audition. The University Symphonic Band is the most select band at the University and performs the most demanding and challenging music available.

505 VOCAL CHAMBER ENSEMBLE 1 credit
Prerequisite: Membership is open to those enrolled in applied voice study. Coaching and rehearsal of soloists and ensemble literature for voices from operatic, oratorio, and lieder repertoires.

506 ORCHESTRA 1 credit
Membership by audition. Study and performance of literature for brass ensemble of all periods of music history. Frequent public concerts. For advanced brass players.

507 STRING ENSEMBLE 1 credit
Membership by audition. In-depth study and performance of choral music literature with special emphasis on string quartet and piano trio.

508 ORCHESTRA 1 credit
Membership by audition. Musical and dramatic group study of excerpts from operatic repertoire. Includes an all-production of standard operas and/or contemporary chamber work with staging, costumes, and scenery.

509 PERCUSSION ENSEMBLE 1 credit
Membership by audition. Study and performance of literature for various percussion groups; develops skill in ensemble performance.

510 WOODWIND ENSEMBLE 1 credit
Membership by audition. Study and performance of woodwind literature from all periods and various combinations of woodwinds. Develops performance skills and knowledge of woodwind literature.

511 CHAMBER ORCHESTRA 1 credit
Membership by audition. Organization designed to study for performance the substantial repertoire for small orchestra. Open to a student of advanced ability.

512 KEYBOARD ENSEMBLE 1 credit
Involves three hours a week of accompanying. Keyboard major required to enroll for at least three years. Music education major may substitute another musical organization for one year.

513 JAZZ ENSEMBLE 1 credit
Membership by audition. Provides experience in jazz ensemble performance. A student is assumed to have knowledge of rudiments of music and some experience in jazz ensemble performance.

514 SMALL ENSEMBLE MIXED 1 credit
Chamber Ensemble, Baroque Ensemble, and Contemporary Music Ensemble. Each is a group of diverse instruments which rehearse and performs a selected body of music.

515 CONCERT CHOIR 1 credit
Membership by audition. Highly select mixed choir. Performs classical literature from all periods. Campus, regional, and tour performances. "Major conducted ensemble" for vocal majors.

516 UNIVERSITY SINGERS 1 credit
Membership by audition. Mixed ensemble devoted to performance of wide variety of choral literature from classical to popular. "Major conducted ensemble" for vocal majors.

517 MADRIGAL SINGERS 1 credit
Membership by audition. Ensemble devoted to performance of vocal choral music of the Renaissance. Performs madrigals and similar works.

518 OPERA CHORUS 1 credit
Open to students and members of University community by audition. Rehearsal and production of opera and musical theatre literature with staging, costumes, and scenery.

519 CONCERT BAND 1 credit
Membership by audition. Performs the finest in concert band literature available for concert bands today.

625 MARCHING BAND 1 credit
This organization is noted for its high-energy performances. Enroll-
COMMUNICATION

7600:

500 HISTORY OF JOURNALISM IN AMERICA 3 credits
A review and analysis of the historical evolution of journalism in America, focusing primarily on newspapers, magazines, radio, and television.

508 WOMEN, MINORITIES AND NEWS 3 credits
Study of images of women and minorities in U.S. news, along with the powers and minorities who are decision-makers in the news industry.

516 NEW MEDIA WRITING 3 credits
Prerequisite: Permission of the instructor. This class will look at how today’s professionals practice online writing. Students will work on writing and reporting skills next in New Media.

517 NEW MEDIA PRODUCTION 3 credits
Prerequisite: 516 or permission of the instructor and 518. Covers practical application of software to create online multimedia documents and explores design ideas for New Media content.

525 COMMUNICATION IN ORGANIZATIONS 3 credits
Overview of theories and approaches for understanding communication flow and practices in organizations, including interpersonal, networks, supervisory/line, formal and informal communication.

536 ANALYZING ORGANIZATIONAL COMMUNICATION 3 credits
Prerequisite: 535 or permission. Methodology for indepth analysis and application of communication in organizations, team building, conflict management, communication flow, individual and group projects, simulations.

537 TRAINING METHODS IN COMMUNICATION 3 credits
Prerequisite: 345 or permission. Principles and concepts in the design and delivery of communication training programs, integration of theory and methodology, presentation skills, matching methods and learner needs.

554 THEORY OF GROUP PROCESSES 3 credits
Group communication theory and conference leadership as applied to individual projects and seminar reports.

557 PUBLIC SPEAKING IN AMERICA 3 credits
Survey and critical analysis of major speakers, speeches and speech movements in American history. Examines how style and content of American speaking influenced events and reflected their times.

562 ADVANCED MEDIA WRITING 3 credits
Prerequisites: 291, 294, or equivalent. Practical applications of script writing principles and techniques, focusing on the skills and discipline required to finish an entire script.

566 AUDIO AND VIDEO EDITING 3 credits
Prerequisites: 280 or equivalent. Theory and practice of editing audio and video for broadcast and corporate applications.

568 NONLINEAR VIDEO EDITING 3 credits
Prerequisites: 280 or equivalent. Advanced computerized multi-track audio and video editing. Theory and practice of multi-track sound mix for video productions.

571 THEORIES OF RHETORIC 3 credits
Study of key figures in history of rhetorical theory, stressing interrelationships among theories of rhetoric, intellectual climates and social climates.

581 FILM AS ART: AN INTRODUCTION TO THE FILM FORUM 3 credits
Explores the formal laws that govern a film, acquainting the student with the film narrative and its stylistic elements.

590 COMMUNICATION WORKSHOP 1-3 credits
May be repeated for a total of six credits. Group study or group projects investigating a particular phase of media not covered by other courses in curriculum.

593 PRODUCTION PRACTICUM 3 credits
Prerequisite: Permission. Practical application of writing, directing, management, recording, and editing skills in problems in electronic media production.

600 INTRODUCTION TO GRADUATE STUDY IN COMMUNICATION 3 credits
Introduction to the ideas and scholarship that constitute the various research interests in the department.

601 EMPIRICAL RESEARCH IN COMMUNICATION 3 credits
An introduction to elementary concepts of empirical and quantitative research and their application in studies of mass media research topics.

604 INTRODUCTION TO QUANTITATIVE RESEARCH IN COMMUNICATION 3 credits
Prerequisite: 603 or equivalent. An introduction to reading and understanding research designs employing basic parametric and nonparametric descriptive and hypotheses testing statistical models in mass media-communication.

606 COMMUNICATION PROBLEMS IN THE BASIC SPEECH COURSE 1 credit
Designed to train a graduate student in methods and materials of introductory speech course. Required of all teaching graduate assistants.

608 COMMUNICATION PEDAGOGY 3 credits
Focuses on aspects of teaching communication and media courses at the college level.

623 AMERICAN MASS MEDIA SYSTEMS 3 credits
Analysis of role, performance and impact of media in America.

624 SURVEY OF COMMUNICATION THEORY 3 credits
Study of the assumptions of fields of communication: information analysis, social interaction and semantic analysis.

625 THEORIES OF MASS COMMUNICATION 3 credits
A review of theories of mass media and studies exploring the effect of media.

626 CONTEMPORARY ISSUES IN BROADCASTING 3 credits
Study of issues important to the management of radio and television broadcast station. Subcription to professional journal required.

628 CONTEMPORARY PUBLIC RELATIONS THEORY 3 credits
Study and practical application of communication: concepts, theories and skills relevant to public relations programs in businesses and nonprofit organizations.

631 SEMINAR: ADVANCED PRODUCTION DESIGN I 3 credits
Prerequisites: Demonstrated proficiency in either photography, film, or video production and permission of instructor. Analysis of communication problems and the design of solutions mediated by film, video and photography. Emphasis on production research and writing in various media formats. Design and production of a major project.

632 SEMINAR: ADVANCED PRODUCTION DESIGN II 3 credits
Prerequisite: 521. Continuation of projects in 521 and an opportunity for students to work in additional media.

635 ISSUES IN LEGAL REGULATION OF THE MEDIA 3 credits
Structure of the regulatory system; current regulatory issues in print, film, radio and television broadcasting, pay and cable TV.

645 INTERCULTURAL COMMUNICATION THEORY 3 credits
Analysis of the impact on the communication process of cultural difference between communication; examination of existing literature in intercultural communication.

665 THEORIES OF ARGUMENT AND PERSUASION 3 credits
Prerequisites: undergraduate course in argumentation and in persuasion, or permission of instructor. Analysis of principal theories related to attitude formation and change.

670 COMMUNICATION CRITICISM 3 credits
Introduces the basic elements, approaches and theories of critical discourse as it is relevant to communication and mass media studies.

675 JOURNALISM IN RHETORICAL CRITICISM 2 credits
(May be repeated for a total of six credits.) Organized around special problems and methods involved in analysis of different genres, forms and topics of discourse.

676 SEMINAR IN RHETORICAL THEORY 3 credits
Concentrated study and research of ancient, modern or contemporary writers on some specific topic in rhetorical theory.

678 RHETORICAL ELEMENTS SOCIAL MOVEMENTS 3 credits
Examination of role and function of collective rhetorical discourse in affecting change. Focus on various rhetorical methodologies for understanding social movements and case studies.

680 GRADUATE COMMUNICATION INTERNSHIP 1-3 credits
May be repeated for a total of six credits. Prerequisites: must have attained the category of full admission and be in good standing in the School’s graduate program; must receive permission and approval of internship placement and research proposal. Provides graduate communication students with opportunity to obtain experience and to apply knowledge of academic concepts in a supervised work setting in the communication field.

686 STUDIES IN COMMUNICATION MEDIA: RADIO 3 credits
Study of radio station programming.

687 STUDIES IN COMMUNICATION MEDIA: TELEVISION 3 credits

691 ADVANCED COMMUNICATION STUDIES 3 credits
(May be repeated for a total of six credits.) Special topics in communication in areas of particular faculty expertise. Consult department for particular topics each semester.

692 SEMINAR IN FILM 3 credits
Prerequisites: permission of instructor. Advanced historical and critical study of works and institutions in film and video. Topics vary.

697 GRADUATE RESEARCH IN COMMUNICATION 3 credits
(May be repeated for a total of six credits.) Prerequisite: 7800.600 and approval of project prospectus one term prior to undertaking the project. Performance of research on problems found in mass media-communication.

698 MASTER’S PROJECT/PRODUCTION 3 credits
(May be repeated for a total of six credits.) Prerequisite: Permission of the school director.

699 MASTER’S THESIS 3 credits
(May be repeated for a total of six credits.) Prerequisite: Permission of the school director.

SPEECH-LANGUAGE PATHOLOGY & AUDDIOLOGY

7700:

520 ASPECTS OF NORMAL LANGUAGE DEVELOPMENT 3 credits
Not open to communicative disorders majors. Introduction to acquisition and development of comprehension 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 school.

540 AUGMENTATIVE COMMUNICATION 3 credits
Prerequisite: 335 or 430503 or permission of instructor. Overview of augmentative communication systems, candidates, symbolic systems, devices, vocabulary, funding. Consider inter-disciplinary issues in assessment/intervention.

545 MULTICULTURAL CONSIDERATIONS FOR AUDIOLOGISTS AND SPEECH-LANGUAGE PATHOLOGISTS 2 credits
Prerequisite: 7700.110 or graduate standing. This course introduces the multicultural 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
Not open to communicative disorders majors. Nature, causes and treatments of speech, hearing and language disorders in public schools. Special reference to role of classroom teacher in identifying and referring student with suspect problems and in working with school counselor.

561 ORGANIZATION AND ADMINISTRATION: PUBLIC SCHOOL SPEECH-LANGUAGE AND HEARING PROGRAMS 2 credits
Prerequisites: Senior or graduate standing. For clinicians who plan to work in public school systems. Covers program requirements and professional issues imposed by PL 94-142.

583 COMMUNICATION DISORDERS: GERIATRIC POPULATION 3 credits
Not open to communicative disorders majors. Examination of communication disorders that exist in geriatric population. Focus on etiology, symptomatology and concomitant rehabilitative procedures. Designed for a student interested in the aging population.
585 COMMUNICATIVE DISORDERS IN THE DEVELOPMENTALLY DISABLED 4 credits
Theory and current understanding of communicative disorders in intellectually and neurologically delayed children.

590 WORKSHOP: SPEECH-LANGUAGE PATHOLOGY AND/OR AUDIOLOGY 13 credits
May be repeated for a total of six credits. Prerequisite: permission. Group investigation of specific phases of speech-language pathology and/or audiology not otherwise offered by courses.

601 ADMINISTRATION AND SUPERVISION IN SPEECH AND HEARING PROGRAMS 4 credits
Prerequisite: permission of instructor. Organization and management of speech and hearing programs in voluntary and official agencies. Philosophy and methodology in supervision of services.

610 INSTRUMENTATION IN SPEECH PATHOLOGY AND AUDIOLOGY 2 credits
Prerequisite: course in clinical instrumentation in speech and hearing.

611 RESEARCH METHODS IN COMMUNICATIVE DISORDERS 3 credits
Introduction to experimental design in field of communicative disorders.

612 RESEARCH METHODS IN COMMUNICATIVE DISORDERS 2 credits
Prerequisite: 611. Advanced statistical methods, development of a research study.

615 ADULT DYSARTHRIA AND APAXIA 2 credits
Development, symptoms, diagnosis and treatment of adult dysarthria and apraxia.

620 ARTICULATION 2 credits
Historical background, current theories and research related to articulation, evaluation and treatment of articulation and phonology disorders.

621 COMMUNICATIVE DISORDERS IN CLEFT PALATE 2 credits
Historical background, current theories and research related to articulation, diagnosis and treatment of cleft palate.

622 SUPPORT SYSTEMS FOR INDIVIDUALS AND FAMILIES WITH COMMUNICATIVE DISORDERS 2 credits
Enhances students' abilities to interview, provide educational information, and create support systems for persons with communicative handicaps and their families.

624 APHASIA 2 credits
Historical background, current theories and research related to articulation, diagnosis and treatment of adult aphasia.

625 LANGUAGE DEVELOPMENT: NORMAL AND DISORDERED 3 credits
Survey of research in normal and disordered development of language skills.

626 VOICE PATHOLOGY 3 credits
Prerequisite: permission of instructor. Background and current research related to normal vocal function as well as the dyslaliasis, and therapy of various disorders of voice.

627 FLUTTERING, THEORIES AND THERAPIES 2 credits
Prerequisite: completion of four credits in voice pathology, languages, and historical literature. Reading and discussion of selected theories and therapies.

628 TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS 2 credits
May be repeated for a total of four credits. Prerequisite: permission of director of Speech and Hearing Center.

629 TOPICS: SPEECH PATHOLOGY AND AUDIOLOGY 2 credits
Prerequisite: permission of instructor. Selected current topics in clinical and/or experimental areas of speech pathology, audiology, or language. Emphasis on review of current and historical literature.

630 LANGUAGE SKILLS IN CHILDREN: ASSESSMENT AND INTERVENTION 3 credits
Prerequisite: 625 or permission of instructor. Theoretical and applied study of child-language assessment and intervention strategies.

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 and acquired brain injury.

632 DYSPHAGIA 3 credits
Dysphagia, swallowing, and related problems of children and adults with feeding and swallowing disorders (dysphagia). It provides actual experiences in diagnosis and feeding technologies in swallowing.

638 SEMINAR IN LANGUAGE AND SPEECH OF THE HEARING IMPAIRED 2 credits
Study of development of language and speech in hearing impaired children, emphasizing psycholinguistic, psychosocial, and medical aspects of hearing impaired children. Effect of conditions of auditory stimulation and acoustic feedback on speech and language. Methods of speech conservation.

639 ADVANCED CLINICAL TESTING 4 credits
Theoretical basis for administration of 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: 609 or permission of instructor. Underlying psychoacoustic principles of administration and interpretation of oto-audiometric tests.

641 AMPLIFICATION 3 credits
Prerequisite: 620 or permission of instructor. Components of amplification systems; methods of evaluating hearing aid performance.

643 PEDIATRIC AUDIOLOGY 2 credits
Prerequisite: 620 or permission of instructor. Etiology of hearing loss in children, techniques for testing preschool and school-age children and other difficult-to-test clients.

645 NEUROBIOLOGY OF CEREBELLAR FUNCTION 2 credits
Prerequisite: 620 or permission of instructor. Theoretical and experimental neurobiological approaches to the role of the cerebellum in learning and memory.

648 NEUROBIOLOGY OF CEREBELLAR FUNCTION 4 credits
Prerequisite: 620 or permission of instructor. Theoretical and experimental neurobiological approaches to the role of the cerebellum in learning and memory.

649 ELECTROENCEPHALOGRAPHY 2 credits
Prerequisite: permission of instructor. Study of the anatomy and physiology of the vestibular system, menstruous, electroencephalographic (EKG) 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, includes preparation of written reports.

654 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.

659 EXTERNAL: SPEECH PATHOLOGY AND AUDIOLOGY 2 credits
Prerequisite: Permission (may be repeated). Clinical practicum in a selected speech-language pathology and/or audiology facility.

679 SPECIAL PROBLEMS: SPEECH PATHOLOGY AND/OR AUDIOLOGY 13 credits
May be repeated for total of six credits. Prerequisite: permission of instructor. Guided study of selected problems in speech pathology and/or audiology.

699 MASTER'S THESIS (May be repeated for a total of six credits.) Prerequisite: permission of School Director.

SOCIAL WORK 7750:

501 SOCIAL WORK PRACTICE I 3 credits
Prerequisite: 276 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: 403 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: 403 or permission of instructor. Development of understanding and methods for utilization of community organization and social policy as social work process in addressing problems and developing programs to meet needs.

504 SOCIAL WORK PRACTICE IV 3 credits
Prerequisite: 403 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 instruction. Must be taken prior to or concurrently with 403 and any of the other practicums. Prerequisites: 402, 403, 404. Race, culture, and conflict in social work related to various practice and theoretical perspectives, to various types of social programs, service agencies, individual family, group, clinical, and societal contexts integrated 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 with women in social services; the dynamics of family systems, assessment of family function and dysfunction, professional helping processes.

525 SOCIAL WORK ETHICS 3 credits
Prerequisite: 476 or permission of instructor. Social Worker's code of ethics as applied to practices, problems and issues in social work.

530 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT I 3 credits
Prerequisite: 477, 276 or permission of instructor. For 527: permission of instructor. Social work perspective on human development across the life cycle. Human diversity approach concerned with the needs of social work students preparing for practice.

530 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT II 3 credits
Prerequisite: 477, 276 or permission of instructor. For 527: permission of instructor. Social work perspective on human development across the life cycle. Human diversity approach concerned with the needs of social work students preparing for practice.

540 SOCIAL WORK RESEARCH I 3 credits
Prerequisite: 440 or 476 or permission of instructor. For 540: Social work practice. Social work practice as a utilization of scientific method in the conduct of practice and research-related work research as found in social work and social science literature for improvement and development of social work practice.

541 SOCIAL WORK RESEARCH II 3 credits
Prerequisite: 441 or 477 or permission of instructor. For 541: Social work practice. Social work practice as a utilization of scientific method in the conduct of practice and research-related work research as found in social work and social science literature for improvement and development of social work practice.

545 SOCIAL POLICY ANALYSIS FOR SOCIAL WORKERS 3 credits
Prerequisite: 445 or 276 or permission of instructor. For 545: undergraduate social work degree of permission. Description, analysis and construction of social policy in social services, understanding of processes and mechanisms which establish or change social policies, to predict consequences of social policies, and to establish goals for social policy development, integrated 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 families, and of practice of social work in child-welfare settings, consideration of supportive, supplementary, and substantive services.

552 SOCIAL WORK IN MENTAL HEALTH 3 credits
Prerequisite: 276 or permission of instructor. Issues, organization, development, and methods 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 with juvenile justice systems of the United States. Social problematic, program development, prevention, diversion and community outreach, legal concerns, case management, and institutional functioning.

555 THE BLACK FAMILY 3 credits
Prerequisite: 276 or permission of instructor. Contemporary problems facing black families, race-ethnicity, gender, social class, structural discrimination, political economy, social policies, and social institutions.

556 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, hospitals, outpatient services, emergency services, clinics, visiting nurse services, nursing homes, pediatric services, self-help organizations.
587 ADVANCED PRACTICE WITH INDIVIDUALS
Prerequisite: 487 or permission of instructor. 12 credits. Graduates in advanced professional development of direct and indirect strategies and techniques of intervention to aid individuals in improving psychological functioning.

588 ADULT DAY CARE
Prerequisite for 497 is 476 or permission of instructor, for 498: permission of instructor. Planning, developing, evaluating, and delivering of adult day service programs. 3 credits.

589 SOCIAL WORK WITH THE MENTALLY RETARDED
Prerequisite 476 or permission of instructor. Application of social work principles in the provision of social work services to meet the needs of the mentally retarded and developmentally disabled and their families. 3 credits.

590 ADMINISTRATION AND SUPERVISION IN SOCIAL WORK
Prerequisite 487 or permission of instructor. Preparation for use of supervision, staff development, and program planning in a social work agency. Examines the social work/agency in its community as it affects organizational goals-setting and program implementation problems. 3 credits.

591 LAW FOR SOCIAL WORKERS
Prerequisite: 276 or permission of instructor. Basic terminology, theories, principles, organization, and regulations of legal areas of legal concerns, and laws explored along with the relationship between social work and law and comparisons of the theoretical bases of the two professions. 3 credits.

592 SUBSTANCE ABUSE AND SOCIAL WORK PRACTICE
Prerequisite: 276 or permission of instructor. Provides students with the essential knowledge and skill for effective substance-related work with people involved in substance abuse. 3 credits.

593 SPECIAL TOPICS IN SOCIAL WORK AND SOCIAL WELFARE
Prerequisite permission of instructor. Analyzes current social work and social welfare theory and policy, settings, innovative interventions and trends in delivery systems in relation to selected areas of concern. Topics and credits variable. 3 credits.

597 INDIVIDUAL INVESTIGATIONS IN SOCIAL WORK, SOCIAL WELFARE, AND HUMAN SERVICES
Prerequisites: permission of department and research. Research in an areas of interest in social welfare theory or institutional operations or in social work practice and the design and implementation of a research plan. Preparation of report appropriate to nature of topic. For social work major. 3 credits.

601 FOUNDATION FIELD PRACTICUM
Prerequisite: 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.) 3 credits.

602 FOUNDATION FIELD PRACTICUM II
Prerequisite: second of two field practicum courses to be taken in the second 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.) 3 credits.

603 ADVANCED FIELD PRACTICUM
Prerequisite: 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 Spring Semester.) 3 credits.

605 SOCIAL WORK PRACTICE WITH LARGE SYSTEMS
- Prerequisite: 604 or permission of instructor. Provides the basic knowledge, skills, and strategies of social work practice with task groups, organizations, and communities. 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. 3 credits.
- Prerequisite: second level graduate student or permission of instructor. This course continues the development and implementation of intervention strategies with an emphasis on 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. 3 credits.
- Prerequisite: graduate status or permission of instructor. Provides knowledge of macro-level human behavior and life cycle development of people as individuals and as members of larger communities. 3 credits.

611 DYNAMICS OF RACISM AND DISCRIMINATION
- Prerequisite: graduate status or permission of instructor. Provides knowledge of macro-level human behavior and life cycle development of people as individuals and as members of larger communities. 3 credits.
- Prerequisite: second level graduate student or permission of instructor. This course focuses on understanding the factors leading to and sustaining racism, sexism, homophobia, and the like, at micro and macro levels. 3 credits.

622 FUNDAMENTALS OF RESEARCH
- 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. 3 credits.

623 FUNDAMENTALS OF RESEARCH II
- Prerequisite: 222, 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. 3 credits.

631 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT: SMALL SOCIAL SYSTEMS
- Prerequisite: graduate status or permission of instructor. This course focuses on an understanding of the human behavior and social development of people as individuals and as members of families and other small groups. 3 credits.

632 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT: LARGE SOCIAL SYSTEMS
- Prerequisite: 631 or permission of instructor. This course focuses on the human behavior of people as members of larger social systems including formal and informal organizations, communities, and institutions. 3 credits.

634 SOCIAL WELFARE POLICY
- 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 social service delivery. 3 credits.

637 SOCIAL WELFARE POLICY II
- Prerequisite: 646 or permission of instructor. This course prepares students with the beginning skills to engage in social policy analysis. 3 credits.

645 ADVANCED STANDING INTEGRATIVE SEMINAR
- Prerequisite: advanced standing. Provides an integrative view of social work practice with an emphasis on values, foundation knowledge and skills, and evaluation of professional interventions. 6 credits.

656 SOCIAL WORK PRACTICE WITH GAY'S AND LESBIANS
- Prerequisite: second level graduate status or permission of instructor. This course examines gay and lesbian culture and contact with oppression based on sexual orientation, and intervention strategies appropriate to practice with gay and lesbians. 3 credits.

657 PSYCHOPHARMACOLOGY AND SOCIAL WORK
Prerequisite: second level graduate student or permission of instructor. An examination of the interaction of the social worker and client with medications, and social work practice. 3 credits.

658 SINGLE SYSTEM DESIGN
Prerequisite: second level graduate student or permission of instructor. Provides students with advanced knowledge about the methodology of single system design and its application to the study of their interventions with clients. 3 credits.

659 SUPERVISION AND STAFF DEVELOPMENT
Prerequisite: second level graduate student or permission of instructor. An examination of the purpose, functions, and theories of supervision, the impact of cultural, ethnic, and gender differences on supervisory relationships, and development of strategies for overcoming barriers. 3 credits.

671 SOCIAL WORK ADMINISTRATION
Prerequisite: second level graduate student or permission of instructor. This course focuses on the leadership and management of social work organizations as they are carried out at different hierarchical levels in human service organizations. 3 credits.

673 STRATEGIES OF COMMUNITY ORGANIZATION
Prerequisite: second level graduate student or permission of instructor. Emphasizes the historical development and application of several community strategies used to identify community problems, and how to organize and empower diverse community groups. 3 credits.

674 INTRODUCTION TO COMMUNITY ORGANIZATION AND PLANNING
Prerequisite: must have completed first year of master's program. Required for all second year students concentrating in Macro Practice sequence. Prepares students to work in community agencies, public and private agencies. 3 credits.

675 COMMUNITY, ECONOMIC SYSTEMS AND SOCIAL POLICY ANALYSIS
- Prerequisite: second level graduate student or permission of instructor. This course provides a basis for understanding economic and fiscal principles of economic and fiscal exchange, accountability and local accounting. 3 credits.

676 AGING AND SOCIAL WORK PRACTICE
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. 3 credits.

677 AGING POLICIES AND PROGRAMS
- 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. 3 credits.

685 SOCIAL WORK PRACTICE: FAMILY AND CHILDREN
- Prerequisite: second level graduate student or permission of instructor. Examines the major problems encountered by families in the life cycle and explores intervention strategies and programs to address their needs and strengths. 3 credits.

686 SOCIAL WELFARE POLICY AND SERVICES: FAMILY AND CHILDREN
- 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 self-sufficiency aspects of services. 3 credits.

689 ADVANCED PRACTICE AND POLICY IN SUBSTANCE ABUSE
- Prerequisite: second level graduate student or permission of instructor. This course provides students with the knowledge and skills for working with people involved in substance abuse, evaluating programs, and preventive work. 3 credits.

695 HEALTH CARE PLANNING AND POLICY ISSUES
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 practice in health can interface with health policy. 3 credits.

696 EPIDEMIOLOGICAL ANALYSIS OF HEALTH AND SOCIAL PROBLEMS
- Prerequisite: second level graduate student or permission of instructor. This course applies the epidemiological method to social work practice, such as treatment groups, making informed decisions, in planning, implementation, and doing preventive work. 3 credits.

700 THEATER 7800:

567 CONTEMPORARY THEATER STYLES A dramatic examination of stage plays of the contemporary theatre. 3 credits.

575 ACTING FOR THE MUSICAL THEATER
- Prerequisite: permission. A scene study course in analyzing and performing roles in American musicals. Accompanied by workshops. 3 credits.

595 WORKSHOP IN THEATRICAL ARTS
- May be repeated for a total of six credits toward degree. Prerequisite: advanced standing in performance or permission of group study. An introduction to various curriculums, theatrical practices, and organizations. 3 credits.

596 INTRODUCTION TO GRADUATE STUDIES
- Exploration of the basic research tools and methods appropriate to the disciplines, including utilization of the literature, planning of writing fields. 3 credits.

601 SPECIAL TOPICS IN THEATER ARTS
- May be offered as different subject areas are covered. No more than 12 credits may be applied toward M.A. degree. Traditional and experimental courses in theater, supplementing those listed in the General Bulletin. 3 credits.

603 COLLOQUIUM ON THE ARTS
- A thematic exploration of the artistic and performing arts forms and organizations examined in relationship to the business management of arts. 3 credits.

Courses of Instruction 123
NURSING 8200:

509 INTERNATIONAL NURSING 3 credits
Prerequisite: Admission to Graduate Program. A comparison of nursing roles and responsibilities in an international environment. The influences of education, ethics, government, demography, and geography on health care will be considered.

599 SPECIAL TOPICS: NURSING 14 credits
(May be repeated as new topics are presented) Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit.

593 WORKSHOPS 14 credits
(May be repeated as new topics are presented) Selected topics in nursing. May be used to meet graduate/graduate requirements at the discretion of the college.

598 SPECIAL READINGS 14 credits
Prerequisite: permission of student's advisor or dean. Special readings in an area of concentration 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 Graduate Program. Overview of extant nursing science. Evaluation and critique of nursing conceptual models. Analysis of the relationships of theory, research, and practice.

605 COMPUTER APPLICATIONS IN NURSING 2 credits
Prerequisite: Admission to Graduate Program. Computer systems influencing nursing practice, research, education, and national knowledge exchanges are examined. The complex issues surrounding their use in nursing are explored.

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 populations. Examine methods to shape policy, distribution, and allocation of resources.

608 PATHOPHYSIOLOGICAL CONCEPTS OF NURSING CARE 3 credits
Prerequisite: Admission to the Graduate Program. In-depth study of patho-physiological conditions 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 the Graduate Program. Permission of instructor. 656, 657. Advanced adult/gerontological assessment and clinical reasoning in primary health care nursing with an emphasis on differential diagnoses and clinical management.

612 ADVANCED CLINICAL PHARMACOLOGY 3 credits
Prerequisite: Admission to Graduate Program. 658. Examines principles of pharmacology and therapeutics for major pharmacological agents used by Advanced Practice Nurses to manage adult/gerontological problems in primary health care settings.

613 NURSING INQUIRY I 3 credits
Prerequisite: graduate level statistics, admission to Graduate Program. Concepts and ethical issues relating to scientific inquiry and evidence-based practice. May not be used to satisfy requirements of the major. Students participate in critical analysis of nursing research.

615 ADVANCED CLINICAL PRACTICE SEMINAR 2 credits
Prerequisite: 657 or permission of instructor. Discussion of issues, concepts, and theories relevant to the development of advanced clinical practice roles.

618 NURSING INQUIRY II 4 credits
Prerequisite: 652 or permission of instructor. Emphasis on development of competencies in scientific inquiry. Research practicum will involve preparation of a pilot study, or participation in faculty research.

630 RESOURCE MANAGEMENT IN NURSING SETTINGS 3 credits
Prerequisite: Admission to Graduate Program or permission of instructor. Examines management of fiscal and human resources in nursing service settings. Analyzes impact of economic and labor relations on health and nursing care.

632 FISCAL MANAGEMENT IN NURSING ADMINISTRATION 3 credits
Prerequisite: Admission to Graduate Program or permission of instructor. Examines management of fiscal and human resources in nursing settings. Areas of analysis include budgeting and fiscal management in graduate nursing settings.

635 ORGANIZATIONAL BEHAVIOR IN NURSING SETTINGS 2 credits
Prerequisites: Admission to Graduate Program or permission of instructor. Examines organizational behavior theories/principles related to systems analysis and assessment of organizational structure in nursing settings.

638 PRACTICUM: NURSING ADMINISTRATION I 5 credits
Prerequisites: Admission to Graduate Program or permission of instructor. Leadership and management theories are utilized to guide study of the role of nurse administrator. Focuses on effective leadership and management skills.

639 PRACTICUM: NURSING ADMINISTRATION II 5 credits
Prerequisite: 638. Leadership and management theories are utilized to guide practice of the role of nurse administrator in health care settings.

640 SCIENTIFIC COMPONENTS OF NURSE ANESTHESIA 3 credits
Prerequisite: admission into the Nurse Anesthesia program. The course presents relevant physiological and chemical components of the drug systems.

641 PHARMACOLOGY FOR NURSE ANESTHESIA I 3 credits
Prerequisite: 640. The study of intravenous induction agents, injectable anesthetics and inhalation anesthetics commonly used in the administration of general anesthesia. Includes use of muscle relaxants.

642 INTRODUCTION TO NURSE ANESTHESIA 1 credit
Prerequisite: admission into the Nurse Anesthesia program. This course provides a general overview of anesthetic concepts and prepares students for their institutional residency. The course includes a lecture component and selected laboratory experiences.

643 PRINCIPLES OF ANESTHESIA I 4 credits
Prerequisite: 640. This course focuses on the acquisition of basic skills related to nurse anesthetist care and administration of anesthetic agents, with a focus on equipment.

THEATER ORGANIZATIONS
7810:
601 PRODUCTION PRACTICUM/DISSERT/TECHNOLOGY 1-2 credits
(May be repeated for a total of four credits) Prerequisite: permission of instructor. Practice in selected production design/technology operations, applications and techniques 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 advisor. Recognition of work undertaken by the student when performing a role in a theater production. Credit assigned and work supervised by faculty project supervisor.

DANCE 7900:
590 WORKSHOP IN DANCE 3 credits
Prerequisite: Advanced standing or permission. May be repeated for a total of eight credits. Group study or group projects investigating a particular phase of dance not covered by other courses in curriculum.

DANCE PERFORMANCE 7920:
590 WORKSHOP IN DANCE 3 credits
Prerequisite: Advanced standing or permission. May be repeated for a total of eight credits. Group study or group projects investigating a particular phase of dance not covered by other courses.

College of Nursing
PHARMACY FOR NURSE ANESTHESIA II 3 credits
Prerequisite: 641. Focuses on mechanisms of drug transport within the human body for inhalation and injectable medications. Effects of respiratory drugs are also discussed.

PRINCIPLES OF ANESTHESIA II 4 credits
Prerequisite: 643. Emphasis on pre-anesthetic care and inductions techniques. Discusses advanced anesthesia and respiratory therapy, and ventilator use.

PROFESSIONAL ROLE SEMINAR 4 credits
Prerequisites: 644, 645. Discusses issues, concepts and theories related to the professional role of an anesthetist. Focuses on leadership management content as well as personal ethical issues.

NURSE ANESTHESIA RESIDENCY 6 credits
Prerequisites: 644 and 645. Students experience supervised clinical experiences allowing students to apply knowledge and skills learned in the didactic portion of the nurse anesthesia curriculum.

ADVANCED PEDIATRIC/ADOLESCENT ASSESSMENT 2 credits
Prerequisite: Admission to Graduate Program, 608. or permission of instructor, corequisite: 651. Focuses on pediatrics and adolescent care. Includes the role of the anesthesiologist in pediatric and adolescent care.

CHILD AND ADOLESCENT HEALTH NURSING I 4 credits
Corequisites: 650, 651. Focuses on enhancing positive health behaviors outcomes of children/adolescents and those with minor health disruptions and problems in family/community contexts.

CHILD AND ADOLESCENT HEALTH NURSING II 4 credits
Prerequisite: 651. Primary health care nursing for positive health behavior outcomes of children/adolescents with acute and chronic health disruptions in family/community contexts.

PHARMACY FOR CHILD AND ADOLESCENT HEALTH NURSING 3 credits
Prerequisite: Admission to Graduate Program. Emphasis on major categories of pharmacology as it influences development outcomes of children/adolescents in ambulatory, acute and chronic care environments.

CHILD AND ADOLESCENT HEALTH NURSING III 4 credits
Prerequisite: 652. Focuses on advanced practice in primary health care using consultation and program development/making related to development and health behavior outcomes of children/adolescents and families.

PRACTICAL ROLES AND ADOLESCENT HEALTH NURSING 4 credits
Prerequisite: 657. Corequisite: 652. Integration of knowledge and skills with a specified population of children/adolescents and their families. Emphasizes implementation of programmatic intervention and evaluation.

BEHAVIORAL HEALTH NURSING I 4 credits
Corequisite: 656. Focuses on the theories, concepts, and techniques utilized in the delivery of behavioral health care to individuals. Theoretical frameworks for direct intervention are examined.

CLINICAL PSYCHOPHARMACOLOGY 3 credits
Prerequisite: 628 or permission of instructor, corequisite: 661. Examines principles of neuroscience, pharmacology and therapeutic use to psychopharmacological agents used to manage adult mental health problems in an array of treatment settings.

BEHAVIORAL HEALTH NURSING INTERNSHIP 2 credits
Prerequisites: 654, 655. Focuses on behavioral health interventions with families and groups. Theoretical frameworks for direct intervention are examined.

BEHAVIORAL HEALTH NURSING I 4 credits
Prerequisites: 651, 660. Focuses on behavioral health nursing with families experiencing the stress of actual or potential health problems. Theoretical frameworks for direct intervention are examined.

BEHAVIORAL HEALTH NURSING II 4 credits
Prerequisites: 661, 665. Focuses on consultation, collaboration, and program development in behavioral health nursing practice. Frameworks for practice in psychiatric and psychosomatic settings are discussed.

PRACTICUM: BEHAVIORAL HEALTH NURSING 3 credits
Prerequisites: 661, 665. Belong to integrative knowledge and skill related to Behavioral Health Nursing. Emphasizes integration of advanced practice nursing care and implementation and evaluation of a programmatic intervention.

ADULT AND GERONTOLOGICAL HEALTH NURSING I 3 credits
Prerequisites: Admission to the Graduate Program. Corequisite: 660. a corequisite for Nurse Practitioner students only. Research and theory integral to advanced nursing practice of adults/families with selected common health problems. Emphasis on comprehensive assessment, health promotion and risk reduction.

INDEPENDENT STUDY 14 credits
Independent study. Opportunity for the advanced graduate nursing practice in a selected area of specialization.

ADULT AND GERONTOLOGICAL HEALTH NURSING II 4 credits
Prerequisite: 671. Corequisite: 661. A corequisite for Nurse Practitioner students only. Focuses on problems common to adult illness in adults in acute/chronic care settings. Multidisciplinary care planning and coordination are emphasized, extending to community-based care.

ADULT AND GERONTOLOGICAL HEALTH NURSING III 4 credits
Prerequisite: 675. Corequisite: 664. A corequisite for Nurse Practitioner students only. Focuses on nursing care of middle-aged adults and their families experiencing chronic illness. Emphasizes management of problems common to chronic care and rehabilitation.

PRACTICUM: ADULT AND GERONTOLOGICAL HEALTH NURSING 3 credits
Prerequisite: 671. Corequisite: 664. A corequisite for Nurse Practitioner students only. Integration of knowledge and skills with an adult/older adult population and their families. Emphasis on implementation and evaluation of programmatic interventions.

NURSING CURRICULUM DEVELOPMENT 3 credits
Prerequisites: Admission to Graduate Program or permission of instructor. 603. Prerequisite/corequisite: 625 or 655 or 665 or 675. Examines curriculum development with a focus on teaching-learning strategies. Emphasizes on process of developing a curriculum.

EVALUATION IN NURSING EDUCATION 3 credits
Prerequisite: 682. Prerequisite/corequisite: 675. Application of principles of evaluation are measurement to situations in nursing education. Emphasizes evaluation as a process. Includes evaluation of teachers, material and program.

PRACTICUM: THE ACADEMIC ROLE OF THE NURSE EDUCATOR 6 credits
Prerequisite: Admission to graduate program in nursing and a nursing program with the student of understanding the full professional role, Contemporary issues in nursing and higher education are examined.

PHARMACY FOR PRACTICUM: BEHAVIORAL HEALTH NURSING 2 credits
Prerequisites: Admission to Adult/Gerontological Nursing Practitioner track, 610, 611. Corequisites: Adult/Gerontological Nursing Practitioner students only. 675. Clinical management of common chronic and acute problems for adults in primary care settings. Focus on episodic management using different diagnostic and clinical reasoning.

ADULT CARE NURSE PRACTITIONER I 4 credits
Prerequisites: 621, 625. Focuses on management of patients in tertiary care settings. Emphasizes on role management using different diagnostic and clinical reasoning.

ADULT CARE NURSE PRACTITIONER II 4 credits
Prerequisites: Admission to Adult/Gerontological Nursing Practitioner track, 675, 680, 691, or permission of instructor. Corequisite: 672. Clinical management of common chronic problems of adults in primary care settings. Focus on role management using different diagnostic and clinical reasoning.

ADULT CARE NURSE PRACTITIONER III 4 credits
Prerequisite: 695. Corequisite: 696. Focus is on course in nursing management of patients with complex health care problems.

CLINICAL REASONING 3 credits
Focus is on integration of abnormal laboratory, radiologic and morphologic findings as they relate to advanced nursing care of the acutely ill individual.

MASTER'S THESIS 1-6 credits
Prerequisite: 693. Supervised research in a specific area of advanced nursing.

PUBLIC HEALTH 8300:

PUBLIC HEALTH 601 PUBLIC HEALTH CONCEPTS 2 credits
Organizational structure, history, law, ethics, essential services, global problems, and future of public health.

SPECIAL TOPICS IN PUBLIC HEALTH 3 credits
Focus on current issues in public health.

EPIDEMIOLOGY IN PUBLIC HEALTH 3 credits
Focuses on methods, field application, hypothesis generation, research design, data collection, analysis and interpretation in the field of epidemiology.

BIOSTATISTICS IN PUBLIC HEALTH 3 credits
Focuses on statistical methods, including basic probability, regression analysis, survival analysis, and applications in public health.

HEALTH SERVICES ADMINISTRATION IN PUBLIC HEALTH 3 credits
Focuses on management principles, planning and evaluation, grant-writing, economics, policy, data sources, and applications in public health.

ENVIRONMENTAL HEALTH SCIENCES IN PUBLIC HEALTH 3 credits
Focuses on environmental science, statistics, and research design.

SPECIALTOPICS 1-3 credits
Focus is on specific topics of current interest in public health. Flyers will be distributed prior to registration each semester.

PRACTICUM 1-12 credits
Students are assigned with a faculty advisor and community preceptor(s) to work on a meaningful public health issue. For students who desire additional field experience. Credit/No Credit.

CAPSTONE PROJECT 3-6 credits
Student is assigned with a faculty advisor and community preceptor(s) to work on a meaningful public health issue. Paper demonstrating applications learned will be required. Credit/No Credit.
POLYMER ENGINEERING

525 INTRODUCTION TO BLENDING AND COMPOUNDING POLYMERS 3 credits
Prerequisite: 4200.2 or 4600.30 or permission. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers. Mixing Mechanisms.

527a BOND DESIGN 3 credits
Prerequisite: 4200-2 or 4600.30 or permission. Molding methods to manufacture polymer products. Machinery, materials, molds, equipment, computer-aided design.

550 ENGINEERING PROPERTIES OF POLYMERS 3 credits
Prerequisite: 622 or equivalent. Introduction to engineering properties and processing. Analyzing mechanical polymer tests in glasses, rubber, and fluid states. Product design. Interdependence of thermal, rheological, and chemical processing concepts.

551 POLYMER ENGINEERING LABORATORY 3 credits
Prerequisite: 4200.2 or equivalent. Laboratory experiments on rheological characteristics of polymer melts, fabrication of engineering products, structural investigation of polymeric parts.

561 POLYMER ENGINEERING SEMINAR 1 credit
Presentations of recent research on topics in polymer engineering by internal and external speakers.

563 STRUCTURAL CHARACTERIZATION OF POLYMERS WITH ELECTROMAGNETIC RADIATION 2 credits
Characterization of orientation, morphology, and structure in polymers using x-ray scattering, birefringence, and nuclear magnetic resonance.

571 RHEOLOGY OF POLYMERIC FLUIDS 3 credits
Experimental methods of determination of rheological properties of polymer melts, solutions, gels, and adhesives. Structure-flow behavior relationships, viscoelastic fluid theory, application to extrusion, fiber, film, and processing methods. Structure development and processing.

562 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS I 3 credits
Prerequisite: 621. Mathematics modeling and engineering design analysis of polymer processing operations including extruders, injection molds, dies, filters, film formation.

563 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS II 3 credits
Prerequisites: permission of instructor. Basic studies on non-isothermal phenomena in polymer engineering emphasizing crystallization, vitrification, and residual stress applications, including fiber spinning and film extrusion.

565 ENGINEERING PROPERTIES OF SOLID POLYMERS 2 credits
Transformations as a function of polymer structure, crystalline characteristics, mechanical including ultimate properties and behavior of elastomers and plastics, large strain behavior. Emphasis on experimental methods.

635 MECHANICAL STRENGTH OF POLYMERIC SOLIDS 2 credits
Extended chain crystal and theoretical strength of crystalline polymers, impact and high speed testing fatigue and low amplitude testing. Environmental stress cracking, statistical nature of failure, reinforcement and optimization of mechanical properties of important commercial polymers.

641 POLYMERIC MATERIALS ENGINEERING SCIENCES 2 credits
Physico-chemical properties of amorphous and crystalline polymers. Glass transitions, crystallization, molecular orientation and morphology of important commercial polymers. Fabrication products and composite materials.

642 ENGINEERING ASPECTS OF POLYMER COLLOIDS 2 credits
Thermodynamic properties of polymer colloids, gel rheology and rheology of polymer solutions. Structure and viscosity, suspensions and emulsions. Phase separation, applications to paints and plastics technology.

650 INTRODUCTION TO POLYMER ENGINEERING 2 credits
Basic concepts of polymer engineering taught in a laboratory/lecture format intended for orientation of new graduate students.

651 POLYMER ENGINEERING LABORATORY 3 credits
Prerequisite: permission of instructor. Laboratory characterization of polymer melts, rubber and plastic extrusion, extrudate swell, injection and compression molding, crystallization behavior, melt flow, gel, film, blowing, impact and tensile testing.

652 POLYMERIZATION REACTOR ENGINEERING 3 credits
Prerequisite: permission of instructor. Polymerization kinetics, reactor design, comparison of polymerization in batch and continuous stirred tank reactors, flow patterns around agitators, tubular reactors, reactor stability.

659 MASTER'S THESIS 16 credits
May be repeated. Supervised original research in specific area of polymer engineering.

711 ADVANCED ELECTROMAGNETIC AND OPTICAL PROPERTIES AND INVESTIGATIONS OF POLYMERS 2 credits
Prerequisite: permission. Application of opto-electroscopy, holography, and x-ray scattering and representation of orientation, optical instruments, piezoelectricity, and scattering and diffraction of x-rays and light. Optical applications.

712 RHEO-OPTICS OF POLYMERS 2 credits
Prerequisite: permission. Applications of rheo-optical methods as means of determining stress fields in polymer glasses and liquids during deformation, rheological properties of glasses in polymer, rubbery and fluid states. Theory of dynamic birefringence and its application to mechanical relaxations of amorphous and semi-crystalline polymers, and recent experimental results.

713 RADIATION SCATTERING AND DIFFRACTION BY POLYMERIC MATERIALS 2 credits
Prerequisites: permission of instructor. Principles of scattering and diffraction theory as applied to polymer, glasses, crystals, and multiphase systems. Angle and small angle x-ray, light and neutron scattering, analysis and determination of crystal structures, mathematical description of orientational distribution of polymeric and the determination of orientation factors by X-ray and other methods.

715 NON-NEWTONIAN FLOW 2 credits
Prerequisite: permission of instructor. Rheological behavior of non-Newtonian fluids. Development of fluid constitutive equations. Viscometric methods.

720 MOLECULAR ASPECTS OF RHEOLOGY 2 credits

721 POLYMER RHEOLOGY AND PROCESSING OF TWO-PHASE POLYMER SYSTEMS 2 credits
Prerequisite: permission of instructor. Particle-particle interactions, mixing devices and design, rheological problems of particle-particle interactions, and rheological behavior of two-phase systems.

722 ADVANCED MODELING OF POLYMER PROCESSING 2 credits
Prerequisite: permission of instructor. Modelling of processing operations including extrusion and film processing, computer-aided design.

723 RHEOLOGY AND PROCESSING OF ELASTOMERS 2 credits
Prerequisite: permission of instructor. Rheological behavior of large strain deformations and processes, and deformation behavior of elastomers and rubbery materials.

727 CHEMORHEOLOGY AND PROCESSING OF THERMOSETS 2 credits
Prerequisites: 621 or 622, or permission of instructor. Rheological behavior of thermostets, vulcanization and thermal properties of rubbers, time-temperature transition behavior in thermostets, reaction injection molding, compression transfer molding, vulcanization.

729 ADVANCED POLYMERIC FLUIDS 2 credits
Prerequisites: 4200.2 or equivalent. Dual course in nonlinear constitutive equations for viscoelastic, viscoplastic, viscoelastic-plastic media. Utilization and application to polymers.

731 POLYMERIC MATERIALS ENGINEERING SCIENCES 2 credits
Prerequisite: permission of instructor. Advanced special topics intended for Ph.D. students in polymer engineering.

741 PHASE TRANSFORMATIONS IN POLYMERIC MATERIALS 2 credits
Prerequisites: permission of instructor. Thermodynamics, nucleation and growth of new crystal phases in semi-crystalline and amorphous polymer systems. Growth of new crystals. Applications of non-linear constitutive equations to polymer processing.

743 RUBBER BLENDS AND ALLOYS 2 credits
Prerequisites: permission of instructor. Rheological properties and relationship to structure of components, compatibilization principles, blending procedures, mechanical properties and rheological behavior of polymers.

745 LIQUID CRYSTALS 2 credits

747 STORED MOLDING AND THERMOFORMING 2 credits
Prerequisites: permission of instructor. Advanced special topics intended for Ph.D. students in polymer engineering.

747 ADVANCED TOPICS IN POLYMER ENGINEERING 2 credits
Prerequisites: permission of instructor. Advanced special topics intended for Ph.D. students in polymer engineering.

789 DOCTORAL DISSERTATION 1-9 credits
May be repeated. Prerequisites: completion of qualifying examination. Approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

POLYMER SCIENCE

501 INTRODUCTION TO ELASTOMERS 3 credits
Prerequisite: permission. Physical Chemistry of elastic materials. Introduction to the science and technology of elastic materials. Lecture and laboratory.

502 INTRODUCTION TO PLASTICS 3 credits
Prerequisite: permission of instructor. Physical Chemistry of elastic materials. Introduction to the science and technology of plastic materials. Lecture and laboratory.

507 POLYMER SCIENCE 4 credits
Prerequisites: 3500.314 or 3650.101 or permission. Principles of polymerization and reaction mechanisms and structure and physical behavior of polymers. Molecular weight distributions of macromolecules discussed and methods of determining molecular weights utilized.

511 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS I 3 credits
Prerequisites: 330 or 350 or permission. Introduction to the structure and properties of polymers. Basic physical and chemical properties of polymers. Molecular weight and its distribution.

512 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS II 2 credits
Prerequisite: 4151 or permission. Mechanical characterization of polymer materials. Molecular characterization of polymer materials. The Boltzmann superposition principle and fracture. Experimental techniques involving stress, strain, and fracture behavior, stress relaxation, creep, and free vibrations discussed.

513 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS III 2 credits
Prerequisite: 4151 or permission. Determination of bound rubber and the corresponding strain, time-dependent, failure, mechanical properties of polymer blends and design considerations discussed.
Courses of Instruction

590 WORKSHOP IN POLYMER SCIENCE 2 credits
May be repeated for credit with permission. Group studies on selected topics involving polymers. May not be used to meet undergraduate or graduate major requirements in polymer science. May be used for elective credit only.

601 POLYMER CONCEPTS 2 credits
Prerequisites: 3150:331 or equivalent courses. Introduction to polymer science, including polymerization, copolymerization, processing and naturally occurring polymers. Polymer nomenclature, definitions and classifications. Polymer stereoregularity and structure-property relationships.

602 SYNTHESIS AND CHEMICAL BEHAVIOR OF POLYMERS 2 credits
Prerequisites: 601 or instructor's permission. Introduction to fundamentals and practical aspects of polymer synthesis and reactions of polymers. General knowledge of laboratory and commercial methods for polymer preparation. Practical examples.

604 SPECIAL PROJECTS IN POLYMER SCIENCE 1 credit
Prerequisite: Research projects limited to first-year graduate students. May be repeated with permission. Supervised and directed study in polymer science. Open to graduate students. May be repeated with permission.

605 POLYMER CHEMISTRY LABORATORY 2 credits
Prerequisites: Permission of instructor. Introduction to organic chemistry and 601 or equivalent. The preparation and identification of polymers to illustrate different methods of polymerization such as step, ring-opening and chain reactions.

606 POLYMER SCIENCE SEMINAR I AND II 1 credit each
Prerequisite: Limited to first and second-year graduate students. Participants are to present a 25-minute lecture on some aspect of polymer science and to participate in discussions of lectures presented by other seminar participants.

610 INORGANIC POLYMERS 2 credits
Prerequisite: 3150:472/477 or 3650:601 or permission. Survey course designed to broaden outlook of typical graduate student beyond chemistry and physics of carbon chains.

612 POLYMER SCIENCE LABORATORY 3 credits
Prerequisites: At least one of the courses 601, 631, 641, or 721 permission of instructor. Laboratory experiments in polymer science. Preparation, processing and characterization of polymers. Structure-property relationships are emphasized. Laboratory work may be substituted by directed study.

617 INTRODUCTION TO PHYSICAL PROPERTIES OF POLYMERS 2 credits
Prerequisite: Permission of instructor. Introduction to polymer physics and physical properties and processing and testing of polymers.

618 PHYSICAL PROPERTIES OF POLYMERS I 2 credits
Prerequisite: Permission of instructor. Introduction to polymer science. Emphasis on polymer science and physical properties of polymers.

621 PHYSICAL PROPERTIES OF POLYMERS II 2 credits
Prerequisite: Permission of instructor. Advanced topics in polymer science and physical properties of polymers.

645 SYNTHESIS AND TECHNOLOGY OF ELASTOMERS 2 credits
Prerequisites: 3150:331 and 3650:340 or permission of instructor. Preparation of both natural and synthetic elastomers. Emphasis on polymerization methods, polymer structure and methods of vulcanization. The modification of elastomers and the effects on physical characteristics of the elastomer described.

674 POLYMER STRUCTURE AND CHARACTERIZATION 2 credits
Prerequisites: Corequisite: 601 or permission of instructor. Laboratory analysis of polymers by fractionation, osmometry, swelling, NMR, IR, UV, X-ray, electronic microscopy, spectrophotometry and chromatography.

680 POLYMER PROCESSING 2 credits
Prerequisite: Permission. Study of process engineering in polymer conversion industry, emphasizing analytical treatment of heat transfer, mass flow, mixing, shaping and molding of polymer materials.

681 DESIGN OF RUBBER COMPONENTS 2 credits
Prerequisite: 4600:337 or equivalent. Principles of design of elastomeric products, emphasizing analytical treatment of stress behavior and mechanisms of failure of resilient mountings, springs, seats, bearings and tires.

699 MASTER'S THESIS 4 credits
Prerequisite: Permission. For properly qualified candidates for master's degree. Supervised original research in polymer science, under direction of faculty member, following submission of thesis.

701 POLYMER TECHNOLOGY I 2 credits
Prerequisites: Introduction to polymer science. Emphasis on polymer compounding and processing. Introduction to polymer structure, properties and processing. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

702 POLYMER TECHNOLOGY II 2 credits
Prerequisites: 701 or permission of instructor. Rubber compounding and processing. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

703 POLYMER TECHNOLOGY III 2 credits
Prerequisites: 702 or permission of instructor. Flow properties, extrusion, calendaring and molding. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

704 CONDENSATION POLYMERIZATION 2 credits
Prerequisite: 350:4510 or permission of instructor. Study of the theory and practice of condensation polymerization. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

705 FREE RADICAL REACTIONS IN POLYMER SCIENCE 2 credits
Prerequisite: 3150:4510 or permission of instructor. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

706 KINETIC AND MONOMER INSERTION REACTIONS 2 credits
Prerequisite: 350:4510 or permission of instructor. Study of the theory and practice of condensation polymerization. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

707 KINETICS OF POLYMERIC PROCESSES 2 credits
Prerequisites: 350:4510 or permission of instructor. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

708 MACROMOLECULAR CHAIN STRUCTURE 3 credits
Prerequisites: Either 3150:141, 3650:331, or 4000:305 or permission. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

709 MACROMOLECULAR CHAIN STRUCTURE 3 credits
Prerequisite: 708 or permission. Emphasis on polymer compounding and processing. Emphasis on polymer compounding and processing.

711 SPECIAL TOPICS: POLYMER SCIENCE 1 credit
Prerequisite: Permission. May be repeated with permission. May be repeated with permission. May be repeated with permission. May be repeated with permission.

712 SPECIAL TOPICS: POLYMER SCIENCE (Credit Limit: 12) 6 credits
Prerequisite: Permission. May be repeated with permission. May be repeated with permission. May be repeated with permission. May be repeated with permission.

777 DOCTORAL DISSERTATION 16 credits
Prerequisite: Permission. May be repeated with permission. May be repeated with permission. May be repeated with permission. May be repeated with permission.
Appendix

Grievance Procedures for Graduate Students

Intellectual Property Rights and Obligations

Family Education Rights and Privacy Act
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 the conference, the student may attempt to resolve the problem with the assistance of the academic dean. A graduate student presenting a case to the academic dean must provide a full written statement of the grievance, together with all appropriate supporting material. When or if the problem has not been adequately solved at that level or the student wishes to appeal that decision, the student shall prepare a written statement of the complaint setting forth clearly and specifically the allegations and shall hand deliver the written complaint to the Dean of the Graduate School. The Dean of the Graduate School shall notify the complainant confirming the receipt of the complaint and shall request all materials from the Dean of the complainant's college.

2. Within one week of receipt of the complaint, the Dean of the Graduate School shall communicate with all parties in an attempt to informally resolve the problem. The result of this process will be a recommendation by the Dean of the Graduate School which will be communicated in writing to all parties, including the Senior Vice President and Provost.

3. The complaint shall become a grievance to be filed with the Senior Vice President and Provost if: 1) the Dean of the Graduate School wishes to have a Hearing Committee render a recommendation on the grievance; or 2) the student wishes to appeal the recommendation of the Dean of the Graduate School. The student must notify the Senior Vice President and Provost in writing within one week of notification of the Dean of the Graduate School's decision on the complaint.

4. Upon receipt of the grievance, the Senior Vice President and Provost shall notify in writing the President of Graduate Student Government that a Hearing Committee should be constituted. The Hearing Committee shall be organized in no more than two weeks.

5. When the grievance has been filed with the Chairperson of the Hearing Committee, it shall be the responsibility of that Chairperson to notify in writing all parties involved in the grievance within five working days. This notification shall include the following information: that a grievance has been filed; the nature of the grievance; and the parties involved.

6. If the charged party in that grievance admits the validity of the grievance, the Chairperson of the Hearing Committee shall waive the hearing and shall direct an appropriate resolution in consultation with the Hearing Committee.

7. If the party charged in the grievance denies the validity of the grievance, the Hearing Committee shall conduct the hearing.

8. At any point in the grievance process, the Chairperson may extend the deadlines with the mutual consent of all parties.

Hearing Committee

A Hearing Committee shall be established as follows:

1. Chairperson - The Chairperson shall be a member of the graduate faculty with full membership, but not from a department involved in the proceedings. This Chairperson shall be chosen at random from an established pool selected by the Graduate Council and shall serve for only one grievance proceeding. The Chairperson shall conduct the hearing and shall vote only in the case of a tie.

2. Members - Four members shall be selected as follows:
   a. A graduate student not involved with the complainant and not from the complainant's department, selected jointly by the Department Chair and the President of the Graduate Student Government. If the grievance is filed against the Department Chair, the Academic Dean shall substitute for the Department Chair. If the grievance is filed against the department, the Senior Vice President and Provost shall substitute for the Department Chair.
   b. A faculty member not involved with the complainant and not from the complainant's department, selected jointly by the Department Chair and the President of the Graduate Student Government. If the grievance is filed against the Department Chair, the Academic Dean shall substitute for the Department Chair. If the grievance is filed against the department, the Senior Vice President and Provost shall substitute for the Department 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 shall meet.
   c. A copy of "Grievance Procedures for Graduate Students" and all relevant documents.

3. Each party shall be required to appear in person before the Hearing Committee to present his/her case. Each party may have an advisory colleague present to protect his/her rights if so desired. However, the parties shall speak and act on their own behalf. Witnesses may be called to present evidence on behalf of the complainant or the charged person. The use of tape recorders is prohibited, except as may be required to accommodate persons with disabilities.

4. All parties shall be entitled to an expeditious hearing. In urgent cases in which it is alleged that a regulation, administration decision, or action threatens immediate and irreparable harm to any of the parties involved, the Hearing Committee shall expedite the hearing and disposition of the case. The Hearing Committee is empowered to recommend to the Dean of the Graduate School that an individual, department, or college discontinue or postpone any action which threatens to cause irreparable harm, pending the final disposition of the case.

5. The burden of proof shall be on the complainant and the standards of justice and fair play shall prevail in the adjudication of violations and grievances.

6. If necessary, the Hearing Committee may consult with the University's Office of General Counsel for advice at any time throughout this process.

Decisions and Actions

1. The Hearing Committee shall decide as follows: there has been a violation of the complainant's rights, 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.
Intellectual Property Rights and Obligations

During your graduate study at The University of Akron and your professional career thereafter, you may become involved with at least one of the three main forms of intellectual property matters: copyrights, patents, and proprietary information/trade secrets. It is possible that certain discoveries may have commercial value, and therefore may invoke one or more of the above forms of intellectual property ownership.

Copyright

Copyright, by law, is automatically owned by the author or the authors, employer or sponsor when the work is placed in a fixed form (or medium). The University Board of Trustees automatically waives any claim of the University to copyright in books, texts, or articles of a purely academic nature authored by faculty or students except when the material is prepared as a sponsored project in which case it is the property of the University. Ownership would then be assigned to the University or its designee as the Board of Trustees directs. Questions of authorship are often best handled informally between potential joint authors.

Patents

All discoveries and inventions made by you while associated with The University of Akron must be reported to your faculty advisor, and through your advisor to your department chair, dean, and thereafter to the Office of Research Services and Sponsored Programs using the standard University of Akron invention disclosure form. This form provides a guide to describing and identifying the invention broadly and referencing specific results. Those persons thought to be possible inventors should also be identified on this form.

Patents on inventions made by University faculty, staff, students or anyone using University facilities are automatically owned by The University of Akron, as provided by Ohio Revised Code Section 3345.14. The final decision as to inventorship is a technical legal conclusion and will be made in the course of preparing a patent application by the patent attorney handling the application.

Proprietary Information

Those engaged in sponsored research may also be involved with developing or receiving proprietary information owned by others outside the University (e.g., sponsors such as corporations and individuals seeking certain research from the University). The University and the principal investigator may have agreed to maintain this proprietary information in confidence. In some situations, proprietary information of a sponsor may be provided to you or other project investigators during a research project. The sponsor desires, in these situations, to keep the information confidential (or secret) for as long as possible.

You are free to use the confidential information in the course of the project and discuss it with other students or faculty members engaged in that project. However, you may not use the information on other projects, nor may you discuss it with other individuals not involved with that project. While these commitments could delay public access to your thesis for a specified time, it will not delay acceptance or approval of your thesis/dissertation nor delay your graduation date.

The University and principal investigator must have written personal commitments from anyone working on a project involving and securing proprietary information. Therefore, all research students are required to execute the Confidentiality Agreement (sample 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 also to be informed by the research director about the scope of the research that is covered by any confidentiality provisions.

If you have any questions as to what information is proprietary, seek guidance from your project's principal investigator or your faculty research advisor.

Questions of Authorship and Inventorship

In the event you think you have been improperly omitted from the list of authors, you should first discuss the matter with your faculty advisor. If you have further questions or consider the matter unresolved, you should inform the following: the appropriate department chair, the college dean, and finally the Dean of the Graduate School. (Questions are usually, and most quickly, resolved at the lowest administrative levels.)

In the event you think you have been omitted as an inventor on a patent application, you should first discuss the matter with your faculty research advisor and, thereafter, with your department chair and finally with your academic dean. Following such consultations, either you and/or your faculty advisor, or your department chair, or your dean can request the patent attorney who prepared the application to recheck the findings and then prepare a formal report on inventorship. The whole patent application file may then be referred to the Office of General Counsel for a re-evaluation of valid inventors. However such as re-evaluation by patent counsel shall only occur with the prior knowledge of your faculty advisor, Department Chair and Dean.
THE UNIVERSITY OF AKRON
INVENTION PATENT AGREEMENT

The University of Akron graduate students are required to sign this form as a condition of being permitted to participate in any research activity at the University.

1. As a condition of and in consideration of my participating in sponsored research or other financially supported activity at The University of Akron, I hereby agree to communicate fully with my Faculty Advisor, including discussing the details of any work conducted by me and the results which flow therefrom. I recognize that this communication is essential as it relates to any sponsored research, to any course and thesis/dissertation research, and to my safety and the safety of everyone else using the same facility that I use.

2. I further agree to disclose promptly to the director of the research and to my Faculty Research Advisor any invention conceived and/or reduced to practice by me whether jointly with others or solely, which results in whole or in part from such sponsored research or financially supported activity. I agree that I will comply with the provisions of any agreement between The University of Akron and any sponsor for any information and laboratory practice to which I am privileged to know. I will cooperate in assuring that the sponsor's rights, including rights in inventions, patents, copyrights, are fully protected. Further, I hereby assign all rights, title and interest to The University of Akron for its disposal at its sole discretion.

3. I also acknowledge that certain technical information that may arise as a result of the sponsored research or supported activity may be of a confidential nature. I agree to be bound to the reasonable terms of any nondisclosure agreement as it has been agreed to by the University.

4. Finally, I acknowledge and agree that any rights which arise as a result of the sponsored research or supported activity belong to The University of Akron or to the sponsor as determined by agreement between The University of Akron and the sponsor.

________________________________________  ______________________________________
Date                                           Student's Signature
Family Educational Rights and Privacy Act (FERPA)

A student has a right to:

- Inspect and review education records pertaining to the student;
- Request and amendment to the student's records; and
- Request a hearing (if the request for an amendment is denied) to challenge the contents of the education records, on the grounds that the records are inaccurate, misleading, or violate the rights of the student.

The parent or eligible student has a right to:

- Inspect and review the student's education records;
- Request the amendment of the student's education records to ensure they are not inaccurate, misleading, or in otherwise in violation of the student's privacy or other rights;
- Consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent;
- File with the U.S. Department of Education a complaint concerning alleged failures by the school to comply with the requirements of FERPA; and
- Obtain a copy of the school's FERPA policy.

Disclosure of Personally Identifiable Information

- FERPA regulations list conditions under which "personally identifiable information" from a student's education record may be disclosed without the 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 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.
Directory
Board of Trustees

May 1999

Dr. Mark N. Apt, 182 East Avenue, Telford, Ohio 44278 (Term expires 2003)
Mr. Alex R. Arshinkoff, 106 South Main Street, Akron, Ohio 44308 (Term expires 2001)
Dr. Donald E. Demkey, 1452 Christmas Run Boulevard, Wooster, Ohio 44691 (Term expires 2006)
Dr. John Rink, 75 Axts Street, Suite 4007, Akron, Ohio 44304 (Term expires 2006)
Ms. Patricia L. Graves, 525 St. Andrews Drive, Akron, Ohio 44303 (Term expires 2004)
Mr. Clifford E. Squiff, 4000 Embassy Suite, #110, Akron, Ohio 44353 (Term expires 2007)
Mr. Raymond J. Mey, 1030 Top Of The Hill Road, Akron, Ohio 44333 (Term expires 2001)
Mr. David E. (Gene) Waddell, 707 Society Building, Akron, Ohio 44303 (Term expires 2002)

Administrative Officers

September 1999

Administration

Luis M. Proenza, President of the University, Ph.D.
Noel L. LePard, Senior Vice President and Provost, Ph.D.
John A. LaGuardia, Vice President, Public Affairs and Development, M.A.
Ted A. Mallo, Vice President and General Counsel and Secretary to the Board of Trustees, J.D.
Henry Netting, Vice President, Business and Finance, B.S.B.A.
Gheryl L. Urban, Assistant to the President for Special Projects, M.A.
Jeffrey J. Wallace, Sr., Associate Provost and Special Assistant to the President for Equity and Campus Diversity, Ph.D.
Joseph M. Walton, Executive Assistant to the President, Ph.D.

Deans

Mark S. Aurburn, Dean of the College of Fine and Applied Arts, Ph.D.
Richard L. Ayres, Dean of the School of Law, J.D.
Larry G. Bradley, Interim Dean of the College of Education, Ph.D.
Cynthia F. Lapers, Dean of the College of Nursing, Ph.D.
Roger B. Creel, Dean of Buchtel College of Arts and Sciences, Ph.D.
Charles M. Dyk, Dean of the Graduate School, Ph.D.
Stephen F. Hallam, Dean of the College of Business Administration, Ph.D.
Frank N. Kelley, Dean of the College of Polymer Science and Polymer Engineering, Ph.D.
John P. Kristofco, Dean of Wayne College, Ph.D.
S. Graham Kelly III, Interim Dean of the College of Engineering, Ph.D.
Karla T. Mugler, Dean of the University College, Ph.D.
David A. Sam, Dean of the Community and Technical College, Ph.D.
Delius E. Williams, Dean of University Libraries, Ph.D.

Graduate Council

September 1999

Charles M. Dyk, Ph.D., Dean of the Graduate School, Chair

Term expires August 31, 2001

William T. Brandly, Ph.D., College of Fine and Applied Arts
Philip A. Howard, Ph.D., College of Arts and Sciences: Social Sciences
Thein Kyu, O.Eng., College of Polymer Science and Polymer Engineering
Robert J. Vellvette, Ph.D., College of Engineering
Jacqueline A. Suppan, 1999-2000 President, Graduate Student Government

Term expires August 31, 2002

Susanne C. Macdonald, Ed.D., College of Education
Judith A. Palalagallo, Ph.D., College of Arts and Sciences: Natural Sciences
Harridutt Ramcherran, Ph.D., College of Business Administration
Linda M. Saliga, Ph.D., College of Arts and Sciences: At Large
Ralph B. Turek, D.M.A., College of Fine and Applied Arts

Term expires August 31, 2002

Kenneth E. Aupehrle, Ph.D., College of Business Administration
J. Thomas Dukes, Ph.D., College of Arts and Sciences: Humanities
George C. Giakos, Ph.D., College of Engineering
Evangeline Newton, Ph.D., College of Education
Kathleen M. Ross-Aloimoliki, Ph.D., College of Nursing

Graduate Faculty*

September 1999

Luis M. Proenza, President (January 1999) B.A., Emory University, M.A., The Ohio State University, Ph.D., College of Arts and Sciences, University of Minnesota, 1977.
Jula A. Abbas, Assistant Professor of History (1999) B.A., American University of Beirut, M.A., California State University at Fullerton, Ph.D., California Institute of Technology, 1996.
Stephen H. Aby, Education Bibliographer, Associate Professor of Bibliography (August 1988) B.A., University of Texas at Austin, M.A., University of Houston, Ph.D., State University of New York at Buffalo, M.S., Kent State University, 1984.
Maria Adomowicz-Harraz, Assistant Professor of Modern Languages (1995) M.A., Maria Curie-Sklodowska University, Poland, M.A., University of Pennsylvania, 1994.
Jeffrey D. Adler, Assistant Professor of Mathematics (1996) A.B., Princeton University, M.S., University of Chicago, 1996.
Ray A. Alderman, Professor of Education (1975) B.S., University of Southern Missouri, M.Ed., University of Texas at Austin, Ed.D., University of Houston, 1976.
Sonja Alemano, Assistant Professor of Public Administration and Urban Studies: Associate Director for Urban Social and Health Policy (1995) B.A., John Carroll University, M.M., Kent State University, Ph.D., Case Western Reserve University, 1991.
Tana A. Alexander, Associate Professor of Music (1978) B.M., The Ohio State University, M.M., College of Fine and Applied Arts, University of Louisville, 1984.
Carolyn M. Andrews, Associate Professor of Communication (1995) B.A., University of Detroit, M.A., Wayne State University, Ph.D., Kent State University, 1992.
William B. Arbuske, Associate Professor of Civil Engineering (1960) B.S.C.E., Ohio University, 1960.
James F. Austin, Associate Professor of Education (1987) B.A., M.A., Ph.D., Case Western Reserve University, 1991.
Roger J. Bain, Professor of Geology (1970) S.S., M.S., University of Wisconsin, Ph.D., Brigham Young University, 1969.
J. Wayne Baker, Professor of History (1968) B.A., Western Baptist College, B.D., Talbot Theological Seminary, M.A., Borgerdine University, M.D., University of Iowa, 1970.
Christopher R. Banks, Assistant Professor of Political Science (1995) B.A., University of Connecticut, J.D., University of Dayton, Ph.D., Kent State University, 1992.
Enrique C. Barrera, Associate Professor of Geography (1996) B.S., University of Washington, M.A., M.S., Ph.D., Kent State University, 1980.
Gerald V. Barrett, Professor of Psychology, Senior Fellow, Institute for Life Span Development and Gerontology (1973) B.A., Webster University, M.S., Ph.D., Case Western Reserve University, J.D., The University of Akron, 1988.
Abel J. Biddle, Assistant Professor of History (1994) B.A., M.A., Ph.D., Florida State University, 1999.
John O. Bee, Professor of Communication, Associate Dean of the College of Fine and Applied Arts (1969) B.A., Ohio University, M.A., Ph.D., University of Wisconsin Madison, 1981.
Wieslaw M. Birenda, Associate Professor of Civil Engineering (1988) M.S., Warsaw Technical University, M.S., Ph.D., Drexel University, 1989.
Jean L. Broussard, Professor of Speech-Language Pathology and Audiology (January 1979) B.A., Ohio University, M.A., Kent State University, Ph.D., The University of Akron, 1986.
Larry G. Bradley, Interim Dean of the College of Education, Professor of Education, Coordinator of Distance Education, Coordinator of the Central Housing Project (1969) B.A., Marquette College, M.A., West Virginia University, Ph.D., Ohio University, 1989.
William T. Brandly, Associate Professor of Speech-Language Pathology and Audiology (August 1990) B.A., Seattle Pacific College, M.S., University of Victoria, Ph.D., University of Arizona, 1989.
William J. Brittain, Professor of Polymer Science (August 1990) B.S., University of Northern Colorado, Ph.D., California Institute of Technology, 1982.

* The dates in parentheses indicate the beginning of service at The University of Akron, unless otherwise stated, service began in the month of September.
LOUIS A. HILL, JR., 1961-1968, Ph.D.
GLENN A. ATWOOD, 1968-1999, Ph.D. (Acting)
NICHOLAS D. SYLVESTER, 1969-1994, Ph.D.
CHOKO S. CHEN, 1994-1995, Ph.D. (Interim)
IRVING F. MILLER, 1993-1998, Ph.D.
S. GRAHAM KELLY III, 1996-, Ph.D. (Interim)

College of Education

W. J. BANKES*, 1921-1931, M.A.
HOWARD R. EVANS*, 1933-1942, Ph.D.
HOWARD R. EVANS*, 1942-1944, Ph.D. (Acting)
HOWARD R. EVANS*, 1944-1958, Ph.D.
CHESTER T. MCNEAL, 1959-1966, Ph.D., LL.D.
H. KENNETH BARKER, 1966-1968, Ph.D.
JOHN S. WATT, 1968-1969, Ph.D. (Acting)
CONSTANCE COOPER*, 1966-1968, Ed.D.
JOHN S. WATT, 1968-1969, Ph.D. (Acting)
RITA S. SALSAS, 1968-1998, Ph.D. (Interim)
LARRY A. BRADLEY, 1998-, Ph.D. (Interim)

College of Business Administration

WARREN W. LEIGH*, 1963-1962, Ph.D.
RICHARD C. REIDENBACH, 1962-1967, Ph.D.
ARTHUR K. BRINNALL, 1967-1968, Ph.D. (Acting)
WILBUR EAFLE BENSON*, 1968-1970, Ph.D.
JAMES W. DUNLAP, 1970-1979, Ph.D.
RUSSELL J. PETRZEN, 1969-1994, Ph.D.
JAMES NITAN, 1990-1965, LL.M. (Interim)
STEPHEN F. HALLAM, 1995-, Ph.D.

School of Law

STANLEY A. SAMAD, 1959-1979, J.S.D.
ALBERT S. RAKAS*, 1979-1981, J.D. (Interim)
DONALD M. JENKINS, 1981-1987, LL.M.
ISAAC C. HUNT, JR., 1987-1995, LL.B.
RICHARD L. AYERS, 1995-, J.D.

Graduate School

CHARLES BULGAR*, 1923-1931, Ph.D., Litt.D. (Dean of Graduate Work)
ERNST H. CERRINGTON, JR., 1955-1960, Ph.D. (Dean of Graduate Studies)
ERNST H. CERRINGTON, JR., 1960-1967, Ph.D. (Dean of the Graduate Division)
ARTHUR K. BRINNALL, 1967-1968, Ph.D. (Dean of Graduate Studies and Research)
EDWIN L. LIVELY, 1968-1974, Ph.D. (Dean of Graduate Studies and Research)
CLALBOURNE E. GRIFFIN, 1974-1977, Ph.D. (Dean of Graduate Studies and Research)
JOSEPH M. WATSON, 1977-1978, Ph.D. (Associate Dean of Graduate Studies and Research)
ALAN N. GENT, 1978-1986, Ph.D. (Dean of Graduate Studies and Research)
JOSEPH M. WATSON, 1986-1989, Ph.D. (Acting Dean of Graduate Studies and Research)
PATRICIA L. CARROLL, 1989-1993, Ph.D. (Dean of the Graduate School)
CHARLES M. DYE, 1993-, Ph.D. (Dean of the Graduate School)

University College (formerly General College)

THOMAS SUMMER*, 1962-1977, Ph.D.
PAUL S. WINGARD, 1977-1978, Ph.D. (Acting)
MARION A. RUEBEL, 1978-1989, Ph.D.
NANCY K. GRANT, 1989-1990, Ph.D. (Acting)
THOMAS J. VUKOVICH, 1990-1993, Ph.D. (Acting)
KARLA T. MUGLER, 1992-, Ph.D.

Evening College

L. L. HOLMES, 1932-1934, M.A. (Director)
LESLIE J. HARDY*, 1934-1953, M.S.Ed., L.H.D. (Director)
E. D. DURIEY, 1953-1956, Ed.D. (Dean)

Directory 143

Community and Technical College

W. M. PETRY*, 1964-1974, M.S.M.E.
ROBERT C. WLEYRICK, 1974-1985, M.S.
FREDERICK J. STURM, 1984-1987, Ph.D. (Acting)
JAMES P. LONG, 1987-1995, Ph.D.
FREDERICK J. STURM, 1990-, Ed.D.
DEBORAH S. WEBER, 1995-, M.A. (Interim)
DAVID A. SAM, 1996-, Ph.D.

College of Fine and Applied Arts

RAY H. SANDFUR*, 1967-1976, Ph.D.
GERARD L. KNIEER, 1976-1986, Ph.D.
WALLACE T. WILLIAMS*, 1987-1991, Ph.D.
LINDA L. MOORE, 1992-1995, Ph.D.
MARK S. AUBURN, 1995-, Ph.D. (Interim)

College of Nursing

ESTELLE B. NAES, 1967-1975, Ph.D.
LILLIAN J. DAVYOUNG, 1975-1989, Ph.D.
ELIZABETH J. MARTIN, 1989-1992, Ph.D.
V. RUTH GRAY, 1992-, Ed.D.
JANNE R. DUNHAM-TAYLOR, 1996-1997, Ph.D. (Interim)
CYNTHIA CAPERS, 1997-, Ph.D.

Wayne College

MARVIN E. PHILLIPS, 1972-1974, M.A. (Acting Dean)
JOHN G. HEDRICK, 1974-1978, Ph.D. (Director)
JOHN G. HEDRICK, 1978-1979, M.A. (Dean)
ROBERT L. McELWEE, 1979-1980, M.A. (Acting Dean)
TYRONE M. TURNING, 1980-1985, Ed.D. (Dean)
ROBERT E. HALL, 1994-1997, Ph.D.
JOHN P. KRISTOFOS, 1997-, Ph.D (Dean)

College of Polymer Science and Polymer Engineering

FRANK N. KELLEY, 1988-, Ph.D. (Dean)
Index
Academic Dishonesty, 22
Academic Requirements, 28
    Admission, 28
    Advancement to Candidacy, 28, 29
    Continuous Enrollment, 28, 29
    Credits, 28, 29
    Dissertation and Oral Defense, 29
    Doctoral, 28
    Graduation, 28, 29
    Language Requirement, 29
    Master's, 28
    Optional Departmental Requirements, 28, 29
    Time Limit, 28, 29
    Transfer Credit, 28, 29
    Accounting, Degree Program, 56, 58, 114
    Accreditation, 7
    Addiction Counseling Certificate, 72
    Administrative Officers, University, 136
    Administrative Specialists, 52
    Educational Research, 52
    Educational Staff Personnel Administration, 52
    Instructional Services, 52
    Pupil Personnel Administration, 52
    School and Community Relations, 53
    Admission, 20, 28
    Doctoral Program, 28
    International Student, 21
    Master's Program, 28
    Transfer Student, 20, 28, 29
    Adult Gerontological Health, 68
    Adult Gerontological Health Nurse Practitioner, 68
    Advancement to Candidacy, 28, 29
    Anesthesia, Nurse, 68
    Anthropology, 41, 100
    Applied Mathematics, 37
    Applied Music, 120
    Applied Politics, 39, 72
    Art, 117
    Arts and Sciences, Buchtel College of, 32, 86
        Anthropology, 41, 100
        Applied Mathematics, 37
        Applied Politics, 39, 72
        Biology, 34, 86
        Certificates (see Certificate Programs, 72)
        Chemistry, 32, 35, 87
        Classics, 87
        Computer Science, 38, 93
        Counseling Psychology, 32
        Courses, 85
        Doctor of Philosophy Degree, 32
        Economics, 35, 88
        Engineering Applied Mathematics, 38, 43, 94
        English, 35, 88
        French, 94
        Geography and Planning, 35, 89
        Geology, 36, 90
        German, 95
        Greek, 87
        History, 32, 37, 91
        Latin, 88
        Master's Degree, 34
        Mathematics and Computer Science, 37, 92
        Mission Statement, 32
        Modern Languages, 94
        Philosophy, 95
        Physics, 38, 96
        Political Science, 38, 96
        Psychology, 33, 39, 97
        Public Administration and Urban Studies, 34, 39, 100
        Sociology, 33, 40, 98
        Spanish, 41, 95
    Enrollment, 28
    Advancement to Candidacy, 28, 29
    Departmental Requirements, 28
    Doctoral, 28
    Dissertation and Oral Defense, 29
    Doctoral, 28
    Graduation, 28, 29
    Language Requirement, 29
    Master's, 28
    Optional Departmental Requirements, 28, 29
    Time Limit, 28, 29
    Transfer Credit, 28, 29
    Accounting, Degree Program, 56, 58, 114
    Accreditation, 7
    Addiction Counseling Certificate, 72
    Administrative Officers, University, 136
    Administrative Specialists, 52
    Educational Research, 52
    Educational Staff Personnel Administration, 52
    Instructional Services, 52
    Pupil Personnel Administration, 52
    School and Community Relations, 53
    Admission, 20, 28
    Doctoral Program, 28
    International Student, 21
    Master's Program, 28
    Transfer Student, 20, 28, 29
    Adult Gerontological Health, 68
    Adult Gerontological Health Nurse Practitioner, 68
    Advancement to Candidacy, 28, 29
    Anesthesia, Nurse, 68
    Anthropology, 41, 100
    Applied Mathematics, 37
    Applied Music, 120
    Applied Politics, 39, 72
    Art, 117
    Arts and Sciences, Buchtel College of, 32, 86
        Anthropology, 41, 100
        Applied Mathematics, 37
        Applied Politics, 39, 72
        Biology, 34, 86
        Certificates (see Certificate Programs, 72)
        Chemistry, 32, 35, 87
        Classics, 87
        Computer Science, 38, 93
        Counseling Psychology, 32
        Courses, 85
        Doctor of Philosophy Degree, 32
        Economics, 35, 88
        Engineering Applied Mathematics, 38, 43, 94
        English, 35, 88
        French, 94
        Geography and Planning, 35, 89
        Geology, 36, 90
        German, 95
        Greek, 87
        History, 32, 37, 91
        Latin, 88
        Master's Degree, 34
        Mathematics and Computer Science, 37, 92
        Mission Statement, 32
        Modern Languages, 94
        Philosophy, 95
        Physics, 38, 96
        Political Science, 38, 96
        Psychology, 33, 39, 97
        Public Administration and Urban Studies, 34, 39, 100
        Sociology, 33, 40, 98
        Spanish, 41, 95
Family

Facilities and Equipment, University, 9
Faculty, Graduate, Alphabetical Listing of, 136
Family and Consumer Sciences, 60, 117
Child Development Option, 60
Child Life Option, 60
Clothing, Textiles and Interiors, 60
Family Development Option, 61
Food Science Option, 61
Nutrition and Dietetics M.S. Program, 61
Family Business, Center for, 80
Family Development Option, 61
Family Education Rights and Privacy Act (FERPA), 133
Family Studies, Center for, 80
Fees, 24
Refunds, 26
Finance, Degree Program, 56, 115
Financial Assistance, 21, 25
Fire and Applied Arts, College of, 60, 117
Art, 117
Communication, 64, 121
Dance, 124
Family and Consumer Sciences, 60, 117
Mission Statement, 60
Music, 61, 119
Social Work, 65, 122
Speech-Language Pathology and Audiology, 65, 121
Theatre Arts, 65, 123
Fire and Hazardous Materials, Training Center for, 81
Fisher Institute for Professional Selling, 82
Food Science Option, 61
French, 94

G

Gardner Student Center, B. 15 (see also Student Center)
General Administration (Education), 108
General Information, 20
Geography and Planning, 35, 89
Geography, Urban Planning, M.A., 35
Geology, 36, 90
Earth Science, 36
Engineering Geology, 36
Environmental Geology, 36
Geophysics, 36
German, 96
Gerontology, 74, 85
Global Business, Institute for, 81
Grades, 21
Graduate Council, 17, 136
Graduate Faculty, 136
Graduate School, 17
Academic Dishonesty, 22
Academic Requirements, 28
Admission, 20
Classification, 20
Commencement, 22
Colloquia, Seminars, and Workshops, 22
Course Load, 21
Degree Programs, Listing of, 17
Doctoral Degree Requirements, 24
Entrance Qualifying Examinations, 20
Fees, 24
Financial Assistance, 21, 25
General Information, 20
Grades, 21
Graduate Council, 17, 134
Graduate Faculty, 17, 134
Graduate Student Government, 18
History of Graduate School, 17
International Students, 21
Listing of Graduate Courses, 17
Master's Degree Requirements, 28
Nature of Graduate Education, 17
Nonaccredited American School Graduates, 20
Objectives, 17
Probation and Dismissal, 22
Refunds, 26
Registration, 21
Repeating a Course, 22
Residence Requirements, 23, 28
Student Responsibility, 20
Thesis and Dissertation Credits, 22
Transfer Student, 20, 28, 29
Graduate Student Government, 18
Graduation, Doctoral, 29
Graduation, Master's, 28
Greek, 87
Grievance Procedure for Graduate Students, 130
Guidance and Counseling, Education, 48, 111

H

Handicapped (see Services for Students with Disabilities, 15)
Health Education, 111
Health Services, Student, 14
Health Services Administration, 57
Higher Education Administration, 53, 109
Higher Education Certificate Program, 74
History, Degree Program, 32, 37, 91
History of the Graduate School, 17
History of the University, 6
Home-Based Intervention Therapy, Certificate Program, 75, 85
Human Resources Management, 59

I

Information Services, 13
Information Systems Management, 58
Inquiries, 2
Installment Payment Plan, 26
Institutes, 80 (see Research Centers and Institutes)
Intellectual Property Rights and Obligations, 131
Interdisciplinary Programs, 72, 95 (see also Certificate Programs)
Interdisciplinary Programs, course listings, 85
Cooperative Education, 85
Divorce Mediation, 85
Environmental Studies, 85
Home-Based Intervention Therapy, 85
Institute for Life-Span Development and Gerontology, 85
Medical Studies, 85
Women's Studies, 85
International Business, 57, 117
International Students, 21
Admission, 21
Costs, Expenses, Fees, 21
Financial Aid, 21, 26
Medical Insurance, 21
Orientation, 21
Teaching Assistants, 21
TSE, 21, 34
Internet Address, 3

J

Joint Programs
Engineering, M.D./Ph.D. with NEOUCOM, 44
J.D./Master of Business Administration, 59
J.D./Master of Public Administration, 40
J.D./Master of Taxation, 58
Sociology Ph.D. with Kent State University, 33
Urban Studies Ph.D. with Cleveland State University, 34
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:

Affirmative Action and Equal Employment Opportunity Officer
Neil M. Russell
Leigh Hall 202
The University of Akron
Akron, Ohio 44325-4709
(330) 972-7300

Information on Title IX (see discrimination) may be obtained from
Neil M. Russell, Title IX Coordinator
(330) 972-7300