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, urban, state-assisted university. It is significant that the efforts, energy, and financial support of an Akron manufacturer of farm equipment, John R. Buchtel, were instrumental in persuading the Ohio legislature to pass a bill providing public funds to construct a college on a hill overlooking the town that stretched along the Ohio Canal. The grateful trustees responded by naming the school Buchtel College. It is also significant that during its first four decades the struggling institution was repeatedly aided in its efforts to survive by various local and regional philanthropists, including 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 1933 those strong ties and the school's financial situation caused its trustees to transfer the institution and its assets to the city. For the next 50 years, the Municipal University of Akron received its principal support from city tax funds and swelled from an enrollment of 138 to nearly 10,000.

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

Changes within the Municipal University's curriculum reflected the strong interrelationship of town and gown. In 1914, a College of Engineering began instruction, and other professional schools followed: Education (1921), Business Administration (1923), Fine Arts and Sciences (1924), Fine and Applied Arts (1967), and Nursing (1967).

Considering the institution's location in the heart of a burgeoning rubber industry, it seemed only appropriate that the world's first courses in rubber chemistry would be offered at Buchtel College, in 1909. From those first classes in Professor Charles W. Knight's laboratory would evolve the world's first College of Polymer Science and Polymer Engineering (1986), now the largest academic polymer program in the world. In the 1920s and 1930s, with the establishment in Akron of the Guggenheim Airship Institute, UA scientists studied the structure and design of zeppelins. During World War II, University of Akron researchers helped fill a critical need in the U.S. war effort by contributing to the development of synthetic rubber. The University's polymer programs have produced some of the world's most able scientists and engineers, and today attract millions of dollars annually in research support, as well as top graduate students from around the world.

But research, innovation, and creativity actively take many forms at the University—in the sciences and in the arts and humanities. Today, UA faculty study ways of matching workers with jobs to maximize performance, they develop new ways to synthesize novel plastics, they probe and produce plays, pen poetry, choreograph dance works; they explore improved methods of tumor detection; they evaluate the quality of water in Northeast Ohio; they provide speech and hearing therapy to hundreds of clients; and they study political campaign financing and reform. UA continuing and adult education programs, 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 1980s, Buchtel College was liberalizing its curriculum by allowing students to choose free electives within 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 their professional lives by providing a balance between courses that teach them how to make a living and courses that teach them about life as we know it in Western civilization. As early as 1994, nine University engineering students headed out into Akron factories, initiating one of the country's first engineering cooperative education programs. World War II-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 "New Majority" 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 1969, but master's degrees were granted as early as 1882. Doctoral work has now expanded to programs leading to the highest academic degree in 13 fields of study. In 1983 the receipt of state tax monies made UA a state-assisted municipal university, and on July 1, 1987, The University of Akron officially became a state university. Today, over 25,000 students from 39 states and 77 foreign countries are enrolled in its 10 degree-granting units. The University of Akron is among the 60 largest 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 about 96,000 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 77 buildings, is within walking distance of downtown Akron and is located in a metropolitan area of 2.8 million people. The University's presence in Northeast Ohio provides hundreds of 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 on campus, the Ohio Ballet, Emily Davis Art Gallery, University Orchestra, Opera/Musical Theatre, concerts, recitals, choral programs, Touring Arts Program, University Theatre, Repertory 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 1961, the University participates on the NCAA Division I level in 17 sports.

For more than a century the college on the hill has been an integral part of the city whose name it bears, an active partner in Akron's renaissance of commercial and artistic endeavors, leader in the city's intellectual and professional advancement, a center for internationally focused research efforts, a source of enrichment, education, and vitality both for itself and for its community. 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 from associate through doctoral levels; pursues a vigorous agenda of research in the arts, sciences, and professions; and provides service to the community. The University pursues excellence in undergraduate and graduate education, and distinction in selected areas of graduate instruction, inquiry, and creative activity.

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.

The 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.
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Graduate Application
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Calendar 1996-1997

Fall Semester 1996
Day and Evening Classes Begin
Mon., Aug. 26
*Labor Day (Day and Evening)
Fri., Sept. 2
Veterans Day (classes held; staff holiday)
Fri., Nov. 11
**Thanksgiving Break
Thurs.-Sat., Nov. 28-30
Classes Resume
Mon., Dec. 2
Final Instructional Day
Sat., Dec. 7
Final Examination Period
Mon.-Sat., Dec. 9-14
Commencement
Sat., Dec. 14
Spring Intercession
Tues.-Sat., Jan. 2-11, 1997

Spring Semester 1997
*Martin Luther King Day
Mon., Jan. 13
Day and Evening Classes Begin
Tues., Jan. 20
*Presidents' Day
Mon., Feb. 18
Spring Break
Mon.-Sat., Mar. 17-22
***May Day
Fri., May 2
Final Instructional Day
Sat., May 3
Final Examination Period
Mon.-Sat., May 5-10
Commencement
Sat., May 10
Summer Intercession
Mon.-Fri., May 12-June 8
Commencement for Law School
Sun., May 18

Summer Session I 1997
First 5- and 8-Week Sessions Begin
Mon., June 9
*Independence Day
Fri., July 4
First 5-Week Session Ends
Sat., July 12

Summer Session II 1997
Second 5-Week Session Begins
Mon., July 14
8-Week Session Ends
Sat., Aug. 2
Second 5-Week Session Ends
Sat., Aug. 16
Summer Commencement
Sat., Aug. 16

Fall Semester 1997
Day and Evening Classes Begin
Mon., Aug. 25

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

For a copy of the Undergraduate Bulletin contact the Office of Admissions, The University of Akron, Akron, OH 44325-2001. (330) 972-7100, or toll-free, (800) 556-4884.

Inquiries
Address inquiries concerning:
Graduate study to the Graduate School, The University of Akron, OH 44325-2101. (330) 972-7663.
Admissions information, campus tours, and housing, transfer of credits to the Office of Admissions, The University of Akron, Akron, OH 44325-2001. (330) 972-7700 or toll-free, (800) 655-4884.
Athletics to the Athletic Director, The University of Akron, Akron, OH 44325-5201. (330) 972-7060.
Registration, scheduling, residency requirements, and veterans' affairs to the Office of the Registrar, The University of Akron, Akron, OH 44325-6208. (330) 972-6300.
The University switchboard number is (330) 972-7111.

University Closing Policy
The president, or designee, upon the recommendation of the associate vice president for the Division of Business and Finance will determine when conditions—such as severe weather or a state of emergency—necessitate closing the entire University or cancelling classes at the main campus and/or Wayne College in Orrville.

The associate vice president for administrative services will promptly notify other designated University officials and members of the Department of University Communications, who will contact area media. University colleges/ departments/schools are encouraged to establish a method for communicating the closing decision to departmental personnel. Closing information will be announced as early and as simply as possible to avoid confusion.

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

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

University Area Code (330)

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

Graduate School

Admission, Graduate School
Miss Brenda Henry .................................. 972-7665
Associate Dean, Graduate School
Dr. Lathardus Goggins ................................ 972-6783
Coordinator, Graduate School
Mrs. Dolli Markovich .................................. 972-6737
Dean, Graduate School
Dr. Charles Dye ........................................ 972-7664
Information, Graduate School
Miss Heather Blake .................................... 972-7663
Graduate Degree Completion
Mrs. Virginia Donnelly ................................ 972-5169
Graduate Minority Student Council
Miss Fedearia Nicholson, President .................. 972-5387
Graduate Student Financial Assistance/Secretary to the Dean
Mrs. Karen Caldwell .................................. 972-6310
Graduate Student Government
Miss Michelle Heath, President ....................... 972-5387

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 ...................... 972-7564
College of Nursing ..................................... 972-7551
College of Polymer Science and Polymer Engineering .. 972-7500
The University of Akron—Wayne College 1-800-221-8308
NEOUCOM (Northeast Ohio Univ. College of Medicine) . 972-7551
University College ....................................... 972-7066

Other Offices

Black Cultural Center .................................. 972-7030
Buchelite, The (student newspaper) .................... 972-7457
Center for Child Development ......................... 374-8761
Communication Centers (photocopying)
Bierce Library .......................................... 972-6278
Gardner Student Center .................................. 972-7870
Cooperative Education Programs ....................... 972-6722
Counseling, Testing, And Career Center
Counseling ............................................. 972-7082
Testing .................................................. 972-7084
Coventry North, The University of Akron Center at ........................................ 972-6266
English Language Institute ................................ 972-7544
Financial Aid, Office of Student
Scholarships ............................................. 972-7032
Work Study ............................................. 972-8074
Gardner Student Center .................................. 972-7866
Health Services, Student ................................ 972-7808
International Programs .................................. 972-6349
Immigration ............................................. 972-6349
International Admission ................................ 972-6349

Minority Affairs, Office of ................................ 972-7658
Minority Retention .................................... 972-7314
Libraries, University
Bierce Library .......................................... 972-7724
Law Library ............................................. 972-7330
Science and Technology Library ....................... 972-7195
Nursery Center .......................................... 972-7760
Parking Services ........................................ 972-7025
Peer Counseling Program ................................ 972-6769
Placement Services
Cooperative Education .................................... 972-6722
Placement Services ..................................... 972-7747
Student Employment .................................... 972-7405
Student Volunteer Program ............................... 972-6841
Registrar, Office of the University
Graduation Office ......................................... 972-7673
Records and Transcripts ................................ 972-6500
Residence Halls .......................................... 972-7800
Sports Information, Director of
Student Assistance Center ................................ 972-5755
C.A.R.E. Program (Chemical Abuse Resource Education) 972-5653
Services for Students with Disabilities .................. 972-7928
TTY/TDD (hearing impaired) ............................. 972-6764
Study Abroad ........................................... 972-6349
Ticketmaster ............................................ 972-6684
University Program Board .............................. 972-7014
Veterans Affairs Coordinator and Counselor .......... 972-7838
Work Study ............................................. 972-8074
WZIP-FM Radio Station .................................. 972-7105

Emergency Phone Numbers

Police/Fire/EMS ......................................... 911
Police (non-emergency) ................................ 972-7123
Anonymous Crime Reports .............................. 972-TIPS (8477)
Campus Patrol .......................................... 972-7263
University Switchboard ................................ 972-7111
Closing Information ...................................... 972-SNOW (7669)

Phone Numbers

For numbers not listed, call the University Switchboard (330) 972-7111.
Together we maintain an intellectual culture that is accessible, disciplined, free, safe, and committed to excellence.

By our behavior with one another we endorse a culture of diversity, celebrating the uniqueness of the individual and developing our understanding and tolerance of differences in gender, ethnicity, age, spiritual belief, sexual orientation, and physical or mental potential.

We take responsibility for sustaining a caring culture, nurturing growth and fulfillment in one another and in the larger communities of which we are a part.

We insist on a culture of civility, united in our rejection of violence, coercion, deceit or terrorism. We work to increase collaboration, cooperation, and consensus within rational dialogue characterized by mutual respect and consideration.

Ours is a responsible culture. We expect each member of our community to carry out responsibly his or her duties for preserving the integrity, quality, and decency of our environment and our discourse.

**Expectations and Responsibilities**

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

**Inside the Classroom**

Inside the classroom, faculty are expected to respect the sanctity of the teaching-learning process by honoring their commitment to students in terms of time, fairness, and enthusiasm. It is the responsibility of the 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 otherwise wronged, harassed, intimidated, or threatened.

**On the Campus**

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

Students can expect that all representatives of all departments 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 their 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.

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**ACCREDITATION**

Accreditation assures that degrees are recognized and approved by select regional and national education associations, societies, and councils. The University of Akron has been accredited by the North Central Association of Colleges and Schools 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:

- Accreditation Board for Engineering and Technology, Technology Accreditation Commission
- Accreditation Board for Engineering and Technology, Engineering Accreditation Commission
- American Assembly of Collegiate Schools of Business
- 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
- Committee on Allied Health Education and Accreditation of American Medical Association
- Council for the Accreditation of Counseling and Related Educational Programs (provisional)
- Council for Professional Development of the American Home Economics Association
- National Academy of Early Childhood Programs
- 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
- North Central Association of Colleges and Schools
- Ohio Board of Nursing
- Ohio State Department of Public Instruction

The University also holds membership in the following educational organizations:

- American Association of Colleges for Teacher Education
- American Association of Community and Junior 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 University Continuing Education Association
- North American Association of Summer Sessions
- Ohio College Association
- Ohio Council on Continuing Higher Education
- State of New York Court of Appeals

The School of Law is accredited by:

- American Bar 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 33 acres encompassed only 10 buildings. Currently the Akron campus covers 170 acres and includes 77 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 park-like pedestrian areas. Students have easy access to retail outlets, transportation, and churches. Akron is easily reached by automobile from major national east-west routes (Interstates 80, 90, 76, and the Ohio Turnpike) and north-south routes (Interstates 71 and 77), all of which link Akron to the surrounding states and regions. The University itself is located between East Buchtel Avenue and Carroll Street in the downtown area. For airline passengers, limousine service is available from the Cleveland Hopkins International Airport and the Akron-Canton Regional Airport, south of Akron.

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:

Admission 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 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, Frederic E. 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 Library.

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

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

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

Business Administration Building. This $9.1 million facility, located at 259 South Broadway, was completed in 1991. The structure consolidates office, classroom, and laboratory facilities for the dean of the College of Business Administration, the George W. Daverio 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, Institutional Research, and the academic computer testing facility, as well as the University's Network Services and the Electronic Systems operation.

Center for Child Development. This former Girl Scout regional headquarters building at 100 Fire Hill has been renovated to accommodate the University's Center for Child Development.

Central Services Building. At 185 South Forge Street, this building houses the administrative service departments of central stores, printing services, and mail room.

Computer Center. Purchased and renovated in 1981 for $13 million, this building at 755 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.

Computer Store. Just west of the Gardner Student Center, the Computer Store 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 Edward J. Thomas, prominent industrialist and dedicated member of the University Board of Trustees from 1952 to 1975, this cultural center, which cost more than $13.9 million, was formally opened in 1973. Designed to accommodate concerts, opera, ballet, and theater productions, the hall is a masterpiece in acoustics, and creative mechanisms. It stands at the corner of University Avenue and Hill Street.

Fire Hill Center. This recently remodeled building, north of East Buchtel Avenue at Fire Hill, houses the Office of Alumni Relations.

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

Folk Hall. This building, at 150 East Exchange Street, provides modern, well-equipped School of Art facilities. Studios are available for graphic arts, photography, drawing, painting, metalsmiling, ceramics, and weaving. The Emily Davis Art Gallery is also located in the facility.

Forge Building. This building at 171 South Forge Street houses the College of Engineering's Construction Technology Program, including offices, computer lab, and classroom space.

Galluccio Hall. This building, at 200 East Exchange Street, formerly a Holiday Inn, is a residential 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 the Crystal Room dining facility.

Gardner Student Center. This complex was named for Donfred H. Gardner, who was appointed dean of men in 1926, the University's first dean of students in 1937 the first dean of administration in 1955, and 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 activities on campus. It provides bowling alleys, meeting rooms, lounges, student activity and publication offices and workrooms, a game and ballroom, 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 Resources Center that includes patient care simulation areas, an audio-visual center, and a state-of-the-art computer learning center.

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, laboratories for the School of Communication, and departmental space for the schools of Theatre Arts and Music. In addition to providing more than 40 student practice rooms, the complex houses radio and television studios, WZIP-FM, 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 2000, an indoor jogging track, physical education laboratories, classrooms, the athletic director's office, the sports information office, athletic offices, and a ticket office.

Hower House. Located on Fire 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 1975, 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. This building, named for the first president of the Municipal University of Akron, Parke R. Kolbe, is soon to be remodeled for the School of Communication, Radio Station WZIP, and a proposed long-distance learning facility. It also houses the University Theatre.

Leigh Hall. Named in honor of Warren V. Leigh, first dean of the College of Business Administration, this facility on Buchtel Common currently houses the John S. Knight Auditorium and interim space for School of Communication faculty during the Kolbe Hall Construction Project.
Paul E. Martin University Center. Located at 106 Fir Hill, the Paul E. Martin University Center has changed from a private club serving dues-paying members to a University-operated restaurant and banquet center. The table service restaurant is open for lunch between 11:30 a.m. and 2 p.m. Business and departmental functions, banquets, receptions, and parties can be scheduled during the hours of 7:30 a.m. to noon. The office of the Department of Development is located on the upper floors of the building.

McDowell Law Center. Named for C. Blake McDowell, prominent local attorney, alumnus, and benefactor of the University, the center houses the School of Law. Opened in 1973 at a cost of $2.5 million, it provides space for the law library, class-rooms, moot courtroom, appellate-review office, seminar rooms, and faculty offices. A $2.6 million addition provides library and support space, and a $1.5 million second expansion has linked McDowell Law Center to West Hall, providing additional administrative office space. The law complex stands at the corner of University Avenue and Wolf Ledges Parkway.

Memorial Hall. Dedicated to the memory of Summit County men and women who died in World War II, it 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 combatives area, a motor learning lab, a human performance lab, an athletic training lab for sports medicine, a weight training and fitness center, an athletics bandage cage, the intramural sports office, and classrooms.

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

Ocasek Natatorium. The $6 million natatorium, completed in 1988, is a 70,000-square-foot structure that houses an Olympic-size swimming pool with adjacent spectator seating area, and locker rooms and showers. The center also houses two racquetball courts as well as weight room facilities. The natatorium is named for former Ohio State Senator O. C. Ocasek.

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, the Ray C. Bliss Institute of Applied Politics, and the English Language Institute. The complex is at the corner of Buchtel Common and South Union Street.

100 Lincoln Street Building. This building houses the Purchasing Department and Network Services, and Telecommunications 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 recently purchased building provides administrative office space for the University treasurer, budget director, the payroll department, and Information Services' network services group.

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 department store is home to the Community and Technical College dean's office, and the departments of Business Technology, Public Service Technology, Allied Health Technology, and Associate Studies. Also located here are the University Archives, the Archives of the History of American Psychology, the School of Communicative Disorders and its Speech and Hearing Services office, the dean's office, and the departments of Business Technology, Public Service, and Network Services, and Telecommunications Department offices, as well as the office of the University Architect, Senior Director of Facilities Planning, and the Office of the Director of Space Utilization.

Polymer Science Building. Construction of the $77 million Polymer Science Building was completed in the spring of 1989. This two-tower structure of steel, concrete, and glass, located at 170 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.

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

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

Schrank Hall. Named for Harry P. Schrank, longtime member and chairman of UA's Board of Trustees, this complex, which adjoins Alumni Science and Engineering Center, is composed of four academic structures and a parking deck. Schrank Hall North contains the office of the president of the Faculty Senate, other offices, and classroom space. Schrank Hall South provides facilities for the School of Home Economics and Family Ecology, the Community and Technical College's Engineering and Science Technology Division, and the Army and Air Force ROTC.

Simmons Hall. Named for Hazelton 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.

Spicer Hall. This major student services building, renovated in 1975, houses the Registrar's Office, Academic Advisement Center, the Office of Student Financial Aid, the Student Aid Office, the Office of Services for Students with Disabilities, and the Student Assistance Center, as well as the Parking Systems office, and offices for the University Controller, the University Auditor and External Auditor, and Accounts Payable and Receivable.

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 1965. Housed in this facility are some polymer science laboratories and the Department of Chemical Engineering.

Zook Hall. Named in honor of 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.

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 and Carroll Hall)
• Computer Services (Computer Center and Carroll Hall)
• Network Services (Lincoln Building)
• Applications Services (Computer Center)

The Information Services Help Desk can be reached at (330) 972-6988. Help Desk personnel 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 144, and can also be reached by e-mail at consult@uakron.edu. Free seminars, workshops, and dial-in software are available.

There are six general purpose computer labs for students, faculty, and staff to use. In addition, there are about 130 Windows/OS/2 computers and 10 Macintosh computers (Computer Center only) in these labs. These computers have personal productivity tools (such as word-processing and spreadsheet packages) and network access. The lab locations are:

• Computer Center, rooms 139, 141 and 146
• Gallicci Hall, room 279
• Bierce Library, room 274A
• Polsky Building, room 267
• Olin Hall, room 273
• Mary Gladin Hall, room 306
There are more than 150 dial-in lines for faculty, staff, and students to use with their computers and modems from home to access UA and Internet networks. UA's computer network, named ZIIPnet, has about 2,000 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 ZIIPnet ID. The network provides access to:
- ZipLINK - UA library catalog
- OhioLINK - 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 multimedia information protocol
- Usenet news groups
- Discussion lists
- Wayne College
- UA Center at Coventry North
- 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
- Computer Based Education and Testing Services provide on-line tutorials, instruction, and testing for UA. The Testing Center is located at 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 system
- Central computer services include:
  - A CMOS-based IBM 9672/R41 CMOS running VM/SESA 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 ZIIPnet, the on-line library catalog
  - A Digital DEC 3000/300LX Usenet news server
  - An IBM RS6000/390 for graphical, secure information access
  - An NCS Opscan 21-75 optical mark sense reader for scanning mark sense forms
- Other services provided to the campus by Information Services include:
  - A computer store which sells selected computers, printers and other peripherals
  - On-campus hardware and software installation services for departments
  - Computer repair services for-on-campus and carry-in
  - Cable television - ZIP-TV
  - Television 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 in its quest to bring staff and students the most up-to-the-minute advances in computer applications, research, knowledge and training.

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 magazines, 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 Northeast Ohio Major Academic and Research Libraries consortium, the Ohio 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 in Bierce Library.

Audio Visual Services, located in Bierce Library, Room 638, maintains an extensive centralized collection of media hardware and audiovisual resources for student and faculty use. It also has a collection of instructional materials in various media formats (tapes, slides, etc.) to supplement classroom instruction.

**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 located in 333 Simmons Hall (330) 972-7082.

The Counseling, Testing and Career Center also cooperates with the Office of Placement Services in jointly providing an extensive range of career development services.

**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 cover a wide range of topics which typically deal with improving grades, reducing test anxiety, planning careers, increasing wellness, and addressing personal issues; as well as providing support groups for minority students and others with a variety of concerns. Brochures are available.

**Testing Service**

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

**Career Service**

Career counseling involves discovering one's interests, needs, values, aptitudes, abilities, and goals; relating these to the world of work; exploring appropriate major subjects and career fields. Occupational information is available through reference books and two computerized career guidance and information systems, SIGI and OCIS.

**Outreach and Consulting Service**

The Center's outreach and consulting service offers assistance to the larger university community by providing programs and workshops for a wide variety of campus groups. The Center regularly provides speakers for classrooms, residence halls, student organizations, and administrative offices. Topics include academic performance, wellness, sexuality, and appreciating cultural diversity.

**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 illnesses.

Student Health Services is open from 8:00 a.m. to 5:00 p.m., Monday through Thursday, and from 8:00 a.m. to 5:00 p.m. on Friday.
The student who becomes seriously ill or suffers a serious injury on campus should be taken to an emergency ward of one of the local hospitals without delay. Those persons present in this kind of emergency should call University Police or 911 immediately. The University assumes no legal responsibility or obligation for the expenses of such transportation or for medical services at the hospital.

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

SERVICES FOR STUDENTS WITH DISABILITIES

According to provisions outlined in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, students with disabilities are ensured equal access and reasonable academic adjustments and accommodations by institutions of higher learning.

The Office of Services for Students with Disabilities is part of the Student Assistance Center in the Division of Student Affairs. It is the responsibility of this office to provide students with disabilities the necessary services that will ensure the opportunity for full participation in University academic programs, activities, and services. If a student has a specific disability, he or she should contact the Office of Services for Students with Disabilities, Spicer Hall 124, (330) 972-7928 (voice) or (330) 972-6764 (TDD).

CENTERS 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 is staffed with a Pre-K 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 rhythms, science exploration, gross motor and fine motor development, socio-dramatic play, multi-sensory 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 pre-school 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. until 6:00 p.m.

For more information call the Center for Child Development, (330) 374-8761.

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 Communication 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 and Mexican shop, and an ice cream and yogurt shop. For more of a cafeteria-style offering, the Hilltop, on the second level, provides deli-style selections at Sara Lee's, as well as full catering for banquet and meeting meals.
- Gardner Theatre, located on the upper level, screens first- and second-run movies twice per week: Tuesday, Thursday, and Saturday.
- 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, pool, and a variety of video games. For the competitive individuals, tournaments in many of these recreational activities are programmed each semester by the Game Room staff.
- The Communication Center, located in the lobby of Gardner Student Center offers the following services: informational and referral services; copying, including color; oversized and reduced copies; binding of materials; mailing facilities for campus and U.S. mail; literature distribution; and class reserve files.
- The Ticketmaster/Film Center, located in the lobby of Gardner Student Center (330) 972-6894, sells tickets to most events in northern Ohio, including Jacob's Field, Gund Arena, Blossom Music Center, the IX Center, Playhouse Square, and Public Hall. Over-the-counter sales include tickets to campus functions, including sporting events, and to local shows. Film and film processing services are also available.
- The Bookstore at the University of Akron is operated as a service of Barnes & Noble Bookstores, Inc. of New York City, Barnes & Noble operates 300 other college stores. The primary purpose of the Bookstore is to make available books and supplies required for course work. In addition, the store also carries a wide range of classroom supplies, paperbacks, engineering and art supplies, greeting cards, University memorabilia, clothing, and other sundry items.

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 to compliance with the Federal Crime Awareness and Campus Security Act of 1990.

The Campus

The University of Akron is the third-largest university in Ohio with a main campus enrollment of 28,000 students from throughout Ohio, the United States, and more than 80 countries. A 170-acre campus, the University now reaches into downtown Akron with the continuing renovation of the former Polk's department store for classroom and office space.

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, and on drug and alcohol control and prevention.

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

University Police

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

The University's 28 police officers are commissioned by the State of Ohio with full law enforcement authority and responsibilities identical to the local police or sheriff. The UA Police Department works closely with the Akron Police Department and other law enforcement agencies. Reports are exchanged every business day so that both agencies receive pertinent information. Information is shared through personal contacts and by phone and radio. University and City of Akron police regularly work together at large campus events such as athletic competitions and dances.

UA Police officers have met or exceeded the training standards of the Ohio Peace Officers Training Council. They also receive ongoing in-service and specialized training in first aid, CPR, firearms, defensive tactics, legal updates, and other skills. UA Police officers enforce laws regulating underage drinking, the use of controlled substances, weapons, and all other incidents requiring police assistance. They also are responsible for public safety services such as crime reports, medical emergencies, fire emergencies, and traffic accidents.
It is the goal of every member of the University Police Department to promote, preserve, and deliver feelings of safety and security through quality services to the members of the University community.

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

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

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

In accordance with the Drug Free Schools and Community Act Amendment of 1989, The University of Akron established the Chemical Abuse Resource Education Center. The C.A.R.E. Center is funded in part by the Fund for Post Secondary Education, U.S. Department of Education. For resources, speakers, and/or program information, call 972-5853 or stop by Gardner Student Center, room 210.

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.

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 complaint will be provided a phone number where the complaint can be filed. Likewise, other agencies refer complaints to University Police when appropriate.

Two police officers patrol parking lots from 7:00 a.m. until the latest evening classes let out. 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 5454.

For emergencies, dial 911 from any campus telephone.

Student Campus Patrol
A student escort service operates 5:00 p.m. to 1:00 a.m., seven days a week for the safety of anyone walking alone on campus during the evenings. By calling extension 7263, an escort will come to the student's location and accompany him/her to any campus building or parking lot.

Employed and trained by The University of Akron Police Department, the campus patrol teams are easily identified by labeled royal blue jackets or yellow 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 lifting 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.

Residence Hall Access
Access into University residence halls is restricted to student occupants, escorted guests, and authorized University personnel. Unescorted persons are not permitted in the residence halls at any time. Twenty-four (24) hour guest visitation is permitted in all residence halls. However, students may vote to restrict visitation hours if desired.

Except for Bulger, Spanton and Gallucci halls, all residence halls are locked on a continuous basis. Bulger and spanton halls are locked between 5:00 p.m. and 8:00 a.m. and Gallucci Hall between 7:00 p.m. and 8:00 a.m. In addition, most residence halls operate 24-hour reception areas. Beginning at 5:00 p.m. in all residence halls except Garson Hall and the Townhouses, guests must present identification as a requirement for building entry. Residents may enter at their own discretion but must also present identification when registering guests after 5:00 p.m. Each resident has access to his or her own building and room with keys or access cards. The Residential Life staffs receives specialized training from University police on security and safety procedures and enforcement of residence hall regulations.

The Residential Life staff conduct educational programs for residents to heighten awareness of safety and security concerns. Sessions include topics from personal safety to sexual assault. The University police department provides a community police patrol in all residence halls during the evening and early morning hours.

Campus Buildings
Most University academic facilities are open to the public from 7:00 a.m. until the latest evening classes let out. Administrative buildings are generally locked at 6:00 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.

The University Police Department works 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. Their 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
Cell extension 911 campus to reach UA police immediately.

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<thead>
<tr>
<th>Service</th>
<th>Extension</th>
<th>Notes</th>
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<tr>
<td>Police</td>
<td>7123</td>
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<tr>
<td>Campus Patrol</td>
<td>7263</td>
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</tr>
<tr>
<td>Police - nonemergency</td>
<td>8123</td>
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<tr>
<td>Environmental and Occupational Health and Safety</td>
<td>8606</td>
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<td>Fire</td>
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<td>EMS/Medical</td>
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<td>Electrical/Plumbing</td>
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<td>Hazardous Materials</td>
<td>8123</td>
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<tr>
<td>Closing Information</td>
<td>7111</td>
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These 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.
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 science, and applied mathematics, mechanical, and polymer), guidance and counseling, history (admissions temporarily suspended), polymer 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 is a joint program with Cleveland State University.

The school also offers programs of study leading to the master's degree in the following areas: biology, biomedical engineering, bilingual/multicultural education, business administration (law/business administration joint program), finance, international business, management, marketing, health services administration, materials management, and quality management, chemical engineering, chemistry, civil engineering, communication, communication disorders (audiology and speech pathology), 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, school treasurer, secondary school administration, superintendent, supervisor), educational foundations (computer based education, educational psychology, historical foundations, instructional media and technology, social/philosophical foundations), electrical engineering, elementary education, engineering, English (composition), geography (urban planning), geology (earth science, engineering geology, environmental geology, geophysics), guidance and counseling, history (world economies), home economics and family development, child life, clothing/textiles/minors, food science, management (human resources, information systems), mathematical sciences (applied mathematics, computer science, mathematics, statistics), mechanical engineering, middle school education, modern languages (Spanish), multicultural education, 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/gerontological, industrial/organizational), public administration and urban studies (law/MPA, joint program, public administration, urban studies), reading, social work, sociology, special education, taxation (law/taxation joint program), technical education (curriculum/supervision, guidance, teaching, vocational home economical theatre arts (arts administration)). In addition, the College of Administration provides a year of study beyond the master's degree in the area of school superintendent.

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.

Background Information

Graduate School

Charles M. Dye, Ph.D., Dean
Lathardus Goggins, Ph.D., Associate Dean
Dollie Q. Markovich, B.A., Coordinator of the Graduate School
Karen L. Caldwell, Secretary to the Dean and Coordinator of the Graduate Financial Aid
Virginia K. Donnelly, B.A., Degree Completion Coordinator
Brenda J. Henry, Admissions Coordinator
Heather A. Blake, B.S., M.S., Receptionist

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 knowledge for the benefit of mankind through the efforts of its faculty and students.

Nature of Graduate Education

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

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

History of the Graduate School

Graduate study began a few years after Buchtel College opened its doors, and the first earned master's degree was conferred in 1882. The College of Education awarded its first master's degree in 1924, the College of Engineering and Business Administration in 1953, the College of Fine and Applied Arts in 1967, and the College of Nursing in 1973. The Department of Speech, 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 1969. Professor Charles Bugler was appointed first dean of graduate work in 1933, and he continued in that capacity until 1950. Professor Ernest H. Cherrington, Jr., served as director of graduate studies from 1955 to 1960 and as dean of the Graduate Division from its establishment in 1960 to 1967. Dr. Arthur K. Brintnell was appointed dean of Graduate Studies and Research in 1967, being succeeded in 1969 by Dr. Edwin L. Lively. Dr. Clouston 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 1989. In 1999 Dr. Patricia L. Carroll 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.
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 adviser.

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.

*An exclusive listing of graduate faculty and Graduate Council can be found in the "Directory" of the Graduate Bulletin.*
General information
Application
The admitted status terminates when the time first admitted or approved.
An admitted 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 head of the appropriate department.

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 about three weeks before the beginning of a term and is published in the Schedule of Classes. Some programs, such as nursing, counseling and counseling psychology, have earlier deadlines. Applicants should contact the departments for more detailed application information.
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 institution 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. The offer of admission is void, however, if the applicant does not register for courses within two years from the time of admission. An individual whose offer of admission has lapsed must submit a new application to be reconsidered.
The student is admitted only for the purpose or objective stated on the application for admission. A new request for admission must be filed when the original objective has been attained or when the student wishes to change objectives.
The admitted status terminates when the time limits have been exceeded or other conditions for continued admitted status have not been met.
No student will be admitted without approval and acceptance by a department within the University, but admission to a department does not necessarily imply admission to or candidacy for any graduate degree program in that department. Admission for graduate study in any program can only be granted by the dean of the Graduate School.

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

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

Entrance Qualifying Examinations
The use of examinations to determine admissibility to enter a graduate program or eligibility to continue in one is the prerogative of the departments offering graduate programs. The department has the right to select the examination and minimum acceptable level of performance, information and procedure may be obtained from the head 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 any applicant who desires to pursue a graduate degree and has a baccalaureate degree from an accredited college or university with an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent); or holds an advanced degree from an accredited college or university in or appropriate to the intended field; or holds a baccalaureate or master's degree from a foreign college or university with first-class standing or its equivalent, plus satisfactory 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 (2.74-2.5 overall GPA or 2.75 over the last two years). This admission status permits a student to take up to 15 semester credits of graduate coursework. Graduate courses taken under this admission status may be applied to a graduate degree program, but only when all requirements for full admission have been met.
- Deferred Admission may be granted if the applicant's record does not meet provisions of the standard admission regulations. 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 with deferred admission status.
- Non-Degree Admission may be granted to a person who wishes to take particular courses but who is not working toward a graduate degree. This admission status permits a student to take 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 must apply through regular channels for any other category. A maximum of six workshop credits may be applied to degree work at a later date if the applicant is given full admission to the Graduate School.
- Transient status may be given to a person who is a regularly enrolled student in good standing in a degree program at another accredited university and has written permission to enroll at The University of Akron. Such permission is valid only for the courses and semester specified, with a maximum of 10 semester credits allowable, and is subject to the approval of the instructor, department head and Graduate School. A transient student is subject to the same rules and regulations as a regularly enrolled student of the University.
- Undergraduate status is for an undergraduate student at the University who may be granted permission to take one or more graduate-level courses if all the following conditions are met:
  - senior standing;
  - overall grade-point average of 2.75 or better or through preceding term (if a student does not have a 3.00 or better in the major field, special justification will be required);
  - written approval is granted by the instructor of the course and the student's advisor.
These courses may later be applied to a degree program if not used to satisfy baccalaureate degree requirements. The maximum number of graduate credits that may be taken by an undergraduate and applied later toward a graduate degree is 12.
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 special use of facilities within limits of the educational need of the postdoctoral graduate program. Tuition and fees shall be collected if allowed under sponsoring contract for any courses the fellow may choose to take;
- a Specialist 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 official transcript from the institution awarding the doctorate. The 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 head and college dean shall be obtained. A guest is welcome to any course or seminar provided space is available. Normally, space and facilities for research cannot be provided for a postdoctoral guest but special requests will be considered. Requests should be submitted, in writing, to the dean of the Graduate School who will review such requests with the appropriate college dean and department head.

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 adviser 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 available to both domestic and international students and are awarded on a competitive basis. Assistantships include tuition scholarships and a stipend ranging up to $13,000. Stipends range up to $18,000. Tuition scholarships are available on a limited basis in some departments.

International Students
The University of Akron welcomes international students and seeks to make their educational experience pleasant and meaningful. Each year, approximately 800 international students and scholars from 65 countries pursue studies and research at The University of Akron.

Admission
International students can 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 nine months before the term begins for best consideration. The following procedures should be followed:

- Obtain an international student application from the International Admissions Office, Office of International Programs, The University of Akron, Akron, OH 44325-3106, telephone (330) 972-6348, fax (330) 972-9604. Return the completed application and the one-time nonrefundable application fee of $50 with the following documentation:
  - An official transcript and degree from all secondary institutions and universities 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 550 or greater. Exceptions include the departments of English and History (60), Public Administration and Urban Studies (676) and Biomedical Engineering (560).
- While a Provisional 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 and Certification of Financial (DCF) and an original statement from the bank showing availability of sufficient funds to cover the cost of the first year of study, and that these funds will be available to the student in this country.

Costs, Financial Aid, and Medical Insurance
To cover tuition and living expenses for the 1996-97 academic year, international graduate students holding F-1 visas will need approximately $14,500. Additional costs for J-1 visa holders and student’s dependents are indicated on the DCF.

Graduate students may request financial aid through fellowships and graduate 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 health insurance coverage must be in effect during their stay in the United States. 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 1996). This exam must be taken prior to functioning as a teaching assistant. Those for whom English is the native language and who expect to become a teaching assistant must demonstrate proficiency in English through departmental certification. Neither the TSE nor departmental certification is required for research or administrative assistants.

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

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:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:507</td>
<td>Middle English Literature</td>
</tr>
</tbody>
</table>

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; 507 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:

- 500-599: Master’s-level courses
- 600-799: J.D.-level courses
- 800-899: Doctoral-level courses

When approved 400-level undergraduate courses are taken for graduate credit, they become 500-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>Points</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>D-</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>Failure</td>
</tr>
<tr>
<td>CR</td>
<td>0.0</td>
<td>Credit</td>
</tr>
<tr>
<td>NC</td>
<td>0.0</td>
<td>No credit</td>
</tr>
<tr>
<td>AUD</td>
<td>0.0</td>
<td>Audit</td>
</tr>
</tbody>
</table>
The following grades may also appear on the term grade reports or on the official academic record. There are no grade points associated with these grades.

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

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

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

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

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

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

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

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

Audit Policy
A student choosing to audit a course must be admitted and indicate audit at the time of registration. The student pays the enrollment fee and may be expected to attend classes, participate in class meetings, and submit the new grade to the Office of the Registrar in writing.

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

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

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

Workshop (credit/nonceit credit 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 summer and late matriculating 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 head, 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 reenrolled for one calendar year, and then only if evidence for expecting satisfactory performance is submitted and found acceptable.

Commencement
Students earning graduate degrees are expected to participate in the commencement exercises. A 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:

- Spring graduation: September 15.
- Fall graduation: May 15.

Academic Dishonesty
Students at The University of Akron are an essential part of the academic community, and enjoy substantial freedom within the framework of the educational objectives of the institution. The freedom necessary for learning in a community so rich in diversity and achieving success toward our educational objectives requires high standards of academic integrity. Academic dishonesty has no place in an institution of advanced learning. The University community is governed by the policies and regulations contained within the University Rules and Regulations Concerning Campus Conduct and Student Discipline Procedures available in the Office of Student Discipline, 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 references 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 examinations.
- Possession and/or unauthorized use of tests, notes, books, calculators or formulas stored in calculators not authorized by the instructor during an examination.
- Providing and/or receiving information from another student other than the instructor, by any verbal or written means.
- Observing or assisting another student's work.
- Violation of the procedures prescribed by the professor to protect the integrity of the examination.
- Cooperation with a person involved in academic misconduct.

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

A further discussion of these procedures and other avenues for recourse can be found in the Grievance Procedures for Graduate Students available at the Graduate School, The Polsky Building 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 reside 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 5747.02 of the Revised Code, provided such person has not, within the time prescribed by this rule, declared himself or herself to be, or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.

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

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

4. For the purpose of determining residency for tuition surcharge purposes at Ohio's state-assisted colleges and universities, "domicile" is a person's permanent place of abode; there must exist a demonstrated intent to 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 located in Ohio, 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 address.

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

1. Criteria evidencing residency:

   a. if a person is subject to tax liability under Section 5747.02 of the Revised Code;

   b. if a person qualifies to vote in Ohio;

   c. if a person is eligible to receive state welfare benefits;

   d. if a person has an Ohio driver's license and/or motor vehicle registration.

2. Criteria evidencing lack of residency:

   a. if a person is a resident or intends to be a resident of another state or nation for the purpose of tax liability, voting, receipt of welfare benefits, or student loan benefits if the loan program is only available to residents of that state or nation;

   b. if a person is a resident or intends to be a resident of another state or nation for any purpose other than tax liability, voting or receipt of welfare benefits.

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

1. A person who is living and is gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who is 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 or his or her employer beyond the territorial limits of the 50 states of the United States and the District of Columbia while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile as long as such person has fulfilled his or her tax liability to the state of Ohio for at least the tax year preceding enrollment.

5. A person who has been employed as a migrant worker in the state of Ohio and his or her dependents shall be considered a resident for these purposes provided such person has worked in Ohio at least four months during each of the three years preceding the proposed enrollment.

F. Procedures

1. A dependent person classified as a resident of Ohio for these purposes (under the provisions of Section C.1. of this rule) and who is enrolled in an institution of higher education when his or her parents or legal guardian removes their residency from the state of Ohio shall continue to be considered a resident during continuing full-time enrollment and until his or her completion of any one academic degree program.

2. In considering residency, removal of the student or the student's parents or legal guardian from Ohio shall not occur, 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 or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident. Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student's actual financial support.

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

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

All fees reflect changes in 1994-95 and are subject to change without notice. Application Fee (this fee is not refundable under any circumstances)

<table>
<thead>
<tr>
<th>Domestic</th>
<th>$25</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>$50</td>
</tr>
</tbody>
</table>

**Tuition Fees**

<table>
<thead>
<tr>
<th>Resident student per credit</th>
<th>$58.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonresident student per credit</td>
<td>$298.30</td>
</tr>
</tbody>
</table>

(same fees apply when auditing classes)

**General Fee**

<table>
<thead>
<tr>
<th>112 credits per semester</th>
<th>$5.65 per credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 credits and over per semester</td>
<td>$72.65 per semester</td>
</tr>
</tbody>
</table>

**Parking Permit Fee**

5 or more credits per semester: $575.00
4 or fewer credits per semester: $24.50
One summer session: $20.50

**Workshop participants**

$2 per day up to $16

**Graduation Fees**

Each degree (except law) $30

**Other Fees**

Theology and binding (payable at time of application for degree)

Binding per volume: $9.50

Microfilming (Ph.D./Ed.D. only) (payable at time of application for degree): $60.00

Copyright Fee (payable at time of application for degree if copyright is sought): $35

Course schedule change fee (for each schedule change form processed): $5

Transcripts (if more than one transcript of a student’s academic record is ordered by a student at one time, the fee shall be $4 for the first transcript and $2 for each additional one): $4

Graduate Student’s Foreign Language Reading Proficiency Exam: $50

Late Graduation Application Fee: $10

Late Registration Fee: $25

*Course Materials and Computing Fees:

For the following graduate courses, the fee noted will be assessed to cover the cost of instructional materials distributed by the instructor and computing fees:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>310:560</td>
<td>Food Plants</td>
<td>2</td>
<td>$10</td>
</tr>
<tr>
<td>210:521</td>
<td>Tropical Field Biology</td>
<td>4</td>
<td>$175</td>
</tr>
<tr>
<td>310:522</td>
<td>Conservation of Biological Resources</td>
<td>4</td>
<td>$15</td>
</tr>
<tr>
<td>310:524</td>
<td>Freshwater Ecology</td>
<td>3</td>
<td>$15</td>
</tr>
<tr>
<td>310:526</td>
<td>Applied Aquatic Ecology</td>
<td>3</td>
<td>$15</td>
</tr>
<tr>
<td>310:533</td>
<td>Pathogenic Bacteriology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:540</td>
<td>Virology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:537</td>
<td>Immunology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:540</td>
<td>Mycology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:541</td>
<td>Plant Development</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:542</td>
<td>Plant Anatomy</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:543</td>
<td>Physiology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:545</td>
<td>Plant Morphology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:547</td>
<td>Plant Physiology</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:548</td>
<td>Economic Biology</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:554</td>
<td>General Botany</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:555</td>
<td>General Zoology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:556</td>
<td>General Ecology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:557</td>
<td>General Entomology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:558</td>
<td>General Zoology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:559</td>
<td>General Physiology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:560</td>
<td>General and Comparative Physiology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:561</td>
<td>Veterinary Embryology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:562</td>
<td>Comparative Veterinary Morphology</td>
<td>4</td>
<td>$50</td>
</tr>
<tr>
<td>310:563</td>
<td>Molecular Biology</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:564</td>
<td>Basic DNA Techniques</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:565</td>
<td>Eukaryotic Techniques DNA</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:566</td>
<td>Eukaryotic Techniques RNA</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:567</td>
<td>Animal Cell Culture</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>310:568</td>
<td>Principles of Transmission Electron Microscopy</td>
<td>3</td>
<td>$20</td>
</tr>
<tr>
<td>310:569</td>
<td>Principles of Scanning Electron Microscopy</td>
<td>3</td>
<td>$20</td>
</tr>
<tr>
<td>310:570</td>
<td>Biochemistry Laboratory</td>
<td>2</td>
<td>$20</td>
</tr>
<tr>
<td>325:572</td>
<td>Economic Forecasting</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>325:574</td>
<td>Seminar: Research Methods</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>325:575</td>
<td>Computer Applications in Geography and Planning</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>325:576</td>
<td>Geographic Information Systems</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>325:577</td>
<td>Advanced Geographic Information Systems</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>325:578</td>
<td>Urban Land Use Analysis</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>325:579</td>
<td>Principles of Cartography</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>325:580</td>
<td>Thematic Cartography</td>
<td>3</td>
<td>$50</td>
</tr>
<tr>
<td>325:581</td>
<td>Applications in Cartography and GIS</td>
<td>3</td>
<td>$50</td>
</tr>
</tbody>
</table>

Introduction to Remote Sensing 3 $10
Advanced Cartography 3 $10
Advanced Remote Sensing 3 $10
Spatial Analysis 3 $10
Sediment and Water Studies 3 $10
Methods of Planning Analysis I 3 $10
Methods of Planning Analysis II 3 $10
Advanced Spatial Analysis 3 $10
Regional Geography of North America 3 $10
Glacial Geology 3 $10
Coastal Geology 3 $10
Advanced Stratigraphy 3 $10
Optical Mineralogy and Introductory Petrography 3 $10
Advanced Petrography 3 $10
Petroleum Geology 3 $10
Coal Geology 3 $10
Economic Geology 3 $10
Fundamentals of Geophysics 3 $10
Exploration Geophysics 3 $10
Advanced Structural Geology 3 $10
Microseismology 3 $10
Geochemistry 3 $10
Groundwater Hydrology 3 $10
Remote Sensing in Geography 3 $10
Applied Quantitative Geomorphology 3 $10
Carbonate Petrology 3 $10
Siliciclastic Sedimentology 3 $10
Ducks and Minerals 3 $10
Igneous Petrology 3 $10
Metamorphic Petrology 3 $10
Mineralogy 3 $10
Ore Microscopy 3 $10
Nuclear Geology 3 $10
Geostatistics 3 $10
Borehole Geophysics 3 $10
Global Tectonics 3 $10
Advanced Ground Water Hydrology 3 $10
Geophysical Methods of Prospecting 3 $10
Urban Geology 3 $10
Introduction to Numerical Analysis 3 $10
Numerical Leagues 3 $10
Numerical Solutions: Ordinary Differential Equations 3 $10
Numerical Solutions: Partial Differential Equations 3 $10
Systems of Ordinary Differential Equations 3 $10
Advanced Numerical Analysis I 3 $10
Advanced Numerical Analysis II 3 $10
Matrix Computations I 3 $10
Matrix Computations II 3 $10
Optimization 3 $10
Introduction to C and UNIX 3 $10
Introduction to Discrete Structures 3 $10
Structured Programming 3 $10
Introduction to Object Oriented Programming 3 $10
Operating Systems 3 $10
UNIX System Programming 3 $10
Theory of Programming Languages 3 $10
Analysis of Algorithms 3 $10
Compiler Design 3 $10
Data Communications and Computer Networks 3 $10
Computer Graphics 3 $10
Artificial Intelligence and Heuristic Programming 3 $10
Computer Organization 3 $10
Microprocessor Programming and Interfacing 3 $10
Automata, Computability, and Formal Languages 3 $10
Database Management 3 $10
Topics in Computer Science 3 $10
Symbolic and Numeric Methods 3 $10
Advanced Operating Systems 3 $10
Advanced Algorithms and Complexity Theory 3 $10
Advanced Compiler Design and Construction 3 $10
Advanced Operating Systems 3 $10
Advanced Computer Systems 3 $10
Advanced Computer Architecture 3 $10
Parallel Processing 3 $10
Advanced Automatic and Computation 3 $10
Advanced Database Management 3 $10
Software Engineering 3 $10
Applied Statistics 3 $10
Applied Statistics 4 $20
Statistical Computer Applications 3 $10
Experimental Design 3 $10
Regression and Correlation 3 $10
Nonparametric Statistics-Methods 3 $10
Factor Analysis 3 $10
Multivariate Statistical Methods 3 $10
Response Surface Methodology 3 $10
Advanced Laboratory I 3 $10
Advanced Laboratory II 3 $10
Survey Research Methods 3 $10
Methods of Policy Analysis 3 $10
Basic Quantitative Research 3 $10
Advanced Research and Statistical Methods 3 $10
Analytical Techniques for Public Administrators 3 $10
Program Evaluation 3 $10
College of Engineering

All graduate-level courses in the College of Engineering are assessed a $30 fee with the exception of the following courses:

- 4200:566 Digitalized Data and Simulation
- 4200:523 Chemistry for Engineers
- 4200:572 Environmental Engineering Principles
- 4200:623 Physical/Chemical Treatment Processes
- 4200:624 Biomedical Processes
- 4200:625 Water Treatment Plant Design
- 4200:626 Wastewater Treatment Plant Design
- 4200:627 Environmental Operations Laboratory
- 4200:665 Control Mechanics
- 4200:555 Microscopies
- 4200:568 Computer Circuits
- 4200:572 Control Systems II
- 4200:586 Power Electronics Laboratory and Design Project
- 4200:563 CADCAM
- 4200:601 Biomedical Instrumentation I
- 4200:620 Neural Networks
- 4200:640 Medical Imaging Devices
- 4200:640 Spin Mechanics
- 4200:641 Soft Connecting Tissue Biomechanics
- 4200:642 Hard Connecting Tissue Biomechanics

College of Education

- 5100:512 Design and Production of Instructional Materials
- 5100:520 Introduction to Computer-Based Education
- 5100:520 Seminar in Computer-Based Education
- 5100:540 Statistics in Education
- 5100:541 Advanced Educational Statistics
- 5100:544 Advanced Micro Application in Secondary Schools
- 5200:645 Tests and Appraisals in Counseling
- 5600:647 Career Development and Counseling Across the Life-Span
- 5600:644 Practicum in Counseling
- 5600:646 Practicum in Counseling II
- 5600:672 Advanced Counseling Practicum
- 5600:673 Principles and Practice of Individual Intelligence Testing
- 5600:714 Objective Personality Evaluation
- 5600:720 Topical Seminar: Guidance and Counseling
- 5700:650 Technology and Materials Application
- 5700:657 Audiology/Neurosciences Seminar
- 5700:661 Clinical Speech Pathology
- 5700:661 Practicum in Speech Pathology
- 5700:675 Computer Applications in Educational Administration

College of Business Administration

All graduate-level courses in the College of Business Administration are assessed a $35 fee with the exception of the following courses:

- 6200:598 CPA Problems: Auditing
- 6200:599 CPA Problems: Theory
- 6200:600 Basic Tax Research
- 6200:643 Accounting
- 6200:644 Income Taxation of Decedents, Estates and Trusts
- 6200:645 Consolidated Tax Returns
- 6200:646 Tax Practice and Procedure
- 6200:649 State and Local Taxation
- 6200:650 Estate Planning
- 6200:651 United States Taxation and Transnational Operations
- 6200:652 Tax Exempt Organizations
- 6200:653 Business Planning
- 6200:656 Non-Qualified Executive Compensation
- 6700:650 Professional Responsibility
- 6700:662 International Business
- 6700:684 Applied Business Documentation and Contact
- 6700:686 Special Topics in Professional Development

College of Fine and Applied Arts

All graduate-level courses in 7500. Applied Music are assessed fees in varying amounts:

- 7100:551 Architectural Presentations I
- 7100:552 Architectural Presentations II
- 7100:553 Architectural Presentations III
- 7100:560 Advanced Food Preparation
- 7100:518 History of Furniture and Interiors I
- 7100:519 History of Furniture and Interiors II
- 7100:520 Experimental Foods
- 7100:523 Professional Image Analysis
- 7100:524 Nutrition in the Life Cycle
- 7100:525 Advanced Textiles
- 7100:532 Interiors, Textiles, and Product Analysis
- 7100:533 Residential Design
- 7100:534 Commercial Design
- 7100:535 Principles and Practices of Interior Design
- 7100:536 Textile Construction
- 7100:537 History of Western Costume to 1800
- 7100:538 History of Fashion Since 1780
- 7100:550 Community Nutrition I
- 7100:551 Community Nutrition II
- 7100:552 Community Nutrition III
- 7100:553 Community Nutrition IV
- 7100:558 Practicum in Dietetics
- 7100:630 Family Relationships in Middle and Later Years
- 7100:631 Instructional Programming in Music for the Microcomputer
- 7100:640 Advanced Accompanying I
- 7100:641 Advanced Accompanying II
- 7100:642 Advanced Accompanying III
- 7100:643 Advanced Accompanying IV
- 7100:653 Corporate Video Design
- 7100:654 Corporate Video Management

Financial Aid

Financial aid programs are 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 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 years. Inquiries may be directed to the Office of Student Financial Aid, 119, (330) 972-7102 or (800) 621-3947.

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.

The University offers an installment Payment Plan (IPP) to the student who needs temporary help paying tuition and housing. This must be repaid in full before the end of the term for which the money was borrowed. Information and applications are available at the IPP Office, Spicer Hall 105, (330) 972-5100.

Graduate assistantships may be available through various graduate degree-granting academic units. Graduate assistantships and other graduate awards are dis-
Refunds will be determined as of the date of formal withdrawal unless proof is submitted that circumstances beyond control of the student, e.g., hospital confinement, prevented the filing of the formal withdrawal earlier, in which case the refund will be determined as of said circumstance. The student assumes responsibility for filing for a refund.

Refunds will be mailed as soon as possible. Refund checks are subject to deduction for any amount owed to The University of Akron by the student.

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

Refund for Cancelled Classes
The University reserves the right to cancel a course should there be insufficient enrollment. A full refund will be mailed to the student as soon as possible.
3
Academic requirements
Academic Requirements

M.S. DEGREE REQUIREMENTS

Admission
When a student is admitted to graduate study, an adviser is appointed by the head 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 advisers 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. Extension by 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 adviser and department head.

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

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 credits from a prior or concurrent graduate degree at The University of Akron may be used to satisfy the requirements of a concurrent or subsequent master's degree. 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 head of the major department.

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

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

Graduation
To be cleared for graduation, a candidate must have completed coursework with a minimum 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 head 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.

S.T.

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 ensures attainment of the degree. A formal degree program consists of a combination of courses, seminars and individual study and research that meet the minimum requirements of the Graduate School and those of the committee for each individual student.

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

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

Residence Requirements
A doctoral student may meet the degree requirements of the Graduate School and department by full-time study or a combination of full- and part-time study.

The minimum residence requirement for a doctoral candidate in all programs is at least two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 9-15 semester credits, except for graduate teaching and research assistants for whom full-time study is specified by the assistantship agreements. The summer sessions may count as one semester provided that the candidate is enrolled for a minimum of 10 consecutive weeks of full-time study and for a minimum of six semester credits for five-week session. Individual programs may have additional residence requirements such as courses or courses to be completed, proper time to fulfill the residence requirement, and the extent to which a resident may hold outside employment.

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

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

All students admitted to doctoral programs must register for a minimum of one graduate credit as approved by their advisers during each Fall and Spring semester. Individual departments may exceed this minimum requirement. Doctoral students shall consult with their advisers about additional requirements. Master's programs may require continuing enrollment. Students should consult their advisers 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 workship credits may be applied to a doctoral degree. Such credits must be relevant to the degree program, recommended by the student's adviser 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 the approval of the dean of the Graduate School.

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 period 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 credit shall not be recorded until a student has completed 12 semester credits at The University of Akron with a grade-point average of 3.00 or better. Transfer credits from other institutions shall not be computed as part of a student's University of Akron grade point average.

Language Requirements

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

- Plan A: Reading knowledge, with the aid of a dictionary, of two approved foreign languages. At the discretion of the major department, an average of "B" in the second year of a college-level course 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) 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 a topic related to the major subject. It should represent a significant contribution to knowledge, be presented in a scholarly manner, reveal the candidate's ability to do independent research and indicate experience in research techniques.

A doctoral dissertation committee supervises and approves the dissertation and administers an oral examination upon the dissertation and related areas of study. This examination is open to the graduate faculty. The dissertation and oral examination must be approved by the committee before the dissertation is submitted to the Graduate School. Two copies of the dissertation are due in the Graduate School at least three weeks prior to commencement. These copies must be signed by the adviser, department head and college dean prior to submission to the dean of the Graduate School. A manual titled "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; 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 Doctor of Philosophy in Chemistry

The Doctor of Philosophy in Chemistry is granted for significant 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 adviser or advisory committee. This consists of the completion of at least 90 credits beyond the baccalaureate degree, including 24 credits of appropriate coursework.
- Complete monthly cumulative exam requirement.
- Complete oral exam requirement.
- Complete seminar requirement.
- Defend dissertation in an oral examination.
- Complete all general requirements for the doctor of philosophy degree.

Doctor of Philosophy in Counseling Psychology

The University of Akron offers a doctoral program in Counseling Psychology. The program allows students to choose a focus 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-affective, and individual basis of human behavior. Practicum and internship experiences are also required of all students and range from skill building in basic psychological assessment and counseling, to actual work with clients, to a year-long, full-time internship in an applied service setting. Pertinent information regarding the emphasis, orientation, and coursework for the Psychology Department entry is included below. Students receive exposure to both colleges through shared coursework and faculty involvement with dissertations but must choose a specialization in one department. The Collaborative Program in Counseling Psychology is accredited by the American Psychological Association.

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

Admission to the Collaborative Program in Counseling Psychology is handled through the department associated with the student's chosen entry point. Students must fulfill both Departmental and Graduate School admission requirements. Departures from the described program for Psychology Department entry may be made only with the approval of the counseling psychology program faculty.

Requirements

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology core courses (610, 620, 630, 640)</td>
<td>16</td>
</tr>
<tr>
<td>Counseling psychology core courses (707, 710, 714, 716, 717, 718)</td>
<td>32</td>
</tr>
<tr>
<td>Practicum sequence (671, 672, 673, 756 [4+4], 759 [4+4])</td>
<td>26</td>
</tr>
<tr>
<td>Advanced Psychological Tests and Measures (750)</td>
<td>4</td>
</tr>
<tr>
<td>Electives (minimum)</td>
<td>6</td>
</tr>
<tr>
<td>A statistics sequence that may be substituted for the doctoral language requirement</td>
<td>16</td>
</tr>
<tr>
<td>Thesis credits (minimum)</td>
<td>8</td>
</tr>
<tr>
<td>Dissertation credits (minimum)</td>
<td>12</td>
</tr>
</tbody>
</table>

- 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 attain a 3.50 GPA in the psychology core or perform satisfactorily on the core mastery examination in order to be eligible for M.A./Ph.D. standing in the Department of Psychology.
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 Department of Social Science and Public Policy of The University of Akron offers 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 (15 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:
  3850:631 Social Psychology
  3850:645 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

The Department of Public Administration and Urban Studies of The University of Akron offers a program leading to the Ph.D. in Urban Studies (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 did 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 and career aspirations (form available in application packet). A student will be considered for admission only if faculty resources are available in the student's indicated area of specialization.
- Those whose native tongue is not English must also demonstrate proficiency in the English language by scoring a minimum of 570 on the Test of English as 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:
- 3980:600 Basic Analytical Research 3
- 3980:601 Advanced Research and Statistical Methods 3
- 3980:611 Introduction to the Profession of Public Administration 3
- 3980:630 Introduction to Planning Theory 3
- 3980:640 Fiscal Analysis 3
- 3980:643 Introduction to Public Policy 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

The Ph.D. Program in Urban Studies has a required core of four courses consisting of two courses in advanced quantitative methods and two courses in urban theory. In addition, students must complete a major consisting of 24 credit hours (eight courses); and a minor consisting of 12 credits (four courses). The major must be taken from one of the following specializations: Policy Analysis and Evaluation, Public Administration, and Urban and Regional Planning. The minor consists of an integrated set of courses offering a specialization in either a set of methodological tools such as advanced statistics, a body of theory, or an area of application such as health policy.

The doctoral major and minor can be completed through a combination of required courses, elective courses, and tutorials. The tutorials allow students to work in close cooperation with an individual faculty member to pursue research interests shared by the student and the faculty member.

Students must pass written and oral comprehensive examinations on the quantitative core courses and on their major area of specialization.

A minimum of 63 credits beyond the master's degree is required, 48 hours of coursework, and 15 hours of dissertation.
MASTER'S DEGREE

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, mathematical sciences, modern languages (Spanish), physics, political science, psychology, sociology, 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.
- Submit three letters of recommendation.
- Submit scores for Graduate Record Examination (Aptitude and Advanced Biology Tests).
- Submit a letter of proposed area of specialization within biology.
- Non-active speakers of English must submit a TSE score of 220 or above (minimum score of 60 on TSE, revised 1995) to be considered for a graduate assistantship.

Master of Science

Thesis Option
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.

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 enrolling 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 adviser, up to 12 credits may be taken in related areas - 24 credits.
- Research and thesis - six credits.
- Participation in departmental seminars.
- Demonstration of reading proficiency in a foreign language appropriate to the field of study prior to the last semester of enrollment.

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. Theses 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:
- 3250:602 Macroeconomic Analysis I 3
- 3250:611 Microeconomic Theory I 3
- 3250:620 Applications of Mathematical Models to Economics* 3
- 3250:626 Statistics for Econometrics* 3

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

Exceptional departures from these requirements may be approved by the permission of the graduate faculty and department head. Courses taken outside the department must be approved (in writing) by the student's advisor prior to enrollment.

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

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 26 credits is required, of which 24 must be at the 600 level and 4 must be in literature or literary theory (exclusive of individual reading).

Required Courses for Both Options:
- 3300:566 Chaucer
- 3300:570 History of the English Language or
- 3300:670 Modern Linguistics
- 3300:671 Shakespearean Drama
- 3300:691 Bibliography and Literary Research

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

Thesis Option
A minimum of 33 credits is required (27 credits of coursework and 6 hours of thesis). Of the 27 credits of coursework, 18 must be in composition studies (including courses in composition, linguistics, and rhetoric) and 9 credits in literature or literary theory (exclusive of individual reading). Of the 27 credits of coursework, 15 must be at the 600 level.

Nonthesis Option
A minimum of 36 credits is required, of which 6 may be individual reading. At least 24 credits 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:
- 3300:670 Modern Linguistics 3
- 3300:673 Theories of Composition 3
- 3300:694 Research Methodologies in Composition 3
- 3300:696 Theory and Teaching of Basic Composition 3

Other Available Courses for Both Options
Composition and Rhetoric:
- 3300:675 Theory of Rhetoric 2
- 3300:679 Scholarly Writing 2
- 3300:688 Seminar: Reading Theory 3

The University of Akron
Linguistics:

3300:570 History of the English Language
3300:571 U.S. Dialects: Black and White
3300:589 Grammatical Structures of Modern English
3300:588 Sociolinguistics
3300:680 Contextual Linguistics

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 as is 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 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.

1Unless the student has passed a comparable course at the undergraduate level with a grade of "B" or better.

Geography and Planning

Master of Arts in Geography

Nonthesis Option

- A minimum of 39 graduate credit hours, to include no more than 6 credits of 3350:698. At least 12 credit hours must be taken at the 600 level, excluding 3350:689 and 699.
- Core Requirements – 12 credit hours (4 courses)
  3350:581 Geographic Research Methods
  3350:583 Spatial Analysis
  3350:586 Field Research Methods
  3350:687 History of Geographic Thought
- Seminars: Completion of research papers in at least 2 courses from the following (6 hours):
  3350:600 SEM: Method
  3350:601 SEN: Method
  3350:602 SEM: Method
- Electives – 21 credit hours

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

Thesis Option

- A minimum of 36 graduate credit hours, to include no more than 6 credits of 3350:698. At least 12 credit hours must be taken at the 600 level, excluding 3350:689 and 699.
- Core Requirements (2 credit hours)
  3350:581 Geographic Research Methods
  3350:583 Spatial Analysis
  3350:586 Field Research Methods
  3350:697 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: Method
  3350:601 SEN: Method
  3350:602 SEM: Method

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

Master of Science in Geography

- Minimum of 39 graduate credit hours, to include no more than 6 credits of 3350:698. At least 12 credit hours must be taken at the 600 level, excluding 3350:689 and 699.
- Core Required Courses – 15 credit hours
  3350:581 Geographic Research Methods
  3350:583 Spatial Analysis
  3350:586 Field Research Methods
  3350:587 History of Geographic Thought
  3350:680 Advanced Spatial Analysis
- Methods/Techniques Requirement
  At least 4 courses (12 credit hours) from:
  3350:503 Computer Applications in Geography and Planning
  3350:505 Geographic Information Systems
  3350:542 Thematic Cartography
  3350:547 Introduction to Remote Sensing
  3350:548 Advanced Cartography
  3350:600 SEM: Spatial Analysis
  3350:637 Methods of Planning Analysis I
- 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.

Master of Arts (Geography/Urban Planning)

- A total of 45 credits of coursework plus internship (3350:685) as follows:
  - Core Requirements
    3350:533 Introduction to Planning
    3350:536 Urban Land Use Analysis
    3350:581 Geographic Research Methods
    3350:583 Spatial Analysis
    3350:586 Planning Theory
    3350:587 Methods of Planning Analysis I
    3350:637 Methods of Planning Analysis II
    3350:639 Development of American Planning
  - Electives – 5 courses, with a concentration from one of the following groups.
    - Land Use and Transportation (any three)
      3350:522 Transportation Systems Planning
      3350:528 Industrial and Commercial Site Location
      3350:529 Soil and Water Field Studies
      3350:680 Advanced Spatial Analysis
    - Cartography/Remote Sensing (any three)
      3350:542 Thematic Cartography
      3350:544 Applications in Cartography and Geographic Information Systems
      3350:547 Introduction to Remote Sensing
      3350:548 Advanced Cartography
      3350:549 Advanced Remote Sensing
    - Comparative Planning (any three)
      3350:538 World Metropolitan Areas
      3350:550 Development Planning
      3350:571 Medical Geography and Health Planning
      3350:583 Comparative Planning
      3350:680 Advanced Spatial Analysis
    - G.I.S. (any three)
      3350:505 Geographic Information Systems
      3350:542 Thematic Cartography
      3350:547 Introduction to Remote Sensing
      3350:549 Advanced Cartography
      3350:680 Advanced Spatial Analysis

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 knowledge will lack any basic knowledge will be required to take appropriate undergraduate courses. The student may not begin formal thesis 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:
  3370:680 Seminar in Geo & Geo-Sci 2
  3370:888 Master's Thesis 6
- 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 their career objectives.

Geology
Equivalents of the current geology, cognate science and mathematics requirements for the University's B.S. in geology are required.

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 5300:780 Seminar in Secondary Education; 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 his 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 faculty will determine appropriate coursework on an individual basis.

- 3400:689 Historic Geology
- 3400:210 Soil Science

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

Environmental Geology
Equivalents of the current science and mathematics requirements for the University's B.S. in geology 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 writing sample, preferably a research paper from a history course;
- Three letters of recommendation, preferably from faculty who know the applicant well;
- Applicants whose native language is not English must also score at least 580 on the Test of English as a Written Language (TOEFL), at least 240 on the Test of English as a Spoken Language (TSE), and take the Test of Written English (TWE).

• Degree requirements include:
  - Satisfactory completion of a minimum of 30 credits of graduate study in history, of which only six may be in individual reading;
  - Concentrated study of three fields, two of which must be chosen from the following:
    - Ancient
    - Medieval
    - Europe, Renaissance to 1750
    - Europe, 1750 to the Present
    - England and the Empire
    - 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.
    - 3400:685 Historiography

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.

Mathematical Sciences

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:
  - Two of the following three courses:
    - 3450:510 Advanced Linear Algebra
    - 3450:512 Abstract Algebra II
    - 3450:611 Topics in Algebra
  - And all of the following courses:
    - 3450:621 Real Analysis
    - 3450:622 Measure Theory
    - 3450:625 Analytic Function Theory
    - 3450:682 Seminar in Mathematics

Thesis Option (30-39 credits)
In addition to the placement review and core requirements, 9-11 credits of 500/600-level courses in mathematics (3450), statistics (3460), 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 (3450), 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, 512 or 611 and in the courses 3450:621, 622 and 625.

Master of Science – Statistics

• Entrance into the program will require the initial completion of the following prerequisites:
  - 3470:561 Applied Statistics I, four credits; or equivalent.
  - 3470:515 Math Concept for Statistics, four credits, or 3450:521/522 Advanced Calculus I/II, three credits each, or equivalent.

• Core curriculum:
  - 3470:651 Probability and Statistics
  - 3470:652 Advanced Mathematical Statistics
  - 3470:655 Linear Models
  - 3470:673 Experimental Design
  - 3470:685 Regression and Correlation
  - 3470:692 Seminar in Statistics

Thesis Option (30 credits of graduate work)
In addition to the core curriculum, 8-10 credits in 500/600 level mathematical sciences courses and 2-4 credits in 3470:689 Master's Thesis must be completed.

Nonthesis Option (33 credits of graduate work)
In addition to the core requirements, 15 credits in 500/600 level mathematical sciences courses must be completed.

• A comprehensive examination, taking the form suggested by the department, must be completed in the thesis or nonthesis option.

• With the consent of the department, up to 6 credits of approved graduate-level electives outside the department may be substituted in the thesis or nonthesis option.
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 (3450:521,522) 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 the course will be added to the required courses for the student and the total number of credits required for the degree will reflect this.

- Core:
  3450:510 Advanced Linear Algebra 3
  3450:621 Real Analysis 3
  3450:625 Analytic Function Theory 3
  3450:627 Advanced Numerical Analysis I, II 6
  3450:633 Methods of Applied Mathematics I, II 6
  3450:682 Seminar in Mathematics 1-3

**Thesis Option (30-39 credits)**

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

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 (3450:521,522) and Mathematical Models (3450:536). If the student fails any part of this review, then the 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
  3470:660 Advanced Probability and Stochastic Process 3
  3470:661 Probability and Statistics 4
  3450:682 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 (3460), or computer science (3460) must be completed. Any graduate-level course may be substituted as an elective provided that this is approved beforehand by the student's advisory committee.

**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 (3460), or computer science (3460) must be completed. Any graduate-level course may be substituted as an elective provided that this is approved beforehand by the student's advisory committee.

Successful completion of the Comprehensive Examinations in the courses 3450:621, 627, 633, 636 and 3470:681 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 also:

- submit 3 letters of recommendation from individuals capable of evaluating the applicant's potential for success in the program;
- have earned a baccalaureate degree in computer science or a related discipline from an accredited college or university with a GPA of 3.00 or higher in computer science and related courses;
- demonstrate proficiency in the areas of differential and integral calculus, probability and statistics, discrete mathematics, and knowledge of at least one high-level, general purpose programming language, and;
- demonstrate proficiency in the areas of data structures, assembly language, computer organization, operating systems, and the theory of programming languages. A student deficient in one or more of these areas may be granted conditional admission.

The 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: (522, 626), (540, 640), (565, 665)
    - Group 2: (525, 625), (560, 660), (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.
  - A written comprehensive examination, taking the form suggested by the department, must be completed in the thesis or nonthesis option. 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 Option II above).

**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 3450:699 Master's Thesis must be completed.

**Nonthesis 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.

**Coordinated Program**

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

The faculty in the College of Engineering and the Department of Mathematical Sciences 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 Mathematical Sciences. The Admission Requirements for the Doctor of Philosophy in Engineering, as given in the Graduate Bulletin (see page 36, 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:
The Master of Arts in Admission is open to students who have completed a four-year undergraduate degree, whose academic records meet the standards required for admission to the Graduate School. No specific field of undergraduate major is required for admission. The GRE score is not required for admission.

Courses may be taken outside the Department of Public Administration and Urban Studies for the purpose of fulfilling any of the requirements listed below but must be approved by the department prior to registration. Each student will, upon entering the program in consultation with a faculty adviser, plan a complete course of study which includes 15-18 hours of core and 15-18 hours of approved electives.

- Core: 3980:600 Basic Quantitative Research 3
- 3980:601 Advanced Research and Statistical Methods 3
- 3980:602 History of Urban Development 3
- 3980:641 Urban Economics: Growth and Development 3
- 3980:643 Introduction to Public Policy 3
- 3980:699 Master's Thesis (optional) 4

Basic Program
Complete 33 credits of coursework 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 adviser.

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, whose academic records meet the standards required for admission to the Graduate School. No specific field of undergraduate major is required for admission. The GRE score is not required for admission.
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 3
    - 3980:601 Advanced Research and Statistical Methods 3
    - 3980:610 Legal Foundation of Public Administration 3
    - 3980:611 Introduction to the Profession of Public Administration 3
    - 3980:614 Ethics and Public Service 3
    - 3980:615 Public Organization Theory 3
    - 3980:616 Personnel Management in the Public Sector 3
    - 3980:640* Fiscal Analysis 3
    - 3980:642* Public Budgeting 3
    - 3980:643 Introduction to Public Policy 3
    - 3980:695** Internship (may be repeated for a total of 6 credits) 3
    - 3980:699 Master's Thesis (optional) 3

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

*Students may take 3250:606 Economics of the Public Sector and 3250:508 State and Local Public Finance to fulfill the requirements of 3980:640 Fiscal Analysis and 3980:642 Public Budgeting. Students must, however, take both 3250:508 and 3250:506 or both 3980:640 and 3980:642.

**Students may take either 3980:614 or 3980:673 in lieu of 3980:601. Students may also take either 3980:697 or 3980:630 in lieu of 3980:643.

***Students working full-time may satisfy internship without a field placement. See advisor for alternative requirement.

Any required course except 3980:699, Master's Thesis, may be waived on the basis of proficiency in the area covered by the course. The criteria for waiver considered by the department are:

- 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.

Areas of Concentration:

- Public and Non-Profit Management
- Urban Theory and Administration
- Public Sector Economics and Financial Management
- Public Policy Analysis and Program Evaluation

- See advisor for suggested courses. Students are encouraged to construct a coherent set of courses that will contribute to more in-depth or multi-disciplinary knowledge of a given area of concentration.

- Advanced Elective Courses (15-19 credits):
  - 3250:639 Public Employee Labor Markets 3
  - 3250:668 Seminar in Regional Economic Analysis and Development 3
  - 3700:630 Seminar in National Politics 3
  - 3700:641 Seminar in Intergovernmental Relations 3
  - 3700:670 Seminar in the Administrative Process 3
  - 3880:550 Workshop 1-3
  - 3980:612 National Urban Policy 3
  - 3980:613 Intergovernmental Management 3
  - 3980:619 Leadership and Decision Making 3
  - 3980:620 Social Services Planning 3
  - 3980:621 Urban Society and Service Systems 3
  - 3980:622 Urban Planning and Health Care 3
  - 3980:623 Public Works Administration 3
  - 3980:635 Parks and Recreation 3
  - 3980:641 Urban Economic Growth and Development 3
  - 3980:650 Comparative Urban Systems 3
  - 3980:670 Research for Futures Planning 3
  - 3980:671 Program Evaluation in Urban Studies 3
  - 3980:672 Alternate Urban Futures 3
  - 3980:673 Computer Applications for Public Organizations 3
  - 3980:674 Analytical Techniques for Public Administration 3
  - 3980:680 Selected Topics in Urban Studies 3
  - 3980:681 Selected Topics in Urban Studies 3
  - 3980:697 Individual Studies 1-3

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 law electives, and 30 credits of required public administration courses plus an internship of three credits. (Internship is required of any student without professional administrative experience.)

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

Sociology

Master of Arts

Thesis Option

Satisfactory completion of 32 semester credits of which at least 21 must be at the 600 level or higher in sociology 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 3
  - 3850:604 Social Research Design 3
  - 3850:617 Sociological Theory 3
  - 3950:331 Social Psychology 3

- Complete at least six hours of thesis work (3850:699). No more than six credits will count toward the degree.

- Completion of master's thesis and successful oral defense of thesis.

Nonthesis Option

This degree is intended for the student who wants intensive substantive training in a specialized area.

Completion of 32 credits of graduate work with no more than six credits taken at the 500 level. In meeting these requirements the student must:

- Complete four required core courses with at least a 3.00 grade-point average:
  - 3850:603 Sociological Research Methods 3
  - 3850:604 Social Research Design 3
  - 3850:617 Sociological Theory 3
  - 3850:631 Social Psychology 3

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

- Pass an oral examination on the specialty area.

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 consult 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.

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 adviser.

- Final comprehensive examinations: the candidate will be required to submit an essay, and pass an oral exam on the essay.
College of Engineering

Irving F. Miller, Ph.D., Dean
Max S. Willis, Jr., Ph.D., Associate Dean,
Research and Graduate Studies
Paul C. Lam, Ph.D., Associate Dean,
Undergraduate Studies and Minority Affairs
Dorie McCubbrey, Ph.D., Director of Women in Engineering
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 must satisfy the requirements for Full Admission, have a cumulative grade-point average of at least 3.040, and submit their scores on the TOEFL or IELTS. Applicants not satisfying the requirements for Full Admission may be admitted provisionally or as a Deferred Admission.

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

Applicants must have a cumulative grade-point average of at least 3.540. Applicants whose native language is not English must have a TOEFL score of at least 550, and also submit their score on the Test of Written English.

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

Applicants with a master's degree must have a cumulative grade-point average of at least 3.040. Applicants with a master's degree must have a cumulative grade-point average of at least 3.540. Applicants whose native language is not English must have a TOEFL score of at least 550, and also submit their score on the Test of Written English.

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

Applicants with a bachelor's degree or a master's degree in a discipline other than engineering who 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 at least 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
4200:305 Equilibrium Thermodynamics 4
4200:321 Transport Phenomena I 3
4200:322 Transport Phenomena II 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 26

Civil Engineering
4300:300 Theory of Structures 3
4300:313 Soil Mechanics 3
4600:310 Fluid Mechanics 3
4300:323 Water Supply and Wastewater Disposal 4
4300:341 Hydraulic Engineering 3
4300:361 Transportation Engineering 3
4300:401 Steel Design 3
4300:403 Reinforced Concrete Design 3
Total 25

Electrical Engineering
4400:360 Physical Electronics 3
4400:361 Electronic Design 4
4400:393 Switching and Logic 4
4400:534 Energy Conversion I 3
4400:335 Energy Conversion Lab 2

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 in 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.

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 Science, Mechanics, Systems Engineering, and Transport Processes. The proposal's intent is to limit the administrative mechanism to the College and the departments while the interdisciplinary programs could be extended to adapt to the changing research and funding trends.

Since the approval of the proposal, Biomedical Engineering and Polymer Engineering have been added to the list of 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 biomaterials.

Systems Engineering includes the scientific prediction, control, and evaluation of the performance of integrated operational systems, and interaction among the components of engineering systems. It includes systems analysis and design, operations research, linear and dynamic programming.

Materials Science 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, and related to engineering processes. Biomedical Engineering studies the theoretical and experimental application of engineering principles to biomedical problems. Some typical areas of interest are signal and image processing, biomechanics, and biomaterials.

Polymer Engineering combines fundamental engineering principles with the structure and rheological properties of polymers to design and analyze polymer processes and equipment.
Coordinated Engineering Applied Mathematics program for the Doctor of Philosophy in Engineering degree between the College of Engineering and the Department of Mathematical Sciences

The faculty in the College of Engineering and the Department of Mathematical Sciences 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 deans in the College of Engineering and the Department of Mathematical Sciences. 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 Committee, completing a formal Plan of Study, satisfying the University's language and residency requirement, passing a Candidacy Examination, presenting an acceptable Dissertation Proposal, writing a dissertation, and publicly and successfully (oral) defending the dissertation before the Interdisciplinary Committee.

Students in the Engineering Applied Mathematics Program must pass a departmental Qualifying Examination conducted and administered by the participating faculty from the Department of Mathematical Sciences and the participating faculty from one of the four undergraduate departments in the College of Engineering.

The Interdisciplinary Committee shall consist of at least six members. It shall have an equal number of faculty with primary appointments in the College of Engineering and participating program faculty from the Department of Mathematical Sciences. The participating faculty from the Department of Mathematical Sciences 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 credit hours 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3450:312 Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>3450:427 Introduction to Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3450:438 Advanced Engineering Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>3450:439 Advanced Engineering Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>3450:421 Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>3450:422 Advanced Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

The student may substitute 3450:680, Introduction to Analysis, for Advanced Calculus I and Advanced Calculus II. These bridging courses may be taken concurrently with graduate courses in the Engineering Applied Mathematics Program and they must be completed in the first two academic years of study.

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

Students participating in the Engineering Applied Mathematics Program must have 42 credit hours of 800/900 level courses, of which none are special topics courses, and 6 credits of special topics or 400/500 level courses. At least 24 credit hours of coursework must be from the College of Engineering and at least 24 credits of coursework must be from the Department of Mathematical Sciences.

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

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

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

One-half (24 credits) of the coursework and one-half (24 credits) of the research credits may be taken at Youngstown State University. The parity of courses is optional. The faculty on the Interdisciplinary Committee for the student submits a proposed Plan of Study. At the Advancement to Candidacy, the Committee recommends official transfer of credits from Youngstown State University to The University of Akron.

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

The College of Engineering and NEOUCOM provide a coordinated program for those desiring both the M.D. and Doctor of Philosophy in Engineering degrees. This program integrates the knowledge and skills acquired by the student in each of the programs. Each individual coordinated degree program will be tailored to suit the background and research interests of the student. Additional information may be obtained from the Department of Biomedical Engineering at The University of Akron or NEOUCOM.

Admission Requirements
Applicants with a bachelor's or master's degree in a discipline other than engineering or in engineering will be required to meet the Admission Requirements for the Doctor of Philosophy Degree in Engineering. Applicants will be required to have completed the following courses and to have taken the MCAT prior to admission into the coordinated M.D. and Doctor of Philosophy in Engineering program:

- M.D. Principles of Chemistry I and II
- M.D. Organic Chemistry I and II
- M.D. Principles of Biology I and II
Degree Requirements

To obtain an M.D. degree from NEOUCOM and a Doctor of Philosophy degree in Engineering, the student must satisfy NEOUCOM's degree requirements and the College of Engineering's Doctor of Philosophy in Engineering Degree Requirements. This coordinated program does not change in any way the degree requirements for either program.

MASTER OF SCIENCE DEGREES

The degrees of Master of Science in Chemical Engineering, Master of Science in Civil Engineering, Master of Science in Electrical Engineering, Master of Science in Mechanical Engineering, and Master of Science in Engineering are offered.

Admission Requirements

Applicants for any of these master of science programs must hold a bachelor's degree from a program that is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology at the time of graduation, or provide evidence of an equivalent academic background to the Dean of the College of Engineering and the appropriate department head.

Applicants must submit an official undergraduate transcript, undergraduate grade point average, at least two letters of recommendation, and official results of the verbal, quantitative, and analytical portions of the GRE.

Applicants with a bachelor's degree must have an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent).

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

Applicants who do not satisfy the requirements for Full Admission may be granted Provisional Admission or Deferred Admission.

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

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<td>4203:371</td>
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<tr>
<td>4203:372</td>
<td>3</td>
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<tr>
<td>4203:373</td>
<td>3</td>
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<td>4203:375</td>
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<td>4203:376</td>
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<tr>
<td>4203:377</td>
<td>3</td>
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<tr>
<td>4203:378</td>
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Civil Engineering

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Electrical Engineering

<table>
<thead>
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<th>Course</th>
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</tr>
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<tbody>
<tr>
<td>4400:300</td>
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</tr>
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<td>4400:301</td>
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Mechanical Engineering

<table>
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<tr>
<td>4600:301</td>
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<td>4600:302</td>
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<tr>
<td>4600:304</td>
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</tbody>
</table>

Degree Requirements

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

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:800</td>
<td>3</td>
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<tr>
<td>4200:805</td>
<td>3</td>
</tr>
<tr>
<td>4202:810</td>
<td>3</td>
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<tr>
<td>4202:815</td>
<td>3</td>
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<td>4202:820</td>
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<td>4202:825</td>
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**Nonthesis Option**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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<tr>
<td>4200:805</td>
<td>3</td>
</tr>
<tr>
<td>4202:810</td>
<td>3</td>
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</tbody>
</table>

Master of Science in Civil Engineering

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

**Thesis Option**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering</td>
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</tr>
<tr>
<td>Approved Mathematics</td>
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<tr>
<td>Master's Thesis</td>
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**Nonthesis Option**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Civil Engineering</td>
<td>15</td>
</tr>
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<td>Approved Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Report</td>
<td>2</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Engineering</td>
<td>15</td>
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<tr>
<td>Approved Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>Master's Thesis</td>
<td>6</td>
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**Nonthesis Option**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Engineering</td>
<td>18</td>
</tr>
<tr>
<td>Approved Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

*The elective chemical engineering courses may not include more than three credits of 500 level courses.

**The required electrical engineering coursework of 18 credits may not include more than six credits of 500 level courses.
Electrical engineering students pursuing the Nonthesis option must pass a graduate level oral comprehensive examination which may be taken after 24 credits have been completed.

**Master of Science in Mechanical Engineering**

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**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Mechanical Engineering Courses*</td>
<td>15</td>
</tr>
<tr>
<td>Approved Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>6</td>
</tr>
<tr>
<td>Master’s Thesis</td>
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<td>Total</td>
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**Nonthesis Option**

<table>
<thead>
<tr>
<th>Course Type</th>
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</thead>
<tbody>
<tr>
<td>Mechanical Engineering Courses*</td>
<td>15</td>
</tr>
<tr>
<td>Approved Mathematics</td>
<td>3</td>
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<tr>
<td>Approved Electives</td>
<td>12</td>
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<td>Engineering Report</td>
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<tr>
<td>Total</td>
<td>32</td>
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</table>

**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. 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. The thesis must be successfully (no “fail” votes) defended before the Advisory Committee, or the engineering report must receive the approval of the Advisory Committee.

**Thesis Option**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Courses</td>
<td>12</td>
</tr>
<tr>
<td>Approved Mathematics or Science</td>
<td>3</td>
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<tr>
<td>Approved Electives</td>
<td>9</td>
</tr>
<tr>
<td>Master’s Thesis</td>
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<tr>
<td>Total</td>
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**Nonthesis Option**

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

**Biomedical Engineering Specialization**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4800:601</td>
<td>Biomedical Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>4800:611</td>
<td>Biometry</td>
<td>3</td>
</tr>
<tr>
<td>3100:685</td>
<td>Physiology for Engineers and Lab</td>
<td>5</td>
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<tr>
<td>Approved Electives</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Master’s Thesis</td>
<td>6</td>
<td></td>
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<tr>
<td>Total</td>
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</table>

**Polymer Engineering Specialization**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Polymer Engineering Core</td>
<td>12</td>
</tr>
<tr>
<td>Polymer Engineering Electives</td>
<td>11</td>
</tr>
<tr>
<td>Approved Engineering and Science Elective</td>
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<tr>
<td>Thesis</td>
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<tr>
<td>Total</td>
<td>32</td>
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</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Engineering Courses</td>
<td>21</td>
</tr>
<tr>
<td>Management Courses</td>
<td>15</td>
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<tr>
<td>Engineering Management Report</td>
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<td>Total</td>
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**Required Courses**

<table>
<thead>
<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>6200:601</td>
<td>Financial Accounting*</td>
<td>3</td>
</tr>
<tr>
<td>6400:602</td>
<td>Managerial Finance**</td>
<td>3</td>
</tr>
<tr>
<td>6500:600</td>
<td>Management and Organizational Behavior*</td>
<td>3</td>
</tr>
<tr>
<td>6603:600</td>
<td>Marketing Concepts*</td>
<td>3</td>
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</table>

**Elective**

Choose three credits of 600 level College Administration courses.

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

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

William E. Klingele, Ed.D., Dean
Larry G. Bradley, Ph.D., Associate Dean
Robert K. Eley, Ed.D., Director of Student Services

DOCTOR OF PHILOSOPHY DEGREE

Programs leading to the Doctor of Philosophy degree in elementary education, secondary education, counseling psychology, and guidance and counseling are offered through the College of 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:

• Completion of the Miller Analogies Test and/or the Graduate Record Examination.
  (Check departments for minimum score requirements.)
• A minimum of 90 or 120 graduate credits (including a 30-credit master's program where applicable) Counseling Psychology and Counseling require a minimum of 120 credit hours, including the doctoral dissertation. A student considered deficient in any area may be required to take additional courses.
• Completion of a foundation studies program designed to prepare the student before specialization.
• Completion of preliminary examinations on foundation studies and the major field of concentration.
• Successful completion of a test in a language judged not to be the student's native tongue:
  - a student in the Department of Counseling and Special Education may elect to develop appropriate research skills prescribed by the adviser in lieu of the foreign language requirements;
  - a student in the Department of Elementary Education may elect to develop appropriate research skills prescribed by the adviser, subject to review by the department head, depending upon the career goal of the student and upon the academic and/or scientific requirement of the dissertation in lieu of the foreign language requirement;
  - a student in the Department of Secondary Education may elect to develop appropriate research skills prescribed by the adviser, subject to review by the department head, in lieu of the foreign language requirement.
• Completion of a least eight credits in cognate area.
• Completion of final written and oral examinations in the student's major field of concentration.
• Completion of a dissertation comprising not more than 20 credits. The oral examining committee must be constituted of at least five full-time faculty members, one of whom must be from outside the college.
• Pass the general requirements for the Doctor Philosophy degree.

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 and one through the College of Arts and Sciences for students with a baccalaureate degree. Students in both tracks are expected to attain a level of broad scientific competence in the core areas of psychology: biological, social, cognitive-effective, 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. Practice 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 year-long, full-time internship in an applied service setting. Students receive exposure to both colleges through shared coursework and faculty and student 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 and guidance and counseling, psychology, school psychology, or a related field.

• Psychology Core (PSY 6100, 620, 630, 640) is required of all students.
• Students register for dual listed courses (PSY 6500/6500U) 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 on the student's dissertation committee.
• Internship — 2,000 hours post-master's with 1,700 hours over no more than two years. The internship site must be listed in the Association of Psychology Post-doctoral and Internship Centers (APPD) 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

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<tr>
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<th>Course Title</th>
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<td>5100:540</td>
<td>Techniques of Research</td>
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<tr>
<td>5600:643</td>
<td>Counseling: Theory and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>5900:645</td>
<td>Tests and Assessment in Counseling</td>
<td>4</td>
</tr>
<tr>
<td>5600:647</td>
<td>Career Development and Counseling Across the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>5600:651</td>
<td>Techniques of Counseling</td>
<td>3</td>
</tr>
<tr>
<td>3750:610</td>
<td>Psychology Core I</td>
<td>4</td>
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<tr>
<td>3750:620</td>
<td>Psychology Core II</td>
<td>4</td>
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<tr>
<td>3750:630</td>
<td>Psychology Core III</td>
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</tr>
<tr>
<td>3750:640</td>
<td>Psychology Core IV</td>
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<tr>
<td>6600:702</td>
<td>Advanced Counseling Practicum</td>
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<tr>
<td>5750:600:707</td>
<td>Supervision in Counseling Psychology I</td>
<td>3</td>
</tr>
<tr>
<td>5750:600:703</td>
<td>Supervision in Counseling Psychology II</td>
<td>3</td>
</tr>
<tr>
<td>5750:600:710</td>
<td>Theories of Counseling and Psychotherapy</td>
<td>4</td>
</tr>
<tr>
<td>5750:600:711</td>
<td>Vocational Behavior</td>
<td>4</td>
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<tr>
<td>5750:600:712</td>
<td>Principles and Practice of Intelligence Testing</td>
<td>4</td>
</tr>
<tr>
<td>5750:600:713</td>
<td>Professional, Ethical and Legal Issues in Counseling Psychology</td>
<td>4</td>
</tr>
<tr>
<td>5750:600:714</td>
<td>Objective Personality Evaluation</td>
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</tr>
<tr>
<td>5750:600:715</td>
<td>Research Design in Counseling I</td>
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</tr>
<tr>
<td>5750:600:716</td>
<td>Research Design in Counseling II</td>
<td>3</td>
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<tr>
<td>5750:600:717</td>
<td>Issues of Diversity in Counseling Psychology</td>
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<tr>
<td>3750:600:718</td>
<td>History and Systems in Psychology</td>
<td>2</td>
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<tr>
<td>3750:600:786</td>
<td>Counseling Psychology Practicum</td>
<td>8</td>
</tr>
<tr>
<td>5100:241</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:743</td>
<td>Advanced Educational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>5100---</td>
<td>College of Education Foundations</td>
<td>6</td>
</tr>
<tr>
<td>3750:6600---</td>
<td>Electives</td>
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</tr>
<tr>
<td>5600:889</td>
<td>Doctoral Dissertation (minimum)</td>
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<tr>
<td>NC</td>
<td>Internship</td>
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<tr>
<td>Minimum Total Credit Hours Required</td>
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</table>

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) Counseling 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. Practice 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.
DOCTOR OF PHILOSOPHY IN SECONDARY EDUCATION

The Department of Educational Administration offers a program leading to the Doctor of Education degree. One option is designed for persons in public or private K-12 educational organizations.

An option in Higher Education Administration is also offered by the department. This is designed for persons who wish to pursue a career in college, university or other post-secondary administrative positions. The program addresses such major institutional functions as academic administration, student services, finance, planning, development, and public relations. A student will have the opportunity to direct studies toward a particular career goal. A student may be admitted after either the bachelor's or the master's degree.

Note: Applications for admission to the Higher Education Administration option of the Doctor of Education degree are not being accepted at this time.

• Minimum Requirements of the K-12 Program
  Foundations (including dissertation) 31
  School Administration (including doctoral residency seminar) 26
  Curriculum and Supervision 12
  Cognate 9

• Minimum Requirements of the Higher Education Administration Program
  Foundations (including dissertation) 31
  Educational Administration 16
  Curriculum, Instruction and Student Services 6
  Doctoral Residency Seminar 3
  Cognate 12
  General Electives 22

DOCTOR OF PHILOSOPHY IN ELEMENTARY EDUCATION

The program leading to a Doctor of Philosophy Degree in Elementary Education is designed to enhance the professional growth of the practicing teacher academically and professionally. The program is predicated on the belief that an effective educator benefits from a well-planned program containing depth of study in three basic areas:

• A specific teaching area/subject discipline.
• Professional education.
• Other contributing disciplines.

With this philosophy in mind, the program provides study in a selected discipline, professional education, and graduate level study. Course offerings are designed to present the required courses as well as those areas that will be explored in overcoming individual deficiencies and expanding the students' academic background. Basic minimum course requirements are in the following areas: (1) core, (2) teaching field, (3) professional education, and (4) cognate area. Three guidelines concerning these steps toward the degree are of particular significance:

• Preliminary examination must be taken at first scheduled opportunity after student's full admission.
• Written comprehensive should be taken after the completion of 60 hours of coursework and prior to the completion of 75 hours.
• Dissertation must be approved by the student's committee and reviewed by the dean of the College of Education.

Foundation Studies Education - Doctoral Program Requirements

Behavioral Studies

5100:620 Behavioral Bases of Education 3
5100:624 Seminar in Educational Psychology or 3
5100:721 Learning Processes 3
5100:723 Teaching Behavior and Instruction 3

Humanistic Studies

5100:701 History of Education in American Society or 3
5100:703 Seminar in History and Philosophy of Higher Education 3

Social and Philosophical Studies

5100:690 Philosophies of Education or 3
5100:902 Comparative and International Education 3
5100:904 Seminar in Cultural Foundations of Education 3
5100:705 Seminar in Social/Philosophical Foundations 3

Research

5100:640 Techniques of Research 3
5100:741 Statistics in Education 3
5100:899 Doctoral Dissertation 16-20

*Counseling psychology students contact adviser for requirements.
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 advisers during each fall and spring semester. Individual departments may exceed this minimum requirement. Doctoral students should consult their advisers about additional requirements.

Masters’s 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 prior to earning the degree or who has earned a master’s degree in a different field. The student must meet the master’s degree in guidance and administration. 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 admission to the advanced degree. The student must receive a pass grade on the relevant Master’s Comprehensive Exam.

No more than six credits of workshops or institutes can be used to satisfy degree requirements.

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

- Philosophies of Education
- Comparative and International Education
- Seminar in Cultural Foundations of Education
- Behavioral Bases of Education
- Seminar in Educational Psychology
- Techniques of Research

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

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 graduate 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 Analogies 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 fall semesters and October 1 for spring semester).

The Council for Accreditation of Counselors 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 an expanded knowledge of how guidance and counseling services benefit students and others in public school settings. Note that numerous areas of concentration are available to students. This is not a certification program. Any changes in the agreed-upon program must be approved by the student’s adviser.

- Foundations Courses (Select one course from each area)
  - Behavioral Foundations
  - Humanistic Foundations
    - Philosophies of Education
    - Topical Seminar in Cultural Foundations of Education
    - Multicultural Counseling
  - Research

Required Departmental Courses
- Elementary School Guidance
- Secondary School Guidance
- Career Development and Counseling Across the Lifespan
- Tests and Appraisal in Counseling
- Counseling Skills for Teachers
- Seminar in School Counseling
- Field Experience IMUST be taken before or concurrently with 663
- Developmental Characteristics of Exceptional Individuals
- Education and Management Strategies for Parents of Exceptional Individuals

Required Departmental Courses
- Elementary School Guidance
- Early Childhood Education
- School and Community Relations
- Curriculum and Instruction
- Physical Fitness and Well-Being
- Special Education
- Computers in Education
- Family Ecology
- Communicative Disorders
- Outdoor Education

Total Area of Concentration Hours Required: 12
Minimum Semester Hours Required for Graduation: 30

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 adviser.

- Foundations (Select one course from each area)
  - Behavioral Foundations
  - Humanistic Foundations
    - Philosophies of Education
    - Topical Seminar in Cultural Foundations of Education
    - Multicultural Counseling
  - Research

Required Counseling Department Courses
- Professional Orientation
- Seminar in Counseling
- Community Counseling
- Subtotal
- Counseling Theory
- Counseling Theory & Philosophy* or
- Counseling Across the Lifespan
- Subtotal
- Appraisal
- Tests and Appraisal in Counseling
  - Prerequisites: 500:640
  - Subtotal
- Counseling Process (all required)
- Techniques of Counseling*
- Group Counseling
  - Prerequisites 500:651 and 500:653
- Practicum in Counseling** or
  - Prerequisites 500:655
  - Subtotal
Counseling
Counseling
Counseling
Internship
Internship

• Specialized Studies (required)
5600:620 Topical Seminar: Substance Abuse and Sexuality 2

• Electives (Select a minimum of 6 hours only with help of advisor)
3750:500 Personality 4
3750:520 Abnormal Psychology 4
3750:530 Psychological Disorders of Children 4
3750:550 Learning and Cognition 4
3750:610 Psychology Core I: Organizational, Social, Applied 4
3750:620 Psychology Core II: Developmental, Perceptual, Cognitive 4
3750:700 Survey of Projective Techniques 4
3750:727 Psychology of Adolescence and Aging 4
3850:611 Social Interaction 3
3850:543 Industrial Sociology 3
4600:620 Topical Seminar 2-3
5600:649 Counseling and Personal Services in Higher Education 3
5600:654 Family and Marriage Therapy: Theory and Techniques 3
5600:655 Marriage and Family Therapy: Theory and Techniques 3
5600:667 Marital Therapy (Prerequisite 5600:665) 3
5600:669 Systems Theory in Family Therapy (Prerequisite 5600:665) 3
5600:695 Field Experience, Master's 1-10
5600:697 Independent Study 1-3
5600:720 Topical Seminar* 2-3
5610:540 Developmental Characteristics of Exceptional Individuals 4
6400:655 Government and Business 3
6500:654 Industrial Relations 3
7400:607 Family Dynamics 3
Subtotal 6-7
Minimum Semester Hours Required for Program 50

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

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 adviser.

• Foundations (select one course from each area)
  ‒ Behavioral Foundations
5600:648 Individual and Family Development Across the Life Span 3
  ‒ Humanistic Foundations
5600:644 Multicultural Counseling 3
  ‒ Research
5100:640 Techniques of Research 3
Minimum Foundation Hours Required 9

• Required Counseling Department Courses
  ‒ Professional Orientation (select one course from each area)
5600:690 Seminar in Counseling 1
5600:691 Elementary School Guidance 1
5600:693 Secondary School Guidance 1
5600:695 Organization & Administration of Guidance Services 1
Subtotal 7
  ‒ Counseling Theory
5600:643 Counseling Theory & Philosophy* 3
5600:647 Career Development and Counseling Across the Lifespan 3
Subtotal 6
  ‒ Appraisal
5600:645 Tests and Appraisal in Counseling 4
Subtotal 4
  ‒ Counseling Projects (all required)
5600:651 Techniques of Counseling* 3
5600:657 Practicum in Counseling** 5
Subtotal 8
Minimum Department Hours Required 33-34

— Internship
5600:685 Internship in Counseling (Minimum 6 hours) 6-7
Subtotal 6-7
Minimum Department Hours Required 35-36

— Specialized Studies (both required)
5610:540 Developmental Characteristics of Exceptional Individuals 3
5600:620 Topical Seminar: Substance Abuse and Sexuality 2
Subtotal 5
Total Semester Hours Required for Graduation 49-50

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 adviser.

• Foundations (select one course from each area)
  ‒ Behavioral Foundations
5600:644 Individual and Family Development 3
  ‒ Humanistic Foundations
5600:646 Multicultural Counseling 3
  ‒ Research
5100:640 Techniques of Research 3
Minimum Foundation Hours Required: 9

• Required Counseling Department Courses (all required)
  ‒ Professional Orientation
5600:690 Seminar in Counseling*** 1
5600:691 Marriage and Family Therapy: Theory and Techniques 3
Subtotal 4
  ‒ Counseling Theory
5600:667 Marital Theory (prerequisite 5600:665) 3
5600:669 Systems Theory in Family Therapy (prerequisite 5600:665) 3
5600:643 Counseling Theory and Philosophy 3
5600:647 Career Development and Counseling Across the Lifespan 3
Subtotal 12
  ‒ Appraisal
5600:645 Tests and Appraisal in Counseling 4
Subtotal 4
  ‒ Counseling Process
5600:651 Techniques of Counseling* 3
5600:657 Practicum in Counseling (prerequisite 5600:653) 5
Subtotal 8
  ‒ Internship
5600:685 Internship in Counseling 2 terms, prerequisite 5600:675** 6-7
Subtotal 6-7
Minimum Department Hours Required 38-39

• Specialized Studies
  ‒ Family Studies
(Required)
7400:651 Family and Consumer Law (choose two of the following) 3
7400:602 Family Life Span Perspective 2
7400:606 Developmental Parent-Child Interactions 3
7400:675 Conceptual Frameworks in Family Ecology 3
  ‒ Sexuality (choose one)
5600:620 Substance Abuse and Sexuality 2
7400:542 Human Sexuality 3
  ‒ Human Development and Individual Differences (choose one)
3750:500 Personality 4
3750:520 Abnormal Psychology 4
3750:530 Psychological Disorders of Children 4
3750:550 Learning and Cognition 4

Graduate Studies 43
The student completing the above listed program will be recommended for Ohio certification if his/her credit pattern numbers 60 semester hour credit hours, counting no more than 15 semester hours at the 500 level, and including the 10 hour credit for the internship and the associated intern seminars.

*Program admission is competitive based upon state internship admissions. Selection procedures and criteria are subject to changes at the discretion of the Department of Counseling and Special Education. For recommendations for certification as a school psychologist in Ohio, the master's student must additionally complete the program prescribed. The requirements may be waived if completed as undergraduates.

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:680:040 Techniques of Research</td>
<td>3</td>
</tr>
<tr>
<td>5620:694 Research Project</td>
<td>2</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>5620:688 Masters Problem</td>
<td>2.4</td>
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<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>5620:699 Master's Thesis</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Departmental requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:643 Counseling: Theory and Philosophy</td>
<td>3</td>
</tr>
</tbody>
</table>

Program requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3750:630 Psychological Disorders of Childhood</td>
<td>4</td>
</tr>
<tr>
<td>3750:620 Survey of Projective Techniques</td>
<td>4</td>
</tr>
<tr>
<td>3750:712 Principles and Practice of Individual Intelligence Testing</td>
<td>4</td>
</tr>
<tr>
<td>5100:684 Seminar in Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:624 Seminar in Human Learning</td>
<td>2</td>
</tr>
<tr>
<td>5300:741 Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5600:630 Seminar: Role and Function of School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5620:602 Behavioral Assessment</td>
<td>3</td>
</tr>
<tr>
<td>5620:010 Educational Diagnoses for the School Psychologist</td>
<td>4</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>5100:654 Seminar in Cultural Foundations</td>
<td>3</td>
</tr>
<tr>
<td>5300:624 Seminar in Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5100:660 Techniques of Research</td>
<td>3</td>
</tr>
<tr>
<td>5100:761 Statistics in Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Professional requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3750:700 Survey of Projective Techniques</td>
<td>4</td>
</tr>
<tr>
<td>3750:750 Psychological Disorders of Childhood</td>
<td>4</td>
</tr>
<tr>
<td>3750:712 Principles and Practice of Individual Intelligence Testing</td>
<td>4</td>
</tr>
<tr>
<td>6900:643 Counseling: Theory and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>5620:690 Seminar: Role and Function of School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5620:692 Behavioral Assessment</td>
<td>3</td>
</tr>
<tr>
<td>5620:610 Educational Diagnoses for the School Psychologist</td>
<td>4</td>
</tr>
<tr>
<td>5620:694 Research Project in Special Area</td>
<td>2.4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>5620:698 Master's Problem</td>
<td>2.4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>5620:699 Master's Thesis</td>
<td>4.6</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3750:600 Personality</td>
<td>4</td>
</tr>
<tr>
<td>5600:630 Development Characteristics of Learning Disabled Individuals</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>5250:693 Reading Diagnosis: School Psychology and Support Personnel</td>
<td>3</td>
</tr>
<tr>
<td>5600:640 Development Characteristics of Exceptional Individuals</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>3750:620 Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5620:681 Cognitive Reaction Models: Principles of Educational Planning</td>
<td>3</td>
</tr>
<tr>
<td>5620:682 Consultation Strategies for School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5620:611 Principles in School Psychology</td>
<td>4</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5620:600 Internship: School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5620:651 Internship: School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5620:680 Field Seminar I: Professional Issues in School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5620:691 Field Seminar II: Law, Incidence/Related Inquiries</td>
<td>3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5200:630 Elementary School Curriculum and Instruction</td>
<td>2</td>
</tr>
<tr>
<td>5620:695 Elementary School Administration</td>
<td>2</td>
</tr>
<tr>
<td>5700:690:01 Principles of Educational/Admission</td>
<td>3</td>
</tr>
</tbody>
</table>

**May be waived if completed as undergraduate.**
Educational Foundations and Leadership

Educational Administration

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

General Administration (Standard Program)

• Foundation Studies – nine credits.

• Required courses:
  5700:601 Principles of Educational Administration 3
  5700:603 Administration of Educational Personnel 2
  5700:606 Evaluation in Educational Organizations 3
  5700:607 School Law 2
  5700:608 School Finance and Economics 3
  5700:615 Computer Applications in Educational Administration 2
  5700:694 Field Experience I: Elementary Administration 2
  5700:696 Field Experience I: Secondary Administration 2
  or
  5700:695 Field Experience I: The Superintendency 2
  5700:706 Collective Bargaining and Employee Relations 2
  5700:707 The Superintendency 3

Higher Education Administration (Specialized Option)

• Foundation studies – nine credits.

• Required courses:
  5700:691 Counseling and Personnel Service in Higher Education 3
  5700:693 Principles of Educational Administration 3
  5700:704 Advanced Principles of Educational Administration 2
  5900:703 Administrative Leadership in Higher Education 1
  5900:720 Finance and Higher Education 3
  5700:721 Law and Higher Education 3
  5700:730 Curriculum and Program Planning in Higher Education 3
  5800:600 Advanced Administrative Colloquium in Higher Education 3
  5800:601 Internship in Higher Education 2
  5900:802 Internship in Higher Education Seminar 1

School Treasurer (Specialized Option)

• Foundation studies – nine credits.

• Required courses:
  5700:601 School Business Administration 2
  5700:607 School Law 2
  5700:608 School Finance and Economics 3
  5700:609 Independent Study in School Financial Management 3
  5700:706 Collective Bargaining and Employee Relations 2
  5700:707 The Superintendency 3
  5700:707:003 Internship 1
  6200:601 Financial Accounting 3
  6200:645 State and Local Taxation 2

Elementary School Principal

Objectives

• Provide the student with an understanding of the elementary school and its history, its present purpose, and its potential.
• Assist the prospective administrator in perceiving the role of the elementary principal and determining whether it is appealing as a career choice.
• Provide the student with the opportunity to experiment with alternate leadership styles in order to determine how the student might best lead.
• Coordinate classroom activities with field experiences in order to exercise the student's administrative skills and test the student's ability to relate understandings to performance.

Program

• Foundation Studies – nine credits.

• Administration courses:
  5200:620 Secondary School Curriculum and Instruction 2
  5200:622 Supervision of Instruction in the Elementary School 2
  5700:601 Principles of Educational Administration 3
  5700:607 School Law 2
  5700:610 Principles of Educational Supervision 3
  5700:613 Administration of Pupil Services 2
  5700:615 Computer Applications in Educational Administration 2
  5700:631 Elementary School Administration 3
  5700:684 Field Experience I: Elementary Administration 2

Post-Master's Degree Requirements for Ohio Certification as an Elementary School Principal

5700:603 Administration of Educational Personnel 2
5700:604 School Community Relations 3
5700:605 Evaluation in Educational Organizations 3
5700:608 School Finance and Economics 3
5700:684 Field Experience I: Elementary Administration 3
5700:706 Collective Bargaining and Employee Relations in Education 2

• Total for Certification: 46 credits.

Secondary School Principal

Objectives

• Enable the student to gain a knowledge of the overall curriculum of the secondary school.
• Provide the student with an understanding of successful methods of improving instruction in the secondary school.
• Provide the student with practice in implementing a program to improve instruction.
• Develop within each student the ability to communicate successfully with individuals and groups.
• Work with the individual and the group successfully to improve the educational program.
• Implement technical aspects of secondary education.

Program

• Foundation Studies courses – nine credits.

• Administration courses:
  5300:619 Secondary School Curriculum and Instruction 2
  5300:621 Supervision of Instruction in the Secondary School 2
  5700:601 Principles of Educational Administration 3
  5700:607 School Law 2
  5700:610 Principles of Educational Supervision 3
  5700:613 Administration of Pupil Services 2
  5700:615 Computer Applications in Educational Administration 2
  5700:620 Secondary School Administration 3
  5700:686 Field Experience I: Secondary Administration 2

Post-Master's Degree Requirements for Ohio Certification as a Secondary School Principal

5700:603 Administration of Educational Personnel 2
5700:604 School Community Relations 3
5700:606 Evaluation in Educational Organizations 3
5700:608 School Finance and Economics 3
5700:686 Field Experience I: Secondary School Administration 3
5700:706 Collective Bargaining and Employee Relations in Education 2

• Total for Certification: 46 credits.

Administration Specialists

The Department of Educational Administration and Leadership offers programs leading to each of the seven Educational Administrative Specialist certificates granted by the Ohio Department of Education.

Each of these specialist certification programs consists of a master's degree program and a post-master's block. In the individual program listings below, master's degree requirements are marked with a single asterisk (*) and post-master's requirements are indicated by double asterisks (**).

Administrative Specialist: Business Management

• Foundation Studies – nine credits.

• Required courses:
  5700:601 Principles of Educational Administration* 3
  5700:602 Secondary Business Administration** 3
  5700:603 Administration of Educational Personnel* 2
  5700:606 Evaluation in Educational Organizations 3
  5700:607 School Law* 2
  5700:608 School Finance and Economics* 3
  5700:612 Administration of Educational Facilities 2
  5700:615 Computer Applications in Educational Administration 2
  5700:684 Field Experience I: Elementary Administration* 2
  or
  5700:686 Field Experience I: Secondary Administration* 2
  5700:686 Field Experience I: Elementary Administration* 2
  or
  5700:686 Field Experience I: Secondary Administration* 2

5700:686 Field Experience I: Supervisory Certificate 3
5700:706 Collective Bargaining and Employee Relations* 2
5700:707 The Superintendency* 3

Financial Management

• Foundation Studies – nine credits.

• Required courses:
  5700:601 Principles of Educational Administration* 3
  5700:602 Secondary Business Administration** 3
  5700:603 Administration of Educational Personnel* 2
  5700:606 Evaluation in Educational Organizations 3
  5700:607 School Law* 2
  5700:608 School Finance and Economics* 3
  5700:612 Administration of Educational Facilities 2
  5700:615 Computer Applications in Educational Administration 2
  5700:684 Field Experience I: Elementary Administration* 2
  or
  5700:686 Field Experience I: Secondary Administration* 2
  or
  5700:686 Field Experience I: Elementary Administration* 2
  or
  5700:686 Field Experience I: Secondary Administration* 2

5700:686 Field Experience I: Supervisory Certificate 3
5700:706 Collective Bargaining and Employee Relations* 2
5700:707 The Superintendency* 3
Administrative Specialist: Educational Research

- Foundation Studies – nine credits.*

- Required courses:
  - 5100:542 Theories of Measurement and Evaluation**
  - 5100:541 Group Testing**
  - 5100:548 Organization and Administration of Guidance Services**
  - 5700:501 Principles of Educational Administration*
  - 5700:500 Administration of Educational Personnel*
  - 5700:506 Evaluation in Educational Organizations* 3

Administrative Specialist: Educational Staff Personnel Administration

- Foundation Studies – nine credits.*

- Required courses:
  - 5700:501 Principles of Education Administration*
  - 5700:508 Administration of Educational Personnel*
  - 5700:506 Evaluation in Educational Organizations* 3
  - 5700:507 School Law* 2
  - 5700:509 School Finance and Economics* 3

Administrative Specialist: Instructional Services

- Foundation Studies – nine credits.*

- Required courses:
  - 5200:630 Elementary School Curriculum and Instruction**
  - 5700:603 Administration of Educational Personnel*
  - 5700:606 Evaluation in Educational Organizations* 3
  - 5700:604 School Law* 2

Administrative Specialist: Pupil Personnel Administration

- Foundation Studies – nine credits.*

- Required courses:
  - 5200:650 Elementary Counseling**
  - 5700:650 Elementary Counseling**
  - 5500:500 School Law* 2
  - 5700:661 Computer Applications in Educational Administration* 2

Administrative Specialist: School and Community Relations

- Foundation Studies – nine credits.*

- Required courses:
  - 5700:601 Principles of Educational Administration*
  - 5700:604 School-Community Relations** 3
  - 5700:606 Evaluation in Educational Organizations* 3
  - 5700:610 Field Experience: The Superintendent**

Assistant Superintendent/Principal Programs

There is significant overlap in the requirements of these two programs. A person entering the assistant superintendent program must already have an administrative or supervisor certificate. Both teaching and administrative experience is required for superintendent certification.

Assistant Superintendent

- Foundation Studies – nine credits.

- Required courses – master’s:
  - 5700:601 Principles of Educational Administration
  - 5700:606 Evaluation in Educational Organizations
  - 5700:607 School Law
  - 5700:608 School Finance and Economics
  - 5700:610 Principles of Educational Supervision
  - 5700:613 Administration of Pupil Services
  - 5700:615 Computer Applications in Educational Administration
  - 5700:617 The Superintendent
• Required courses – post-master’s:
  5700:602 School Business Administration 2
  5700:603 Administration of Educational Personnel 2
  5700:604 School Community Relations 3
  5700:612 Administration of Educational Facilities 2
  5700:706 Collective Bargaining and Employee Relations 2
  5700:865 Two field experiences are required 4-6

Superintendent

• All of the assistant superintendent requirements plus:
  5700:704 Advanced Principles of Educational Administration 2

• Electives, as needed, to bring the program to a total of 60 graduate semester hours.

* Required only of an elementary student.
** Required only of a secondary student.
† Required only of a special education student.

Supervisor

• Foundation Studies – nine credits.

• Major field:
  5300:630 Elementary School Curriculum and Instruction*
  5200:732 Supervision of Instruction in the Elementary School*
  5200:619 Secondary School Curriculum and Instruction**
  5200:721 Supervision of Instruction in the Secondary School**
  5610:651 Seminar: Special Education Curriculum Planning*
  5610:602 Supervision of Instruction: Special Education*
  5700:609 Principles of Curriculum Development
  5700:610 Principles of Educational Supervision
  5700:685 Field Experience for Supervisors
  5700:740 Theories in Educational Supervision

• Electives – With the approval of the adviser, the student will select at least one of the following courses and others to fulfill the program minimum of 30 credits:
  5100:701 History of Education in American Society 3
  5100:741 Statistics in Education 3
  5700:988 Master’s Problem 2

* Required only of an elementary student.
** Required only of a secondary student.
† Required only of a special education student.

Educational Foundations

This 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.

A student’s program of study will be determined jointly by the student and an academic advisor. Emphasis can range from advanced instructional technology to traditional studies in educational psychology or the social/philosophical aspects of education. A thesis or problem paper is required.

• Foundation Studies – College Core Foundation Studies.

• Departmental requirements:
  The student will earn a minimum of 15 credits, excluding thesis or problem paper, within the Department of Educational Foundations and Leadership. These credits will be distributed between the social foundations, psychological studies, and evaluation and research with a minimum of nine credits from one of these areas and six credits from the other (college requirements may be included).

† After accumulating 21 credits, the student will take a master’s comprehensive examination.

Elementary Education

Bilingual Multicultural Education

The major purpose of this program is to provide education majors with the knowledge, skills, and attitudes necessary to teach bilingual students. Students may become certified in bilingual multicultural education at either the undergraduate or graduate level. The certification requires that a person also become certified in one of the following areas: elementary education, secondary education, special education, or physical education.

At the end of the program, the student must demonstrate proficiency in English and a language other than English in order to meet the certification requirements of the Ohio State Department of Education.

Graduate students wishing a master’s degree in addition to bilingual multicultural certification may earn a master’s degree in multicultural education by taking additional coursework.

The program incorporates coursework in the history and philosophy of bilingual multicultural education, linguistics, English as a second language instruction, culture and theories, and practices for teaching bilingual students reading, language arts, mathematics, social studies and science.

• Program requirements:
  5300:589 Seminar in English: Introduction to Bilingual Linguistics 3
  5630:582 Characteristics of Culturally Diverse Populations 3
  5630:584 Principles of Bilingual Multicultural Education 3
  5630:587 Techniques for Teaching English as a Second Language in the Bilingual Classroom 4

• Electives: Total to fulfill program minimum of 30 credits and to be taken from 5200, 5250, or 5630 coursework.

The purpose of this program is to provide knowledge, skills and attitudes which will enable the educator to design and implement programs that promote the concept of cultural pluralism. Special attention is given to educational programming for the culturally different learner.

• Required Courses:
  5100:640 Techniques of Research 3
  5300:766 Seminar in Secondary Education* 4
  5600:649 Group Testing in Counseling 3
  5630:581 Multicultural Education in the United States 3
  5630:582 Characteristics of Culturally Diverse Populations 3
  5630:586 Seminar: Education of the Culturally Different 2

• Electives in related special fields – 17 credits.

* Two seminars are required.

Elementary Education

Students seeking a master’s degree in elementary education can follow several options. A 30-credit program is available for students who contemplate pursuing the Ph.D. in the future. This 30-credit program includes the completion of a master’s thesis under the direction of a faculty adviser. The thesis provides the student with research/scholarly writing experiences that form the foundation for further study at the doctoral level.

30 Credit Option

• Foundation studies – nine credits.

• Elementary Education:
  5200:538 Materials and Laboratory Techniques in Elementary School Mathematics 3
  5200:630 Elementary School Curriculum and Instruction 2
  5200:631 Trends in Elementary Education 2
  5200:699 Trends in Reading Instruction 2
  5200:699 Master’s Thesis 4
  5200:780 Seminar in Elementary Education (two seminars required) 4

• Electives: Total to fulfill program minimum of 30 credits and to be taken from 5200, 5250, or 5630 coursework.

For persons wishing to gain further knowledge of the elementary school curriculum and remain in the elementary classroom, the 36-credit program is available. This program requires a field experience that provides an opportunity for the teacher to experiment with newly acquired skills and knowledge under the direction of a faculty adviser.

36 Credit Option

• Foundation studies – nine credits.

• Elementary Education:
  5200:538 Materials and Laboratory Techniques in Elementary School Mathematics 3
  5100:630 Elementary School Curriculum and Instruction 2
  5200:631 Trends in Elementary Education 2
  5200:699 Trends in Reading Instruction 2
  5200:695, 696 Field Experience, Master’s 4
  5200:780 Seminar in Elementary Education 2

• Electives: Total to fulfill program minimum of 36 credits. Electives may be taken in one concentrated area or from several areas, but must contain courses from 5200, 5250, or 5630 as listed in the bulletin.

Middle School Education

For elementary and secondary certified teachers, these courses comprise a major area of study within the master’s programs in the elementary and secondary education departments. They deal with the middle-grade learner, curriculum and programs. The student should seek advice from within the appropriate department for other requirements peculiar to the elementary and secondary programs.
The master's degree is designed for early childhood, elementary, junior high, middle, secondary content, secondary developmental, and special education teachers working in a diagnostic-prescriptive, clinical, or adult program. The programs of study provide opportunities to study those aspects of reading that relate to the professional goals and interests of the student.

The 30-credit option is designed for students who contemplate pursuing a doctoral program in the future; this option requires a thesis. The 36-credit option is designed for students who wish to enhance their knowledge of reading instruction and remain in a classroom setting to use their newly acquired knowledge. This program requires a field experience under the direction of a member of the elementary education faculty.

Neither of these degree options lead to certification in reading in Ohio. Persons wishing this certification must complete additional courses as specified below.

**30 Credit Option**

- **Foundation studies – nine credits.**
  - Reading:
    - 5200:690 Master's Thesis 4-6
    - 5200:780 Seminar in Elementary Education: Children's Literature 2
    - 5205:840 Developmental Reading in the Content Areas - Elementary 3
    - 5205:850 Trends in Reading Instruction 2
    - 5205:861 Diagnosis and Correction of Reading Problems 5
    - 5205:862 Clinical Practices in Reading 5

**36 Credit Option**

- **Foundation studies – nine credits.**
- **Reading:**
  - 5200:695, 900 Field Experience: Master's 2
  - 5200:780 Seminar in Elementary Education: Children's Literature 2
  - 5205:840 Developmental Reading in the Content Areas - Elementary 3
  - 5205:850 Trends in Reading Instruction 2
  - 5205:861 Diagnosis and Correction of Reading Problems 5
  - 5205:862 Clinical Practices in Reading 5
  - 5205:863 Supervision and Curriculum Development in Reading Instruction 2

### Physical Education and Health Education

#### Athletic Training for Sports Medicine

The Athletic Training program, requiring 35 credits, is designed primarily for students having an undergraduate degree in the same area. Students may become involved in supervising university undergraduates, working with athletic teams, and other clinical experience both on- and off-campus. Students interested in this program should not assume they are automatically admitted into it. Admission is based on an interview process conducted by the athletic training staff. If interested in this program, you should contact the head athletic trainer (MH-77 ext. 6058) as soon as possible so that you can be fully apprised of your individual situation.

- **Foundation Courses:**
  - 5100:640 Techniques of Research 3
- **Required Courses:**
  - 3100:561 Human Physiology 4
  - 3100:562 Human Physiology 4
  - 3100:565 Advanced Cardiovascular Physiology 3
  - 5550:605 Physiology of Muscular Activity and Exercise 3
  - 5550:606 Statistics: Qualitative and Quantitative Methods 3
  - 5550:616 Advanced Athletic Injury Management 4
  - 5550:642 Therapeutic Modalities and Equipment in Sports Medicine 3
  - 5550:690 Special Topics: Pharmacology for Sports 3

At least two (2) credit hours from the following:
- 5550:695 Field Experience: Master's 2-6
- 5550:696 Master's Problem 2-4
- 5550:699 Master's Thesis 4-6

- **Electives to be taken with permission of the adviser (at least one course from among the following are required):**
  - 5100:520 Introduction to Instructional Computing 3
  - 5550:536 Foundations and Elements of Adapted Physical Education 3
  - 5550:555 Motor Development of Special Populations 3
  - 5550:616 Administration of Physical Education, Intramurals, and Athletics 3
  - 5550:690 Motivational Aspects of Physical Activity 3
  - 5550:680 Special Topics: Laboratory Instrumentation 3
  - 5601:507 Sports Nutrition 3

Students who enter the NATA program with undergraduate training in the required courses listed above (Section II) will take course work from the elective listed (after consultation with their adviser) in a number sufficient to meet the 35 hour program requirement.

#### Outdoor Education

The outdoor education program, requiring 32 credits, is designed for those students having an undergraduate background in elementary or secondary education, biology, environmental studies, health, physical education or recreation. Students may become involved with existing outdoor education programs in the public schools, metropolitan, state and national park programs, or public and private agencies which conduct outdoor/environmental education programs.

- **Foundation Studies—nine credits.**
- **Required Foundation Courses:**
  - 5100:640 Techniques of Research 3

Remaining six (6) credits to be chosen, with approval of adviser from 5500:500 or 5500:600 course offerings or 5550:605 Statistics: Qualitative and Quantitative Methods.

- **Required courses:**
  - 5550:650 Application of Outdoor Education to the School Curriculum 4
  - 5500:552 Resources and Resource Management for the Teaching of Outdoor Education 4
  - 5500:556 Outdoor Pursuits
  - 5500:605 Outdoor Education: Special Topics 2-4
  - 5500:695 Field Experience 2-4

At least 2 credits if only one action selected

- 5550:696 Master's Problem 2-4
- 5550:699 Master's Thesis 4

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

#### Physical Education

The graduate program in physical education, requiring 30 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 (9 cr.) and the program studies area of physical education (21 cr.). The emphasis in this curriculum is to provide answers to the questions "what can I learn about teaching and what decisions do I face as a professional educator?" 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 adviser who should be consulted with on a regular basis. In fact, adviser approval is required on certain course work.

- **Required Foundation Courses:**
  - 5100:600 Philosophies of Education 3
  - 5100:604 Topical Seminar in the Cultural Foundations 3
  - 5100:620 Behavioral Bases of Education 3
  - 5100:624 Seminar in Human Development and Education 3
  - 5100:640 Techniques of Research 3

- **Required Department Courses:**
  - 5550:536 Foundations and Elements of Adapted Physical Education 3
  - 5550:555 Motor Development of Special Populations 3
  - 5550:603 Administration of Physical Education, Intramurals, and Athletics 3
  - 5550:605 Physiotherapy of Muscular Activity and Exercise 3
  - 5550:606 Statistics: Qualitative and Quantitative Methods 3
  - 5550:608 Supervision of Physical Education 2
  - 5550:616 Motivational Aspects of Physical Activity 3
  - 5550:695 Field Experience: Master's 2
  - 5550:699 Master's Problem 2

With the approval of an adviser, the student may select additional courses and/or workshops related to the graduate program.
Option: Adapted Physical Education

The Adapted Physical Education option is designed for advanced study about teaching physical education to handicapped individuals. Emphasis is given to a developmental model using assessment and programming of motor skills which lead to increased educational, social, vocational, and life-time fitness development. The program combines research and clinical/field experiences to provide schools and agencies with expertise needed to improve their programs. A minimum of 34 graduate credits is required. Completion of this program will also afford the student an Ohio validation for teaching this content area.

- Required Foundation Courses:
  5100:600 Philosophies of Education
  5100:604 Topical Seminar in the Cultural Foundations of Education
  5100:620 Behavioral Bases of Education
  5100:624 Seminar in Human Development and Education
  5100:840 Techniques of Research

- Required Department Courses:
  5550:536 Foundations and Elements of Adapted Physical Education
  5550:551 Assessment and Evaluation in Adapted Physical Education
  5550:535 Motor Development of Special Populations
  5550:635 Physiology of Muscular Activity and Exercise
  5550:606 Techniques of Research
  5550:635 Field Experience: Master's
  5610:565 Neuromotor Aspects of Physical Disabilities
  5610:567 Management of Strategies in Special Education

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

Option: Exercise Physiology/Adult Fitness

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

- Required Foundation Courses:
  5100:620 Behavioral Bases of Education
  5100:624 Seminar in Human Development and Education
  5100:640 Techniques of Research

- Required Department Courses:
  3100:561 Human Physiology
  3100:562 Advanced Cardiovascular Exercise
  3100:565 Physiology of Muscular Activity and Exercise
  5550:606 Statistics: Qualitative and Quantitative Methods
  5550:680 Special Topics in Health and Physical Education: Laboratory Instrumentation
  7400:597 Sports Nutrition

- At least two (2) credits from among the following:
  5550:685 Field Experience: Master's
  5550:688 Master's Problem
  5550:690 Master's Thesis

- Electives: Select at least one (1) course from among the following and have advisor approval.
  5102:500 Introduction to Instructional Computing
  5100:741 Statistics in Education
  5100:743 Advanced Education Statistics
  5550:601 Administration of Physical Education, Athletics and Intramurals
  5550:609 Motivational Aspects of Physical Activity

Secondary Education

Secondary Education (Certification)

This program is open to highly qualified students who hold the B.A. or B.S. degree. All requirements for certification must be met including the 600 hours of field and clinical/diagnostic experience.

- Foundation Courses (10 credits):
  5100:600 Philosophies of Education
  5100:604 Topical Seminar in the Cultural Foundations of Education
  5100:620 Behavioral Bases of Education
  5100:642 Topical Seminar in Measurement and Evaluation
  5550:695 Field Experience: Master's

- Secondary Education Seminar (2 credits):
  5300:780 Seminar in Secondary Education

- Secondary Education (16):
  5300:695 Field Experience: Master's
  5300:698 Field Experience: Master's
  5300:699 Field Experience: Master's

- Area of Concentration (9):
  Select 9 credits at 500-level or above.
  - Field Experience (Student Teaching) (7 credits):
    5300:695 Field Experience: Master's
    5300:698 Field Experience: Master's

- A comprehensive examination is required.

Total Program: 44 credits
Technical Education

The major objective of the technical education program is to prepare the instructor and other educational personnel for post-secondary educational institutions, industry, and public and private agencies engaged in the education and training of technicians and middle-level workers. The major requires completion of 32 credits.

Program
- Foundation Studies - nine credits.
- Professional technical education courses:
  5400:505 Occupational Education for Youth and Adults 3
  or
  5400:510 The Two-Year College 3
  5400:530 Curriculum Development in Technical Education 2
  5400:535 Instructional Techniques in Technical Education 4
- Teaching Internship:
  The student entering the program without teaching experience is required to take a teaching internship at a cooperating two-year institution.
  5400:690 Internship: Teaching Vocational Education 2
  or
  5400:691 Internship: Teaching Technical Education 2
  or
  5400:692 Internship: Post-Secondary Education 2
- Elective credits (zero to four credits) may support the field of specialization, add to general education, or be professional education courses.
- A comprehensive examination is required.

Options (Select one for a total of 8-13 credits.)

Teaching
An approved schedule of career-related courses selected from the Graduate School offerings. Course selections will be determined by the student's academic and professional background.

Guidance Option A (must be followed in sequence)
  5600:643 Counseling Theory and Philosophy 3
  5600:651 Techniques of Counseling 3
  5600:653 Group Counseling 4
  5600:675 Practicum in Counseling I 5

Guidance Option B
  5600:645 Community Counseling 3
  5600:646 Career Development and Counseling Across the Lifespan 3
  5600:645 Group Testing in Counseling 3

Select one of the following:
  5600:649 Counseling and Personnel Services in Higher Education 3
  5600:526 Career Education 2
  5600:610 Counseling Skills for Teachers 3

Curriculum and Supervision
  5700:609 Principles of Curriculum Development 3
  5700:610 Principles of Educational Supervision 3
  5700:610 Elective in Curriculum or Supervision 3

Vocational Home Economics - Family Life (eight to nine credits)

Vocational Home Economics - Child Care and Development (Job Training Specialization) (eight to nine credits)
College of Business Administration

Stephen F. Hallam, Ph.D., Dean
James E. Irman, J.D., Associate Dean
James R. Emore, D.B.A., Assistant Dean and Director of Undergraduate Programs
John Daniel Williams, D.B.A., Assistant Dean and Director of Graduate Programs

MASTER'S DEGREE

The College of Business Administration (CBA) offers graduate programs which lead to the degree of Master of Business Administration, Master of Science in Management, and Master of Taxation. The University has offered programs of study in business since 1919, initially through the Department of Commerce and since 1953 through the College of Business Administration. In 1958, graduate studies in business were begun. Both the undergraduate and master's programs are accredited by the American Assembly of Collegiate Schools of Business (AACSB).

During its long tradition, the college has sought to fulfill the educational and professional needs of its 1,200 graduate students, the community and regional business organizations. To meet its urban objectives, the college offers most graduate programs on a part-time basis. However, many students enroll full-time to complete the master's program in a shorter period.

Admission

Policy

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

- Hold a baccalaureate degree from a regionally accredited college or university and have a total index score of 1,000 or more points based upon the overall undergraduate grade-point average (GPA) (A=4.0) times 200 plus the Graduate Management Admissions Test (GMAT) score.
- Hold a baccalaureate degree from a regionally accredited college or university and have a total index score of 1,050 or more points based on the junior/senior (i.e., last 64 semester or 96 quarter 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. Since staff, 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. 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.

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). Since the GMAT test is administered worldwide only four times per year, the applicant should register for it sufficiently in advance to have the GMAT results within 14 days of the test date. An applicant can take the GMAT only once per year. After the test results have been received, the applicant should contact the Graduate Admissions Committee (GAC) at least one month prior to the start of the term in which he/she wishes to enroll. GMAT registration bulletins can be obtained from the Graduate Programs in Business Office or the Educational Testing Service, Box 966-R, Princeton, NJ 08540. Those who have taken the GMAT more than five years ago are normally required to retake it. If an applicant is denied admission by the Graduate Admissions Committee, the applicant will be informed in writing of the GAC's decision within one week of the meeting.

Requirements

To be awarded any master's degree from the College of Business Administration, a student must:

- Meet the time and grade-point requirements of the Graduate School.
- Complete the minimum credits in each of the degree descriptions.
- Complete all course requirements of applicable master's program.

Transfer Policy

The College of Business Administration will permit 3 credits of comparable graduate credits to be transferred into any of the graduate business programs (10 law school credits into the J.D./M.Taxation program). These credits must be approved 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.

Second Degree

For a student who has already obtained one master's degree in business, there are specific guidelines for applying for a second degree in the College of Business Administration. 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.

- Foundation Courses
  - 3250:600 Foundation of Economic Analysis
  - 6200:601 Financial Accounting
  - 6400:602 Managerial Finance
  - 6400:605 Government and Business
  - 6500:690 Management and Organizational Behavior
  - 6900:601 Quantitative Decision Making
  - 6500:602 Computer Techniques for Management
  - 6606:600 Marketing Concepts

- Functional Core (12 credits):
  - 6200:610 Accounting Management and Control
  - 6400:624 Financial Management and Policy
  - 6500:670 Operations Management
  - 6600:620 Strategic Marketing Management

- Professional Core (4 credits):
  - 6700:690 Professional Responsibility
  - 6710:692 International Business
  - 6710:694 Applied Business Documentation and Contact
  - 6700:686 Special Topics in Professional Development

- Quantitative Tools (3 credits):
  - 6200:664 Research and Quantitative Methods in Accounting
  - 6400:650 Accounting Costs and Prices
  - 6500:662 Applied Operations Research
  - 6600:640 Business Research Methods

- Concentration (9 credits):
  - The student must select 9 credits in a field of concentration (accounting, finance, management, marketing, international business, quality management, materials management, health services administration).
The Master of Science in Accounting program is designed to provide an advanced concentration in accounting. However, the School of Accountancy has made the Master of Science in Accounting program inactive, and no candidates will be admitted to this program until further notice.

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 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 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.

Options:
Choose a concentration from the following:

**Information Systems Management (ISM)** 15 credits
- ISM Required Concentration Courses:
  - 6500:641 Data Management and Communication
  - 6500:642 Analysis and Design of Business Systems
  - 6500:644 Managerial Decision Support and Expert Systems
  - 6500:645 Advanced Management Information Systems

**Human Resource Management (HRM)** 16 credits
- HRM Required Concentration Courses:
  - 6500:650 Fundamentals of Human Resource Administration
  - 6500:654 Labor Management Relations
  - 6500:655 Compensation Administration
  - 6500:652 Organizational Behavior
  - 6500:653 Organizational Theory

**HRM Restricted Electives (Select 3 credits):**
- 6500:658 Strategic Human Resources Management
- 6500:659 Employment Regulations
- 6500:651 Productivity and Quality of Worklife Issues
- 6700:686 Selected Topics in Professional Development

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

Degree Requirements
A student is required to fulfill the requirements of the School of Law, 87 credits, which includes 10 credits transferred from the CBA. The requirements of the CBA may be met by fulfilling the requirements previously listed which include the common body of knowledge (Foundation) courses (unless waived because of prior undergraduate credits earned) and 25 credits for M.B.A. of advanced courses in the CBA plus six credits transferred from the School of Law. The Master of Taxation program consists of 97 credits of advanced courses in the CBA plus 10 credits transferred from the School of Law. The reciprocal acceptance of course credits by each school is the essence of the joint programs. All law courses used to fulfill CBA requirements must be approved by the director of Graduate Programs in Business Administration. To earn both degrees, a total of 97 (J.D./M.B.A.) or 102 (J.D./M.Tax.) 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 must 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 concentration 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.

Law Courses to be used as MBA Concentration Courses

Accounting (choose 6 credits)
9200:639 Estate and Gift Taxation
9200:640 Individual Taxation
9200:641/642 Corporate Taxation I, II
9200:665 Taxation of Partnerships and S Corporations
9200:674 Current Problems in Taxation
9200:675 Special Problems in Estate Planning
9200:680 Qualified Pensions and Profit Sharing
9200:682/683 Wills, Trusts and Estates I, II

Finance (choose 6 credits)
9200:629 Commercial Law I
9200:630 Bankruptcy Law
9200:639 Estate and Gift Taxation
9200:652 Land Use Planning
9200:671 Securities Regulation
9200:675 Special Problems in Estate Planning
9200:680 Qualified Pensions and Profit Sharing
9200:682/683 Wills, Trusts and Estates I, II
9200:691 International Investments

International Business (choose 6 credits)
9200:649 International Law
9200:676 International Trade
9200:681 International Investments and the European Economic Community

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

Marketing (choose 6 credits)
9200:627 Commercial Law I
9200:689 Commercial Law II
9200:692 Media Law
9200:697 Patent, Trademark and Copyright Law
9200:698 Seminar in Business Planning
9200:699 Seminar in Product Liability
9200:694 Sports and Entertainment Law
College of Fine and Applied Arts

Linda Moore, Ph.D., Dean
William K. Gueguel, Ph.D., Associate Dean
William H. Seaton, Ph.D., Associate Dean

M A S T E R ’ S D E G R E E

Home Economics and Family Ecology

A program of study is offered leading to the Master of Arts in Home Economics and Family Ecology degree with 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:

- 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 Home Economics and Family Ecology 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 in one of the six options, with a minimum of 40 credits. These credits will include:
  - foundation courses to prepare the student for research in home economics and family ecology; and a discipline;
  - core courses in the area of speciality;
  - 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 adviser.
- Complete a thesis, project or an internship. The thesis option involves the design and evaluation of original research in an appropriately related area compatible with the student's background and area of pursuit. The research may involve a creative historical or experimental design. The internship option involves the design, development, implementation and evaluation of original and creative programs and/or resource materials pertaining to family and/or child development. Part of the internship experience may take place in a community-based agency which serves families and/or children. A written proposal for the thesis or internship option must be submitted at the completion of approximately 20 credits of graduate study.
- Pass a written comprehensive examination over major and minor areas after the completion of at least 24 credits of graduate work.
- Apply for advancement to candidacy upon successful completion of 25 credits of graduate study, the written comprehensive examination, and an approved prospectus for a thesis or internship.
- Pass an oral examination covering the thesis or internship report.

Foundation Courses

- Required by all program options:
  3400:604 Orientation to Graduate Studies in Home Economics and Family Ecology
  3400:610 Historical and Conceptual Bases of Home Economics and Family Ecology
  3400:695 Research Methods in Home Economics and Family Ecology

Child Development Option

- Core Courses:
  3400:605 Developmental Parent-Child Interactions
  3400:610 Child Development Theories
  3400:695 Development in Infancy and Early Childhood

- Option Electives
  Select 12 credits from the following courses with approval of adviser: (if a course has been taken at the undergraduate level, other courses must be selected.):
  3400:502 Family Life Patterns in the Economically Dependent Home
  3400:504 Adolescence in the Family Context
  3400:542 Human Sexuality
  3400:545 Public Policy and American Families
  3400:548 Before and After School Child Care
  3400:560 Organization and Supervision of Child Care Centres
  3400:596 Parent Education
  3400:607 Family Dynamics
  3400:616 Infant and Child Nutrition
  3400:651 Family and Consumer Law
  3400:660 Programming for Child Care Centers

- Cognate Electives
  Select 7 credits with approval of adviser from courses within the School of Home Economics and Family Ecology OR from a cognate area outside the School of Home Economics and Family Ecology OR from a combination of the above.

Child Life Option

- Core Courses:
  3400:551 Child in the Hospital
  3400:555 Practicum: Establishing and Supervising a Child Life Program
  3400:556 Orientation to the Hospital Setting

- Option Electives
  Select 10 credits with approval of adviser from among the following: (if a course has been taken at the undergraduate level, other courses must be selected.):
  3400:501 Family Life Patterns in the Economically Dependent Home
  3400:504 Adolescence in the Family Context
  3400:542 Human Sexuality
  3400:560 Organization and Supervision of Child Care Centers
  3400:596 Parent Education
  3400:606 Developmental Parent Child Interactions
  3400:616 Infant and Child Nutrition
  3400:639 Programming for Child Care Centers
  3400:665 Development in Infancy and Early Childhood

- Cognate Electives
  Select 10 credits with approval of adviser from courses within the School of Home Economics and Family Ecology OR from a cognate area outside the School of Home Economics and Family Ecology OR from a combination of the above.

Clothing, Textiles and Interiors Option

- Core Courses:
  3400:634 Materials Culture Studies
  3400:639 Theories of Fashion
  3400:677 Social Psychology of Dress and the Near Environment

- Options Electives:
  3400:516 History of Interior Design
  3400:519 History of Interior Design II
  3400:523 Professional Image Analysis
  3400:525 Advanced Textiles
  3400:527 Textile and Apparel Industry
  3400:533 Residential Design
  3400:535 Principles and Practices Interior Design
  3400:536 Textile Conservation
  3400:537 Historic Costume to 1800
  3400:538 History of Fashion Since 1800
  3400:549 Flat Pattern Design
  3400:621 Problems in Design
  3400:696 Individual Investigation in Home Economics and Family Ecology

- Cognate Electives
  Select 6 credits with approval of adviser from courses within the School of Home Economics and Family Ecology OR from a cognate area outside the school OR from a combination of the above.

- Internship/Thesis Master's Project (select one):
  3400:694 Master's Project
  3400:695 Internship
  3400:696 Master's Thesis

Total

40
Family Development Option

- **Core Courses:**
  - 7400:650 Family Life Patterns in the Economically Deprived Home
  - 7400:504 Adolescence in the Family Context
  - 7400:508 Family Financial Management
  - 7400:540 Family Crisis
  - 7400:542 Human Sexuality
  - 7400:545 Public Policy and American Families
  - 7400:546 Culture, Ethnicity and the Family
  - 7400:598 Parent Education
  - 7400:601 Families in Transition
  - 7400:603 Family Relationships in Middle and Later Years
  - 7400:605 Developmental Parent-Child Interactions
  - 7400:610 Child Development Theories

- **Electives:**
  - Select 12 credits from the following courses with approval of adviser. 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
  - 7400:504 Adolescence in the Family Context
  - 7400:508 Family Financial Management
  - 7400:540 Family Crisis
  - 7400:542 Human Sexuality
  - 7400:545 Public Policy and American Families
  - 7400:546 Culture, Ethnicity and the Family
  - 7400:598 Parent Education
  - 7400:601 Families in Transition
  - 7400:603 Family Relationships in Middle and Later Years
  - 7400:605 Developmental Parent-Child Interactions
  - 7400:610 Child Development Theories

- **Cognate Electives:**
  - Select 7 credits with the approval of adviser from within the School of Home Economics and Family Ecology OR from a Cognate Area outside the School OR a combination of the above.

  - Internship or Thesis (Select one):
    - 7400:696 Internship
    - 7400:699 Master's Thesis

**Total: 40 credits**

Food Science Option

- **Core Courses:**
  - 7400:575 Analysis of Food
  - 7400:576 Developments in Food Science
  - 7400:520 Experimental Foods (if taken at the undergraduate level, choose 3 additional credits from option electives)

- **Option Electives:**
  - Select 9-12 credit hours with the approval of adviser from among the following: (If a course has been taken at the undergraduate level, other courses must be selected from among option electives.)

  - 3100:500 Food Plants
  - 3100:540 Special Topics: Economics/World Food Problems
  - 7400:585 Seminar in Home Economics and Family Ecology: Topics in Food Science
  - 7400:570 The Food Industry: Analysis and Field Study
  - 7400:503 Advanced Food Preparation
  - 7400:524 Nutrition in the Life Cycle
  - 7400:525 Advanced Human Nutrition I
  - 7400:625 Advanced Human Nutrition II

- **Cognate Electives:**
  - Select 5-8 credits with approval of adviser from the School of Home Economics and Family Ecology OR from a cognate area outside the school OR a combination of the above.

  - Internship/Thesis (Select one):
    - 7400:696 Internship
    - 7400:699 Master's Thesis

**Total: 40 credits**

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 Home Economics and Family Ecology 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 home economics and family ecology 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 adviser.
- Pass a written comprehensive examination covering major and minor areas after the completion of at least 24 credits of graduate work.
- Apply for advancement to candidacy upon successful completion of 25 credits of graduate study, the written comprehensive examination, and an approved prospectus for a thesis or project.
- Complete a thesis or a project. The thesis option involves the design and evaluation of original research in an appropriately related area commensurate with the student's background and area of pursuit. The project option involves the design, development, implementation and evaluation of original and creative programs and/or resource materials. A written proposal for the thesis or project option cannot be submitted until the successful completion of a comprehensive examination.
- Pass an oral examination covering the thesis or project.

Foundation Courses

- Required by all program options:
  - 7400:504 Orientation to Graduate Studies in Home Economics and Family Ecology

- Core Courses:
  - 7400:644 Advanced Human Nutrition I
  - 7400:645 Advanced Human Nutrition II

Electives (9 to 11 credits required)

Select with the approval of adviser from among the following. At least 2 courses must be selected from Biology (3100) or Chemistry (3130). 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
- 3100:562 Human Physiology II
- 3100:565 Cardiac Physiology
- 3100:566 Pharmacology
- 3100:670 Medical Physiology, Pathophysiology, and Pharmacology
- 3100:686 Research in the Biology of Aging
- 3150:501 Biochemistry Lecture I
- 3150:502 Biochemistry Lecture II
- 3400:520 Experimental Foods
- 3400:524 Nutrition in the Life Cycle
- 3400:574 Cultural Dimensions of Foods
- 3400:575 Developments in Food Science
- 3400:585 Community Nutrition I - Lecture
- 3400:586 Community Nutrition II - Lecture
- 3400:587 Sports Nutrition
- 3400:588 Practice in Dietetics
- 3400:589 Nutrition in Diminished Health

Cognate Electives (9 to 11 credits required)

Select with the approval of adviser from among the following or other courses that strengthen the student's goals.

- 3470:694 Statistics for the Health Sciences
- 3380:678 Social Gerontology
- 5900:651 Techniques of Counseling
- 6500:600 Management and Organizational Behavior
- 6500:602 Computer Techniques for Management

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 consult 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 specialty or performance which the school director approves as equivalent to an undergraduate major.
- The Graduate School's requirements for admission.
- The performance and accompanying options require an audition on the student's major instrument/voice. Please contact the coordinator of Graduate Studies for an audition time.
For the composition option, compositions representing the applicant's techniques are required.

The options in music education, music theory, and music history and literature require an interview with faculty in the appropriate area.

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

For the performance option in voice, a proficiency equal to two semesters each of Italian, German, and French are required for completion of the Master of Music Degree in Voice Performance. If the student lacks background in any of these languages, auditing of undergraduate courses is required.

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

**Composition Option**

- **Music core courses – eight credits (to be selected):**
  - 7500:555 Advanced Conducting: Instrumental 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:515 Musical Styles and Analysis I (Chant through Palestrina) 2
  - 7500:516 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  - 7500:517 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  - 7500:618 Theorv, Pedagogy 2

- **Major required courses – 25-23 credits:**
  - 7500:521 Choral Literature 2
  - 7500:618 Musical Styles and Analysis IV (20th Century) 2
  - 7500:624 Historical Survey: Music of the 20th Century 2
  - 7500:647 Master's Chamber Recital 1
  - 7500:649 Master's Thesis 4
  - 7510:610 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 adviser.
  - Electives – three credits.

To be selected by student and adviser. 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**
  - 7500:511 Foundations of Music Education 3
  - 7500:512 Practices and Trends in Music Education 3
  - 7500:514 Measurement and Evaluation in Music Education 3
  - 7500:569 Master's Thesis 4

- **Additional music/education courses – select 17-19 credits with approval music education and graduate advisers**
  - 7500:675 Seminar in Music Education 1
  - 7500:697 Advanced Problems in Music Education 2-8
  - Topics may include: General Music, Kodály Principles and Techniques; Children's Choirs: Psychology of Music, Self-Esteem in Music; Music Learning, Arranging; Choral Literature, Choral Methods; Instrumental Methods and Techniques; and Conducting.
  - 7500:590 Music Workshops 2
  - 7510:615 Applied Music 2
  - 7515:612 Ensembles 1
  - 7520:618 Musical Styles and Analysis 2
  - 7500:621/624 Music History Survey 2
  - 5100:610 Educational Foundations 2
  - 5200:616 Elementary Education 2
  - 5300:617 Secondary Education 2

- **Non-Thesis Option – 34 credits**

- **Required Music Education Core Courses – 9 credits**
  - 7500:511 Foundations of Music Education 3
  - 7500:512 Practices and Trends in Music Education 3
  - 7500:514 Measurement and Evaluation in Music Education 3

- **Additional music/education courses – select 25 credits with approval of music education and graduate advisers**
  - 7500:675 Seminar in Music Education 1
  - 7500:697 Advanced Problems in Music Education 2

- **Topic may include: general music, Kodály Principles and Techniques; Children's Choirs; Psychology of Music, Self-Esteem in Music; Music Learning, Arranging; Choral Literature, Choral Methods; Instrumental Methods and Techniques; and Conducting.**

**Performance Option in Accompanying**

- **Music core courses – Eight credits (to be selected):**
  - 7500:555 Advanced Conducting: Instrumental 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:515 Musical Styles and Analysis I (Chant through Palestrina) 2
  - 7500:516 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  - 7500:517 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2

- **Major required courses – 23-26 credits:**
  - Select either 7500:562 or 7500:633
  - 7500:562 Master's Thesis, Piano 3
  - 7500:633 Teaching and Literature: Piano and Harpsichord 2
  - 7500:640 Advanced Accompanying I 1
  - 7500:641 Advanced Accompanying II 1
  - 7500:642 Advanced Accompanying III 1
  - 7500:643 Advanced Accompanying IV 1
  - 7500:666 Advanced Song Literature 3
  - 7500:688 Graduate Recital (to be completed in a minimum of two performance media) 2
  - 7510:614 Keyboard Ensemble (participation in two ensembles required)** 2
  - 7510:618 Small Ensemble - Mixed 2
  - 7520:6 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 adviser.
  - Electives – two credits.

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

Degree total: 33-36 credits.

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

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

**Two semesters ensemble participation required for degrees completed in two semesters. Four semesters ensemble participation required for degrees completed in four semesters.**
### Performance Option in Winds, String Percussion

- **Music core courses:** eight credits to be selected:
  - 7500:555 Advanced Conducting: Instrumental 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:615 Musical Styles and Analysis I (Chant through Palestine) 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 Historical Survey: Music of the Middle Ages and Renaissance 2
  - 7500:622 Historical Survey: Music of the Baroque 2
  - 7500:624 Historical Survey: Music of the 20th Century 2

- **Major required courses – 16-18 credits:**
  - 7500:618 Musical Styles and Analysis IV (20th Century) 2
  - 7510:620- Applied Music (select appropriate instrument) 8

- **Select one of the following as appropriate to major instrument:**
  - 7500:630 Teaching and Literature: Brass Instruments 2
  - 7500:631 Teaching and Literature: Woodwind Instruments 2
  - 7500:632 Teaching and Literature: Percussion Instruments 2
  - 7500:634 Teaching and Literature: String Instruments 2
  - 7500:698 Graduate Recital

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

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

Degree total: 34-36 credits.

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

### Performance Option in Voice

- **Music core courses:** eight credits to be selected:
  - 7500:555 Advanced Conducting: Instrumental 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:615 Musical Styles and Analysis I (Chant through Palestine) 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 Historical Survey: Music of the Middle Ages and Renaissance 2
  - 7500:622 Historical Survey: Music of the Baroque 2
  - 7500:624 Historical Survey: Music of the 20th Century 2

- **Major required courses – 20-22 credits:**
  - 7500:618 Musical Styles and Analysis IV (20th Century) 2
  - 7500:685 Vocal Pedagogy 3
  - 7500:686 Advanced Song Literature 3
  - 7500:688 Graduate Recital 2
  - 7510:620- Ensemble participation in two ensembles required** 2-4
  - 7520:624 Applied Voice 8

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

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

Degree total: 34-36 credits.

### 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 Palestine) 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 Historical Survey: Music of the Middle Ages and Renaissance 2
  - 7500:622 Historical Survey: Music of the Baroque 2
  - 7500:624 Historical Survey: Music of the 20th Century 2

- **Major required courses – 18-21 credits:**
  - 7500:618 Musical Styles and Analysis IV (20th Century) 2
  - 7500:662 Repertoire and Pedagogy: Organ 2
  - 7500:683 Teaching and Literature: Piano and Harpsichord 2
  - 7500:697 Advanced Problems in Music 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, in 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:
  - 7500:515 Bibliography and Research 2
  - 7500:655 Advanced Conducting: Instrumental 2
  - 7500:656 Advanced Conducting: Choral 2
  - 7500:615 Historical Survey: Music of the Middle Ages and Renaissance 2
  - 7500:622 Historical Survey: Music of the Baroque 2
  - 7500:624 Historical Survey: Music of the 20th Century 2

- **Major required courses – 26-28 credits:**
  - 7500:615 Musical Styles and Analysis I (Chant through Palestine) 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 Pedagogy 2
  - 7500:695 Advanced Problems in Music 6
  - 7500:696 Master’s Thesis 4
  - 7510:620- Ensemble participation in two ensembles required** 2
  - 7520:624 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.

- **Electives – zero to two credits.**
  - To be selected by student and advisor. Areas may include graduate-level courses in other disciplines in which the student obtains permission of instructor or 7520:624 Applied Composition.

Degree total: 34-36 credits.

### 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:**
      - 7600:620 Introduction to Graduate Study in Communication 3
      - 7600:695 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 coursework – 12 credits:**
      - Graduate electives – 6 credits.
      - Thesis (699) or Project/Production (698) – 6 credits.
    - **Total – 36 credits.**
  - Comprehensive examination required for students not pursuing a thesis, project, or production after 24 credits of coursework, including all core courses.
Theatre Option

- 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.

Continuous Enrolment Requirement: Regarding the completion of 7800:699 Master's Thesis, students must enroll for one credit of 7800:690 each Fall and Spring semester until the thesis project is completed approved.

Theatre Option

- Complete a minimum of 36 credits from one of the following courses of study.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>7800:600</td>
<td>Introduction to Graduate Studies</td>
<td>3</td>
</tr>
<tr>
<td>7800:638</td>
<td>Design/Technology Course of Study</td>
<td></td>
</tr>
<tr>
<td>7800:641</td>
<td>Problems in Directing</td>
<td>3</td>
</tr>
<tr>
<td>7800:645</td>
<td>Seminar in Dramatic Literature</td>
<td>3</td>
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<tr>
<td>7800:650</td>
<td>History of Theatre</td>
<td>3</td>
</tr>
<tr>
<td>7800:659</td>
<td>Master's Thesis</td>
<td>6</td>
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</tbody>
</table>

Design/Technology Course of Study

- Complete two credits from the following:

<table>
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<tr>
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<td>Advanced Problems in Lighting</td>
<td>3</td>
</tr>
<tr>
<td>7800:641</td>
<td>Problems in Directing</td>
<td>3</td>
</tr>
<tr>
<td>7800:645</td>
<td>Graduate Acting Techniques</td>
<td>3</td>
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<tr>
<td>7800:658</td>
<td>History of Theatre</td>
<td>3</td>
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<tr>
<td>7800:660</td>
<td>Advanced Technical Theatre</td>
<td>3</td>
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<tr>
<td>7800:691</td>
<td>Seminar in Stage Costume Design</td>
<td>3</td>
</tr>
<tr>
<td>7800:999</td>
<td>Master's Thesis</td>
<td>6</td>
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General M.A. Course of Study - History, Literature, Criticism

- Complete an oral defense of the thesis or production.

Arts Administration Option

- Complete a minimum of 42 credits.

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<tr>
<td>7800:641</td>
<td>Problems in Directing</td>
<td>3</td>
</tr>
<tr>
<td>7800:642</td>
<td>Seminar in Scene Design</td>
<td>3</td>
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<tr>
<td>7800:645</td>
<td>Seminar in Dramatic Literature</td>
<td>3</td>
</tr>
<tr>
<td>7800:655</td>
<td>Dramatic Theory and Criticism</td>
<td>3</td>
</tr>
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<td>7800:660</td>
<td>History of Theatre</td>
<td>3</td>
</tr>
<tr>
<td>7800:661</td>
<td>Seminar in American Theatre</td>
<td>3</td>
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<tr>
<td>7800:699</td>
<td>Master's Thesis</td>
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Communicative Disorders

This program, leading to the M.A. in communicative disorders, is 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 enter the program:

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

  For speech-language pathology majors:
  - 7700:611 Research Methods in Communicative Disorders I 3
  - 7700:628 Topics in Differential Diagnosis of Speech and Language Disorders 2
  - 7700:650 Advanced Clinical Practicum: Differential Diagnosis 1

  At least two credits from the following:
  - 7700:651 Advanced Clinical Practicum: Voice 1
  - 7700:652 Advanced Clinical Practicum: Fluency 1
  - 7700:653 Advanced Clinical Practicum: Articulation 1
  - 7700:654 Advanced Clinical Practicum: Language 1

  For audiology majors:
  - 7700:611 Research Methods in Communicative Disorders I 3
  - 7700:612 Research Methods in Communicative Disorders II 2
  - 7700:659 Master's Thesis 4-6
  - 7700:654 Advanced Clinical Practicum: Diagnostic Audiology 1
  - 7700:657 Advanced Clinical Practicum: Rehabilitative Audiology 1

The student must take four credits of 7700:695 Externship: Speech Pathology and Audiology. Two credits of 5610:693 Student Teaching in Speech Pathology or 5610:692 Student Teaching in Audiology may be substituted for two credits of 7700:695. (Although 5610:692 and 5610:693 are 6 hours of credit, only 2 of those credits may be substituted for 7700:695.) 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 7700:639 Advanced Clinical Testing to fulfill this requirement.

The following limitations on time toward the degree may be exceeded only with the approval of two-thirds of the student's graduate faculty:

- no more than 4 credits of workshop courses,
- no more than 6 credits of directed study course work (including 7700:697), and
- no more than 6 credits taken in disciplines other than communicative disorders.

- Only 7 credits of clinical practicum may be applied toward completion of degree requirements. These 7 credits may consist of externship, student teaching (maximum of 2 credits), and in-house practicum. However, the student may wish, or be required, to complete one or more practica in addition to degree requirements. Only 2 credits of student teaching (5610:692 or 5610:693) can be counted toward 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.

• Electives in related fields (4-7 credits):
  Options here include course work in business, computer science, urban studies, and music.

• Complete an oral defense of the thesis.

• General Electives 0-9
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 on a one-time basis 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 and 700 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.
- 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.
- Complete an approved program of courses which include the following required courses:

  **First Year Professional Foundation:**
  - Fall Semester
    - 7750:604 Social Work Practice with Small Systems 3
    - 7750:606 Foundation Field Practicum 3
    - 7750:622 Fundamentals of Research I 3
    - 7750:631 Human Behavior and Social Environment: Small Social Systems 3
    - 7750:648 Social Welfare Policy I 3
  - Spring Semester
    - 7750:605 Social Work Practice with Large Systems 3
    - 7500:606 Foundation Field Practicum 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
    - 7750:704 Advanced Practice with Small Systems I 3
    - 7750:706 Advanced Field Practicum 3
    - 7750:707 Social Welfare Policy II 3
    - 7750:763 Psychopathology and Social Work 3
    - One elective 3
  - Spring Semester
    - 7750:705 Advanced Practice with Small Systems II 3
    - 7750:706 Advanced Field Practicum 3
    - 7750:764 Single System Design 3
    - Two electives 6

  **Second Year Concentrations (Macro Practice):**
  - Fall Semester
    - 7750:706 Advanced Field Practicum 3
    - 7750:707 Social Welfare Policy II 3
    - 7750:711 Introduction to Community Organization and Planning 3
    - One elective 3
  - Spring Semester

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Graduate Studies 59
College of Nursing

Janne R. Dunham-Taylor, R.N., Ph.D., Interim Dean
Linda Linc, R.N., Ph.D., Interim Associate Dean of Graduate Program
Elaine Nichols, R.N., Ed.D., Associate Dean of Undergraduate Program
Pryllis Fitzgerald, R.N., Ph.D., Assistant Dean of Student Affairs

MASTER OF SCIENCE IN NURSING

Philosophy

The College of Nursing, an integral part of The University of Akron, accepts the responsibility for providing the general mission of the University, which is dissemination and pursuit of knowledge, the nurturing of intellectual curiosity, the search for truth and a conscious effort to serve the nursing student in the urban and rural community.

The College of Nursing faculty believe that the goal of professional nursing is individual, familial and community.

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. Family configurations may be traditional or nontraditional.

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, disability, and quality of life. People have the right to participate in decisions affecting and effecting personal health.

Environment includes all living and nonliving dimensions with which the individual, family and community have interrelationships. The dynamic environmental interrelationships define and establish rules for health and modes of action.

Nursing is an art and science. The discipline of nursing is concerned with individual, family and community and their responses to health within the context of the 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 practice of nursing occurs in a variety of settings. The role of the nurse involves the prevention of social and cultural responsibilities, including accountability for professional actions and provision of quality nursing care.

Education is an individualized, lifelong-process. Learning is a continual process and includes the individual's interrelationships with the environment. Knowledge acquisition, development, critical thinking and self-expression enable 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.

Learning occurs through continual construction and reconstruction of experience in relation to environmental influences. Nursing education at the baccalaureate level synthesizes knowledge from nursing, humanities, social, cultural, physical and natural sciences to operationalize the nursing process in practice. The student is prepared to function as nurse generalist in a variety of settings. Faculty and student continually seek to refine the commitment to and understanding of the relationship between theory and practice. Students are encouraged to become self-directed, collaborative, interdependent and independent. These variables are the foundation for life-long learning and professional development.

Nursing education at the master's level builds upon baccalaureate nursing preparation and is a foundation for doctoral study. Graduate education provides advanced learning to prepare specialists, educators and administrators in the practice of nursing. College of Nursing graduate students analyze and use a variety of theoretical formulations and research findings in advanced practice as well as plan and conduct research with guidance. The students develop expertise through self-direction, peer relations, personal valuing, and faculty modeling and facilitation.

Characteristics of the Graduate*

Upon completion of the program graduates will be able to:

- Incorporate theories and advanced knowledge into nursing practice.
- Demonstrate competence in selected role(s).
- Identify researchable nursing problems and participate in research studies in advanced nursing practice.
- Use leadership, management, and teaching knowledge and competencies to influence nursing practice.
- Assume responsibility for contributing to improvement in the delivery of health care and influencing health policy.
- Assume responsibility for contributing to the advancement of the nursing profession.

Admission

- Baccalaureate degree in nursing from 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 52 or GRE taken within the last five years. During the past three years, the range of GRE scores has been: verbal 400-614, quantitative 400-569, 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 Associate Dean 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 associate dean regarding the applicant's status. The associate dean 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 according to the following criteria:

- Completed application for the Graduate Program in Nursing
- 3.00 College GPA in baccalaureate degree in nursing from NLN-accredited nursing program
- Three (3) letters of reference from 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.

Instructional Program

The Master of Science in Nursing curriculum includes 36 credit hours of study and focuses on nursing care of vulnerable populations in episodic and long-term care situations. Areas of concentration include Adult Health Nursing, Liaison-Community Mental Health Nursing, Child and Adolescent Health Nursing, and Gerontological Nursing. Graduates are prepared for advanced practice roles in education, administration, clinical nurse specialization, or nurse practitioner. The curriculum is based on theory and research 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 44 credit hours of study and focuses on the master's preparation of certified registered nurse anesthetists (CRNA).

Nursing Core

The core consists of 17 credits which span the curriculum. These courses encompass advanced theory, research and practice.

Nursing Research*

All students enroll in a research core for a total of 7 credits: B200:683, Nursing Inquiry I and B200:699 Master's Thesis or B200:684 Nursing Inquiry II.

*National League for Nursing

**A baccalaureate degree in nursing from a foreign university which is recognized by The University of Akron.
Advanced Practice Roles

Options are provided for roles of educator, administrator, clinical nurse specialist, or nurse practitioner.

Electives

Students may choose to enroll in cognate electives. The graduate nursing curriculum requires 36 credits of study (Child and Adolescent Health Nursing option requires 40). Additional credits will provide the opportunity to individualize and strengthen the major.

Core course required of all students:
- 8200:609 Pathophysiological Concepts of Nursing Care
- 8200:613 Theoretical Basis for Nursing
- 8200:605 Computer Applications in Nursing
- 8200:607 Policy Issues in Nursing
- 8200:613 Nursing Inquiry
- 8200:618 Nursing Leadership I
- 8200:699 Master's Thesis

Functional role courses selected by students based upon area of specialty:
- Education:
  - 8200:682 Nursing Curriculum Development
  - 8200:683 Evaluation in Nursing Education
  - 8200:694 Practicum: The Academic Role of the Nurse Educator
- Administration:
  - 8200:632 Fiscal Management in Nursing Administration
  - 8200:630 Resource Management in Nursing Settings
  - 8200:635 Organizational Behavior in Nursing Settings
  - 8200:638 Practicum Administration I
  - 8200:639 Practicum Administration II
- Nurse Anesthesia**

The Anesthesia Track is accredited by the Council on Accreditation of Nurse Anesthesia Programs.
- 3100:561 Human Physiology I
- 3100:562 Human Physiology II
- 8200:640 Scientific Components of Nurse Anesthesia
- 8200:641 Pharmacology for Nurse Anesthesia I
- 8200:643 Principles of Anesthesia I
- 8200:644 Pharmacology for Nurse Anesthesia II
- 8200:645 Principles of Anesthesia II
- 8200:647 Professional Role Seminar
- 8200:649 Nurse Anesthesia Residency
- 8200:650 Pediatric/Adolescent Assessment
- 8200:651 Child and Adolescent Health Nursing I
- 8200:652 Nutrition: Child and Adolescent Health Nursing
- 8200:655 Child and Adolescent Health Nursing II
- 8200:656 Pharmacology for Child and Adolescent Health Nursing
- 8200:657 Child and Adolescent Health Nursing III
- 8200:659 Practicum: Child and Adolescent Health Nursing
- 8200:661 Liaison-Community Mental Health Nursing I
- 8200:662 Liaison-Community Mental Health Nursing II
- 8200:663 Liaison-Community Mental Health Nursing III
- 8200:664 Practicum: Liaison-Community Mental Health Nursing
- 8200:671 Adult Health Nursing I
- 8200:675 Adult Health Nursing II
- 8200:677 Adult Health Nursing III
- 8200:679 Practicum: Adult Health Nursing
- 8200:680 Clinical Management I
- 8200:682 Clinical Management II
- 8200:684 Clinical Management III

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R.N.-M.S.N. PROGRAM

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.
- Grade-point average of 3.00 on a 4.00 scale for all previous college work.
- Three (3) letters of reference from a recent employer; a member of the nursing profession; 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 400-614, quantitative 400-660, and analytical 400-640.
- 300-word essay describing professional goals.
- Interview with selected faculty members and submission of a portfolio.
- 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 upper-division baccalaureate coursework and a minimum of 36 hours of graduate coursework. Students will receive 46 hours of undergraduate bypassed credit after successful completion of all undergraduate course requirements. This is in accordance with the current University policy for bypassed 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
- 8200:437 Nursing Research
- 8200:460 Issues and Roles of the Profession of Nursing
- 8200:461 Concepts and Theories of Professional Nursing
- 8200:471 Community Health Nursing
- 8200:480 Leadership Roles of Professional Nursing
College of Polymer Science and Polymer Engineering

Frank N. Kelley, Ph.D., Dean
Rudolph J. Scavuzzo, Ph.D., Associate Dean

HISTORY
The University of Akron has been a focus for training and research in polymer science since 1910 when Professor Charles M. Knight began offering courses in rubber chemistry. Master's theses treating rubber chemistry on the University library shelves date to 1920. The University began developing major laboratories in 1942 under the leadership of Professor G.S. Whitby, and the UA program played a significant role in the synthetic rubber industry of the U.S. government during World War II. An Institute of Rubber Research under the direction of Professor Maurice Morton was created in 1956, which became an Institute of Polymer Science in 1964. A Ph.D. program in Polymer Chemistry was introduced in 1956. In 1967 a Department of Polymer Science in the College of Arts and Sciences was formed which awarded M.S. and Ph.D. degrees in Polymer Science.

A Center for Polymer Engineering was created in 1963 and a Department of Polymer Engineering in the College of Engineering in January 1964 with Professor J.L. White as director and department head to give thrust to polymer processing and engineering applications. In 1968 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.

DESCRIPTION
The College of Polymer Science and Polymer Engineering carries out a program of research and education, primarily at the graduate level, and serves as a major intellectual resource for the scientific and technological development of polymers and related materials and processes. The college consists of the Department of Polymer Science, the Department of Polymer Engineering, the Maurice Morton Institute of Polymer Science and the Institute of Polymer Engineering.

The Department of Polymer Science and The Institute of Polymer Science, emphasize polymer synthesis, the physical chemistry, physics and mechanical behavior and technology of polymers, and many of their applications. The Department of Polymer Engineering and the Institute of Polymer Engineering, emphasize polymer processing (including reactive processing), solid state structure/morphology and properties of polymers as related to process history as well as engineering analysis and design. Collaborative research among the faculty in the two departments is common and provides a unique environment and capability for solving modern-day problems. This provides a fertile environment for students to obtain multidisciplinary training.

ADMISSION REQUIREMENTS
Admissions to the graduate program in the college are competitive. The departmental admission committees carefully consider each applicant. Early application is suggested.

DEPARTMENT OF POLYMER SCIENCE
Students with an undergraduate degree in chemistry, physics, or engineering and a grade point average of 2.75/4.0 or better are admissible. Students holding a degree in biology or natural sciences usually need additional courses on the undergraduate level in physics, physical and analytical chemistry. For such students, a special non-degree admission may be given for one or two semesters, followed by a full admission upon a student's successful completion of the remedial undergraduate courses. All applications must be supported by at least one letter of recommendation from a teacher or supervisor that the candidate is able to handle independent scientific research. GRE scores are recommended with each application.

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

DEPARTMENT OF POLYMER ENGINEERING
Students with an undergraduate degree in Chemical Engineering, Mechanical Engineering or related degrees with a grade point average of 2.75/4.0 or better are admissible. Students holding a degree in the natural sciences usually need additional undergraduate engineering courses, which are required prerequisites for core courses. For such students, depending upon their background, a special non-degree admission may be given followed by full admission upon successful completion of a series of required remedial courses.

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

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

Doctor of Philosophy in Polymer Science
An interdisciplinary program leading to the Doctor of Philosophy in Polymer Science is administered by the Department of Polymer Science graduates from the three main disciplines (chemistry, physics and engineering) are guided into the appropriate courses of study and research that in 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 head 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:

• 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 987:6078 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.

987:1001 Polymer Concepts
987:1002 Synthesis and Chemical Behavior of Polymers
987:104 Condensation Polymerization
987:105 Free Radical Reactions in Polymer Science
987:106 Ionic and Monomer Insertion Reactions
4 credits of polymer physical chemistry courses:
987:1814 Polymer Structure and Characterization
987:1875 Polymer Thermodynamics
4 credits of polymer physical property courses:
987:1821 Physical Properties of Polymers I
987:1822 Physical Properties of Polymers II
4 credits of polymer engineering and technology courses:
987:1801 Polymer Technology I
987:1802 Polymer Technology II
987:1803 Polymer Technology III
3 credits of polymer science laboratory:
987:1813 Polymer Science Laboratory
**Doctor of Philosophy in Engineering**

(Polymer Engineering)

The Department of Polymer Engineering administers a graduate program in which graduate 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 head and dean.

Students in Polymer Engineering must satisfy the general requirements of the Graduate School and the department as stated below:

- 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.
- Complete courses in the plan of study developed by the student advisory committee on the basis of the qualifying examination. A minimum of 90 credits of graduate work must be earned, including all course requirements listed for the Master of Science in Polymer Engineering degree.
- Pass a candidacy examination which may be taken after 90 percent of the course work specified in the plan of study has been completed.
- 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 credits in the following required core courses in polymer science: 9871:603 Polymer Concepts; 619 Polymer Science Laboratory; 631 Physical Properties of Polymers I; 634 Polymer Structure and Characterization; 701 Polymer Technology.
- Completion of 13 credit hours of elective courses appropriate to each student's area of interest.
- Completion of a research project (9871:699) and the resulting 6 credits.
- Attendance at and participation in seminar-type discussions scheduled by the department. Credits for participation in either polymer science or polymer engineering seminars do not apply toward the degree.
- Demonstrated competence in computer skills.
- At least 12 credits of graduate coursework and all thesis credits must be completed at the University.

### 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, 9 thesis credits, and 12 credits of approved electives.

#### Polymer engineering core:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>9841:611</td>
<td>Structural Characterization of Polymers with Electromagnetic Radiation</td>
<td>2</td>
</tr>
<tr>
<td>9841:621</td>
<td>Rheology of Polymeric Fluids</td>
<td>3</td>
</tr>
<tr>
<td>9841:622</td>
<td>Analysis and Design of Polymer Processing Operations I</td>
<td>3</td>
</tr>
<tr>
<td>9841:631</td>
<td>Engineering Properties of Solid Polymers</td>
<td>2</td>
</tr>
<tr>
<td>9841:641</td>
<td>Polymeric Materials Engineering Science</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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</tr>
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#### Polymer engineering elective:

<table>
<thead>
<tr>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>9841:601</td>
<td>Polymer Engineering Seminar</td>
<td>1</td>
</tr>
<tr>
<td>9841:623</td>
<td>Analysis and Design of Polymer Processing Operations II</td>
<td>3</td>
</tr>
<tr>
<td>9841:942</td>
<td>Engineering Aspects of Polymer Colloids</td>
<td>2</td>
</tr>
<tr>
<td>9841:951</td>
<td>Polymer Engineering Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>9841:961</td>
<td>Polymerization Reactor Engineering</td>
<td>3</td>
</tr>
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</table>

#### Approved engineering and science elective (a minimum of 3 credits of approved science or mathematics required):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>4300:681</td>
<td>Advanced Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>4800:622</td>
<td>Continuum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>9871:613</td>
<td>Polymer Science Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>9871:674</td>
<td>Polymer Structure and Characterization</td>
<td>2</td>
</tr>
<tr>
<td>9871:676</td>
<td>Polymer Thermodynamics</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Thesis:

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>9841:699</td>
<td>Master's Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

#### Requirements:

<table>
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<tr>
<th>Credit Type</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Polymer Engineering Core</td>
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<tr>
<td>Approved Electives</td>
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<td>Approved Mathematics</td>
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<td>Thesis</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
</tr>
</tbody>
</table>

- Attendance at and participation in department seminars as directed by the advisory committee is required.

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**Graduate Studies**

63
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 team taught. Interdisciplinary Studies and certificate programs will include coursework designated as "Interdisciplinary Studies".

Upon completion of any of these programs, a statement will be placed on the student’s permanent record indicating the area of concentration. The certificate indicating the area of concentration will be awarded when the student completes requirements for a degree unless otherwise specified.

ADDITION COUNSELING
David M. Weis, 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 addition 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 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
5600:750 Addiction Counseling I: Theory and Practice 3
5600:732 Addiction Counseling II: Assessment and Treatment Planning 3
5600:734 Addiction Counseling III: Models and Strategies of Treatment 3
5600:885 Internship in Counseling 6.7
Total credit hours 15-16

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
3700:570 Campaign Management I 3
3700:571 Campaign Management II 3
3700:672 Seminar: Political Influence and Organizations 3
3700:686 Internship in Government and Politics 3

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:
3300:570 Seminar: Theory and Teaching of Basic Composition 3
3300:673 Theories of Composition 3
3300:675 Seminar Research Methodologies in Composition 3

Optional Courses:
3300:570 History of the English Language 3
3300:571 U.S. Dialects: Black and White 3
3300:589 Grammar and Composition 3
3300:675 Theory of Rhetoric 3
3300:689 Seminar: Sociolinguistics 3
3300:697 Modern Linguistics 3
3300:699 Seminar: Stylistics 3
3300:688 Seminar: Contextual Linguistics 3

DIVORCE MEDIATION
Helen Claminshaw, Ph.D., Coordinator

Requirements
This graduate certificate program in divorce mediation requires a minimum of 15 graduate credits dependent upon previous educational background. The program has been designed to serve the practicing or prospective divorce mediator.

All applicants to the program should have previously earned a law degree or a master’s degree (at minimum in the behavioral sciences, such as psychology, social work, counseling, and family therapy, or child and family development). Applicants planning to pursue the certificate must apply to the Center for Family Studies and the Graduate School for admission as non-degree students. Persons currently working toward a doctorate or juris doctor at the University may participate in the certificate program as a cognate or minor. In this case, students must receive permission from their academic department as well as admission from the Center for Family Studies. Since the educational preparation prior to
entry to this program will be quite diverse, the selection of courses within the certificate will vary among the participants. However, all students are expected to complete the core courses in addition to 10 credit hours selected from among several disciplines related to divorce mediation.

Core:
- 1800:601 Divorce Mediation 3
- 1800:602 Divorce Mediation Practicum 2

Select at least one from each area:
- Law
  - 9200:608 Family Law 3
  - 9200:651 Family Consumer Law 3
- Accounting
  - 6200:601 Financial Accounting 3
  - 9200:621 Accounting for Lawyers 3
- Family
  - 5600:655 Marriage and Family Therapy: Theory and Techniques 3
  - 5600:657 Marital Therapy 3
  - 7600:657 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
  - 9200:540 Family Crisis 3
  - 9200:590 Family and Divorce 3
  - 9200:652 Family in Life Span Perspective 2
  - 9200:664 Alternative Dispute Resolution 3

GERONTOLOGY

Harvey Stens, Ph.D., Director
Isadore Newman, Ph.D., Associate Director
Becky Snyder Warner, M.A., Program Coordinator
Gerontology Certificate Program
Terry H. Albanese, Ph.D., Practicum Coordinator
Jerome Kaplan, Ph.D., Program Coordinator,
Nursing Home Administrator Program

Requirements

This certificate program is a special course of study along with undergraduate and graduate degree programs in various departments and colleges throughout the University. Individuals who already hold undergraduate or graduate degrees 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 curriculums committees of the institute will oversee this certificate program and certify through the director of the institute that all requirements for the certificate have been completed.

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 in Industrial Management (Personnel Option) with a Certificate in Gerontology.

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

Admission

To participate in the program the graduate level, a student should:
- Be formally admitted to The University of Akron Graduate School.
- Make written application to the program counseled by student’s major academic adviser.
- Have an interview with a designated faculty member of the Institute for Life-Span Development and Gerontology.
- Receive written notification for admission from the director of the Institute for Life-Span Development and Gerontology.
- Consult with the director or a designated faculty member to formulate a program of study.

Program

Minimum: 18 credits.

Core:
- 9006:680 Interdisciplinary Seminar in Life-Span Development and Gerontology 3
- 9006:686 Practicum/Internship 3
- 9006:687 Research Methods Course 3

Electives:*
- 9006:686 Retirement Specialist 2
- 9006:680 Workshop - Women: Middle and Later Years 2
- 9006:680 Workshop - Aging: Process and Intervention 2
- 3703:680 Policy Problems: Aging** 3
- 3750:520 Psychology Core I: Development, Perceptual, Cognitive 4
- 3750:727 Psychology of Adulthood and Aging 4
- 3850:678 Social Gerontology 3
- 3850:681 Cross Cultural Perspectives in Aging 3
- 5400:541 Educational Gerontology Seminar 3
- 5400:681 Seminar in Higher Education: Life-Span and Community Education 2
- 6500:687 Seminar in Health Services Policy and Administration 3
- 6500:683 Seminar in Health Services Systems Management (with permission) 3
- 9200:653 Family Relationships in Middle and Later Years 2
- 7600:550 Social Needs and Services for Later Adulthood and Aging 3

* From student’s home department
** Select a minimum of three courses. A student is required to take two of the three electives outside the major of 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 15 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 master'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 this admission category should first meet with the director of the Center for the Study of Higher Education. The person wishing to pursue a doctorate in an academic department may concurrently undertake the certificate program as a cognate or minor. Such students must apply to the Graduate School for admission to the academic department and also apply for admission to the Center for the Study of Higher Education and must be admitted to both programs. Applicants wishing to pursue only the certificate program must apply to both programs. 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: administrative student services, curriculum, and instruction option, a higher education teaching internship developed in conjunction with the student's major academic advisor, and the center staff may be anticipated. Internships may be completed at the University or at one of several cooperating institutions.

Required:
- 5100:703 Seminar: History and Philosophy of Higher Education 3
- 5800:700 Introductory Administrative Colloquium in Higher Education 1
- 5900:700 Advanced Administrative Colloquium in Higher Education 1
- 5600:691 Seminar in Higher Education: Administration in Higher Education (B) 3
- 5900:715 Seminar in Higher Education: Administration in Higher Education (B) 3

Student Services in Higher Education (II)
- 5600:648 Counseling and Personnel Services in Higher Education (A) 3
- 5800:725 Seminar in Higher Education: Student Services (B) 3
Theoretical Frameworks:

- 3850:620 General Systems Theory
- 5600:643 Theories and Philosophy of Counseling
- 5600:655 Marriage and Family Therapy: Theory and Techniques
- 4000:607 Family Dynamics
- 3850:512 Socialization: Child to Adult
- 4000:622 Family Life Span Perspective
- 4000:606 Developmental Parent-Child Interactions
- 4000:610 Child Development Theories

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 Disorder of Children
  - 3750:704 Theories of Personality
- **Sociology**
  - 3850:550 Sociology of Mental Health
  - 3850:698 Human Ecology
  - 3850:753 Human and Family Health (Special Topics)
- **Counseling**
  - 5600:550 Counseling Problems Related to Life / Death
  - 5600:620 Multicultural Counseling
  - 5600:620 Human Sexuality
- **Special Education**
  - 5610:546 Developmental Characteristics of Exceptional Individuals
  - 5610:546 Developmental Characteristics of Behaviorally Disordered Individuals
  - 5610:560 Working with Parents of Handicapped Individuals
  - 5610:604 Education and Management Strategies for Parents of Exceptional Individuals
- **Multicultural Education**
  - 5630:682 Characteristics of Culturally Diverse Populations
- **Home Economics and Family Ecology**
  - 4000:501 Family Life Patterns in the Economically Depressed Areas
  - 4000:504 Adolescence in the Family Context
  - 4000:506 Family Resource Management
  - 4000:540 Family Crisis
  - 4000:542 Human Sexuality
  - 4000:546 Culture, Ethnicity, and the Family
  - 4000:590 Family and Divorce
  - 4000:596 Parent Education
  - 4000:675 Conceptual Frameworks in Family Ecology
- **Social Work**
  - 7750:510 Minority Issues in Social Work Practice
  - 7750:552 Social Work and Mental Health
  - 7750:554 Social Work in Juvenile Justice

### Mid-Careers Program in Urban Studies

**Gary M. Gappert, Ph.D., Director**

#### 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 a certificate, the certificate will be granted.

#### Admission

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

#### Program

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

### Core:

- 3900:600 Basic Analytical Research
- 3900:601 Advanced Research and Statistical Methods

### Mid-Careers Certificate Program

**Helen K. Clemens, Ph.D., Coordinator**

**Program**

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

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

#### Admission

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

- Be formally admitted to The University of Akron Graduate School.
- Make appropriate advising curriculum and develop a 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.
- Meet 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:**

- 1620:500 Home-Based Intervention Theory
- 1620:504 Home-Based Intervention Techniques and Practice
- 1620:505 Home-Based Intervention Internship

**Eligibility Courses:**

Students must have completed at least 9 credits of coursework in theoretical frameworks from their discipline or related areas follows:

- Systems Theory
  - 3850:620 General Systems Theory
  - 5600:643 Theories and Philosophy of Counseling
  - 5600:655 Marriage and Family Therapy: Theory and Techniques
  - 4000:607 Family Dynamics
- Developmental Theory
  - 3850:512 Socialization: Child to Adult
  - 4000:622 Family Life Span Perspective
  - 4000:606 Developmental Parent-Child Interactions
  - 4000:610 Child Development Theories
Graduate Studies

PARENT AND FAMILY EDUCATION

Helen K. Clemenshow, 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.

- 7400:596 Parent Education
- 7400:601 Developmental Parent-Child Relations
- 7400:593 Practicum in Parent and Family Education

Electives:

Students must successfully complete six credits of coursework selected from among the various departmental courses listed below. These credits shall be chosen from departments outside the student’s discipline.

- Home Economics and Family Ecology
  - 7400:501 Family Life Patterns of the Economically Deprived 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
  - 2460:610 Child Development Theories
  - 7400:681 Family and Consumer Law
  - 7400:686 Development in Infancy and Early Childhood

- Social Work
  - 7750:555 The Black Family
  - 7750:785 Social Work Practicum with Family and Children
  - 7750:786 Social Welfare Policy and Services: Family and Children

- Psychology
  - 3750:501 Child and Adolescent Health Nursing
  - 3750:520 Psychological Disorders of Children
  - 3750:726 Child Psychology
  - 3750:737 Psychology of Learning Disabilities

- Sociology
  - 3890:512 Socialization Child to Adult
  - 3890:677 Family Analysis

- Educational Foundations
  - 5100:548 Individual and Family Development Across the Lifespan
  - 5100:721 Learning Processes

- Educational Guidance and Counseling
  - 5600:646 Multicultural Counseling
  - 5600:648 Individual and Family Counseling Across the Lifespan
  - 5600:695 Marriage and Family Therapy: Theories and Techniques
  - 5600:697 Mental Therapy
  - 5600:699 Systems Theory in Family Therapy

- Special Education
  - 5610:540 Developmental Characteristics of Exceptional Individuals
  - 5610:559 Communication and Consultation with Parents and Professionals

- Multicultural Research
  - 5630:482 Characteristics of Culturally Diverse Populations

- Educational Administration
  - 6700:604 School Community Relations

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)
  - 3250:500 Human Resource Policy
  - 3250:606 Public Finance
  - 3250:696 Seminar on Economic Planning

- Political Science (choose one)
  - 3700:541 The Policy Process
  - 3700:642 Methods of Policy Analysis
  - 3700:668 Seminar in Public Policy Agenda and Decisions

- Sociology (choose one)
  - 3890:513 Sociology of Program Evaluation and Program Improvement
  - 3890:579 Political Sociology

In addition to the courses listed above, each student, after receiving the approval of his or her advisor, shall complete two courses related to public policy.

Each student shall complete a thorough paper dealing with public policy under the direction of a graduate faculty member in the departments of economics, political science or sociology. The student shall enroll for three credits in one of the following courses: 3250:897/898 Reading in Advanced Economics. 3700:697 Independent Research and Readings or 3650:697 Readings in Contemporary Sociological Literature. The student’s paper shall be evaluated by an interdisciplinary committee consisting of graduate faculty from at least two of the previously mentioned departments.

All persons enrolled in the Graduate Certificate Program in Public Policy must successfully complete 3700:695 Internship in Political Science, a course which will permit a student to gain experience working with public officials, government agencies, political parties or interest groups. A student will normally enroll in this course after having completed at least 12 semester credits of work relating to public policy. A person with extensive administrative or governmental experience may be permitted, with the approval of the student’s advisor, to substitute another course dealing with public policy in place of the Internship in Political Science.

At least two-thirds of the credits earned for this certificate must be in 600- or 700-level courses. No more than three courses in which the student enrolls, of the seven required for the Graduate Certificate in Public Policy, may also apply toward meeting requirements for a graduate degree at The University of Akron.
The student must maintain at least a "B" (3.00) average in course work for the certificate.

Administration of the Program
The departments of economics, political science, and sociology shall select representatives for a coordinating committee from among those members of the college faculty who have special knowledge or expertise in the area of public policy. The committee shall meet each year elect one of its members as chairperson. The chairperson shall be responsible for disseminating information about the certificate, certifying that a student has met requirements for the completion of the program and convening members of the coordinating committee whenever appropriate.

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, second language pedagogy, and related disciplines.

Students who do not have English as a native language must demonstrate adequate proficiency in English with a valid TOEFL score of at least 550.

Program
3300:573 Seminar in Teaching ESL: Theory and Method 3
3300:589 Special Topics: Grammatical Structures of English 3
5630:581 Multicultural Education in the U.S.** 3
or
3300:549 Special Topics: Sociolinguistics** 3
5630:587 Techniques for Teaching ESL 3

The awarding of this certificate is not contingent upon completion of a degree program. Undergraduate certificate programs require a 2.00 grade-point average; graduate certificate programs require a 3.00 grade-point average.

**Choice to be decided in consultation with the program director.

TECHNICAL AND SKILLS TRAINING

For information, contact Dr. Susan J. Olson, (330) 972-6666.

This certificate program in technical and skills training is a special course of study within the College of Education undergraduate and graduate programs to serve the practicing or prospective business and/or industrial-technical trainer.

Persons are eligible for admission to the Certificate in Technical and Skills Training if they have been admitted to study as special, non-degree or full-time students in any department of the University. Undergraduates will earn the certificate upon graduation from their degree program. Individuals who already hold undergraduate or graduate degrees may also pursue this certificate. Students with an undergraduate degree who do not seek a graduate degree may pursue the certificate at the postbaccalaureate level. Students who already hold a graduate degree or do not wish to pursue a graduate degree may be admitted to the program as a non-degree graduate student. Students pursuing graduate degrees will receive their graduate certificate upon completion of the requirements for their graduate degree. Students enrolled in the undergraduate and postbaccalaureate program will enroll in the courses at the undergraduate level. Students admitted to the Graduate School as degree seeking or non-degree students will enroll in graduate courses. Graduate students enrolled in the core courses at the 500 level will have an additional graduate level project.

Those formally admitted to The University of Akron and meeting the Certificate entrance requirements may pursue the Certificate in Technical and Skills Training. Students shall seek admission to the program by filing an application with the program coordinator. The student will schedule courses with the assistance of an advisor in the Technical Education Program.

Those who have completed either a BS or MS in Technical Education at The University of Akron prior to the Fall of 1984 must seek advisor approval before pursuing the Certificate. Only six hours of prior technical education coursework can be accepted towards the certificate and all accepted coursework must be no older than six years at the time of completion of the certificate. Only graduate credit may be used for a graduate certificate and only undergraduate credit may be used for an undergraduate or postbaccalaureate certificate. Any course substitutions must be made with the advisor's prior written approval. Students must maintain at least a 3.0 average in certificate coursework to receive this certificate. Enrollment will be limited to space available. All those applying for the undergraduate certificate must have completed at least 60 semester hours with a 2.75 GPA. For
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Research centers and institutes
Research Centers and Institutes

University Research Council:
Vice President for Research and University Development,
to be named (chair)
Associate Vice President for Research, to be named (member)
Frank Kelley, Ph.D., Dean, College of Polymer Science and Polymer
Engineering (member)
Dean, Buchtel College of Arts and Sciences, to be named
(member)
Irving Miller, Ph.D., Dean, College of Engineering (member)
Charles Dye, Ph.D., Dean, Graduate School (member)
Director of Research Services and Sponsored Programs,
to be named (member and secretary)
Ted Mallo, J.D., Assistant Professor, General Counsel (member, ex officio)
Virginia Gunn, Ph.D., Faculty Senate Nominee (member)
Antonia Forster, Ph.D., Faculty Senate Nominee (member)
James White, Ph.D., Institute of Polymer Engineering (member)

In the past, colleges and universities have been thought of as enclosures where knowledge and training were dispensed to eager students. But this has never been true, for it is here that much of the new knowledge is developed. And with the accelerating tempo of our times, there is an increased call for universities to provide more information to enable society to cope.

The University of Akron is alive to this challenge and has sought to develop its research program with an eye to the needs of the society it serves. Here the emphasis is on work that is relevant. The University's concern with relevant research has been the number of interdisciplinary teams that have been put together to tackle specific problems. For instance, problems in connection with water pollution have used the services of chemists, biologists and chemical engineers. While the planning and organization of a research project is usually carried out by or with the assistance of a faculty member, both graduate and undergraduate students have the opportunity to participate, depending on the nature of the project and the skills and knowledge required.

Sponsored research activities on campus are coordinated by the Associate Vice President for Research and the Director of Research Services and Sponsored Programs. 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 Vice President for Research and University Development, the Associate Vice President for Research, the Director of Research Services and Sponsored Programs, representatives of the Faculty Senate, various college deans and institute directors, and General Counsel.

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 name 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 Rittgers, 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 at the north edge of the campus.

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 clearing house for the gathering and dissemination of economic education materials and programs. It also fosters an understanding and appreciation of the American economic system.

Center for Environmental Studies
Annabelle M. Foos, Ph.D., Interim Director
The Center for Environmental Studies matches the expertise of 95 affiliates in 33 disciplines with the needs of students seeking study and research opportunities in complex environmental issues. Since its founding in 1970, the center has sponsored, or in other ways supported, activities appropriate to the goal of attaining a quality environment for mankind.

The center coordinates special forums, workshops and seminars that address major issues. Examples include the National Energy Forum, the World Food Forum, and Evaluation of Environmental Data. Workshops on energy, natural history and environmental studies in England also emphasize the interdisciplinary approach to the resolution of issues.

The center provides programs of environmental studies in the Cuyahoga Valley National Recreation Area (CVNRA). These programs are operated through the University's Cuyahoga River Interpretive Center. Water research is a major role of the Center.

Center for Family Studies
Helen K. Clemenshaw, Ph.D., Director
The Center for Family Studies, established in 1979, was designed to stimulate and encourage the interdisciplinary study of the family. It serves both the University and the community by fostering collaboration between faculty, students, practitioners and community leaders on curriculum development, educational conferences and seminars, research and training, and public policy relevant to important family issues.

The Center is represented by faculty from 5 colleges and over 15 disciplines, it also includes leaders from various community systems, such as the schools, hospitals, churches, mental health, social service 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. Please refer to the sections on Certificate Programs in this Bulletin or 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 containment and fire prevention and control is provided under contract to various municipalities, industries and agencies. The programs are supported by the faculty of the Fire Protection Technology degree program in association with other state and nationally recognized professionals.
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 1993. Its mission is to enhance the image of the sales profession, to promote professional selling and sales management as a rewarding life career, to provide quality sales training and learning experiences, and to advance the knowledge of professional selling through the support of applied research.

Institute for Futures Studies

Gary Gappert, Ph.D., Director

The Institute for Futures Studies and Research exists to initiate and provide comprehensive programs in salient and vital policy research, including a structural framework which encompasses strategic planning, environmental scanning, trends analysis and other innovative research methods.

The Institute for Future Studies and Research was established in 1978, with its focus on interdisciplinary courses, lectures, publications, and activities relating to relevant issues which will impact the future of the local, state, national, and international arenas. It cooperates with the Center for Urban Studies and other research institutes.

Through its relationship with the Department of Public Administration and Urban Studies and The Center for Urban Studies, the Institute has organized and produced several books relating to the urban future, including the 1990 publication, Cities in a Global Society and the forthcoming The Future of Urban Environments. It has also sponsored major conferences on George Orwell, Aldous Huxley, and Edward Bellamy in cooperation with the Ohio Humanities Council.

Institute for Life-Span Development and Gerontology

Harvey L. Sterns, Ph.D., Director
Isadore Newman, Ph.D., Associate Director
Betty Snyder Warner, M.A., Program Coordinator, Gerontology Certificate Program
Terry H. Albanese, Ph.D., 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 Industrial Management (Personnel Option) with a Certificate in Gerontology. Faculty fellows at the institute representing 23 University departments conduct research, and provide special courses, workshops, and seminars as well as participate in community research and demonstration projects. Students in the certificate programs carry out field placements at numerous community service settings.

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.

Center for Peace Studies

For information, contact the office, 201 Lehigh Hall, (330) 972-6513.

The Center for Peace Studies provides students with the opportunity for an interdisciplinary course of study in one of the related fields of international peace or conflict resolution and management. Course programs draw on the resources of a wide spectrum of the University's academic departments. Upon completion of all required courses, students receive not only academic credits for the courses, but a Certificate in Peace Studies or a Certificate in Conflict Resolution/Management, respectively. The Center also sponsors workshops for teachers, special campus programs, and research projects. It also collaborates with community organizations and peace centers on other campuses.

Joint Center for Policy Research

Shara L. Davis, M.A., Director
Douglas V. Shaw, Ph.D., Acting Director, Center for Urban Studies

Designed as a partnership between the University of Akron's Center for Urban Studies (CUS) and Lorain County Community College's Public Services Institute, the Joint Center for Policy Research (JCP) combines the energies of research faculty, staff and graduate students of a state university with the strong commitment of a community college in responding to local needs.

The Joint Center's primary mission is to serve the Lorain County community-leaders, nonprofit organizations, government agencies, and citizens-and to extend the college's commitment to local economic development. In addition, its services are provided on a regional level.

In its fourth year of operation, the services being offered upon request are: Customized Policy Research and Consultation; Data Service Delivery System; and Capacity Building. Customized policy research and consultation services involve the collection of qualitative and quantitative information utilizing various data gathering techniques, primarily survey research and focus group techniques. The data service delivery system involves the sharing of information from sources including the 1990 Census data as well as data from other JCP and CUS research endeavors. Capacity building involves training and empowering organizations with the ability to facilitate their own qualitative information collection and to use that information through the decision making process. The Joint Center carries out its projects by drawing upon the full services of the CUS Research Lab.

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 characterizations. The institute, founded in 1983, 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 1956 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)

Sunggu Lee, Ph.D., Director
Kathy L. Fullerton, Ph.D., Assistant Director

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 reactions, separation technology, new polymeric materials, biotechnology, and environmental engineering. In conjunction with this, the Center operates several scale-up and miniplant pilot 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.
The University of Akron

Small Business Institute

Jeffrey C. Dilts, Ph.D., Director

The Small Business Institute was established in 1973 and was the first Small Business Institute funded in Northern Ohio. The Small Business Institute’s objective is to offer management assistance counseling to area organizations through the utilization of senior and graduate students in the College of Business Administration, working as advisers under the supervision of College of Business Administration faculty. Nearly 300 firms have been serviced by the institute since its founding. It is an integral part of the Akron Summit Industrial Incubator project.

Survey Research Center

Jesse F. Marquette, Ph.D., Director
Anne-Marie Scarbrick-Hauser, Ph.D., Assistant Director

The University of Akron Survey Research Center is a research organization established with the prime objective of making quality survey research facilities available to university personnel, national state, community and other legitimate research agencies. The Center 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. Center staff are available for consultation in the development of grant proposals and budgets.

The Survey Research Center has been in continuous operation at The University of Akron since 1982, utilizing research and professional staff, graduate assistants, and over 50 regular interviewers. Most of the work done by the Center is on behalf of the government or non-profit agencies and mass media organizations such as newspapers and television stations. The Center’s work, both directly and indirectly, influences public discussion and planning on significant social and political issues. The Center has, since its inception, processed more than 115,000 completed interviews in over 133 projects concerned with topics such as national or state political and social issues, government services, economic development, and public policy planning.

Center for Urban Studies

Douglas V. Shaw, Ph.D., Acting 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. To meet the needs of urban communities, the Center engages in a wide variety of scholarly and applied research projects, research consultation, and information and data services.

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.

Since 1979, the Center has been the University’s representative to the Ohio Board of Regents’ Urban University Program (UUP) which links eight state universities to help Ohio meet the challenges of its urban future. UUP’s Northeast Ohio Inter-Institutional Research Consortium focuses on the revitalization of the region through the efforts of the faculty and staff of the four urban universities in Northeast Ohio.

Over the years, the Center has expanded its programs and services, building a substantial intellectual and technological infrastructure. The majority of the Center’s research and services is supported by external grants and contracts which represent UUP funding for multiyear projects, multcampus projects, and faculty research projects as well as funding from private sources for client-driven research and services.

CUS activities are organized under three broad programs: Public Policy Issues Program; Public Sector Marketing Research and Data/GIS Services Program; and Community Institution and Leadership Building Program. Increasingly, these areas are becoming distinct programs, each with its own program head, professional staff, and affiliated faculty from various disciplines and professions.

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.

Linked with CUS is another important center: the Joint Center for Policy Research, an innovative partnership with the Public Services Institute at Lorain County Community College which is intended to serve the needs of Lorain County for policy research services.
6
Courses of instruction

The University of Akron

1870
Course Numbering System*

INDEX

Interdisciplinary Programs
1800 Divorce Mediation
1830 Home-Based Intervention Therapy
1880 Medical Studies

Buchtel College of Arts and Sciences
3001 Women's Studies
3006 Institute for Lifespan Development and Gerontology
3010 Environmental Studies
3100 Biology
3110 Biology/NEOUCOM
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
3490 Engineering Applied Mathematics
3500 Modern Languages
3520 French
3530 German
3580 Spanish
3600 Philosophy
3650 Physics
3700 Political Science
3750 Psychology
3850 Sociology
3870 Anthropology
3980 Public Administration and Urban Studies

College of Engineering
4200 Chemical Engineering
4300 Civil Engineering
4400 Electrical Engineering
4450 Engineering Computer Science
4600 Mechanical Engineering
4800 Biomedical Engineering

College of Education
5100 Educational Foundations
5200 Elementary Education
5250 Reading
5300 Secondary Education
5400 Technical and Vocational Education
5500 Physical Education
5560 Outdoor Education
5600 Educational Guidance and Counseling
5610 Special Education
5620 School Psychology
5630 Multicultural Education
5700 Educational Foundations and Leadership
5900 Special Educational Programs
5900 Higher Education Administration

College of Business Administration
6200 Accountancy
6400 Finance
6500 Management
6600 Marketing
6700 Professional
6800 International Business
7700 Communicative Disorders
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 One, "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
3 credits
Prerequisite: Admission to Certificate Program. Overview of home-based intervention to include philosophy and description of this programmod as well as assessment of family, their home and community environment.

504 HOME-BASED INTERVENTION TECHNIQUES AND PRACTICE
3 credits
Prerequisite: 503. Provides intervention techniques and skill areas required for home-based intervention and learning opportunities for matching techniques with specific family problems.

505 HOME-BASED INTERVENTION INTERNSHIP
3 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

1980:

501 SPECIAL TOPICS: MEDICAL EDUCATION
1-3 credits
(May be repeated) Special topics and current issues in medical education. Emphasis on presentation of oral and written reports and subsequent student-faculty dialogue.

WOMEN’S STUDIES

3001:

500 FEMINIST THEORY
3 credits
Prerequisite: 3001/300. A summary of feminist theory to familiarize students with the main currents in contemporary feminist theory and the origins and evolution of that thought.

585 SPECIAL TOPICS IN WOMEN’S STUDIES
1-3 credits
(May be repeated) Specialized topics and current issues in Women’s Studies. Covers content and issues not currently addressed in other academic courses. Emphasis will be on original source materials, critical analyses and the synthesis of empirical and theoretical aspects.

590 WORKSHOP (May be repeated) Group experimental study of special issues in Women’s Studies.

INSTITUTE FOR LIFE-SPAN DEVELOPMENT AND GERONTOLOGY

3006:

680 INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY
3 credits
Prerequisite: permission. The certificate program student only. Explores interdisciplinary issues in life-span development and gerontology. Guest speakers from various disciplines and services which have life-span development and gerontological components and involvement in community facilities and services.

685 SPECIAL TOPICS
1-3 credits
Prerequisite: permission of instructor. Specialized topics and current issues in life-span development, gerontology, or gender. Emphasis is on original source materials, critical analyses and synthesis of empirical, theoretical and applied aspects.

695 RETIREMENT SPECIALIST
2 credits
An investigation of issues related to the design and implementation of pre-retirement planning and examination of life-span planning education as employed by labor, business and education.

ENVIRONMENTAL STUDIES

3010:

590 WORKSHOP IN ENVIRONMENTAL STUDIES
3 credits
Prerequisite: varies with topic. Credit in graduate program must have prior approval of advisor. Skills, attitudes and fundamental concepts dealing with timely environmental problems and issues covered. Instrution under direction of University faculty.

602 EVALUATION OF ENVIRONMENTAL DATA
3 credits
Prerequisite: Graduate standing. One year of chemistry, physics, job experience or course work in chemical engineering. A review of environmental testing techniques in current use. Emphasis on interpretation and limitations.

681 GRADUATE SEMINAR IN ENVIRONMENTAL STUDIES
3 credits
Prerequisite: Graduate standing. Explores topics of current environmental concern. Emphasis on presentation of oral and written reports and subsequent student-faculty dialogue.
BIOLOGY 3100:

500 FOOD PLANTS 2 credits
Prerequisites: 111 or permission of instructor. A survey of the plants used for human food, including their history, structure, uses.

521 TROPICAL FIELD BIOLOGY 4 credits
Prerequisite: 111/112 or equivalent. Ecology of coral reefs, tidal pools, mangroves, intertidal areas, terrestrial flora and fauna, island biogeography. Taught at a field station in the tropics.

522 CONSERVATION OF BIOLOGICAL RESOURCES* 4 credits
Prerequisites: 217 or permission. Basic principles for management of plant and animal resources in natural areas. Political, economic and social aspects of resource management. Laboratory with field trips.

524 FRESHWATER ECOLOGY* 3 credits
Prerequisite: 217. Field, laboratory study of lake ecosystems. Species composition of selected basic communities, community energetics, nutrient cycling. Limnological survey of a local lake, laboratory.

525 FRESHWATER ECOLOGY FIELD AND LABORATORY STUDIES 3 credits
Prerequisites: 217 or permission of instructor. Field and laboratory studies of lakes, ponds, and rivers. Collection, identification, and ecology of aquatic plants and animals, especially phytoplankton, zooplankton and benthic organisms.

528 APPLIED AQUATIC ECOLOGY* 4 credits
Prerequisite: permission. Biological methods for assessing quality of natural waterways. Emphasis given to use of benthic invertebrates as indices of water quality for aquatic management.

529 BIOLOGY OF BEHAVIOR 2 credits
Prerequisites: 211, 217 and 316. Biological basis of behavior: ethological theory; function, evolution and adaptiveness of behavior. May be taken without 4291529.

537 ADVANCED ADVANCED MICROBIOLOGY 4 credits
Prerequisite: 311. Study of specific groups of bacteria involved in the production of food or chemicals. Focus on oil and water and those involved in industrial biocatalytic cycles. Laboratory.

538 PATHOGENIC BACTERIOLOGY 4 credits
Prerequisite: 311. Study of major groups of bacteria which produce infections in human, biochemical properties of microorganisms which endanger vanguard and nature of host resistance. Laboratory.

550 VIROLOGY 4 credits
Prerequisite: 311. Physical, chemical and biological properties of viruses including mechanisms of infection, genetics and tumor formation: methods of cultivation and identification. Laboratory.

553 IMMUNOLOGY 4 credits
Prerequisite: 311. Recommended: 423. Nature of antibodies, antigen response and antigen-antibody reaction. Special emphasis on immunologic methods, hyperreactivity, immunologic tolerance and immune diseases considered. Laboratory.

565 MYCOLOGY 4 credits
Prerequisite: 112. Structure, life history classification of representative fungi with emphasis on the importance of fungi to human achievement. Laboratory.

567 PLANT DEVELOPMENT 4 credits
Prerequisite: 112 and one year of organic chemistry. Embryology and morphogenesis of plants in relation to physical, chemical, genetic and structural factors. Laboratory.

568 PLANT ANATOMY 3 credits
Prerequisite: 112. Structure and development of cells, tissues, organs and organ systems of seed plants. Laboratory.

575 PHYSIOLOGY 4 credits
Prerequisite: 112. Examination of the major groups of animals with emphasis on life histories and their relationship to algal form and structure. Laboratory.

577 PLANT PHYSIOLOGY 4 credits
Prerequisite: 112. Structure, reproduction, life cycles, ecology, evolution, economic significance of plant life: pollination, reproduction, growth, development and response to internal and external stimuli. Laboratory.

579 ECONOMIC BOTANY 3 credits
Prerequisite: 112 and one year of organic chemistry. Water, soil and mineral requirements of plants. Photosynthesis and their metabolism. Growth and response to internal and external stimuli. Laboratory.

581 GENERAL ENTOMOLOGY 4 credits
Prerequisites: 112, 117, 217. Structure, physiology, life cycle, economic importance characteristics of order and major families of insects. Laboratories parallel lectures.

583 INVERTEBRATE ZOOLOGY 4 credits
Prerequisites: 112, 217. Invertebrate groups, their classification, function, morphology, adaptive radiation and life history. A phycological approach is used. Laboratories parallel lectures.

585 PARASITOLOGY 4 credits
Prerequisite: 311. Principles of parasitism; host-parasite relationships. Important human and veterinary parasitic diseases, and control measures. Laboratories parallel lectures.

587 ORNITHOLOGY* 4 credits
Prerequisite: 1,2. Introduction to the study of birds, classification, anatomy, physiology, behavior, ecology, evolution, natural history and field identification. Laboratory.

598 VERTEBRATE ZOOLOGY 4 credits
Prerequisite: 310 or permission. Biology of vertebrates, except birds — evolution, ecology, ethology, systematics and anatomy. Laboratory with field trips.

561.2 HUMAN PHYSIOLOGY 4 credits each
Prerequisite: senior or graduate standing. Detailed study of function of the human body with special emphasis on neuromuscular, cardiovascular, respiratory, renal and endocrine physiology. Laboratory.

564 HISTOLOGY 3 credits
Prerequisites: 211 and one year of organic chemistry. Study of cells, extracellular matrix, tissue renewal, cardiovascular, endocrine and immune mechanisms involved in understanding physiology of a variety of invertebrate and vertebrate animals.

565 ADVANCED HUMANICULAR PHYSIOLOGY 3 credits
Prerequisites: 211 or permission. An introduction to the comparative physiology of major vertebrates. The laboratory consists of dissections of representative vertebrates.

567 THE PHYSIOLOGY OF REPRODUCTION 3 credits
Prerequisite: 426/564 or permission. Study of the physiological mechanisms of reproduction throughout the animal kingdom with special emphasis upon mammalian endocrinological control. Controversial issues in the field will be examined and current research presented.

569 RESPIRATORY PHYSIOLOGY 3 credits
Prerequisites: 426/562 or 464/564 or permission. Study of mechanisms determining gas exchange including ventilation, diffusion, blood flow, diffusion, and control systems. Emphasis on the role of the respiratory system in normal human lung function. Clinical aspects are not considered.

570 MOLECULAR BIOLOGY 3 credits
Prerequisites: 211, 311. Fundamentals of molecular biology, including recombinant DNA technology, applications in biotechnology, medicine, and genetic engineering. Mechanisms of gene regulation.

581 ADVANCED GENETICS 3 credits
Prerequisite: 112. Nature of the gene; genetic codes; hereditary determinants; and genes in population. Lecture and seminar.

584 PHARMACOLOGY 3 credits
Prerequisite: 310 recommended. Subcellular-level physiology. Interactions of drugs with living systems with emphasis on molecular and cellular mechanisms of action, drug metabolism and excretion, and selected aspects of experimental toxicology. Clinical aspects and specific drug therapies not considered.

587 WORKSHOP IN BIOLOGY (May be repeated) 3 credits
Prerequisites: 310, 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 repeated for up to 4 credit hours.

5793 BIOLOGICAL PROBLEMS 12 credits each
Prerequisite: permission. Honors-level work usually consisting of laboratory investigations. A minimum of 4 credits may apply toward the major degree requirements.

625 BASIC DNA TECHNIQUES 3 credits
Basic DNA techniques including extraction of DNA, cleavage of DNA and cloning. Laboratory.

630 ENVIRONMENTAL PHYSIOLOGY 3 credits
Prerequisite: 311. Study of physiological reactions of healthy mammals to natural changes or extremes of physical environment.

670 MEDICAL PHYSIOLOGY, PATHOPHYSIOLOGY, AND PHARMACOLOGY 3 credits
Prerequisite: Admission to M.S.N. program, or 200/361, or consent of instructor. Selected principles of human physiology, pathophysiology, and pharmacology are examined in depth, as well as related to the science of patients in the clinical setting.

681 CYTOLOGY 3 credits
Prerequisites: 211, 212. Structure and functional organization of cells at a subcellular level. Three lectures and 1-2 weeks.

682 EUCAITIC TECHNIQUES-DNA 3 credits
A graduate level laboratory course which familiarizes the student with several methods used to isolate and characterize eucaryotic genes at the DNA level. Laboratory.

683 EUCAITIC TECHNIQUES-RNA 3 credits
A graduate level laboratory course which familiarizes the student with several methods used to study eucaryotic genes at the RNA level. Laboratory.

685 ANIMAL CELL CULTURE 4 credits
Tissue culture techniques: biology and physiology of animal cells and tissues under in vitro conditions. Application of these techniques to radiology, cancer chemotherapy and animal virus genetics. Laboratory.

686,7 RESEARCH IN THE BIOLOGY OF AGING 3 credits each
Enrollment restricted to graduate students in biology, or by approval in special cases. Introduction to research techniques in study of biological aspects of aging and experience in special research project in the field.

688 PRINCIPLES OF TRANSMISSION ELECTRON MICROSCOPY 3 credits
Prerequisites: 310 or 681 or equivalent. Modern cytological methods using transmission electron microscopy. Required to demonstrate proficiency in fixation techniques, use of ultramicrotome, light and electron microscopes and darkroom techniques.

689 PRINCIPLES OF SCANNING ELECTRON MICROSCOPY 3 credits
Prerequisites: 310, 681 or equivalent. An introduction to modern cytological methods using the scanning electron microscope. A portfolio is required to demonstrate proficiency in fixation techniques, the use of supplemental equipment such as the critical point dryer apparatus and the use of a supercritical dryer, and proficiency in the use of the scanning electron microscope.

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

721 BIOLOGY COLOQUIUM 1 credit each
May be repeated. Prerequisite: permission. Attendance at all departmental seminars and presentations of the seminar held on original research. Required of all thesis option students who wish to present their thesis research.

799 MASTER'S THESIS 1-6 credits each
May be repeated. A minimum of 6 credits is required for thesis option student.

*Field trips involved minor transportation costs.
603 MACROECONOMIC ANALYSIS II
Prerequisites: 602. Macroeconomic dynamics and stability analysis of closed and open Keynesian systems. Includes coverage of post-Keynesian theories of economic growth.
3 credits

606 ECONOMICS OF THE PUBLIC SECTOR
Examination of public sector economics comprehends public revenues and expenditures. Develops policies of taxation, welfare aspects of the public sector, theory of public goods. Includes public sector taxation, comparative statics, public choice, welfare analysis, fiscal federalism etc.
3 credits

610 FRAMEWORK OF ECONOMIC ANALYSIS
Prerequisite: Graduate standing. Development of theoretical and analytical framework for decision making. Dislosure of applications of the framework to situations concerning demand, cost, supply, production, price, employment and wage.
3 credits

611 MICROECONOMIC THEORY
Prerequisite: 610. Congsideration of consumer behavior and the firm. Determination of market prices. Optimization model, establishment of criteria for competitive and allocative efficiency.
3 credits

612 MICROECONOMIC THEORY II
Prerequisite: 611. Competition of goods and markets in economic theory and the relativization in public policy and the choice of welfare.
2 credits

615 INDUSTRIAL ORGANIZATION
Prerequisite: 611 or permission. Examines interfaces between government structure, firm conduct and economic performance. Measurement and effects of monopoly power, industrial concentration and changes.
3 credits

616 ANTITRUST ECONOMICS
Prerequisite: 615 or permission of instructor. Economic rationale behind legislative and judicial decisions affecting mergers, vertical, horizontal restraints, monopolization, collusion, price discrimination.
3 credits

617 THE ECONOMICS OF REGULATION
Prerequisite: 615 or permission of instructor. Examines rationale, methods and success of government regulation of public safety, transportation and communications industries.
3 credits

620 APPLICATIONS OF MATHEMATICAL MODELS TO ECONOMICS
3 credits

621 APPLICATION OF LINEAR MODELS IN ECONOMIC ANALYSIS
Prerequisite: Courses in intermediate microeconomics. Review of selected topics of linear algebra, regression to economic theory. Static open and closed exogeny systems, dynamic models, consumption technology and theory of demands, linear programming, general equilibrium analysis.
3 credits

625 STATISTICS FOR ECONOMETRICS
Prerequisite: Courses in elementary differential and integral calculus, 600:321, 322 or equivalent. A review of statistical theory and its application to research in economics. Emphasis is on estimation and hypothesis testing as a prelude to econometrics.
2 credits

626 ECONOMETRICS
Prerequisite: 625 or equivalent. Formulation of functional relations among economic variables suitable for statistical estimation from observational data and construction of multivariate econometric models and methods of estimation.
3 credits

628 SEMINAR IN RESEARCH METHODS
Prerequisite: Permission of instructor. A seminar in the research use of applied mathematical economics or econometrics. Emphasis is on individual development of a theoretical proposition of research strategy, its empirical examination and policy implication.
3 credits

633 THEORY OF WAGES AND EMPLOYMENT
Analytical approach to integration of economic theory with observed labor market phenomena. Discussion of wage and employment theories, effects of unions, collective bargaining, some pressing problems.
3 credits

634 COLLECTIVE BARGAINING
Economic issues and implications involved in hours of work, employment and unemployment, and the relations of trade unions upon basic institutions of a free private enterprises.
3 credits

635 LABOR LAW
3 credits

636 COLLECTIVE BARGAINING II
Prerequisite: 635 or permission of instructor. Examination of processes of negotiation. Course deals with actual collective negotiations. Student decisions on issues, policies and tactics, then negotiates contract.
3 credits

637 EMPLOYMENT LAW
Study of selected aspects of legislation and case decisions affecting employment relations. Topics include employment-at-will, health and safety, wage, hours and benefits, arbitration.
3 credits

638 PUBLIC SECTOR LABOR MARKETS
Prerequisite: 635 or permission of instructor. Examination of unique problem of public employment under collective bargaining agreements. Focus on legal framework, tripartite nature of negotiations and special situations facing public employees.
3 credits

644 SEMINAR ON ECONOMIC GROWTH AND DEVELOPMENT
Prerequisite: Graduate standing. An overview of economic growth since age of classical economics. Problems in development of emerging countries. Discussion of aggregate macroeconomic policies of capital formation, investment, taxation, international trade.
3 credits

650 SEMINAR ON ECONOMIC PLANNING
Types and methods of analysis of policy issues. Covers non-econometric methods, e.g., project analysis, mathematical programming, social accounting. Stress applied problem solving and effective communication.
3 credits

656 SEMINAR ON REGIONAL ECONOMIC ANALYSIS AND DEVELOPMENT
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, South Eastern Europe, Southeast Asia or Eastern Europe.
3 credits

660 INTERNATIONAL MONETARY ECONOMICS
International financial relations between the financial market and exchange rate adjustment. Balance of payments adjustment policies. International monetary system.
3 credits

661 INTERNATIONAL TRADE
Prerequisite: 644. Analysis of trade theories and development in trade theory, policy implications in trade relations among developed and developing economies.
3 credits

662 MONETARY ECONOMICS
Introduction to intermediate economics of monetary theory. Emphasis on integration of money and value theory among other areas, plus some pressing policy issues.
3 credits

COURSES IN ECONOMICS
506 STATE AND LOCAL PUBLIC FINANCE
3 credits

507 ECONOMIC FORECASTING
3 credits

510 LABOR MARKET POLICY
3 credits

511 THE DEVELOPMENT OF AMERICAN CORPORATE STRUCTURE
3 credits

515 SPECIAL TOPICS: ECONOMICS
3 credits

527 COMPARATIVE ECONOMIC SYSTEMS
3 credits

529 COMPARATIVE ECONOMIC SYSTEMS I
Prerequisites: 200 and 201, or 244, or permission of instructor. Systems of economic organization, ranging from the theoretical extreme of a perfectly free market economy to the socialist varieties. Historical evolution of economic systems causing problems in theory and practice.
3 credits

530 ECONOMIC DEVELOPMENT AND PLANNING
3 credits

531 ECONOMIC DEVELOPMENT AND PLANNING FOR UNDERDEVELOPED COUNTRIES
Prerequisites: 200 and 201, or 244. Basic problems in economic development. Theories of development. Government planning for development. Trade development of underdeveloped countries. Credit not available for students with credit for 3250:504.
3 credits

550 MONETARY AND BARRIER POLICY
Prerequisites: 390, 400. Continua, interest and credit, policies of control by central banks and governments, the Federal Reserve System.
3 credits

551 WORKSHOP IN ECONOMICS
Prerequisites: 200, 201. Group study of special topics in economics. May not be used to meet undergraduate major requirements in economics. May be used for elective credit only.
3 credits

557 FUNDAMENTALS OF ECONOMIC ANALYSIS
Prerequisites: Graduate standing. The measurement of national income, employment and price level; aggregate consumption, investment and asset holding, decision problems faced by households and firms, partial equilibrium and analysis of competition and monopoly and general equilibrium analysis. May not be substituted for 602, 603, 611, or located toward the 600 level credit required for N.A. in economics.
3 credits

562 MACROECONOMIC ANALYSIS I
Prerequisites: Courses in intermediate microeconomics. Students interested in terms of complete statistics with only recently brief mention of dynamic models.
3 credits
GEOGRAPHY AND PLANNING

3350:

503 COMPUTER APPLICATIONS IN GEOGRAPHY AND PLANNING
Applicants advanced instruction in technologies to geography and planning, including database systems, electronic spreadsheets, data base management systems, and the Internet. Laboratory. 3 credits

505 GEOGRAPHIC INFORMATION SYSTEMS
2 credits

507 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS
Prerequisite: 505. Advanced introduction to the theory and application of geographic information systems (GIS) and its application in professional and research environments. Laboratory. 3 credits

522 TRANSPORTATION SYSTEMS PLANNING
Prerequisites: 520 or permission. Study and analysis of transportation systems from a geographic perspective. Emphasis on transportation planning and problems and issues, elements of transportation planning. 3 credits

532 RECREATION AND COMMERCIAL SITE LOCATION
Prerequisite: 520 or permission. Relationship between land, resources, population, transportation and commercial and industrial location processes. 3 credits

533 INTRODUCTION TO PLANNING
Prerequisite: 530 or permission. Role of geographic information in city, regional and resource planning. 3 credits

536 URBAN LAND USE ANALYSIS
Prerequisite: 530 or permission. Land use classification systems and their spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land use. 3 credits

538 WORLD METROPOLITAN AREAS
Prerequisite: 530 or permission. Comparative analysis of metropolitan regions. Urbanization, land use, transportation, population and role of cities in economic development in different cultures. 3 credits

539 DEVELOPMENT OF AMERICAN PLANNING
Prerequisite: 530 or permission. The evolution of urban planning as a profession, particularly in the United States. 3 credits

540 PRINCIPLES OF CARTOGRAPHY
Theoretical and practical applications of cartographic principles used to design and produce maps. Emphasis on basic cartographic mapping techniques and methods of presenting quantitative and descriptive data. Laboratory. 3 credits

541 APPLICATOINS IN CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS
Prerequisites: 530 or permission. Application of analytic and presentation techniques from cartographic and geographic information systems to practical problems in geography and planning. Laboratory. 3 credits

547 INTRODUCTION TO REMOTE SENSING
Prerequisite: 530 or permission. Study of aerial photography and non-photographic imagery, developed by radar, thermal, multispectral and satellite scanners. Emphasis on use in geographic, geological, biological and engineering research. 3 credits

548 ADVANCED CARTOGRAPHY
May be repeated for a maximum of 3 credits. Advanced study of cartographic principles with an emphasis on the use of color for map design and production. Laboratory activities. 3 credits

549 FIELD RESEARCH METHODS
Prerequisite: 545. Principles of geographic research. Field research methods. Laboratory. 3 credits

551 PHOTOANALYSIS
Prerequisites: 485/585 or permission. Analysis of cartographic principles used to design and produce maps. Emphasis on basic cartographic mapping techniques and methods of presenting quantitative and descriptive data. Laboratory. 3 credits

552 FIELD STUDIES AND RESEARCH METHODOLOGY
Prerequisite: 485/585 or permission. Field research methods. Laboratory. 3 credits

554 SPECIAL TOPICS IN GEOGRAPHY
Prerequisite: 485/585 or permission. May be repeated for a maximum of 3 credits. May be repeated for a maximum of 3 credits. Laboratory. 3 credits

558 SOIL AND WATER FIELD STUDIES
Prerequisites: 530 or permission. Study of soil and water in the context of the natural environment. Laboratory. 3 credits

601 SPECIAL TOPICS
Prerequisite: 530 or permission. Laboratory. 1-3 credits

602 PLANNING THEORY
Introduction to the political, institutional and ethical foundations and procedural theories of urban and regional planning. 3 credits

603 FACILITIES PLANNING
Study of methods and implementation of urban facilities planning. 3 credits

604 LAND USE PLANNING LAW
Prerequisite: permission. May be repeated for a maximum of 6 credits. Credit for Urban Land Use Planning Law granted only when this course is offered in the manner described in the Ohio State University and the Ohio State University. 3 credits

605 COMPARATIVE PLANNING
A survey of international political and regional planning implementation measures in use in the developed world. Particular attention will be given to the planning experiences of European nations and their impact on American planning theory and practice. 3 credits

606 METHODS OF PLANNING ANALYSIS I
Introduction to the primary analytic techniques for small-scale geographic and economic analysis and protection. 3 credits

607 METHODS OF PLANNING ANALYSIS II
Prerequisite: 606. Review of the primary techniques for comprehensive plan preparation, evaluation and implementation. 3 credits

608 ADVANCED SPATIAL ANALYSIS
Prerequisite: 485/585 or permission. The construction and analysis of maps and spatial models. Emphasis on the use of satellite imagery and spatial data. Laboratory. 3 credits

609 PLANNING INTERNSHIP
Prerequisite: permission. Individual experience in selected planning agencies for supervised performance in professional work. 1-6 credits

610 HISTORY OF GEOGRAPHIC THOUGHT
Prerequisite: 485/585 or permission. Critical review of major developments in geographic concepts from ancient times to the present. 3 credits

615 INDEPENDENT READING AND RESEARCH
Prerequisite: 485/585 or permission. Critical review of major developments in geographic concepts from ancient times to the present. 1-6 credits

620 URBAN LAND USE PLANNING
Prerequisite: 530 or permission. Land use classification systems and the spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land uses. 3 credits

621 MILESTONE IN URBAN LAND USE PLANNING
Prerequisite: 530 or permission. Land use classification systems and the spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land uses. 3 credits

622 MILESTONE IN URBAN LAND USE PLANNING
Prerequisite: 530 or permission. Land use classification systems and the spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land uses. 3 credits

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Prerequisite: 530 or permission. Land use classification systems and the spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land uses. 3 credits

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Prerequisite: 530 or permission. Land use classification systems and the spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land uses. 3 credits

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Prerequisite: 530 or permission. Land use classification systems and the spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land uses. 3 credits

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Prerequisite: 530 or permission. Land use classification systems and the spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land uses. 3 credits

640 MILESTONE IN URBAN LAND USE PLANNING
Prerequisite: 530 or permission. Land use classification systems and the spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of land uses. 3 credits
GEOLOGY 3370:

505 ARCHAEOLOGICAL GEOLOGY 3 credits (includes lab)
Prerequisite: 10 or by permission of instructor. Provides background in the historical principles and techniques relevant to prehistoric or historic periods. Topics include stratigraphy, absolute dating, locality assessment, zoology/zoogeography, lithology, and remote sensing. Required lab.

510 REGIONAL GEOLOGY OF NORTH AMERICA 3 credits
Prerequisites: 101, 102, 200, 201, 260, advanced permission, recommended. 350. Examination of provinces of North America emphasizing structure, tectonic setting, stratigraphy and processes responsible for landforms in each province. Laboratory.

511 GLACIAL GEOLOGY 3 credits
Prerequisite: 20 or permission. Causes and effects of Pleistocene expansion of polar ice masses with emphasis on glacial deposits and world climatic changes.

521 COASTAL GEOL & GLACIAL GEOLOGY 3 credits
Prerequisites: 101, 324 or permission of instructor. Study of the origins and evolution of coasts and coastal deposits with particular attention paid to the interaction of waves and currents with sediments and the development of associated sedimentary features.

525 ADVANCED STRATIGRAPHY 2 credits
Prerequisites or corequisites: 300, 324 or permission. Emphasis on correlation, depositional systems, sedimentation and terranes, seismic stratigraphy, and basin analysis. Laboratory in the field.

532 OPTICAL MINERALOGY-INTRODUCTION TO PETROGRAPHY 3 credits
Prerequisites: 210 and 211 or equivalent. Optical techniques for identification, characterization, and classification of minerals and rocks using the petrography microscope. Laboratory.

533 ADVANCED PETROGRAPHY 3 credits
Prerequisite: 532. Petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and minerals. Emphasis on thin section. Laboratory.

535 PETROLEUM GEOLOGY 3 credits
Prerequisite: 350 or permission recommended. 324. Natural occurrences of petroleum. Characterization, origin, enrichment and exploration methods. Laboratory.

539 COAL GEOLOGY 3 credits
Prerequisites: 101, 102; recommended 324. Origin, composition and occurrence of coal with emphasis on depositional environments, qualification processes, exploitation, evaluation and exploration. Laboratory.

537 ECONOMIC GEOLOGY 3 credits
Prerequisite: 321 and 360. Study of economic and non-economic mineral deposits emphasizing paragenesis and exploration. Laboratory.

541 FUNDAMENTALS OF GEOPHYSICS 3 credits
Prerequisites: 3400, 223 or permission and 3600-392. Fundamental concepts in solid earth, geodynamics, plate tectonics, atmosphere, and geodynamics. Contributions of geophysics to recent major developments in geoscience.

544 EXPLORATION GEOPHYSICS 3 credits
Prerequisites: 3400, 223 or 3600-392 or permission. Basic principles and techniques of geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical methods and application to geological problems. Laboratory.

549 BOREHOLE GEOPHYSICS 3 credits
Prerequisite: permission of instructor. Basic principles and techniques of geophysical well logging with emphasis on electrical, radioactive and sonic measurements and their quantitative evaluation. Applications in oil, gas and groundwater exploration. Laboratory.

550 ADVANCED STRUCTURAL GEOLOGY 3 credits
Prerequisite: 350 or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory.

553 MICROPROTEOLYSIS 3 credits
Prerequisite: 360 or permission. Introduction to techniques of microproteolysis evolution and petrology of selected microfossil gravels. Laboratory.

570 GEOCHEMISTRY 3 credits
Prerequisite: 101, 230, 321, 350 or 102, 153, or permission. Application of chemical principles to the study of geologic processes. Laboratory.

574 GROUNDWATER HYDROLOGY 3 credits
Prerequisites: 101, 102, 153. Occurrence, regulation and measurement of groundwater. Qualitative and quantitative presentation of geological and geophysical aspects of groundwater hydrology. Laboratory.

585 INDIVIDUAL READINGS IN GEOLOGY 1-4 credits
Prerequisite: permission of graduate advisor required. May be repeated for a total of 8 credits. May not be used to meet degree requirements. Directed reading to fit individual student program. Credit/Noncredit.

590 WORKSHOP 1-3 credits
May be repeated. Group studies of special topics in geology. May not be used in minor or graduate or major requirements in geology. May be used for elective credit only.

593 GEOLOGY FIELD CAMP I 3 credits
Prerequisites: 101 and 102 and permission of instructor. Introduction to collection and interpretation of field data and construction of geological maps.

594 GEOLOGY FIELD CAMP II 3 credits
Prerequisites: 231, 350, 405 or 393 plus permission of instructor. Advanced techniques and methods of field geology necessary for detailed geological mapping and research.

608 REMOTE SENSING IN GEOLOGY 3 credits
Prerequisite: 3350. 457 or 457 equivalent. Techniques for analysis and processing of remotely sensed data from photogrammetry and SAR, airborne and satellite sensing systems. Applications to local, regional and global geologic and environmental problems. Laboratory.

609 APPLIED QUANTITATIVE GEOMORPHOLOGY 3 credits
Prerequisite: 510. Practical applications to geomorphology of topography, hydrology, and remote sensing. Laboratory.

622 CARBONATE PETROLOGY 3 credits
Prerequisite: 324 and 432 or permission of instructor. Detailed examination of carbonate suites with emphasis on depositional facies and diagenetic alteration. Laboratory.

624 SILICICLAVEOUS SEDIMENTOLOGY 3 credits
Prerequisite: 324 and 432 or permission of instructor. Emphasis on processes that transport and deposit sediment and the stratification associated with these processes. Fieldwork in depositional settings and associated fossil assemblages. Laboratory.

631 ROCKS AND MINERALS 4 credits
Prerequisites: 101 and permission. Inter-disciplinary course integrating crystallography, mineralogy and petrology for the science teacher and graduate student from disciplines other than geology. Laboratory.

632 IGNEOUS PETROLOGY 3 credits
Prerequisites: 432 or 532. Origin and paragenesis of igneous rocks. Theory, petrological trends, and properties of major igneous rock types. Selected rock suites studies. Laboratory.

635 METAMORPHIC PETROLOGY 3 credits
Prerequisite: 432 or 532. Classification, identification, genesis of clay minerals, clay rocks, zeolites. Laboratory stresses methods of identification of clay minerals, analysis, petrographic interpretation of clay materials in suites of samples from the rock record. Laboratory.

639 NUCLEAR GEOLOGY 3 credits
Prerequisite: permission. Three four-hour laboratory. Prerequisites: minimum of seven credits in chemistry, physics, eight credits in calculus and eight credits in geology or permission. Discusses nature of radioactive and stable isotopes, their applications in geology, nuclear minerals, radiometric dating and disposal of radioactive wastes. Nuclear analytical techniques will also be discussed, lecture, laboratory and field study.

643 GEOSTATISTICS 3 credits
Prerequisites: 101, 3470 or equivalent course in statistics. Application of statistical methods to geology and geophysics including testing of hypotheses, trend surface analysis, analysis of variance, nonparametric statistics and time series analysis.

654 GLOBAL TECTONICS 3 credits
Prerequisite: 350, 441 or permission. Theoretical study of physical forces involved in formation and deformation of earth crust with emphasis on plate tectonics and associated disasters.

674 ADVANCED GROUNDWATER HYDROLOGY 3 credits
Prerequisite: 426 or 427. Study of water table and aquifer systems under steady and nonsteady state conditions. Collection and interpretation of field data with regard to theories, Water well development. Laboratory and field work.

747 GEOCHEMICAL METHODS OF PROSPECTING 3 credits
Prerequisite: nine credits of chemistry. Prerequisites or permission. Emphasis on correlation, depositional and environmental geochemistry and methods and applications to engineering problems. Laboratory.

783 FREEKING TEACHING PRACTICUM 2 credits
Prerequisite: graduate assistant ship. Training and experience in college teaching of geology under supervision of experienced faculty. May be repeated for a maximum of 8 credits. Credits may not be used to meet degree requirements. Credit/Noncredit.

785 ADVANCED FIELD STUDIES 2 credits
May be repeated for a total of four credits. Prerequisite: permission of instructor. Field trip course emphasizing themes of geology not readily studied in Ohio. Includes pretrip preparation, field observations and data gathering, post-trip examination and/or written report. Student will bear trip expenses.

796 GEOLOGY COLOQUIM 1 credit
Lectures on current topics in geological sciences and thesis problems and defenses by graduate students. May be repeated. Does not satisfy degree requirements.

798 GRADUATE RESEARCH PROJECT 1-3 credits
May be repeated for a total of six credits. Prerequisite permission. Directed research or capstone research in an aspect of geology chosen by student in consultation with an instructor.

799 MASTER'S THESIS 1-6 credits
Independent and original investigation. Must be successfully completed, report written and defended before a committee.

HISTORY 3400:

500 WOMEN IN REVOLUTIONARY COLUMBIA 3 credits
Prerequisites: 3400, 350, or 40320, or permission of instructor. A study of the challenges women in women's lives in China during the late imperial (1644-1911) and socialist (1949-1998) periods.

501 IMPERIALISM IN EAST ASIA 3 credits
An examination of the European relations in the modern period, highlighting China's response to British, Russian and Japanese imperialism in the 19th and 20th centuries.

504 STUDIES IN ROMAN HISTORY 3 credits
Prerequisite: completion of 6 hours of History courses at the 200 or 300 level. Concentrated investigation of selected topics such as imperialism in middle and late Republic, the age of Augustus, or the fall of western Empire.

516 MODERN INDIA 3 credits
History of the Indian subcontinent from c. 500 with emphasis on Indian society and culture, British imperialism, and the emergence of Indian nationalism.

518 THE RENAISSANCE 3 credits
The transition from the Middle Ages to modern times (750-1600). Special emphasis on intellectual trends, the development of humanism, and the fine arts.

526 THE REFORMATION 3 credits
Europe in the 16th Century; its religious, cultural, political and diplomatic development, with special emphasis on Protestant, Anglican and Catholic reformations.

529 EUROPE IN THE FRENCH REVOLUTIONARY ERA, 1789-1815 3 credits
Development of Revolution, Napoleonic regime and satellites.
550 EUROPE

554 OHIO HISTORY

560 ANCESTRY

565 THE AMERICAN REVOLUTIONARY ERA: POLITICAL, MILITARY, AND CONSTITUTIONAL ASPECTS

570 THE AGE OF JEFFERSON AND JACKSON, 1801-1860

575 THE CIVIL WAR AND RECONSTRUCTION, 1861-1877

580 THE ORIGINS OF MODERN EUROPE, 1787-1914

585 AMERICAN HISTORY, 1877-1945

590 RECENT AMERICA: THE UNITED STATES SINCE 1945

595 UNITED STATES DIPLOMACY SINCE 1898

600 U.S. CONSTITUTIONAL HISTORY TO 1770

605 UNITED STATES DIPLOMACY SINCE 1914

610 ADVANCED RESEARCH IN INTELLECTUAL HISTORY

615 APPLIED RESEARCH IN EMPIRE AND COLONIAL RELATIONS

620 HISTORY OF THE UNITED STATES SINCE 1870

625 AMERICAN ECONOMY SINCE 1900

630 U.S. SOCIAL-CULTURAL HISTORY TO 1877

635ナーuy ECONOMIC HISTORY SINCE 1900

640 AMERICAN ENVIRONMENTAL HISTORY

645 OHIO HISTORY

650 AMERICAN SOCIAL-HISTORICAL HISTORY AFTER 1877

655 SPECIAL TOPICS IN AMERICAN SOCIAL-HISTORICAL HISTORY

660 HISTORICAL RESEARCH AND WRITING IN SELECTED TOPICS OF AMERICAN HISTORY

665 HISTORY OF THE UNITED STATES SINCE 1787

670 EXPERIMENTAL RESEARCH ON SELECTED TOPICS OF AMERICAN HISTORY

675 RESEARCH SEMINAR IN LATIN AMERICAN HISTORY

680 INDIAN INDIAN HISTORY

685 RESEARCH SEMINAR IN HISTORY AND SOCIOLOGY

690 RESEARCH SEMINAR IN HISTORY AND GEOGRAPHY

695 WRITING SEMINAR: AMERICAN HISTORY

696 RESEARCH SEMINAR IN HISTORY AND POLITICAL SCIENCE

700 WRITING SEMINAR: AMERICAN HISTORY

705 RESEARCH SEMINAR IN AFRICAN AMERICAN HISTORY

710 RESEARCH SEMINAR IN THE CIVIL WAR AND RECONSTRUCTION

715 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

720 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

725 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

730 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

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795 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

800 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

805 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

810 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

815 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

820 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

825 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

830 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

835 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

840 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

845 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

850 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

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980 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

985 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

990 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960

995 RESEARCH SEMINAR IN THE UNITED STATES SINCE 1960
COMPUTER SCIENCE

3460:

506 INTRODUCTION TO C AND UNIX
Prerequisite: Programming experience. C language programming. UNIX shell programming, file structure, system design and interprocess communication. (Not an approved mathematical sciences major, minor, or certificate elective.)

518 INTRODUCTION TO DISCRETE STRUCTURES
Prerequisite: 206 or permission. Introduction to a number of structures in mathematics of importance to student in computer science. Topics include algorithms and flow chart language, graphs and digraphs, trees, matrices, codes.

520 STRUCTURED PROGRAMMING AND COMPUTER NETWORKS
Prerequisites: 396 and 495/595. Techniques of block programming, using a structured programming language, program readability, program verification and program design.

521 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING
Prerequisite: 116. Object-oriented design, analysis, and programming using different development models. Comparison with other programming paradigms.

526 OPERATING SYSTEMS
Prerequisite: 307 and knowledge of C. Introduction to various types of operating systems: batch processing systems, multiprocessing systems and interacting processes, storage management, processor and resource control, deadlock problem. Course is independent of any particular operating system.

528 UNIX SYSTEM PROGRAMMING
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 programming.

530 THEORY OF PROGRAMMING LANGUAGES
Prerequisites: 307 and knowledge of C. Advanced concepts underlying programming languages and their applications, formal definitions of programming languages, Backus Normal Form, semantics. Alternative approaches and programming paradigms including functional programming.

535 ANALYSIS OF ALGORITHMS
Prerequisites: 316 and 495/595. Design and analysis of efficient algorithms for random access machines; derivation of pattern-matching algorithms.

540 COMPILE DESIGN
Prerequisites: 307 and 316. Techniques used in writing and modifying compilers including translation, loading, execution, symbol tables and storage allocation; compilation of simple expressions and statements; organization of a compiler for handling lexical scan, syntax scan, object code generation, error diagnostics and code optimization. Use of compiler writing languages and bootstrapping. The course requires a project involving compiler writing.

597D DATA COMMUNICATION AND COMPUTER NETWORKS
Prerequisites: 206 and knowledge of C. ISO/OSI, TCP/IP, SNA data switching, protocols, flow and error control, routing, topology, Network trends, network taxonomies, and socket-based programming.

597C COMPUTER GRAPHICS
Prerequisites: 316 and knowledge of C. Topics in vector graphics, scan line graphics, representations, and languages for graphics.

590 ARTIFICIAL INTELLIGENCE AND HEURISTIC PROGRAMMING
Prerequisite: 76. Study of various programs which have displayed some intelligent behavior. Exploration of level at which computer can display intelligence.

595 COMPUTER ORGANIZATION
Prerequisite: 306. An introduction to the hardware organization of the computer at the register, processor and system level. An in-depth study of the architecture of a particular computer family.

597C MICROPROCESSOR PROGRAMMING AND INTERFACING

597D AUTOMATA, COMPUTABILITY AND FORMAL LANGUAGES
Prerequisite: 495/595. Theory of automata, computability, and formal languages.

597D DATABASE MANAGEMENT
Prerequisite: 396. Fundamentals of database organization, data manipulation, and representation, data integrity, privacy.

597C COMPUTER SCIENCE
Topics in computer science. The course may be repeated for a total of six credits. Prerequisite: permission of instructor. Selected topics in computer science at an advanced level.

597B WORKSHOP IN COMPUTER SCIENCE
Group study of special topics in computer science. May not be used to meet graduate or undergraduate requirements in mathematics, statistics or computer science.

597D INDIVIDUAL READING IN COMPUTER SCIENCE
(1-3 credits) (May be repeated for a total of six credits) Prerequisite: permission of instructor. Directed study designed as introduction to research problems. Undergraduate designation faculty members.

610 SYMBLOIC AND NUMERICAL METHODS
Prerequisites: 3450:222, 3450:322, 495/595, or 4085/850, or 3460:330 or knowledge of Lisp. Computer applications of symbolic methods using an advanced symbolic manipulation language (MACSYMA). LISP-level programming for MACSYMA. Theoretical and practical aspects of combining symbolic and numerical methods.

625 ADVANCED OPERATING SYSTEMS
Prerequisite: 260/265. Advanced topics in operating system design: synchronization mechanisms, performance evaluation, security, distributed operating systems.

635 ADVANCED ALGORITHMS AND COMPLEXITY THEORY
Prerequisite: 4355/535 or equivalent. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theorems, complexity hierarchies, NP-completeness and intractable problems.

640 ADVANCED COMPLER DESIGN AND CONSTRUCTIONS
Prerequisite: 4450/5450 or equivalent. Continuation of 4450/5450. Theory of LALR and LR(1) parsing, compiler writing tools and environments, code optimization, implementation of extended language features. Major programming project required.

645 COMPUTER NETWORKS AND DISTRIBUTED SYSTEMS
Prerequisites: 455/556 and 455/555. Interconnection technologies, protocol layering models, datagram and stream transport services, client-server paradigms, and principles of protocols for interconnected networks operating as unified systems and TCP/IP technology.

657 ADVANCED COMPUTER GRAPHICS
Prerequisites: 457/557 or knowledge of C and UNIX. Topics include 3D viewing and projections, image manipulation, 3D transformations, color clipping and animation via raster files, fractal mapping, surface rendering, and solid mapping.

660 EXPERT SYSTEMS
Prerequisite: 460/560 or maturity in mathematics. Architectures of expert systems, knowledge representation and acquisition, inference mechanisms for expert systems, uncertainty management, expert system tools and applications.

665 ADVANCED COMPUTER ARCHITECTURE
Prerequisites: 465/565 or equivalent. Fundamentals of computer architecture and design, with emphasis on computer performance tradeoffs. Studies of pipeline, vector, RISC, and multiprocessor architectures.

677 PARALLEL PROCESSING
Prerequisite: Working experience in UNIX, C, and FORTRAN. Advanced computer architectures: theories of parallel computing, system resources optimization, efficient programming techniques. Classic results and practical insights into implementing parallel algorithms on actual parallel machines.

678 ADVANCED AUTOMATA AND COMPUTABILITY
Prerequisites: 470/570 or equivalent. An in-depth study of concepts related to computability. Topics include nondeterministic automata, recursive function theory, the Chomsky Hierarchy, lambda calculus and recursively enumerable sets, and undecidability.

677 DATABASE MANAGEMENT
Prerequisite: 475/575 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.

680 SOFTWARE ENGINEERING
Prerequisites: 307 and 316. Introduction to current techniques and methodologies used in software design, development, implementation, and maintenance.

692 SEMINAR IN COMPUTER SCIENCE
12 credits (May be repeated) Prerequisite: permission of advisor. Seminar-type discussions on topics in computer science. No more than 2 credits apply to major requirements.

696 MASTER’S RESEARCH
(May be repeated) Prerequisite: permission of advisor. Research in suitable topics in computer science culminating in a research paper. No more than 2 credits applicable to major requirements.

699 MASTER’S THESIS
2 credits Prerequisite: Permission. May be repeated for a total of 4 credits. A properly qualified candidate for a master’s degree may obtain 2 credits for research experience which culminates in presentation of a faculty-supervised thesis.

710 ADVANCED COMPUTING TECHNOLOGIES IN PHYSICAL SCIENCES
Prerequisites: Programming experience in FORTRAN: 3450:2757 or 4285/629 or 426/529 or 524/629. A knowledge of the UNIX operating system, introduction to object oriented techniques in scientific computing. Topics include numerical software design, symbolic computation, and parallel computing.

STATISTICS

3470:

515 MATHEMATICAL CONCEPTS FOR STATISTICS
Prerequisites: 3450:223, 3450:312, or equivalent. Topics from matrix algebra and analytic geometry, including vectors, matrices, determinants, eigenvalues, eigenvectors, and linear transformations.

511 THEORETICAL STATISTICS I (LAND II)
3 credits Each. Prerequisite: 3450:223. Elementary combinatorial probability theory, random variables and distribution functions, expectation, moments and moment generating functions. Joint distributions, independence, marginal and conditional distributions of random variables. Solving problems involving binomial, normal, Poisson, bivariate normal, exponential, and Gamma distributions.

520 STATISTICAL METHODS
Application of statistical methods to the social sciences including description statistics, probability distribution, statistical inference, correlation, regression, computer applications. May not be used to meet graduate degree requirements for mathematical sciences majors.

525 PROBABILITY
Prerequisite: 3450:221. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes.

520 THEORETICAL STATISTICS I
3 credits Each. Prerequisite: 3450:223. Elementary combinatorial probability theory, random variables and distribution functions, expectation, moments and moment generating functions. Joint distributions, independence, marginal and conditional distributions of random variables. Solving problems involving binomial, normal, Poisson, bivariate normal, exponential, and Gamma distributions.

520 STATISTICAL METHODS
Application of statistical methods to the social sciences including description statistics, probability distribution, statistical inference, correlation, regression, computer applications. May not be used to meet Mathematical Sciences degree requirements.

525 PROBABILITY
Prerequisite: 3450:221. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes.

520 THEORETICAL STATISTICS I
3 credits Each. Prerequisite: 3450:223. Elementary combinatorial probability theory, random variables and distribution functions, expectation, moments and moment generating functions. Joint distributions, independence, marginal and conditional distributions of random variables. Solving problems involving binomial, normal, Poisson, bivariate normal, exponential, and Gamma distributions.

520 STATISTICAL METHODS
Application of statistical methods to the social sciences including description statistics, probability distribution, statistical inference, correlation, regression, computer applications. May not be used to meet Mathematical Sciences degree requirements.

525 RESEARCH
Prerequisite: 460/560 or equivalent. Applications of statistical theory to natural and physical sciences and engineering, including probability distributions, survival analysis, hypothesis testing and confidence intervals, and life and non-life insurance.

520 APPLIED STATISTICS
Prerequisite: 460/561 or equivalent. Applications of the techniques of regression and multivariate analysis to the analysis of variance.

657 DESIGN OF SAMPLE SURVEYS
Prerequisite: 465/561 or equivalent. Design and analysis of frequently used sample survey techniques.

695 RELIABILITY MODELS
Prerequisites: 465/561. Selection topics in reliability modeling including parametric and nonparametric models, competing models of failure, censored data and accelerated life models.
571 ACTUARIAL SCIENCE I
Prerequisite: 3450:229 or equivalent. Study of various statistical, financial, and mathematical calculations used to determine insurance premiums related to contingent risks based on individual risk model frameworks.
3 credits

572 ACTUARIAL SCIENCE II
Prerequisite: 177/170. Further development of Actuarial Science I. Study of multiple life functions, multiple decrement models, valuation theory for pension plans, insurance models including expenses, nonforfeiture benefits and dividends.
3 credits

575 FOUNDATIONS OF STATISTICAL QUALITY CONTROL
Prerequisite: 461/561 or equivalent. Course provides a solid foundation in the theory and applications of statistical techniques widely used in industry.
3 credits

580 STATISTICAL COMPUTER APPLICATIONS
Prerequisites: 3450:222 and one semester course in statistics or permission. Translation of statistical operations into computer languages, iterative procedures, generating utility, Monte Carlo techniques, use of statistical packages.
3 credits

589 TOPICS IN STATISTICS
(May be repeated for a total of six credit hours. Prerequisite: permission. Selected topics in advanced statistics, including reliability, sampling techniques, decision theory, advanced inference, stochastic processes, and others.
3 credits

591 WORKSHOP IN STATISTICS
(May be repeated for a total of six credit hours. Topic will be designated by change of topic. Group studies of special topics in statistics. May not be used to meet undergraduate or graduate minor requirements in mathematics and statistics. May be used for elective credit only.
3 credits

595 STATISTICAL CONSULTING
Prerequisite: 461/561 or permission. Students will be assigned to work with an instructor on current projects in the Center for Statistical Consulting. May be repeated for a total of 4 credits. No more than 2 credits will count toward major requirements. Does not count for elective credit for math science department majors.
3 credits

620 APPLICATIONS OF MATRICES TO STATISTICS
Prerequisites: 3450:229 or equivalent. Matrices, introduction to multivariate normal distribution, application of non-linear models.
3 credits

650 ADVANCED PROBABILITY AND STOCHASTIC PROCESSES
Prerequisite: 651. Random walk distributions, Markov chains, laws of large numbers, convolutions, branching processes, renewal theory, Markov chains, time-dependent stochastic processes.
3 credits

651 PROBABILITY AND STATISTICS
Prerequisites: 3450:222 or 955 or equivalent. Probability, random variables, moments and generating functions, random vectors, special distributions, limit theorems, sampling, point estimation, hypothesis testing, confidence estimation.
4 credits

652 ADVANCED MATHEMATICAL STATISTICS
Prerequisite: 651. Convergence of random variables, the Central Limit Theorem; theory of estimation; theory of hypothesis testing, the multivariate normal density, introduction to linear models; Bayesian statistics.
3 credits

655 LINEAR MODELS
Prerequisites: 3450:212 and 651 or equivalent. General linear model in matrix notation, general linear hypothesis, regression models, experimental design models, analysis of variance and covariance, variance components.
3 credits

663 EXPERIMENTAL DESIGN
Prerequisite: 562 or equivalent. Selected topics in experimental design including random effects, nested effects, nested designs, split plot designs, confounding, fractional factors, Latin squares, and analysis of covariance.
3 credits

684 STATISTICS FOR THE HEALTH SCIENCES
(May not be used to meet degree requirements for mathematical sciences majors. Prerequisite: college level algebra (or equivalent). Descriptive statistics, probability and probability distributions, tests of hypotheses and confidence intervals, nonparametric statistics, regression and correlation.
4 credits

685 REGRESSION AND CORRELATIONS
Prerequisites: 562 or 565 or equivalent. Analytical theory; least squares - multiple regression; polynomial regression; correlation, linear, and bivariate correlation; multiple regression; model building; response surfaces.
3 credits

686 NONPARAMETRIC STATISTICS METHODS
Prerequisites: 560 or 561 or equivalent. Theory and practice using techniques requiring less restrictive assumptions. Nonparametric analogues to t- and F-tests, ANOVA, regression and correlation. Computer applications.
3 credits

687 FACTOR ANALYSIS
Prerequisites: 560 or 561 or 564. Theory and techniques for identifying variables through use of principal components and factor analysis. Identification of groups using cluster analysis. Computer applications.
3 credits

688 MULTIVARIATE STATISTICAL METHODS
Prerequisite: 562 or equivalent. Multivariate techniques including distance concept, hierarchical T2, multivariate ANOVA, regression and correlation, linear contrasts, factorial experiments, nested and repeated measure designs, Conjoint Preference tests, linear discriminant analysis, canonical correlations, application.
3 credits

675 RESPONSE SURFACE METHODOLOGY
Prerequisite: 422/426 or equivalent. First and second order response designs, efficient experimental plans, methods for the analysis, and optimization of response functions.
3 credits

689 ADVANCED TOPICS IN STATISTICS
(May be repeated for a total of six credits.) Prerequisite: 651. Selected Topics in statistics including correlation in order, statistics, advanced inference, sequential analysis, stochastic processes, reliability theory, Bayesian statistics and regression.
3 credits

692 SEMINAR IN STATISTICS (May be repeated.) Prerequisite: permission of advisor. Seminar-type discussion on topics in statistics leading to supervised research project. No more than 2 credits apply to major requirements.
3 credits

959 PRACTICUM IN STATISTICS AND MATHEMATICS
Prerequisite: Graduate teaching assistant or permission. Training and experience in college teaching of statistics. May not be used to meet degree requirements. May be taken only on a credit/no credit basis.
3 credits

697 INDIVIDUAL READING
(May be repeated for a total of four credits.) Prerequisites: graduate standing and permission. (Contact advisor in statistics under guidance of selected faculty member.
1/2 credits

698 MASTERS RESEARCH
(May be repeated.) Prerequisite: permission of advisor. Research in suitable topics in statistics culminating in a research paper. No more than 2 credits applicable to major requirements.
1/2 credits

699 MASTER'S THESIS
Prerequisite: 461/561 or equivalent. May be repeated for a total of 4 credits. Prerequisite: Permission. Properly qualified candidates for master's degree may obtain 24 credits for research experience which culminates in presentation of faculty-supervised thesis.
2 credits

ENGINEERING APPLIED MATHEMATICS 3490:

701 INTERDISCIPLINARY RESEARCH SEMINAR
Prerequisite: Permission. For students seeking graduate degrees in Applied Mathematics. An introduction to applied mathematics research in the mathematical sciences, physical sciences, and engineering.
3 credits

705 ADVANCED SEMINAR IN APPLIED MATHEMATICS
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.
14 credits

586 PRELIMINARY RESEARCH (May be repeated.) Completion of qualifying examination and approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation topic.
1-3 credits

589 DOCTORAL DISSERTATION
(May be repeated.) Completion of candidacy examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.
1-4 credits

MODERN LANGUAGES 3500:

590 WORKSHOP
(May be repeated.) Group studies of special topics in modern languages.
2 credits

FRENCH 3520:

502 ADVANCED FRENCH GRAMMAR
Prerequisite: 302 or equivalent. Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonics.
3 credits

503 FRENCH LITERATURE OF THE MIDDLE AGES AND THE RENAISSANCE
Prerequisites: 502 or 306 or equivalent. Reading and discussion of selected Medieval and Renaissance literary works. Conducted in French.
4 credits

511 17TH CENTURY FRENCH LITERATURE
Prerequisites: 302 or 306 or equivalent. Reading and discussion of selected works in poetry, drama and novels. Conducted in French.
4 credits

515 18TH CENTURY FRENCH LITERATURE
Prerequisite: 305 or 306 or equivalent. Reading and discussion of selected authors: emphasis on the Philosophes. Conducted in French.
4 credits

519 19TH CENTURY FRENCH LITERATURE
Prerequisite: 306 or equivalent. Reading and discussion of selected works pertaining to romantic, realist and naturalistic themes in French.
4 credits

522 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS OR CULTURE OR LITERATURE
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.
1-4 credits

527 20TH CENTURY FRENCH LITERATURE
Prerequisite: 302 or 306 or equivalent. Reading and discussion of the most representative works of period. Conducted in French.
4 credits

529 FRANCAIS ET CARIBBEAN LITERATURE
Prerequisites: 305 or 306 or equivalent. A study of selected literary works from Haiti, Guadeloupe, and Martinique in light of their geographic, historic, socioethnic, and cultural determinants.
3 credits

560 SELECTED THEMES IN FRENCH LITERATURE
May be repeated. Conducted in French. Prerequisites: 305 and 306 or equivalent. Reading and discussion of literary works selected according to an important theme.
3 credits

571 FRENCH LANGUAGE PROFICIENCY
Designed to develop proficiency in reading comprehension. Pretests students for graduate reading examination. Does not count toward French major.
3 credits

618 ROMANCE AND APPLIED LANGUAGES
History of French language from 822 to present. Second semester deals with application of linguistic research to teaching of French.
4 credits each

623 SELECTED TOPICS IN THE MOVEMENT OF IDEAS IN FRENCH LITERATURE
Study of ideas instrumental in shaping French thought and culture.
4 credits each

6192 FRENCH CULTURE EXPRESSED IN LITERATURE
Prerequisites: 306, 4 credits each. Anthropological approach emphasizing social and civic institutions, education, music and art, value systems and national characteristics.
2 credits

614 SEMINAR: FRANCAIS ET LITERATURE, CULTURE AND CIVILIZATION
Study of various aspects of culture, civilization and literature of French expression outside of France.
2 credits

622 SEMINAR: THE IMAGE OF THE WOMAN IN FRENCH LITERATURE
Prerequisite: 305 or 306 or equivalent. Study of the woman as created in French literature from Middle Ages to present.
2 credits

641 FRENCH TEACHING PRACTICUM
Prerequisite: teaching internship or permission. Orientation and practice of teaching language and culture. Periodic review and evaluation. Credits may not be applied toward degree requirement.
3 credits

798 INDIVIDUAL READING AND RESEARCH SEMINAR
Prerequisite: permission. Independent study and research in specific areas. Consistent reading and writing required.
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<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>535:</td>
<td><strong>GERMAN</strong></td>
<td></td>
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<tr>
<td>519:</td>
<td>THE AGE OF GOETHE I: Prerequisite: 303 or 306 or permission. Enthralement and generation of Sturm und Drang, including works of Wieland, Lessing, Klopstock, Herder, the young Goethe and others. Conducted in German.</td>
<td>3</td>
</tr>
<tr>
<td>520:</td>
<td>THE AGE OF GOETHE II: Prerequisites: 302, 346 or permission. Faust, selections from parts I and II, Sallas of Goethe and Schiller. Conducted in German.</td>
<td>3</td>
</tr>
<tr>
<td>531:</td>
<td>200 YEARS OF GERMAN DRAMA: Prerequisite: 303 or 306 or permission. Representative works of major classical dramatics including Lessing, Goethe, Schiller, Kleist, Grillparzer. Conducted in German.</td>
<td>3</td>
</tr>
<tr>
<td>532:</td>
<td>200 YEARS OF GERMAN DRAMA: Prerequisite: 302 or 306 or permission. Representative works of the major dramatics. Sucker, Hebel, Hauptmann and Wedekind. Conducted in German.</td>
<td>3</td>
</tr>
<tr>
<td>525:</td>
<td>GERMAN SHORT STORY: Prerequisite: 302 or 306 or permission. Reading and discussion of representative works of German romanticism, including those of Tieck, Kleist, E. T. A. Hoffman, Brentano, Eichendorff. Conducted in German.</td>
<td>3</td>
</tr>
<tr>
<td>526:</td>
<td>GERMAN SHORT STORY: Prerequisite: 302 or 306 or permission. Reading and discussion of representative works of the 19th century, including Gogol, Chekhov, S. Forester, Melville, Storm. Conducted in German.</td>
<td>3</td>
</tr>
<tr>
<td>529:</td>
<td>20TH CENTURY LITERATURE I: Prerequisite: 302 or 306 or permission. Clash of old and the new at the turn of the century. Works of T. Mann, Hauptmann, Kraus, Hofmannsthal, Rilke, Wedekind and others. Conducted in German.</td>
<td>3</td>
</tr>
<tr>
<td>530:</td>
<td>20TH CENTURY LITERATURE II: Prerequisite: 302 or 306 or permission. Impact of modernity. Reading and discussion of writings of Weiss, Kafka, Doblin, Weigel and others. Conducted in German.</td>
<td>3</td>
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<tr>
<td>531:</td>
<td>GERMAN LANGUAGE READING PROFICIENCY: Designed to develop proficiency in reading comprehension.</td>
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<tr>
<td>3580:</td>
<td><strong>SPANISH</strong></td>
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<tr>
<td>505:</td>
<td>SPANISH LINGUISTICS: PHONOLOGY: Preparatory: permission. Descriptive study of Spanish phonetics and morphology, comparison of Spanish and English sounds, historical aspects, regional accents and sociolinguistic variation. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>506:</td>
<td>SPANISH LINGUISTICS: SYNTAX: Preparatory: permission. Descriptive study of Spanish syntax, introduction to theories of grammar, overview of Spanish semantics and pragmatics. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>509:</td>
<td>MEDIEVAL AND RENAISSANCE SPANISH LITERATURE: Reading and discussion of representative works that mark the beginnings of Spanish literature in poetry, prose and drama, with emphasis given to the major works: Libro de Buen Amor, Libro de los Ecos de Mio Cid, El Libro de Buen Amor, La Celestina and the ballads. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>511:</td>
<td>SPANISH LITERATURE OF THE GOLDEN AGE: Reading and discussion of representative novels and short stories with special emphasis on works of Miguel de Cervantes, Lope de Vega and other writers of the 16th and 17th centuries. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>512:</td>
<td>CERVANTES: DON QUIJOTE: Reading and analysis of Don Quijote as the first modern novel in the historical context of Renaissance and Baroque aesthetics. Conducted in Spanish.</td>
<td>3</td>
</tr>
<tr>
<td>515:</td>
<td>16TH AND 17TH CENTURY SPANISH DRAMA AND POETRY: Reading, discussion and lectures. Study of Nencia, Gerra and Romanceros. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>516:</td>
<td>16TH CENTURY SPANISH PROSE: Reading, discussion and lectures. Study of Realismo, Naturalismo and La Guerra del D6. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>518:</td>
<td>20TH CENTURY SPANISH PROSE: Reading and analysis of representative works of the 20th century, including Gaspar Arnaiz, tuna, Garcia Lorca, and other writers of the 19th and 20th centuries. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>519:</td>
<td>20TH CENTURY SPANISH DRAMA/POETRY: Reading and analysis of representative works of the 20th century, including Gaspar Arnaiz, tuna, Garcia Lorca, and other writers of the 19th and 20th centuries. Conducted in Spanish.</td>
<td>3</td>
</tr>
<tr>
<td>522:</td>
<td>SPECIAL TOPICS IN SPEAKING/WRITING/COMMUNICATION: Preparation and lectures. Conducted in Spanish.</td>
<td>3-4</td>
</tr>
<tr>
<td>523:</td>
<td>SPANISH-AMERICAN LITERATURE BEFORE 1900: Reading and analysis of selected works of Spanish-American authors. Conducted in Spanish.</td>
<td>4</td>
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<tr>
<td>524:</td>
<td>20TH CENTURY SPANISH-AMERICAN LITERATURE: Reading and analysis of selected works of Spanish-American authors. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>525:</td>
<td>20TH CENTURY SPANISH-AMERICAN NOVEL: Reading and analysis of selected works of Spanish-American authors. Conducted in Spanish.</td>
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<tr>
<td>578:</td>
<td>SPANISH AND SPANISH-AMERICAN CULTURE AND CIVILIZATION: Preparatory: 302 or permission. Emphasis on customs, traditions, literature and art that constituted Spanish and Spanish-American contribution to Western civilization. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>529:</td>
<td>CULTURE AND LITERATURE OF THE HISPANIC CARIBBEAN: Preparatory: 302 or permission. Emphasis on customs, traditions and literature, including festivals, fairs, and other activities. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>530:</td>
<td>WOMEN'S BEST IN 20TH CENTURY SPANISH LITERATURE: Reading and analysis of selected works from the 20th century that depict women in Hispanic cultures. Methodologies of feminist criticism will be studied. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>571:</td>
<td>SPANISH LANGUAGE READING PROFICIENCY: Designed to develop proficiency in reading comprehension. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>601:</td>
<td>SEMINAR ON SPANISH LITERATURE: Reading and discussion on monumental medieval literature works of Spain such as Poema de Mio Cid, E. Conde Lucanor, El Libro de Buen Amor. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>608:</td>
<td>SEMINAR ON SPANISH LITERATURE OF THE GOLDEN AGE: Reading and discussion on representative works from the Renaissance to the late Baroque period. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>613:</td>
<td>SEMINAR ON 20TH CENTURY SPANISH LITERATURE: Reading and discussion of representative works of the 20th century, including works of Hemingway, Faulkner, Dos Passos, and others. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>617:</td>
<td>SEMINAR ON 20TH CENTURY SPANISH-AMERICAN LITERATURE: Reading and discussion of contemporary writers with emphasis on modernism, the novel, and the short story. Conducted in Spanish.</td>
<td>4</td>
</tr>
<tr>
<td>621:</td>
<td>SEMINAR ON 20TH CENTURY SPANISH LITERATURE: Studies in representative representative works with a selection of significant works and authors that represent specific literary movements. Conducted in Spanish.</td>
<td>4</td>
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<tr>
<td>626:</td>
<td>SPANISH TEACHING PRACTICUM: 3 credits. Conducted in Spanish.</td>
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<td>628:</td>
<td>SPANISH FOR TEACHERS: Conducted in Spanish.</td>
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<tr>
<td>631:</td>
<td>SPANISH INTEGRATION EDUCATION: Conducted in Spanish.</td>
<td>1-4</td>
</tr>
<tr>
<td>652:</td>
<td>SPANISH FOR TEACHERS: Conducted in Spanish.</td>
<td>3</td>
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<tr>
<td>653:</td>
<td>SPANISH INTEGRATION EDUCATION: Conducted in Spanish.</td>
<td>1-4</td>
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<tr>
<td>657:</td>
<td>SPANISH INTEGRATION EDUCATION: Conducted in Spanish.</td>
<td>1-4</td>
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<tr>
<td>699:</td>
<td>MASTER'S THESIS: (May be repeated) Preparatory: permission of instructor.</td>
<td>3 credits</td>
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<tr>
<td>3600:</td>
<td><strong>PHILOSOPHY</strong></td>
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<tr>
<td>511:</td>
<td>LATER DIALOGUES OF PLATO: Preparatory: one introductory course and 20th or permission of instructor. Reading of dialogues in translation, commenting with Thucydides, Sophocles, Aristotle, Thucydides, Plutarch.</td>
<td>3</td>
</tr>
<tr>
<td>518:</td>
<td>ANALYTIC PHILOSOPHY: Preparatory: one introductory course and 312 or permission of instructor. Reading of selected works of Plato, Aristotle, and other philosophers. Conducted in Spanish.</td>
<td>3</td>
</tr>
<tr>
<td>521:</td>
<td>PHILOSOPHY OF LAW: Preparatory: one introductory course in philosophy or permission of instructor. Reading of selected works of Locke, Berkeley and Hume.</td>
<td>3</td>
</tr>
<tr>
<td>522:</td>
<td>CONTINENTAL RATIONALISM: Preparatory: one introductory course and 312 or permission of instructor. Reading of selected works of Descartes, Spinoza, Leibniz.</td>
<td>3</td>
</tr>
<tr>
<td>524:</td>
<td>EXISTENTIALISM: Preparatory: one introductory course in philosophy, 312 or permission of instructor. Reading of selected works of Kierkegaard, Dostoevski, Husserl, and others. Conducted in Spanish.</td>
<td>3</td>
</tr>
<tr>
<td>526:</td>
<td>PHENOMENOLOGY: Preparatory: one introductory course in philosophy, 312 or permission of instructor. Conducted in Spanish.</td>
<td>3</td>
</tr>
<tr>
<td>532:</td>
<td>ARISTOTLE: Preparatory: one introductory course in philosophy, 312 or permission of instructor. Conducted in Spanish.</td>
<td>3</td>
</tr>
<tr>
<td>533:</td>
<td>KANT: Preparatory: 301, 312 or permission of instructor. Conducted in Spanish.</td>
<td>3</td>
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<tr>
<td>534:</td>
<td>MODERN PHILOSOPHY: Preparatory: one introductory course in philosophy, 312 or permission of instructor. Conducted in Spanish.</td>
<td>3</td>
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<tr>
<td>536:</td>
<td>PHILOSOPHY OF RELIGION: Preparatory: one introductory course in philosophy, 312 or permission of instructor. Conducted in Spanish.</td>
<td>3</td>
</tr>
<tr>
<td>538:</td>
<td>PHILOSOPHY OF SCIENCE: Preparatory: one introductory course in philosophy, 312 or permission of instructor. Conducted in Spanish.</td>
<td>3</td>
</tr>
<tr>
<td>571:</td>
<td>METAPHYSICS: Preparatory: one introductory course in philosophy, 312 or permission of instructor. Conducted in Spanish.</td>
<td>3</td>
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<tr>
<td>580:</td>
<td>SEMINAR: Preparatory: one introductory course in philosophy, 312 or permission of instructor. Conducted in Spanish.</td>
<td>3</td>
</tr>
</tbody>
</table>
581 PHILOSOPHY OF LANGUAGE
Prerequisites: 101 and 170 or permission of instructor. Contemoporary philosophical questions about nature of language and its relati-onto reality and human thinking. Includes discusston of views of linguists such as Chomsky.
3 credits

587 INDIVIDUAL STUDY
(May be repeated for a total of six credits) Prerequisites: completion of required course of philosophy major or semimonograph inumber and department head. Directed independent study of philosophy, philosophy or philosophical problem under guidance of selected faculty mentor. Subject matter determined by selected faculty mentor in discussion with student. Graduate credit requires significant additional work which may include additional research paper.
13 credits

615 SEMINAR: HISTORY OF PHILOSOPHY
(Prerequisite: 2 credits) Lectures on current research topics in physics; by invited speakers. May be repeated, but only one credit counts toward M.S. degree. Credit/No credit.
1 credit

598 PHYSICS COLOQUIUM
Lectures on current research topics in physics by invited speaktors. May be repeated, but only one credit counts toward M.S. degree. Credit/Noncredit.
1 credit

605 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS I
Prerequisite: permission. An introduction to FORTRAN and BASIC to computer science. Numerical solutions to problems, including Newton's and Schrodinger's equations. Treatment of advanced level for graduate students. Boundary value problems, differential, multipole expanson, sev-arving fields, Maxwell's equations and electromagnetic waves, reflection, refraction, wave-guides and cavities.
3 credits

606 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS II
Prerequisite: 605 or permission. Data reduction, Monte Carlo plotting, comparison of theoretical and experimental data, invar scale squats, curve-fitting. May accommodate scientific problems of individual interest.
3 credits

615 ELECTROMAGNETIC THEORY I
Prerequisite: 457/557 or permission of instructor. Electromagnetics and magnetostatics at advanced level for graduate students. Boundary value problems, differential, multiple expansions, self-arving fields, Maxwell's equations and electromagnetic waves, reflection, refraction, wave-guides and cavities.
3 credits

616 ELECTROMAGNETIC THEORY II
Prerequisite: 66, Scattering and diffraction, plasma physics, special theory of relativity, dyanmics of relativistic particles in fields, collisions of charged particles, radiation from moving chargers, bremsstrahlung, multiple fields.
3 credits

625 QUANTUM MECHANICS I
Prerequisites: 441/541, 450/550 or permission of instructor. Basic concepts of quantum mechanics, representation theory, particle in a central field. Addition of angular momenta and spins. Clebsch-Gordon coefficients, perturbation theory, scattering, transition probabilities.
3 credits

626 QUANTUM MECHANICS II
3 credits

641 ATOMIC MECHANICS I
Prerequisite: 423/523 or permission of instructor. Principle of least action and Lagrange's equations. Motion, conservation laws. Integration or equation of motion. Collisions, small oscillations, Lagrange's equations, canonical interations.
3 credits

641 STATISTICAL MECHANICS
Prerequisite: 442/542 or permission of instructor. Fundamental principles of statistical mechanics. Gibbs, Ferry and Bose statistics, soles, liquids, gases, phase equilibrium, thermal reactions.
3 credits

658 ADVANCED NUCLEAR PHYSICS
Prerequisite: 626. Quantum mechanics applied to nucleus. Interaction of radiation with nucleus, nuclear scattering, nuclear reactions, energy levels of nuclei.
3 credits

659 SOLID-STATE PHYSICS I
Prerequisite: 441/541 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.
3 credits

660 SOLID-STATE PHYSICS II
3 credits

681 SPECIAL PROBLEMS IN THEORETICAL PHYSICS
Prerequisite: Ph.D. May be repeated. Pernission. Intended to facilitate expansion of particular areas of interest in theoretical physics, by consultation with faculty member and independent study beyond available course work.
1-3 credits

681 SEMINAR IN THEORETICAL PHYSICS
Prerequisite: Ph.D. 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.
13 credits

697 GRADUATE RESEARCH
Prerequisite: M.S. degree may obtain up to five credits for faculty supervised research projects. Grades and credit received at completion of such projects.
1-15 credits

698 SPECIAL TOPICS: PHYSICS
Prerequisite: permission. Enables student who needs information in special areas, in which no formal course is offered, to acquire knowledge in these areas.
1-14 credits

699 MASTER'S THESIS
Prerequisite: permission. With approval of department, one credit may be earned by candidate for M.S. degree upon satisfactory completion of a master's thesis.
1 credit

PHYSICS
3650:

590 HISTORY OF PHYSICS
Prerequisite: 262 or 292. Study of origin and evolution of major principles and concepts characterizing modern physics.
3 credits

590 WAVES
Prerequisite: 262 or 292. Analysis of phenomena common to all waves, including free oscil­lations, forced oscillations, standing waves, reflection, refraction, interference and diffraction. Water, sound, electromagnetic, seismic and acoustics waves examined.
3 credits

593 MECHANICS I
Prerequisite: 262 or 3450/233. Mechanics at intermediate level. Newtonian mechanics, motion of a particle in one dimension, central field problem, system of particles, conservation laws. rigid bodies, gravitation.
3 credits

594 MECHANICS II
Prerequisite: 431531. Advanced mechanics at the senior or beginning graduate level. Measuring coordinate systems, mechanics of continuous media. Lagrange's equations, tensor algebra and analysis, rotation or rigid bodies, vibrations theory.
3 credits

595 ELECTROMAGNETISM I
Prerequisites: 262, 3450/233 or permission of instructor. Electricity and magnetism at intermediate level. Electrodynamics and magnetostatics, electric field, scalar potential, electric, Laplace's and Poisson's equations, current, magnetic field, vector potential, magnetic materials, induction.
3 credits

596 ELECTROMAGNETISM II
Prerequisite: 435038. Special relativity, four vectors, Maxwell's equations in covariant form, propagation, reflection and refraction of electromagnetic waves, multipole radiation.
3 credits

594 QUANTUM PHYSICS I
Prerequisites: 262 and 4550/235. Laboratory course stressing measurement techniques with contemporary laboratory apparatus. Typical design, instrumment calibration and report emphasis. Modern physics experiments and measurements of fundamental natural constants.
3 credits

594 QUANTUM PHYSICS II
Prerequisite: 441/541. Applications of quantum mechanics to atomic, nuclear and solid state physics. Transition probability, Pauli exclusion principle, Hydrogen and Helium atoms. atomic forces, quantum statistics.
3 credits

595,1 ADVANCED LABORATORY I AND II
Prerequisite: 323 or permission of instructor. Adapaticions of electronic, solid state devices, techniques, to research in contemporary physics. Introduction to rotation techniques, nuclear magnetic resonance, electron spin resonance, nuclear quadrupole resonance. Spectroscopy, spectrometers, photo and nuclear spectroscopy.
2 credits each

594 TECHNIQUES OF PHYSICS INSTRUCTION
Teaching assistants are introduced to current research in learning physics, shown applications for their laboratories, and trained in skills needed as a laboratory teaching assistant.
1 credit

594 DIGITAL DATA ACQUISITION
Prerequisite: 262 or 292. Designed to introduce science and mathematics students to use of digital techniques of interfacing instruments to microcomputers. Physical measurements and devices under control are emphasized.
3 credits

594 INTRODUCTION TO SOLID-STATE PHYSICS
Prerequisite: 441 or permission of instructor. Account of basic physical processes occurring in solids, with emphasis on fundamental relation between these processes and periodicity of crystalline lattice
3 credits

594 NMR SPECTROSCOPY I AND II
Prerequisite: 441 or permission of instructor. Theoretical basis and experimental techniques of NMR spectroscopy. Classical concepts and quantum mechanical treatments of NMR. Bloch equation, spin-spin and spin-lattice relaxation times. Steady state and transient phenomena. General features of broadline and high-resolution NMR spectra, NMR instrumentation and operating principles. Theory and analysis of high-resolution NMR spectra. Quantitative application to materials and high-resolution NMR spectra and determination of physical and chemical structures.
2 credits each

594 METHODS OF MATHEMATICAL PHYSICS I AND II
Prerequisite: 262, 3450/233 and senior or graduate standing in a physical science or engi­neering. Vectors, generated coordinates, tensors, calculus of variations, vector spaces, linear transformations, matrices, eigenvalues, Hilbert space, boundary value problems, trans­cendental functions, complex variables, analytic functions, Green's functions, integral equations.
2 credits each

594 SELECTED TOPICS: PHYSICS
(May be repeated) Prerequisite: permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics.
14 credits

594 WORKSHOP
(May be repeated) Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member.
1-12 credits

597 INDEPENDENT STUDY
(May be repeated) Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member.
1-12 credits

598 PHYSICS COLLOQUIUM
1 credit

POLITICAL SCIENCE
3700:

502 POLITICS AND THE MEDIA
Prerequisites: relationships of the press, the news media and political decision mak­ers.
3 credits

504 POLITICS IN THE MIDDLE EAST
Prerequisite: 310. 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. In­depth study of selected political systems.
3 credits

510 INTERNATIONAL DEFENSE POLICY
Prerequisite: At least one of the following: 220, 32K, 340C, 340D, 360, 407, 438, or permission. International strategies for political use of military forces. Focus on methodology, conceptual, and ethical dierences confronted in designing and implementing defense policy.
3 credits

511 THEORIES OF INTERNATIONAL POLITICAL ECONOMY
Prerequisite: 360 or permission of instructor. This course examines the predominant and com­peting theories of international political economy, including imperialism, world systems analy­sis, late wave theory, neo-mercantilism, and neo-realism.
3 credits

512 GLOBAL ENVIRONMENT POLITICS
Prerequisite: 303, 304, or permission of instructor. Examines the general dimensions of the global environmental challenge, including the roles played by technology and the structure of the world system.
3 credits

POLITICAL SCIENCE
515 COMPARATIVE FOREIGN POLICY
Prerequisite: 30 or 220 or permission. Study of foreign policies of selected nations, with special attention to processes and outcomes of decision-making of the major powers.

520 ISSUES AND APPROACHES IN COMPARATIVE POLITICS
Prerequisite: 300 or permission of instructor. Detailed examination of approaches to the study of comparative politics, political parties, elites and various theories of revolution.

525 LATIN AMERICAN POLITICS
Prerequisite: 300 or permission of instructor. Examination of patterns of government and politics in Latin America.

540 SURVEY RESEARCH METHODS
Prerequisite: 100 or 201 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
Prerequisite: Eight credits in political science. Intensive study of policy-making processes, emphasizing the role of various participants in executive and legislative branches as well as private individuals and groups.

542 METHODS OF POLICY ANALYSIS
Prerequisite: 20. Examines variety of methods available for analyzing public policies. Techniques of cost-benefit analysis, evaluation research quasi-experimentation are covered as well as consideration of ethical questions in policy analysis, the practical problems facing policy analysts.

561 THE SUPREME COURT AND CONSTITUTIONAL LAW
Prerequisite: 100 or permission. Interpretation of the Constitution by the Supreme Court with emphasis on federal judicial, legislative and executive power; separation of powers; and federalism.

562 THE SUPREME COURT AND CIVIL LIBERTIES
Prerequisite: 100 or permission. Interpretation of the Constitution by the Supreme Court with emphasis on freedom of speech and press, freedom of religion, criminal rights and right to privacy.

570 CAMPAIGN MANAGEMENT I
Prerequisite: Six credits of political science or permission. Reading, research and practice in campaign management.

571 CAMPAIGN MANAGEMENT II
Prerequisite: 4705/70. The second course in campaign management. Focus is on timing, coalition building, candidate positioning, event planning, internal organization, and other elements of campaign decision-making in political campaigns.

572 CAMPAIGN FINANCE
Prerequisite: Six credits of political science or permission. Reading and research in financial development in political campaigns.

573 VOTER CONTACT AND ELECTIONS
Prerequisite: Six credits of political science or permission. Theoretical and practical approaches to gaining votes in all phases of political campaigns.

574 POLITICAL OPINION, BEHAVIOR AND ELECTORAL POLITICS
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 political outcomes.

575 AMERICAN INTEREST GROUPS
Prerequisite: Six credits of political science or permission. Reading and research on the development, structure and function of interest groups in the United States.

576 AMERICAN POLITICAL PARTIES
Prerequisite: Six credits of political science or permission. Reading and research on the development, structure and function of parties in the United States.

580 POLICY PROBLEMS
May be repeated for a total of six credits. Prerequisite: 188 or permission. Intensive study of selected problems in public policy.

590 WORKSHOP
May be repeated. Group studies of special topics in political science. May not be used to meet undergraduate or graduate major requirements in political science. Elective credit only.

600 SCOPE AND THEORIES OF POLITICAL SCIENCE
Prerequisite: Six credits of political science or permission. Emphasis on the nature, scope and content of political science. Theory construction and evaluation in political science.

601 RESEARCH METHODS IN POLITICAL SCIENCE
Prerequisite: Six credits of political science, including 440 (or a satisfactory equivalent) or permission of instructor. Techniques of research and research methodology in political science, including sampling and quantification techniques.

610 SEMINAR IN INTERNATIONAL POLITICS
Prerequisite: Six credits of political science or permission. Analysis of current problems in theory and practice of politics and organization.

620 SEMINAR IN COMPARATIVE POLITICS
Prerequisite: Six credits of political science or permission. Selected topics in comparative politics. Comparative method.

625 SEMINAR IN POLITICS OF DEVELOPING NATIONS
Prerequisite: Six credits of political science or permission. Selected topics in comparative politics. Emphasis on theories of political development.

630 SEMINAR IN NATIONAL POLITICS
Prerequisite: Six credits of political science or permission. Reading and research on major developments of political science in one or more areas of contemporary significance.

641 SEMINAR IN INTERGOVERNMENTAL RELATIONS
Prerequisite: Six credits of political science or permission. Graduate-level examination of problems resulting from changing relations between levels of government in the United States; comparison with other federal systems.

660 SEMINAR IN CIVIL LIBERTIES AND THE JUDICIAL PROCESS
Prerequisite: Six credits of political science or permission. Civil liberties and judicial process viewed in political context. Readings and research on selected topics.

665 SEMINAR IN PUBLIC POLICY ISSUES AND DECISIONS
Prerequisite: 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.

670 SEMINAR IN THE ADMINISTRATIVE PROCESS
Prerequisite: Six credits of political science or permission. Intensive examination of administrative implementation of public policies. Readings and research on selected topics.

672 SEMINAR POLITICAL INFLUENCE AND ORGANIZATIONS
Prerequisite: Permission. Examination of how public concerns and demands are resolved or diverted in a theoretical and applied look at interest groups, public opinion, media, and political institutions.

689 SEMINAR IN URBAN AND REGIONAL POLITICS
Prerequisite: Six credits of political science or permission. Graduate-level examination of selected topics in American politics, comparative politics, international politics, international relations and political theory.

690 SPECIAL TOPICS IN POLITICAL SCIENCE
12 credits
Prerequisite: Six credits of political science or permission. Graduate-level examination of selected topics in political science.

696 INTERSHIP IN GOVERNMENT AND POLITICS
Prerequisite: Permission of advisor. May be repeated for a total of twelve credits. No more than two credits apply to degree requirements.

698 TOPICS IN MASTER'S RESEARCH
May be repeated for a total of six credits. Prerequisite: Graduate assistant. Supervised individual placement with political office holders, party groups, governmental agencies, law firms and other organizations involving professional-level work.

699 INDEPENDENT RESEARCH AND READING
May be repeated for a total of six credits toward the master's degree in political science. Prerequisite: permission.

700 POLITICAL SCIENCE PRACTICUM
Prerequisite: Permission of instructor. Professional summer required of new graduate students. May not be applied toward degree requirements. Covers disciplinary subfields, teaching, research practices, career tracks and program selections. Graded credit/no-credit.

709 MASTER'S THESIS
2-4 credits

PSYCHOLOGY

3750:

500 PERSONALITY
Prerequisite: Admission to the Graduate School. Consideration of current conceptualizations and empirical basis of personality with emphasis on methods of measurement, experimental findings and research techniques.

510 PSYCHOLOGICAL TESTS AND MEASUREMENTS
Prerequisite: Admission to the Graduate School. Consideration of the nature, constitution and use of tests and measurements in industry, government and education. Includes aptitude and achievement tests, rating scales, attitude and opinion analysis.

512 SOCIAL PSYCHOLOGY
Prerequisite: Admission to the Graduate School. Survey of syndromes, etiology, diagnoses and treatments of major psychological conditions ranging from transient maladjustments to psychoses.

513 PSYCHOLOGICAL DISORDERS OF CHILDREN
Prerequisite: Admission to the Graduate School. Survey of syndromes, etiologies and treatments of behavioral disorders in children from the standpoint of developmental psychology. Behavioral data and treatment approaches emphasized.

543 HUMAN RESOURCE MANAGEMENT
Prerequisite: Admission to the Graduate School. The application of psychological theory to the effective management of human resources in an organization, including recruitment, selection, training and retention of personnel.

544 ORGANIZATIONAL THEORY
Prerequisite: Admission to the Graduate School. The application of psychological theory to macro-level processes in organizations including leadership, motivation, task performance, stress and interpersonal relationships.

545 PSYCHOLOGY OF SMALL GROUP BEHAVIOR
Prerequisite: Admission to the Graduate School. Intensive investigation of factors affecting behavior and performance in small groups, including effects of personality, social structure, task, situation and social-cognitive variables.

546 COGNITIVE DEVELOPMENT
Prerequisite: Admission to the Graduate School. Intensive investigation of factors affecting behavior and performance in small groups, including effects of personality, social structure, task, situation and social-cognitive variables.

546 HISTORY OF PSYCHOLOGY
Prerequisite: Admission to the Graduate School. Psychology in pre-scientific period and details of developmental or systematic viewpoints in 19th and 20th centuries.

590 WORKSHOP IN PSYCHOLOGY
15 credits
Prerequisite: Admission to the Graduate School. May be repeated. May not be used to meet undergraduate or graduate major requirement in psychology. Group studies of special topics in psychology.

630 PSYCHOLOGICAL RESEARCH USING QUANTITATIVE AND COMPUTER METHODS I AND II
4 credits each
Sequential prerequisite: Graduate standing in psychology or the joint doctoral program in counseling psychology or special studies with permission. Psychological research problems applying quantitative and computer methods. Topics include research design, sampling, data collection, data analysis, hypothesis testing, psychological measurement, error, robustness and power.

610 PSYCHOLOGY CORE I: ORGANIZATIONAL, SOCIAL AND APPLIED
4 credits
Prerequisite: Graduate standing in psychology or the joint doctoral program in counseling psychology or special studies with permission. Psychological research problems applying quantitative and computer methods. Topics include research design, sampling, data collection, data analysis, hypothesis testing, psychological measurement, error, robustness and power.
COURSES OF INSTRUCTION

620 PSYCHOLOGY CORE I: DEVELOPMENTAL, PERCEPTUAL, AND COGNITIVE 4 credits
Prerequisites: 620 or departmental permission. Major systems of psychological development, perception, and cognitive and information processing including an historical perspective.

630 PSYCHOLOGY CORE II: COUNSELING, INDIVIDUAL AND NORMAL 4 credits
Prerequisites: 620 or departmental permission. Critical examination and application of research, theory, and clinical skills in counseling with an emphasis on the counseling relationship and selected aspects of human development, perception, learning and memory, cognition, and counseling process.

640 PSYCHOLOGY CORE IV: SENSORY, BIOPSYCHOLOGICAL AND EXPERIMENTAL 4 credits
Prerequisites: 620, graduate standing in psychology or the junior-senior program in counseling psychology or permission of the instructor. Survey of the theories, methods, and historical aspects of human development, perception, learning and memory, cognition, and information processing including an historical perspective.

650 GROUP COUNSELING 4 credits
Prerequisites: 630, 710, or 5600-543, 545, or permission of instructor. Emphasis on group process and group process in professional counseling. Focus is on the preparation for actual client contact in subsequent practicum.

671 PRACTICUM IN COUNSELING PSYCHOLOGY 2 credits
Prerequisites: 630; graduate standing in psychology and permission of instructor. Introduction to and training in skills used in process of counseling and psychotherapy. This course is a preparation for actual client contact in subsequent practicum.

672 COUNSELING PRACTICUM I 4 credits
Prerequisites: 630, 671, 672, graduate standing in psychology and instructor's permission. Supervision of experience in the counseling psychology department Counseling Clinic.

673 COUNSELING PRACTICUM II 4 credits
Prerequisites: 630, 671, 672, graduate standing in psychology and instructor's permission. Supervision of experience in the counseling psychology department Counseling Clinic. Training covers counseling, assessment and case management skills.

674 PERSONNEL PRACTICUM (May be repeated) Prerequisites: 671, graduate standing in psychology. 4 credits
Prerequisites: 630, graduate standing in psychology and permission of instructor. Extension and development of therapeutic skills and intervention techniques, with supervised training in a counseling psychology department Counseling Clinic.

680 ADVANCED PSYCHOLOGICAL AGING PRACTICUM (May be repeated) Prerequisites: 631; 680, graduate standing in psychology. 4 credits
Prerequisites: 630, graduate standing in psychology and departmental permission. Supervised experience in applied cognitive aging psychology to provide the student with the opportunity to apply skills and knowledge acquired in the academic setting to and obtain knowledge about communities programs and agencies which focus on developmental processes.

699 MASTER'S THESIS (May be repeated) Prerequisite: departmental permission. Research analysis of data and preparation of thesis for master's degree. 1-4 credits

700 SURVEY OF PROJECTIVE TECHNIQUES 4 credits
Prerequisites: 630 or instructor's permission. Introduction to rational, assumptions and ethics and research of projective testing. Elementary administration, scoring and interpretation of projects; introduction to and survey of other important contemporary projective instruments.

701 PSYCHOLOGICAL TESTS AND MEASUREMENTS 4 credits
Prerequisites: 700; Application of psychological testing problems to diagnostic and evaluation. Program experience in administration, scoring and interpretation. Integration process of data with other assessment techniques in variety of settings.

702 PSYCHOLOGY OF LEARNING AND BEHAVIOR 4 credits
Prerequisites: 630. Advanced study of the background, theoretical foundations, techniques, research and applications of psychology as the science and profession.

705 SUPERVISION IN COUNSELING PSYCHOLOGY I 3 credits
Prerequisites: 630; doctoral organization of instructor. Experience in supervising a graduate student in counseling.

707 THEORIES OF COUNSELING AND PSYCHOTHERAPY 3 credits
Prerequisites: 630 or departmental permission. Major systems of individual psychotherapy explored within a philosophical framework; Freudian, behavioral, Rogerian, cognitive, and other. Includes research, contemporary problems and ethics.

710 VOCATIONAL BEHAVIOR 4 credits
Prerequisites: 630, graduate standing in psychology. Major systems of psychological behavior in the field of work as the counselor as a professional and as a person; topics include occupational choice, the application of psychological knowledge, perception, learning, memory, and creativity.

711 PRINCIPLES AND PRACTICE OF INDIVIDUAL INTERVENTION THERAPY 4 credits
Prerequisites: 630 or graduate standing in psychology, and instructor's permission. History, assumptions and techniques of intelligence testing in administration, scoring and interpretation of individual intelligence tests for children and adults.

713 PROFESSIONAL ETHICAL AND LEGAL ISSUES IN COUNSELING PSYCHOLOGY 3 credits
Prerequisites: 630; doctoral candidacy in professional psychology. Standard of professional responsibilities in counseling, ethical code, and professional standards.

714 PERSONALITY DIAGNOSIS 4 credits
Prerequisites: 630, 640, 670, 711, 720, and 700; 4010; and 5200; 640; and 5600; 645. Study of the development, administration, and interpretation of objective instruments for personality assessment.

715 RESEARCH DESIGN IN COUNSELING I 3 credits
Prerequisites: 630; doctoral candidacy in professional psychology. Survey of research designs, evaluation procedures, and research in counseling and related areas.

717 ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY 4 credits
Prerequisites: 630; one semester of practicum work. Critical examination and application of research, theory, and clinical skills in counseling, focusing on race/ethnicity, gender, sexual orientation, age, disability, and spirituality.

718 HISTORY AND SYSTEMS IN PSYCHOLOGY 2 credits
Prerequisites: 630. Psychological and scientific antecedents of psychology and development of psychological principles and practice and the systematic viewpoints in the 19th and 20th centuries.

720 PSYCHOLOGY OF CHILDREN AND YOUTH 4 credits
Prerequisites: 630 or permission. Current research in child psychology. Covered with some emphasis on cognitive development. Topics include language, memory, intelligence, hypnosis, and procreation.

722 PSYCHOLOGY OF ADULTHOOD AND AGING 4 credits
Prerequisites: 630 or permission. Aspects of development, aging, with emphasis on lifespan issues, research design and research designs. Major systems of individual psychotherapy explored within a philosophical framework; Freudian, behavioral, Rogerian, cognitive, and other. Includes research, contemporary problems and ethics.

726 SOCIAL DEVELOPMENTAL PSYCHOLOGY 4 credits
Prerequisites: 630; graduate standing in psychology. Inference and generalization in social psychological concepts and their application in professional counseling. Includes social influence, social role, social groups, and social identity.

731 THEORIES OF LEARNING 4 credits
Prerequisites: 630 or departmental permission. Contemporary review of research and theory in learning, memory, and decision-making. Process-oriented approach with emphasis on development mental issues.

732 APPLIED COGNITIVE AGING PSYCHOLOGY: INFORMATION PROCESSING 4 credits
Prerequisites: 630. Graduate standing in psychology, and department permission. Contemporary review of research and theory in learning, motivation, attention, and problem solving in adulthood. Includes such areas as environmental design, mobility, and age-related issues.

733 APPLIED COGNITIVE AGING PSYCHOLOGY: HIGHER PROCESSES 4 credits
Prerequisites: 630, 631, and 632, and instructors permission. Emphasis on applications of cognitive aging psychology to the aging process; topics include research and applications of cognitive aging psychology in aging populations, and theories of social development and social cognition in the elderly.

734 THE PSYCHOLOGY OF MENTAL RETARDATION 4 credits
Prerequisites: 630, 640, and 670; and graduate standing in psychology or permission of instructor. Contemporary review of research and theory in learning, motivation, attention, and problem solving in adulthood. Includes such areas as environmental design, mobility, and age-related issues.

735 APPLIED DEVELOPMENTAL PSYCHOLOGY 4 credits
Prerequisites: 630, 631, and 632, and departmental permission. Includes research and applications of cognitive aging psychology to the aging process; topics include research and applications of cognitive aging psychology in aging populations, and theories of social development and social cognition in the elderly.

736 INDUSTRIAL GERONTOLOGY 4 credits
Prerequisites: 630, 631, and 632, and departmental permission. Includes research and applications of cognitive aging psychology to the aging process; topics include research and applications of cognitive aging psychology in aging populations, and theories of social development and social cognition in the elderly.

737 PERSONNEL SELECTION AND PERFORMANCE EVALUATION 4 credits
Prerequisites: 630 and graduate standing in psychology or permission of instructor. Includes research and applications of cognitive aging psychology to the aging process; topics include research and applications of cognitive aging psychology in aging populations, and theories of social development and social cognition in the elderly.

738 TRAINING AND ORGANIZATIONAL DEVELOPMENT 4 credits
Prerequisites: 630 and graduate standing in psychology or permission of other students who have completed 630. Review of strategies employed by industrial/organizational psychologists for personnel selection, placement and promotion. Study of objective and subjective criteria used in personnel selection and training effectiveness.

739 RESEARCH METHODS IN PSYCHOLOGY 4 credits
Prerequisites: 630, 640, and graduate standing in psychology or permission of instructor. Includes research and applications of cognitive aging psychology to the aging process; topics include research and applications of cognitive aging psychology in aging populations, and theories of social development and social cognition in the elderly.

740 PROFESSIONAL APPLICATIONS OF COMPUTER TO PSYCHOLOGY 4 credits
Prerequisites: 630, 640, and graduate standing in psychology or permission of instructor. Includes research and applications of cognitive aging psychology to the aging process; topics include research and applications of cognitive aging psychology in aging populations, and theories of social development and social cognition in the elderly.
502 HISTORY OF SOCIOLOGICAL THOUGHT 3 credits
Prerequisite: 100 or permission. Exposition of major scholars in the classical sociological tra­dition. Lecture.

504 CONTEMPORARY SOCIOLOGICAL THEORIES 3 credits
Prerequisite: 100 or permission. Examination of major theoretical works in sociological theories, emphasizing current theoretical approaches to issues of social order and social change. Lecture.

510 SOCIAL STRUCTURES AND PERSONALITY 3 credits
Prerequisite: 100 or permission. An analysis of the relationship between social structure and personality. Emphasis on the role of social structure in shaping individual development. Lecture.

511 SOCIAL INTERACTION 3 credits
Prerequisite: 100 or permission. Examination of the interaction of individuals and groups in society. Lecture.

512 SOCIALIZATION CHILD TO ADULT 3 credits
Prerequisite: 100 or permission. An analysis of the socialization process from childhood to adulthood, including the role of socialization in shaping personality development. Lecture.

513 RACIAL AND ETHNIC RELATIONS 3 credits
Prerequisite: 100 or permission. An analysis of the relationship between race and ethnicity, including the historical and contemporary factors that influence these dynamics. Lecture.

520 SOCIOLOGY OF WOMEN 3 credits
Prerequisite: 100 or permission. An analysis of the relationship between gender and social structure, including the impact of gender on personal and social development. Lecture.

525 SOCIOLOGY OF URBAN LIFE 3 credits
Prerequisite: 100 or permission. An analysis of the social dynamics of urban life, including the impact of urbanization on social structure and individual behavior. Lecture.

526 THE VICTIM IN SOCIETY 3 credits
Prerequisite: 100 or permission. An analysis of the roles of victims in society, including the impact of victimization on personal and social development. Lecture.

529 PROBATION AND PAROLE 3 credits
Prerequisite: 330 or 420 or permission. An analysis of the role of probation and parole in society, including the impact of these systems on offenders and their families. Lecture.

531 JUVENILE DELINQUENCY 3 credits
Prerequisite: 100 or permission. An analysis of the role of delinquency in society, including the impact of these behaviors on personal and social development. Lecture.

532 CORRECTIONAL METHODS 3 credits
Prerequisite: 330 or 420. An analysis of the role of correctional methods in society, including the impact of these systems on offenders and their families. Lecture.

533 SOCIOLOGY OF DEVIANT BEHAVIOR 3 credits
Prerequisite: 100 and at least six additional credits of sociology courses or permission. An analysis of the role of deviance in society, including the impact of these behaviors on personal and social development. Lecture.

540 SOCIOLOGY OF RELIGION 3 credits
Prerequisite: 100 or permission. An analysis of the role of religion in society, including the impact of these behaviors on personal and social development. Lecture.

541 SOCIOLOGY OF LAW 3 credits
Prerequisite: 100 and at least six additional credits of sociology courses or permission. An analysis of the role of law in society, including the impact of these behaviors on personal and social development. Lecture.

542 SOCIOLOGY OF EDUCATION 3 credits
Prerequisite: 100 or permission. An analysis of the role of education in society, including the impact of these behaviors on personal and social development. Lecture.

545 SOCIAL ISSUES IN AGING 3 credits
Prerequisite: 100 or permission. An analysis of the role of aging in society, including the impact of these behaviors on personal and social development. Lecture.

550 SOCIOLOGY OF MENTAL ILLNESS 3 credits
Prerequisite: 100 or permission. An analysis of the role of mental illness in society, including the impact of these behaviors on personal and social development. Lecture.

560 SOCIAL ISSUES IN HEALTH 3 credits
Prerequisite: 100 or permission. An analysis of the role of health in society, including the impact of these behaviors on personal and social development. Lecture.

561 SOCIOLOGICAL METHODS IN HEALTH RESEARCH 3 credits
Prerequisite: 100 or permission. An analysis of the role of research in health, including the impact of these behaviors on personal and social development. Lecture.

562 CRITICAL OF MORTALITY: COMMUNICATIONS RESEARCH 3 credits
Prerequisite: 100 or permission. An analysis of the role of communications research in society, including the impact of these behaviors on personal and social development. Lecture.

563 CRITICAL OF MORTALITY: COMMUNICATIONS RESEARCH 3 credits
Prerequisite: 100 or permission. An analysis of the role of communications research in society, including the impact of these behaviors on personal and social development. Lecture.

565 SEMINAR IN RACE RELATIONS 3 credits
Prerequisite: 100 or permission. An analysis of the role of race and ethnicity in society, including the impact of these behaviors on personal and social development. Lecture.

570 SOCIAL PSYCHOLOGY 3 credits
Prerequisite: 100 or permission. An analysis of the role of social psychology in society, including the impact of these behaviors on personal and social development. Lecture.
652 CONFLICT 3 credits
Prerequisite: permission. Current concepts of human conflict. Discussion of verbal and nonverbal strategies for understanding conflict phenomena. Power, values, ideology, riots, revolution and war. (Same as KSU 72572) Seminar.

654 MEDICAL SOCIOLOGY 3 credits
Prerequisite: permission of instructor. A general survey of the field of medical sociology with special emphasis on applications of sociological concepts and methods to problems in health and health care in the contemporary urban United States. (Same as KSU 72722) Seminar.

657 URBAN HEALTH CARE 3 credits
Prerequisite: permission. Relationships between urban social structures and processes and organization and functioning of healthcare delivery systems in urbanized nations. Seminar.

658 FIELD RESEARCH IN URBAN LIFE STYLES 3 credits
Prerequisite: permission. Examination of various life styles in a contemporary urban society. Explores issues of theory and methodology in urban studies through examination of both classic and contemporary studies. Includes application of concepts and techniques in actual field research. Seminar.

659 SOCIAL ENGAGEMENT 3 credits
Prerequisite: permission. Examination of nature and type of deviance. Problems and issues in theory and research. (Same as KSU 72601) Seminar.

660 SOCIOLOGY OF CRIMINAL BEHAVIOR 3 credits
Analysis of relationships among crime and deviancy to social structure and social processes. Responses by criminal justice agencies. Seminar.

661 JUVENILE DELINQUENCY: THEORY AND RESEARCH 3 credits
Prerequisite: permission. Analysis of theories of delinquency: ecological, class structural, substructural, etc. Review of relevant research also presented. Seminar.

662 SOCIOLOGY OF CORRECTIONS 3 credits
Prerequisite: permission. Analysis of correctional institutions as social systems. Individual structure and internal dynamics. Analysis of present state of corrections research. Seminar.

671 FAMILY ANALYSIS 3 credits
Prerequisite: permission. Analysis and evaluation of sociological theory and research in the family. Concentration on techniques of theory construction and research design in sociological study of the family. (Same as KSU 72534) Seminar.

679 SOCIAL GERONTOLOGY 3 credits
Prerequisite: permission. Examination of impact of aging upon individuals and society. Reactions of individuals and society to aging. (Same as KSU 72578) Seminar.

679 POLITICAL SOCIOLOGY 3 credits
Description, analysis and interpretation of political behavior through application of sociological concepts. Seminar.

680 SOCIOLOGY OF EDUCATION 3 credits
Selected problems in sociological analysis of educational systems. Emphasis on sociological determinants of learning as class, race, family and peer subcultures. (Same as KSU 72547) Seminar.

681 CROSS CULTURAL PERSPECTIVES IN AGING 3 credits
Prerequisite: permission. A comparison of aging in different cultures and societies around the world.

688 POPULATION 3 credits
Analysis of demographic-population theory and methods. Trends and differences in fertility, migration and selected sex-distributional variables also considered. (Same as KSU 72665) Seminar.

687 SOCIAL CHANGE 3 credits
Advanced seminar in theories of social change. (Same as KSU 72320) Seminar.

687 HUMAN ECOLOGY 3 credits
Selected problems in analysis of social behavior in relation to physical environment. Overview of theory, methods and applications of human ecology. (Same as KSU 72650) Seminar.

689 URBAN ECOLOGY 3 credits
Seminar in theory and measurement of social ecology of urban areas. Emphasis on trends and differences in distributional organizational behavior in urban America.

690 READINGS IN CONTEMPORARY SOCIOLOGICAL LITERATURE 1-3 credits
Prerequisite: seven credits of sociology and permission of instructor and instructor of field study. Preparation and presentation of written material in students' chosen field of interest. Requires conferences with instructor.

694 DIRECTED RESEARCH 1-3 credits
May be repeated. Prerequisite: permission. Research to be conducted by the student under graduate faculty supervision.

999 MASTER'S THESIS 2.5-6 credits
May be repeated for a total of six credits. Prerequisite: permission. Supervised thesis-writing.

700 COLLEGE TEACHING OF SOCIOLOGY 2 credits
Prerequisite: teaching teaching of permission. Training and experience in college teaching of sociology. Not approved as credit toward a degree. Seminar.

705 THEORY AND MEASUREMENT OF SOCIAL ATTITUDES 3 credits
Prerequisites: 603 and 634, or permission. Seminar in theories of social attitudes and techniques for their measurement. (Same as KSU 72231) Seminar.

707 MULTIVARIATE TECHNIQUES IN SOCIOLOGY 3 credits
Prerequisites: 602 and 634, or permission. Seminar in multivariate social methodology. Problems using advanced multivariate techniques in analysis of sociological data. Topics include nonparametric causal analysis such as recursive and nonrecursive path analysis. (Same as KSU 72727)

709 MEASUREMENT IN SOCIOLOGY 3 credits
Prerequisite: 706 or permission. Theory and methods of measurement reliability and validity in social data. Topics include estimating reliability and validity scale and item design, alternative measurement strategies, measurement models. Seminar.

711 ADVANCED TECHNIQUES IN RESEARCH 3 credits
Prerequisite: permission. Selected topics in advanced multivariate statistical analysis and in strategies of sociological research. Emphasis on current trends and innovations in research techniques. (Same as KSU 72726) Seminar.

713 ANALYSIS OF SOCIOMETRIC DATA 3 credits
Prerequisite: 706 or permission. Critical examination of data analysis techniques having particular relevance to research problems in sociology. (Same as KSU 72721) Seminar.

715 SOCIAL SAMPLING 3 credits
Prerequisites: 603 or 604 or permission. Theory and methods of sampling in sociological research. Topics include sample design, sampling efficiency, nonresponse, mortality in longitudinal designs, urban, organizational, and survey sampling, stratified and cluster sampling. Seminar.

711 SURVEY RESEARCH METHODS 3 credits
Prerequisites: 603 and 604, or permission. In-depth study of design and administration of social surveys. (Same as KSU 72720) Seminar.

712 EXPERIMENTAL AND QUASI-EXPERIMENTAL RESEARCH IN SOCIOLOGY 3 credits
Prerequisite: 603 or permission. Application of experimental and quasi-experimental techniques in sociological research. Emphasis on attention given to elaborating design, statistical analyses and empirical literature. Seminar.

714 QUALITATIVE AND EMPIRICAL METHODS 3 credits
Prerequisite: 706 or permission. Theory building and theory testing through the application of such techniques as participant-observation, open-ended interviewing, content analysis, sociological statistics, research writings, social agencies, and other contemporary sources and qualitative statistics. (Same as KSU 72725) Seminar.

718 THEORY CONSTRUCTION 3 credits
Studies of methods and methods for constructing scientific theory. Emphasis on writings, courses, seminars and seminars, and philosophies of science and application of these ideas in development of sociological theories. (Same as KSU 72601) Seminar.

719 SPECIAL TOPICS IN SOCIOLOGICAL THEORY 3 credits
Prerequisite: permission. Topics in special sociological theories. May be repeated for a total of six credits. (May be repeated under different headings. Content of course to be determined by instructor. (Same as KSU 72195) Seminar.

722 EARLY SOCIOLOGICAL THOUGHT 3 credits
Prerequisite: 617 or permission. Topics in the thought of selected sociologist prior to 1950 examined in depth. Specific persons considered will be selected by instructor but will be announced in advance of beginning of class. (Same as KSU 72701) Seminar.

723 SEMINAR IN SOCIOLOGICAL THEORY 3 credits
Prerequisite: 722 or permission. Intensive critical analysis of current scholarship in broad range of contemporary sociological theories. Varies; all required reading will be from primary sources. (Same as KSU 72705) Seminar.

731 SMALL GROUP RESEARCH TECHNIQUES 3 credits
Prerequisite: 632. Application and implications of research in small groups. Focus on both laboratory and field studies. Seminar.

733 CONTEMPORARY TRENDS IN SOCIAL PSYCHOLOGY 3 credits
Prerequisite: permission. Selected topics on significant contemporary issues, theories and methodological developments in social psychology. (Same as KSU 72495) Seminar.

734 RESEARCH IN SOCIAL PSYCHOLOGY 3 credits
Prerequisite: 633. Design and development of a research project oriented to empirically examine selected concepts in social psychology or to test selected propositions in social psychology. (Same as KSU 72431) Seminar.

747 URBAN SOCIOLOGY 3 credits
Analysis of theories of urban process and review of major contributions in empirical analysis of urban life. (Same as KSU 72859) Seminar.

750 RESEARCH IN COMMUNITY AND AREA PROBLEMS 3 credits
Prerequisite: permission. Special investigation of community, area or regional problems; definition and execution of special project. (Same as KSU 72859) Seminar.

751 SPECIAL TOPICS IN SOCIOLOGICAL ORGANIZATION 3 credits
Prerequisite: permission. Seminar in social organization. Topics to be determined by instructor.

756 SEMINAR IN URBAN PROGRESS 3 credits
Prerequisite: Ph.D. standing in sociology or permission. Critical examination of current research and theory related to urban life, special emphasis on social change in urban environment. (Same as KSU 72691) Seminar.

767 SPECIAL TOPICS IN DEVIANCE AND DISORGANIZATION 3 credits
Prerequisite: permission. Seminar in social organization. Topics to be selected in social deviance and disorganization.

769 RESEARCH IN DEVIANCE AND DISORGANIZATION 1 credit
Prerequisite: 683. Seminar in social organization. Topics to be selected in social deviance and disorganization.

770 CONTEMPORARY ISSUES IN SOCIAL CHANGE 1 credit
Prerequisites: 687 or permission. Seminar in social organization. Topics to be selected in social deviance and disorganization.

771 CONTEMPORARY ISSUES IN SOCIAL CHANGE 1 credit
Prerequisites: 687 or permission. Seminar in social organization. Topics to be selected in social deviance and disorganization.

776 RESEARCH IN SOCIAL CHANGE 1 credit
Prerequisites: 687 or permission. Seminar in social organization. Topics to be selected in social deviance and disorganization.

778 RESEARCH IN HUMAN ECOLoGY 1 credit
Prerequisites: 655. Seminar in human ecology. Intersection of theoretical and methodological components to aid in understanding of social phenomena and social change. Advanced notices in specific content will be provided to instructor. (Same as KSU 8230) Seminar.

781 RESEARCH IN SOCIAL Change 1 credit
Prerequisites: 687 or permission. Seminar in social organization. Topics to be selected in social deviance and disorganization.

786 RESEARCH IN SCIENCE 1 credit
Prerequisite: 686. Seminar in social organization. Intersection of theoretical and methodological components to aid in understanding of social phenomena and social change. Advanced notices in specific content will be provided to instructor. (Same as KSU 8230) Seminar.

899 DOCTORAL DISSERTATION 1-3 credits
(Must be repeated for a minimum of 30 credits) Dissertation. (Same as KSU 82951)
567 CULTURE AND MEDICINE
Prerequisite: 150 or permission of instructor. Analyzes various aspects of Western and non-Western medical systems from an anthropological perspective. Compares traditional medical systems around the world.

561 LANGUAGE AND CULTURE
Prerequisite: 150 or permission. Examination of language structure and interaction of language, cognition and culture. Lecture.

563 SOCIAL ANTHROPOLOGY
Prerequisite: 150 or permission. Comparative structural analysis of non-Western systems of kinship and social organization in terms of status, roles, kinship, social norms and extended household ties and other kingly groupings. Lecture.

572 SPECIAL TOPICS: ANTHROPOLOGY
Prerequisite: 150 (May be repeated); Prerequisite: permission. Designed to meet needs of student with interests in selected topics in anthropology. Offered irregularly when resources and opportunity permit. May include anthropological field school, laboratory research or advanced course work not presently offered by department on regular basis.

594 WORKSHOP IN ANTHROPOLOGY
Prerequisite: 150 (May be repeated). Introduction to special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only.

565 SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS
3 credits

567 INDIVIDUAL INVESTIGATION
3 credits
Prerequisites: permission of instructor and head of department. Intensive reading and/or research in student's chosen field of interest. Regular conference with instructor. Preparation of a research paper.

PUBLIC ADMINISTRATION AND URBAN STUDIES

3680:

590 WORKSHOP
Prerequisite: Open to freshmen and sophomores only. May be repeated; Group studies of special topics in urban studies. May not be used to meet major requirements in urban studies. May be used for elective credit only.

590 BASIC ANALYTICAL RESEARCH
3 credits
Prerequisite: permission. Examinations of basic factors of social science research methodology and techniques. Statistical techniques, including probability and sampling techniques used in urban studies.

590 ADVANCED RESEARCH AND STATISTICAL METHODS
3 credits
Prerequisites: 600. Extends study of social science to include more advanced research designs and multivariate statistical techniques.

590 AMERICAN URBAN DEVELOPMENT
3 credits
Prerequisite: permission. Survey of methods in urban making in both the public (government) and private (business and the professions) sectors. Emphasis on use of research tools of economic analysis, data generation, and analysis and simulation.

590 LEGAL FOUNDATIONS OF PUBLIC ADMINISTRATION
3 credits
Prerequisites: permission. Introduction to the legal foundations and context of public administration, including the principles of the coursework, public organizations, public administration, and the public.

590 INTRODUCTION TO THE PROFESSION OF PUBLIC ADMINISTRATION
3 credits
Prerequisite: permission. Introduction to the theory and practice of the field of public administration, including the principles of the coursework, public organizations, public administration, and the public.

590 INTERGOVERNMENTAL RELATIONSHIP
3 credits
Prerequisite: permission. Examination of the federal, state and local governments as they operate in the United States. Emphasis on federalism and the role of state and local governments in the United States.

590 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. Emphasis on ethical dilemmas and the role of ethics in public service.

590 PUBLIC ORGANIZATION THEORY
3 credits
Prerequisites: 601 and 602 or equivalent. Examination of the development of public organization theory and the current state of theoretical developments in the field of public administration.

590 PERSONNEL MANAGEMENT IN THE PUBLIC SECTOR
3 credits
Prerequisites: 603 and 604 or equivalent. Examination of the role of personnel management in the public sector. Emphasis on the development of personnel policies and the management of human resources.

590 LEADERSHIP AND DECISION MAKING
3 credits
Prerequisite: permission. Examination of the context of public organization management including relevant organizational theory, strategic management and planning and public sector leadership.

590 CITIZEN PARTICIPATION
3 credits
Prerequisites: permission. The fundamental theory, background, techniques, and issues of citizen participation in public policy making.

590 SOCIAL SERVICES PLANNING
3 credits
Prerequisite: permission. In-depth analysis of total social services requirements and various ways in which social services planning function is carried out in urban communities.

590 URBAN SOCIETY AND SERVICE SYSTEMS
3 credits
Prerequisite: permission. Analysis of urban social bases of urban society, heredity, social problems, relationships to planning, and social services.

590 URBAN PLANNING AND HEALTH CARE
3 credits
Prerequisite: permission. Basic knowledge of the health service delivery system is provided for planners and administrators in the public sector.

590 PUBLIC WORKS ADMINISTRATION
3 credits
Prerequisite: permission. Examination of the building, maintenance and management of public works.
720 COMPARATIVE PLANNING STRATEGIES
Prerequisite: 715 or permission. Review and analysis of alternative planning theories, institutions, and implementation strategies in a variety of national settings. 3 credits

799 URBAN TUTORIAL
Prerequisite: permission. In-depth study of a particular approved field or topic of current interest. 3 credits

899 DOCTORAL DISSERTATION
May be repeated. Open to properly qualified student accepted as candidate for Doctor of Philosophy degree. Student must register for at least three credits each semester until dissertation is accepted. Minimum of 15 credits required. 1-15 credits

Courses of Instruction

College of Engineering

CHEMICAL ENGINEERING

4200:

561 SOLIDS PROCESSING 3 credits
Prerequisite: 321 and 253 or permission. Comprehensive problems in sedimentation, filtration, dewatering and other operations involving mechanisms of particulate solids in liquid and gas continua.

563 POLLUTION CONTROL 3 credits
Prerequisite: 352 or permission. Air and water pollution sound and problems. Engineering aspects and methodology.

566 DIGITAL DATA AND SIMULATION 3 credits
Prerequisite: permission. Data acquisition and analysis by digital devices. Digital control applications and design.

570 ELECTROCHEMICAL ENGINEERING 3 credits
Prerequisites: 322, 330. Chemical engineering principles as applied to the study of electrode processes and to the design and operation of electrochemical reactors. Topics include electrolyte thermodynamics, cell polarization, Faraday's laws, electrode kinetics, transport processes in electrochemical systems, current distributions, reactor design, experimental methods, commercial processes, and batteries and fuel cells.

572 SEPARATION PROCESSES IN BIOCHEMICAL ENGINEERING 3 credits
Prerequisite: 353 or permission. Kinetics of homogenous and heterogeneous systems. Reactor design for ideal and non-ideal flow systems.

610 CLASSICAL THERMODYNAMICS 3 credits
Prerequisite: 225. Discussion of laws of thermodynamics and their application. Predication of phase fields, miscibilities, and chemical potentials.

622 BIOCHEMICAL ENGINEERING 3 credits
Application of chemical engineering principles to biological processes which produce desirable compounds or destroy unwanted or hazardous substances.

630 CHEMICAL PROCESS DYNAMICS 3 credits
Prerequisite: 600. Development and solutions of mathematical models for chemical processes including models based on transport phenomena principles, population balance methods, and systems analysis.

631 CHEMICAL ENGINEERING ANALYSIS 3 credits
Prerequisites: 322, 275, 330. Mathematical analysis of problems in transport processes, chemical reactions and control systems. Solution techniques for these problems and their practical significance are stressed. Heuristic pitfalls will be given for necessary theory developments.

632 NONLINEAR DYNAMICS AND CHAOS 3 credits
Prerequisites: 3450:235. Description and analysis of the complex behavior exhibited by nonlinear equations. Emphasis is on the numerical methods to quantify chaos.

634 APPLIED SURFACTANT SCIENCE 3 credits
Prerequisite: 610. The basics of surfactant science, the chemical engineering application of surfactants including use in polymerization media, separations, emulsions, microemulsions, and rheology modifiers.

635 ADVANCED POLYMER ENGINEERING 3 credits
Prerequisite: 322 or 600 or permission. Reactor for polymerization, polymer characterization, polymer processing, polymer rheology.

640 ADVANCED PLANT DESIGN 3 credits
Prerequisite: permission. Topical treatment of process and equipment design, scale-up, optimization, process synthesis, process economics. Case problems.

580 HETEROGENEOUS CATALYSIS 3 credits
Prerequisite: 331. Kinetics and mechanisms of heterogeneous and homogeneous catalytic reactions; characterization and design of heterogeneous catalyst.

696 TOPICS IN CHEMICAL ENGINEERING 3 credits
(May be repeated for a total of six credits.) Prerequisite: permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthetic fuels processing, biotechnology, multiphase phenomena and new separation techniques.

698 MASTER'S RESEARCH 1-6 credits
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in chemical engineering culminating in a master's thesis.

699 MASTER'S THESIS 1-6 credits
(May be repeated to a maximum of six credits) For properly qualified candidates for master's degree. Supervised original research in specific area of chemical engineering selected on basis of availability of staff and facilities.

701 ADVANCED TRANSPORT PHENOMENA 3 credits
Prerequisite: 600. Advanced theory of transport phenomena such as applied tensor thermodynamics, cell polarization, Faraday's laws, electrode kinetics, transport processes in electrochemical systems, current distributions, reactor design, experimental methods, commercial processes, and batteries and fuel cells.

702 MULTIPHASE TRANSPORT PHENOMENA 3 credits
Prerequisite: 600. General transport theorem, kinematics, Cauchy's Lemmas and the kmp boundary conditions are developed followed by the theory of volume averaging. The single phase equations are then volume averaged to obtain the multiphase equations of change. The solution of the resulting equations and their practical significance is also covered.

706 ADVANCED REACTION ENGINEERING 3 credits
Prerequisite: 600. Kinetics of heterogeneous systems, steady and unsteady state, mathematical modeling of chemical reactors, fluidization and additional topics drawn from current literature.
CIVIL ENGINEERING:

4300:

574 DESIGN OF EARTH STRUCTURES 3 credits
Prerequisite: 314 or permission. Design of earth structures: dams, highway fills, subgrade, etc. Earthquake construction techniques, quality control, embankment analysis. Solution of soil mechanics and design problems. Graduate students will perform more advanced analysis and design.

518 SOIL AND ROCK EXPLORATION 3 credits
Prerequisite: permission. Soil exploration criteria and planning. Conventional tools and methods, sampling and in situ testing methods. Theory and application of geophysics and geophysical methods in civil engineering. Theoretical and applied surveying. Geophysical and geophysical methods. Earthquake instrumentation and analysis. Foundation design and analysis of shallow and deep foundations. Graduate students will perform more advanced analysis and design.

523 CHEMISTRY FOR ENVIRONMENTAL ENGINEERS 3 credits
C Lecture – 1 lab
Prerequisite: One year of college chemistry. General, physical, organic, biochemistry, and related disciplines. Environmental engineering. Students are exposed to current issues and technologies in environmental engineering. Graduate students will perform more advanced analysis and design.

526 ENVIRONMENTAL ENGINEERING DESIGN 3 credits
Prerequisite: 523. Introduction to the physical, chemical and biological processes important to the design criteria for wastewater treatment systems.

527 WATER QUALITY MODELING AND MANAGEMENT 3 credits
Prerequisite: 323. Site-specific advanced design of water treatment systems, development of management strategies and optimization techniques. Course covers water quality modeling techniques.

582 HAZARDOUS AND SOLID WASTES 3 credits
Prerequisite: 527, 528. Analysis of processes producing hazardous and solid wastes, evolution of processes and procedures for treatment and disposal. Graduate students may discuss with non-technical classmates.

543 APPLIED HYDRAULICS 3 credits
Prerequisite: 341. Review of design principles: urban hydraulics, stream channel mechanics, sedimentation, coastal engineering.

551 COMPUTER METHODS OF STRUCTURAL ANALYSIS 3 credits
Prerequisite: 523. Design and implementation of computer programs for the analysis of structures.

553 OPTIMUM STRUCTURAL DESIGN 3 credits
Prerequisite: 526. Basic concepts in structural optimization. Mathematical programming techniques and methods including constrained minimization, multivariable minimization, and constrained minimization.

554 ADVANCED MECHANICS OF MATERIALS 3 credits
Prerequisite: 520 or equivalent. Theoretical and experimental aspects of stress analysis, strain energy, and energy-based design. Graduate students will perform more advanced analysis and design.

563 TRANSPORTATION PLANNING 3 credits
Prerequisite: 361. Theory and techniques for transportation planning. Development of economic and social impacts of transportation systems. Graduate students will perform more advanced analysis and design.

566 TRAFFIC ENGINEERING 3 credits
Prerequisite: 361. Traffic engineering principles and methods. Traffic studies, data collection and analysis, traffic generation and distribution, and traffic control. Graduate students will perform more advanced analysis and design.

567 ADVANCED HIGHWAY DESIGN 3 credits
Prerequisite: 565. Roadway design, alignment, cross-section design, and safety analysis. Graduate students will perform more advanced analysis and design.

568 HIGHWAY MATERIALS 3 credits
Prerequisite: 361 or permission. Properties of asphalt, cement, and other highway materials. Design and testing of highway pavements and surfaces. Graduate students will perform more advanced analysis and design.

574 UNDERGROUND CONSTRUCTION 3 credits
Prerequisite: 340. Geological principles of structural geology and the design and construction of underground facilities. Graduate students will perform more advanced analysis and design.

604 DYNAMICS OF STRUCTURES 3 credits
Prerequisite: 560. Advanced topics in structural dynamics, including linear and nonlinear systems. Graduate students will perform more advanced analysis and design.

605 PRESTRESSED CONCRETE 3 credits
Prerequisite: 560. Advanced topics in concrete, including prestressed concrete structures. Graduate students will perform more advanced analysis and design.

611 FUNDAMENTALS OF SOIL BEHAVIOR 3 credits
Prerequisite: 560. Advanced topics in soil mechanics, including soil behavior under load, soil testing, and soil classification. Graduate students will perform more advanced analysis and design.

615 FOUNDATION ENGINEERING I 3 credits
Prerequisite: 560. Foundation design and analysis. Graduate students will perform more advanced analysis and design.

616 FOUNDATION ENGINEERING II 3 credits
Prerequisite: 560. Advanced topics in foundation design and analysis. Graduate students will perform more advanced analysis and design.

617 NUMERICAL METHODS IN GEOTECHNICAL ENGINEERING 3 credits
Prerequisite: 560. Advanced numerical methods for solving geotechnical problems. Graduate students will perform more advanced analysis and design.
641 RANDOM SIGNAL ANALYSIS
3 credits
Prerequisite: 447 Analysis, introduction and smoothing of engineering data through application of statistical and probability methods.

643 INFORMATION THEORY AND CODING
3 credits
Prerequisite: 541 or permission. Source, channel, entropy, mutual information, source and channel coding theorem. Channel coding theorem for waveform channels. Introduction to self-distruction theory.

644 CHANNEL CODING
3 credits
Prerequisite: 641 or permission. Algebraic structure of error control codes; techniques for encoding and decoding. Coverage of the major classes of linear block codes and convolutional codes.

645 DIGITAL SIGNAL PROCESSING
3 credits
Prerequisite: 433. Relationships between continuous-time and discrete-time Fourier transforms. Sampling, aliasing, sampling rate conversion. Operator concepts in signal processing. All-pass systems, FIR digital filter design.

647 DIGITAL SPECTRAL ANALYSIS AND SIGNAL MODELING
3 credits
Prerequisite: 465 or permission of instructor. Methods and theory of spectral analysis and signal modeling are investigated in detail. Applications of theory include speech processing, optimal filtering, biomedical systems, digital communications.

651 STATISTICAL COMMUNICATION THEORY
3 credits
Prerequisite: 541 or permission. Fundamental principles of transmission of digital information over noisy channels. Optimum receivers. Bandwidth and dimension. Capacity of the band-passed Gaussian channel.

652 ELECTROMAGNETIC THEORY I
3 credits

653 ELECTROMAGNETIC THEORY II
3 credits
Prerequisite: 650 or permission of the course instructor. Scattering. TEM waves, guided wave theory, transmission line coupling, boundary guides and cavities, modal orthogonality and completeness, Greens function, excitation and coupling, open-boundary waveguides.

652 ADVANCED ELECTROAUTOGRAPHY
3 credits

655 ADVANCED ANTENNA THEORY AND DESIGN
3 credits
Prerequisites: 452, 553. Basic properties and recent advances of microstrip antennas. Analysis and design of reflector antennas. Analysis and synthesis of linear and planar antenna arrays.

661 DESIGN OF DIGITAL SYSTEMS
3 credits
Prerequisite: 450. Application of logic circuits in modern digital electronic computers and in digital communication systems. Computer organization and control, input-output devices and interfaces, advanced topics in computers.

662 TOPOLOGIES IN ELECTRONICS
3 credits
Prerequisite: permission of department head. Discussions of recent advances in electronics.

663 VLSI CIRCUITS AND SYSTEMS
3 credits
Prerequisite: graduate status. An introductory course designed to provide a broad overview of the very-large-scale-integrated (VLSI) systems, circuits, and devices. Topics include design, simulation, layout, fabrication, and test procedures.

664 INTEGRATED CIRCUIT DEVICES
3 credits
Prerequisite: 353, 360, or equivalent. Develops physical and analytical descriptions of solid-state electronic devices leading to equations and models of (Schotky and PN) diodes and field-effect and bipolar transistors.

667 DISCRETE CONTROL SYSTEMS
3 credits
Prerequisite: 476/572 or permission. Theory, technique, and analysis for discrete control systems. L2 and 2-norm, state and output feedback, linearization, pole assignment, state observers, and Kalman filtering.

671 NONLINEAR CONTROL
3 credits
Care 674 or instructor permission. Designed to provide students with qualitative insights into nonlinear systems and techniques for controlling such systems. Topics include describing functions, Popov and circle criteria, jump resonances, subharmonics, phase plane, non-autonomous systems, Lyapunov theory, bifurcation of attractors and routes to chaos.

674 CONTROL SYSTEM THEORY
3 credits
Prerequisite: 571 or instructor permission. Advance 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
3 credits
Prerequisite: 472 or permission of the instructor. This course is designed to provide the control engineer with tools necessary to simulate continuous systems on a digital computer. Topics include linear state-space methods, nonlinear systems, filter, and computer simulations and simulation language systems.

676 RANDOM PROCESS ANALYSIS
3 credits
Prerequisite: 674. Analysis and design of control systems with stochastically defined input. Introduction to estimation filters.

677 OPTIMAL CONTROL I
3 credits
Prerequisite: 674. Formulation of optimization problem; application of variational calculus; maximum principle and optimality principle to control problems. Computational techniques in optimization.

679 DYNAMICS AND CONTROL OF POWER ELECTRONIC CIRCUITS
3 credits
Prerequisites: 493/553 or equivalent. Averaged and sampled-data models for rectifiers and DC/DC converters. Small-signal models about the cyclic steady-state. Feedback control using classical and modern approaches.

681 POWER SYSTEM ANALYSIS
3 credits
Prerequisite: 490. Short-circuit and load flow analysis of power systems with emphasis on computer solution. Transient machine analysis.

682 POWER SYSTEM STABILITY
3 credits
Prerequisite: 681. Steady state and transient stability of power systems with emphasis on computer solution.

683 ECONOMICS OF POWER SYSTEMS
3 credits
Prerequisites: 681. Analysis and optimization of power system for economic dispensing using a computer.

684 PROTECTIVE RELAYING
3 credits
Prerequisite: 490. Principles and application of relays as applied to protection of power systems.

685 SURGE PROTECTION
3 credits
Prerequisite: 460. 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 status in Electrical Engineering. Voltage and mechanical differential equations of electric machines, analytical and numerical methods for solution of a system of magnetic differential equations.

687 POWER ELECTRONICS II
3 credits
Prerequisite: 485/585 or equivalent. Effects of the nonlinearities of the inverter circuit components, design of DC/DC converters and inverter with transient and thermal issues. Analysis and design of advanced power circuits.

688 CONTROL OF ELECTRIC MACHINES
3 credits
Prerequisites: graduate status in Electrical Engineering. Elements of control circuits for electric drives, techniques for torque-speed control of electric machines.

689 POWER SEMICONDUCTOR DEVICES
3 credits
Prerequisite: graduate status in Electrical Engineering. Structure and physics of power semiconductor devices, diodes, Bipolar junction transistors, MOSFETs, Thyristors, IGBTs, Bipolar devices (IGUCM). Emphasis on the features that characterize these devices from the lower power semiconductor devices.

691 SPECIAL PROBLEMS
12 credits
(May be taken more than once) Prerequisite: permission of department head. For a qualified graduate student. Supervised research or investigation in major field of training or experience. Credits dependent upon nature and extent of project.

699 MASTER'S RESEARCH
1-2 credits
Prerequisite: Permission of advisor (May be repeated). Research on a suitable topic in electrical engineering culminating in a master's thesis.

799 MASTER'S THESIS
16 credits
Prerequisite: permission of department head. Research and thesis on some suitable topic in research.

749 FUNCTIONAL ANALYTIC METHODS IN SYSTEM THEORY
3 credits
Prerequisite: permission of instructor. A course surveying necessary background in advanced research. Advanced topics in real and functional analysis covered.

753 TOPICS IN ELECTROMAGNETICS
3 credits
Prerequisite: 651. Introduction to advanced techniques in fields. Topics include application of Green's function techniques to related boundary value problems.

772 MODULATION TECHNIQUES FOR CONTROL SYSTEMS
3 credits
Prerequisites: graduate student in Electrical Engineering. Introduction to advanced modulation techniques for control systems. Topics include an introduction to the design and analysis of control systems.

773 ADVANCED LINEAR CONTROL SYSTEMS
3 credits
Prerequisite: 374 and a course in Real Analysis or equivalent. Covers topics related to the design of robust control systems. The synthesis of controllers which yield stable closed-loop systems will be considered. The Hilbert space framework for controller design is included. Special emphasis will be given to the robust stabilization problem and the disturbance attenuation problem.

775 ROBOT CONTROL
3 credits
Prerequisite: 671. Design and evaluation of robots and control systems. Control techniques based on the algebraic Riccati equation. Decentralized and reliable control design methodologies.

777 OPTIMAL CONTROL II
3 credits
Prerequisite: 671. Advanced state-feedback optimal control. Output-feedback issues, including loop transfer recovery, optimal observer design, reduced-order controllers, frequency weighting and decentralized control.

786 ADAPTIVE CONTROL
3 credits
Prerequisite: 671 or permission of instructor. This course will provide the advanced graduate student with the tools necessary for the control of time-varying nonlinear and stochastic systems. Topics include minimum-variance control, adaptive control, Kalman filtering, minimum-variance control, LQG control and stochastic adaptive control.

779 ADVANCED TOPICS IN CONTROL
3 credits
Prerequisite: 774. Discussions of recent advances in control systems.

788 ADVANCED SEMINAR
3 credits
(May be taken more than once) Prerequisite or permission of department head. Advanced level seminars in areas of current interest. For student seeking Ph.D. in engineering.

89a PRELIMINARY RESEARCH
1-6 credits
Prerequisite: approval of dissertation director. Preliminary investigations prior to submission of a dissertation proposal to the interdisciplinary Doctoral Committee.

89b DOCTORAL DISSERTATION
1-6 credits
(May be repeated) Prerequisite: acceptance of research proposal by the interdisciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student.

ENGINEERING COMPUTER SCIENCE

4450:

520 OBJECT ORIENTED DESIGN
3 credits
Prerequisite: 3460:208 or equivalent. Introduction of object-oriented design paradigm and the design implementation with the object-oriented programming language C++.

570 INTEGRATED SYSTEM DESIGN
3 credits
Prerequisites: 4210:4400-405. Prerequisites for 570: 4400:4056. Introduction to computer architecture, design methods and design tools for VLSI systems, CAD devices, and computer-aided design and control. Links methods and tools. Design systems.

579 SPECIAL TOPICS: COMPUTER SCIENCE
12 credits
(May be taken more than once) Prerequisite: permission of department head. Special topics in computer engineering.

606 COMPUTER ARCHITECTURE
3 credits
Prerequisite: 4400:363 or equivalent. Historical developments of computer architecture. Design methodology, computer organization and design of instructions. Parallel Processing. Control instruction implementations. Memory organization. System configurations.
MECHANICAL ENGINEERING

4600:

540 THERMAL SYSTEM COMPONENTS
Prerequisites: 360, 231. 307. Performance analysis and design of basic components of thermal energy exchange and conversion systems. Components studied include heat exchangers, pumps, compressors, turbines, and expanders.

510 HEATING AND AIR CONDITIONING

511 COMPRRESSIBLE FLUID MECHANICS

512 FUNDAMENTALS OF FLIGHT
Prerequisite: 310 or equivalent. Permission of instructor. Introduction to basic aerodynamics, airplane performance, stability and control, and launch and recovery. Design considerations are emphasized.

515 INTRODUCTION TO AERODYNAMICS
Prerequisites: 300 and 360 or permission. Introduction to aerodynamic concepts. Conformal transformation. Theory of thin airfoils. Two-dimensional airfoil theory. Wakes of finite span, lifting line theory, lumped source, vortex lattice, and panel methods.

516 INTRODUCTION TO AEROSPACE PROPULSION
Prerequisites: 300 and 360 or permission. Introduction to propulsion systems currently used in the aerospace field. Fundamental principles for turbomachinery, turbojets, ramjets, chemical rockets, and electric rocket propulsion.

515 ENERGY CONVERSION
Prerequisites: 310, 315. Topics from fields of internal combustion engines, cycle analysis, modern conversion devices.

516 ENERGY TRANSFER PROCESSES
Prerequisite: 315. Analysis, design of extended-surface, idealized convective, combined modes of heat transfer and heat exchanger with a design phase. Heat transfer in magnetic field fluid systems.

522 EXPERIMENTAL STRESS ANALYSIS I
Prerequisite: 316 or 360/202. Experimental methods of determining stress or strain in brittle, ductile, strain gauges, photoelasticity.

530 MACHINE DYNAMICS

541 FUNDAMENTALS OF MECHANICAL VIBRATIONS
Prerequisites: 232 and 3459:235. Undamped and forced vibrations of systems having one or two degrees of freedom.

532 VEHICLE DYNAMICS
631 RHEOMETRIC DESIGN 3 credits
Prerequisite: 321 and permission of instructor. The geometry of continued motion. Analysis of related plane motion using vectors and the digital computer. Curvature theory. Synthesis of linkages and gearing. Introduction to computer-aided design.

632 RELIABILITY IN DESIGN 3 credits

633 COMPUTERIZED MÓSÁL ANALYSIS OF STRUCTURES 3 credits
Prerequisite: 531 or equivalent. Moda1 analysis theory and measurement techniques. Digital signal processing of context and dynamics theory. Moda1 parameter estimation with "random" experience in the application of modal measurement methods in vibration analysis.

634 ADVANCED DYNAMICS OF ROTATING MACHINERY 3 credits
Prerequisite: 430:523 or equivalent. Dynamic analysis and simulation of complex rotating systems. Steady state transient and stability analysis with inertia, gyroscopic imbalance, rotor-0ct, disk-stiffness, and impeller interaction effects.

635 STRESS ANALYSIS IN SOLIDS AND FLUIDS 3 credits
Prerequisite: 531 or equivalent. The wave equation. Propagation of elastic-plastic stress waves through solid media. Transmission, reflection, absorption and distortion phenomena. Low and high viscosity effects. Dynamic fracture, numerical simulation techniques.

642 SYSTEM ANALYSIS AND CONTROL DESIGN 3 credits
Prerequisite: 440 or equivalent. Uniform methods of modeling and response analysis, controllability and observability concept, theory and analysis of linear and nonlinear engineering processes. Design of feedback controls for optimum performance for multivariable real-time control applications.

643 DISTRIBUTED PROCESS CONTROL DESIGN AND APPLICATIONS 3 credits
Prerequisite: 440 or equivalent. Digital and continuous control algorithms. Process computer function implementation. Self-learning, diagnostic, intelligent control systems. Case studies and experiments from various engineering disciplines.

645 PROCESS IDENTIFICATION AND COMPUTER CONTROL 3 credits
Prerequisite: 440 or equivalent or by permission. Obtaining mathematical models of processing from non-observability. Methods of digital control design. Case studies on computer control of selected processes.

646 EXPERIMENTAL SYSTEMS IN CONTROLL AND MANUFACTURING 3 credits
Prerequisite: 440:540 or equivalent or by permission. Experiment system methodologies for process control. Design and application of flexible manufacturing and robotics.

647 NEURAL AND FUZZY CONTROL SYSTEMS 3 credits
Prerequisite: 440:450 or permission of instructor. Analysis and design of intelligent control systems. Neural networks and fuzzy sets for process identification and control design. Applications and case studies in industry.

650 TIBOLOGY 3 credits
Fundamental concepts of friction lubrication and wear treated. Includes basic theory, advanced engineering, applications to machine, gears, belts, cables. Specific topics include adhesive and abrasive wear, boundary lubrication, fluid film lubrication and bearings, rolling element bearings, bearing dynamics.

660 ENGINEERING ANALYSIS 3 credits
Prerequisite: B.S. in engineering. Study of analysis techniques as applied to specific engineering problems. Applications include beam deflections, acoustic, heat conduction and hydrodynamic stability.

665 CORD MECHANICS 3 credits
Prerequisite: 521. Elastic and viscoelastic theory of wire rope is from this introduction. Applications are discussed with respect to tire mechanics, hoisting and landing compound construction.

695 MEASUREMENTS METHODS AND EXPERIMENTAL ERROR IN THERMOFIUID SCIENCES 3 credits
Prerequisite: 525. Flow, conduction heat transfer convection heat transfer. The course will include elements of experimental error analysis, heat capacities, and critical analysis of geometries including testing, methods and devices for fluid flow quantization and temperature measurement techniques. Laboratory work with basic equipment.

696 SPECIAL TOPICS IN MECHANICAL ENGINEERING 3 credits
Prerequisite: Permission. For qualified graduate for graduate degree. Supervised research in the study of a major field of inquiry. Credit depends upon nature and extent of project as determined by advisor and department head.

697 ENGINEERING REPORT 2 credits
Prerequisite: Permission of advisor. A relevant problem in mechanical engineering for students seeking the nonthesis option. The final engineering report must be approved by the advisor and the advisory committee.

698 MASTER'S RESEARCH 1-3 credits
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in mechanical engineering culminating in a master's thesis.

699 MASTER'S THESIS 1-15 credits
Prerequisite: Permission of advisor. Supervised research in a specific area of mechanical engineering.

704 FÍNTE ELEMENT ANALYSIS II 3 credits

705 FÍNTE ELEMENT ANALYSIS III 3 credits

706 DYNAMICS OF VISCOUS-FLOW 3 credits

710 COMPUTATIONAL FLUID DYNAMICS II 3 credits
Prerequisite: 710 or permission of instructor. Development of advanced computational techniques for convectively-dominated flows. Higher order explicit and implicit schemes including nonoscillatory ENO/FCC capturing methods applied to benchmark problems.

715 HYDRODYNAMIC STABILITY 3 credits

719 ADVANCED HEAT TRANSFER 3 credits
Prerequisite: 619. Flow and pressure. Topics include nonhomogeneous or nonlinear boundary value problems of conduction heat, heat transfer with melting, solidification and boiling, heat transfer in porous media and hydromagnetically and thermally convectively conducting media.

723 APPLIED STRESS ANALYSIS II 3 credits
Prerequisite: 623. Constitutive and 623 Development of approximate solution techniques involving finite elements, methods of weighted residuals (Rayleigh-Ritz, Galerkin, Trefftz, collocation, least squares, etc.) and finite differences.

726 LINEAR CONTINUUM MECHANICS 3 credits
Prerequisite: 521. Linear kinematics, strain and stress, constitutive equations, stability and function. Solution of linear deformation problems in hyperelasticity, coupled thermoviscoelasticity, electroelasticity, elastoplasticity, etc.

730 VIBRATIONS OF CONTINUOUS SYSTEMS 3 credits
Prerequisite: 630. Continuation of 620. Analysis of continuous vibrating systems, using separation of variables, energy, variational, Rayleigh-Ritz and other approximate techniques. Concepts and solution of integral equations as applied to continuous systems.

733 RANDOM VIBRATIONS 3 credits
Prerequisite: 630 or equivalent. Stationary random processes and their transmission through linear and nonlinear vibrating systems. Analysis of random data and inference between stochastic of mutual norms.

732 ADVANCED MODAL ANALYSIS OF STRUCTURES 3 credits
Prerequisite: 633 or equivalent. Structural excitation techniques. Modal parameter estimation. System modification; mass stiffness; lumping matrices; substructuring; Prediction and evaluation of structural modified characteristic.

741 OPTIMIZATION THEORY AND APPLICATIONS 3 credits
Prerequisite: Permission. Theory of optimization in engineering systems, development and method of solution of minimization problems for physical processes, large systems. Use of computer programming, optimization techniques.

753 ADVANCED METHODS IN ENGINEERING ANALYSIS 3 credits

755 ADVANCED SEMINAR IN MECHANICAL ENGINEERING 1-3 credits
Prerequisite: 540:206 or equivalent. Permission. Topic: Research techniques in mathematics. Permission of department of mechanical engineering. Advanced projects and studies in various areas of mechanical engineering, intended for student seeking Ph.D in engineering degree.

756 RESEARCH INCURS 1-15 credits
Prerequisite: approval of dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.

757 DOCTORAL DISSERTATION 1-15 credits
Prerequisite: approval of dissertation director. Thesis research and study.

BIOMEDICAL ENGINEERING 4800:

601 BIOMEDICAL INSTRUMENTATION I 4 credits
Prerequisite: 260:501, 569, and 440:322 or 440:320. Clinical instrumentation for measure and display physiologic and anatomic parameters. Basic concepts of instrumentation including design criteria and operational analysis. Practical experience gained through the use of instrumented mammalian heart.

611 BIOMETRY 3 credits
Prerequisite: permission of department head. Statistical and experimental design topics for the biomedical and biotechnological instrumentation discipline including distributions, hypothesis testing and estimation, ANOVA, scatter analysis and nonparametric statistics.

620 NEURAL NETWORKS 3 credits
Prerequisite: 540:250 or equivalent. Examination of highly parallel, distributed architectures for computing that are biologically inspired, derived from structures observed in biological nervous systems. After an overview of how real neurons operate, the course will examine both classical and modern neural computing architectures. Comparisons will be made with traditional neural machines and applications for which neural networks seem most promising will be examined.

621 SEUROLOGY SYSTEMS ANALYSIS 3 credits
Prerequisite: 540:371 or equivalent. Study of various sensory modalities from systems engineering perspective. Techniques from linear and nonlinear systems are applied to aspects of vision, hearing, touch, and position sensing in humans. Comparisons are made with artificial emulations of these senses.

630 BIOMEDICAL COMPUTING 3 credits
Prerequisite: 440:240 or equivalent. Computer applications in health care, clinical laboratories, AMI, medical records, direct order entry, AID, CAD conversion, patient monitoring, performance and interfaces, diagnostic algorithms, ATR, ECG systems.

632 PROCESSING OF BIOLOGICAL SIGNALS 3 credits
Prerequisite: 540:250 or equivalent. For advanced standing in College of Engineering and B.S. or equivalent. Concepts for the analysis of biological continuous signals and hybrid processes including discriminating and adaptive component in medical signal processing, computer graphics and data statistics.

644 MEDICAL IMAGING DEVICES 3 credits
Imaging modalities including radiation, magnetic resonance, and sound. The formation of images. Specific devices including computer tomography, magnetic resonance, ultrasound, gamma cameras and PET.

655 PHYSIOLOGICAL CONTROL SYSTEMS 3 credits
Prerequisite: 540:371 or equivalent. Principles of human physiology. Automatic control theory, and computer models. Measure and display physiological control systems. Both linear and nonlinear. Both similarities to be differences from traditional engineering systems will be presented. Computer simulations of various physiological systems will be developed.

688 IMAGE PROCESSING FOR BIOMEDICAL DATA 3 credits
Image processing, quantization, and signal enhancement including smoothing and sharpening. Restoration using inverse and Weiner filters. Edge detection and thresholding with region growing for segmentation.

694 SPINE MECHANICS 3 credits
COLLEGE OF EDUCATION

EDUCATIONAL FOUNDATIONS

5100:

512 DESIGN AND PRODUCTION OF INSTRUCTIONAL MATERIALS 3 credits (20 clinical hours)
- Design, adaptation, and preparation of instructional materials using graphic, transparency production, video equipment, computer authoring software, mounting, and laminating procedures, photography, and other procedures.

514 ORGANIZING AND SUPERVISING EDUCATIONAL MEDICAL PROGRAMS 3 credits
- Prerequisites: 50 or permission of the instructor. Procedures for planning, organizing, and evaluation educational medical programs including media facilities and services.

520 INTRODUCTION TO INSTRUCTIONAL COMPUTING 3 credits
- Examines the use of word processing, spread sheets, databases, graphics, telecommunication, and authoring software in both educational and business settings and evaluates instructional and application software.

590, 1.2 WORKSHOP 1-3 credits
- Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

594 EDUCATIONAL INSTITUTIONS 14 credits
- Special studies designed as in-service upgrading programs.

600 PHILOSOPHIES OF EDUCATION 3 credits
- Examination of basic philosophical problems underlying triad educational questions confronting society. Provides foundation for understanding of questions of modern society and education.

602 COMPARATIVE AND INTERNATIONAL EDUCATION 3 credits
- Comparative study of selected national school systems with reference to 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. Issues and subjects related to study of education from historical, philosophical, theoretical and/or ideal, different topics will be offered from section to section.

616 ADULT EDUCATION 2 credits
- Survey course for teachers and administrators. Historical background including influencing theories and trends in development in the field. Emphasis on background and social value of current programs.

620 BEHAVIORAL BASICS OF EDUCATION 3 credits
- Prerequisite: 250 or equivalent. Introduction to scientific study of learning and development. Studies required to study current theories, research in areas of learning, development, motivation, instruction.

624 SEMINAR: EDUCATIONAL PSYCHOLOGY 3 credits
- Prerequisite: 250 or equivalent. In-depth study of research in selected areas of learning, development, evaluation and motivation.

610 TOPICAL SEMINAR IN COMPUTER-BASED EDUCATION 3 credits
- Prerequisite: 420/520. Advanced topics related to development, implementation, research, and evaluation in U.S. Student withdrawal emphasized. Required; knowledge of programming language recommended.

636 TOPICAL SEMINAR IN EDUCATIONAL TECHNOLOGY 3 credits
- (Repeatable for up to nine credits.) Current trends and practices in educational technology: computer authoring software, tools and processes for instructional video production, presentation systems.

640 TECHNIQUES OF RESEARCH 3 credits
- Research methods and techniques commonly used in education and behavioral sciences: preparation of research reports. Includes: library, historical, survey and experimental research and data analysis.

642 TOPICAL SEMINAR IN MEASUREMENT AND EVALUATION 3 credits
- (May be repeated for a total of six credits.) Topics of current interest and need will be emphasized. The student will develop extended competencies with contemporary measurement and evaluation techniques.

646 MULTICULTURAL COUNSELING 3 credits
- Prerequisites: 580/683. Counseling of students from diverse cultural backgrounds. Preparedness of counselor to work with culturally diverse people.

648 INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFE SPAN 3 credits
- An exploration of individual and family development. Emphasis will be placed on understanding the relationships among individuals and the family.

655 FIELD EXPERIENCE: MASTER'S 3 credits
- Prerequisites: permission of department head and instructor. Field experience determined in accordance with student's program and professional goals.

697 INDEPENDENT STUDY 1-12 credits
- (May be repeated for a total of six credits.) Prerequisites: permission of department head and instructor. Specific area of study determined in accordance with student's program and professional goals.

698 MASTER'S PROBLEM 2-4 credits
- Prerequisites: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with problems in educational foundations.

699 MASTER'S THESIS 4-6 credits
- Prerequisites: permission of department head and instructor. In-depth study of research problem within humanistic and behavioral foundations.

701 HISTORY OF EDUCATION IN AMERICAN SOCIETY 3 credits
- Historical development of education in American social order. Special emphasis on social, political, and economic setting.

702 HISTORY: HISTORY AND PHILOSOPHY OF HIGHER EDUCATION 3 credits
- Prerequisite: 600 or equivalent. History and philosophy related to genesis and development of higher education in the Western world with special emphasis given to higher education in development in United States.
ELEMENTARY EDUCATION

5200:

511 CREATIVE TECHNIQUES FOR EXPLORING CHILDREN'S LITERATURE

2 credits

Prerequisite: 5019. Examination of techniques for interpreting children's literature including storytelling, creative dramatics, reader's theater and chorus speaking.

515 MICROCOMPUTER APPLICATIONS FOR ELEMENTARY TEACHERS

3 credits

Prerequisite: $1000/5212 or permission of instructor. Focus is upon developing student competence in the use of elementary education computer technology to influence both the teacher's personal and professional productivity.

536 ACTIVITIES TO INDIVIDUALIZE SOCIAL STUDIES

2 credits

Prerequisite: 531. Development of materials and activities (arithmetic games, simulation games, jigsaw puzzles, non-graded field trips and integrated activities) to provide variety and to develop an individualized, student-oriented social studies program.

536 GEOMETRY AND MEASUREMENT IN ELEMENTARY SCHOOL MATHEMATICS

3 credits

Prerequisite: 531. Tendis in geometry and measurement instruction in elementary school. Procedures for development of important geometric concepts and measurement skills.

539 STRUCTURE OF THE NUMBER SYSTEM IN ELEMENTARY SCHOOL MATHEMATICS

3 credits

Prerequisite: 530. Applied and advanced topics in mathematics education in elementary school. Through investigation of number system presently being taught in elementary school.

538 MATERIALS AND LABORATORY TECHNIQUES IN ELEMENTARY SCHOOL MATHEMATICS

3 credits

Prerequisite: 530. Applied mathematics. Construction and application of mathematical models. Procedures for development of important mathematical concepts through the laboratory approach.

539 PROPERTIES OF NUMBERS IN ELEMENTARY SCHOOL MATHEMATICS

3 credits

Prerequisite: 530. Investigation of the number properties that help explain how laws of arithmetic work. Procedures for development of important arithmetic concepts and computational skills.

540 CONTEMPORARY ELEMENTARY SCHOOL SCIENCE PROGRAMS

2 credits

Prerequisite: 533. Contemporary elementary science programs critically analyzed and their procedures developed and implemented in University classroom.

590,1,2,3 WORKSHOP

13 credits each

Weekly workshop for elementary education major who wish to pursue further refinement of teaching skills. Emphasis on demonstrations of teaching techniques and development of suitable teaching devices.

594 EDUCATIONAL INSTITUTES

14 credits

Special courses designed as in-service upgrading programs. Frequently provided with the support of national foundations.

620 LITERATURE FOR YOUNG CHILDREN

2 credits

Literature for children ages two through six examined in depth as to values and purpose, methods and techniques for presenting to children, adaptability and quality of books available.

630 ELEMENTARY SCHOOL CURRICULUM AND INSTRUCTION

2 credits

Application of findings of recent research to curriculum building and procedures in teaching.

661 DIAGNOSIS AND TREATMENT OF PERFORMANCE DEFICIENCIES IN ELEMENTARY SCHOOL MATHEMATICS

2 credits

Examination of misapplications of contemporary mathematics teaching theory on diagnostic-remedial process.

665 PROBLEMS IN ELEMENTARY SCIENCE EDUCATION

2 credits

Examination of influence of new curricular designs in elementary science. Emphasis on inquiry investigation and discovery and new trends on total elementary school curriculum.

690 EDUCATION AND THE YOUNG CHILD

2 credits

Counsel designed on educational settings of young children from birth through five years.

READING

5250:

511 MATERIALS AND ORGANIZATIONS FOR READING INSTRUCTION

3 credits

Prerequisite: 5200/533. Professional problems of selection and evaluation of reading materials and classroom organizations involved. (May be repeated for a total of six credits).

540 DEVELOPMENTAL READING IN THE CONTENT AREAS - ELEMENTARY

3 credits

Prerequisites 5200/533 or permission of instructor. Nature of reading skills related to content subjects. Methods and materials needed to promote reading achievement in content subjects for the elementary classroom soldier.

541 LANGUAGE AND ITS RELATIONSHIP TO READING IN THE ELEMENTARY SCHOOL

3 credits

Prerequisite: 5200/533 or permission of instructor. An overview of the linguistic field in the teaching of reading in the elementary school. A discussion of major linguistic principles for classroom application in grades K-8.

542 TEACHING READING TO CULTURALLY DIVERSE LEARNERS

3 credits

Prerequisite: 5200/533 or permission of the instructor. Knowledge, skills, and strategies for effective methods of teaching reading to diverse populations and/or learners whose language patterns are nonstandard.

680 TRENDS IN READING INSTRUCTION

2 credits

Prerequisite: 5200/533 or 542/425. Survey course designed to update reading background of students who have not had a recent course in reading.

681 DIAGNOSIS AND CORRECTION OF READING PROBLEMS

5 credits

Prerequisite: 560. Reading diagnosis and instruction and reasons for retardation of diagnosis and corrective techniques for developing reading. (May be repeated for a total of six credits)

682 CLINICAL PRACTICES IN READING

5 credits

Prerequisite: 581. Nature and theory of reading difficulties experienced by selected children. Supervised practices and independent work with children in conjunction with staff on other disciplines.

683 Diagnosing Reading Difficulties for School Psychologists and Support Personnel

3 credits

Prerequisite: 5200/533 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 prescriptive strategies will be included.

682 ADVANCED STUDY AND RESEARCH IN READING INSTRUCTION

3 credits

Survey of research designs and evaluation of programs, design and development of process in reading through group/individual study.

683 C&L Supervision and Curriculum Development in Reading Instruction

2 credits

Relating to total curriculum, procedures for developing reading program in all curriculum areas; examination of children's literature and related instructional reading by supervisors and consultants.

SECONDARY EDUCATION

5300:

666 INDIVIDUALIZED INSTRUCTION: LEARNING STYLE IDENTIFICATION AND RESOURCE PRESCRIPTION

3 credits

Prerequisite: 640/641. Individual learning style characteristics, practical approaches in individualization of instruction, multisensory resource development and prescription.

695,6 EXPERIENCE MASTER'S

12 credits each

Prerequisites: permission of adviser and department head. On-the-job experience related to student's course of study.

697 INDEPENDENT STUDY

12 credits

Prerequisites: permission of adviser and department head. Selected areas of independent investigation as determined by adviser and related to student's academic needs.

698 MASTER'S PROBLEM

2 credits

Prerequisite: permission of adviser and department head. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with problem in elementary education.

699 MASTER'S THESIS

4 credits

Prerequisites: $500/5400 and permission of adviser and department head. In-depth research investigation. Student must be able to demonstrate necessary competencies to deal with research problems in elementary education.

732 SUPERVISION OF INSTRUCTION IN THE ELEMENTARY SCHOOL

2 credits

Supervisory role of elementary principal and other supervisory personnel.

780 SEMINAR IN ELEMENTARY EDUCATION

2 credits

May be repeated for a total of six credits. Prerequisites: permission of department head and instructor. Intensive study of research methods applicable to education. Emphasis on developing a dissertation proposal.

781 RESIDENCY SEMINAR

2 credits

Two-hour weekly meeting for elementary doctoral student in residence.

799 RESEARCH PROJECTS IN ELEMENTARY EDUCATION

12 credits

Prerequisites: permission of adviser and department head. In-depth investigation of specific problem pertinent to elementary education.

895.6 FIELD EXPERIENCE FOR ELEMENTARY DOCTORAL STUDENT

12 credits each

Prerequisites: permission of adviser and department head. Designed to help student preparing to teach methods course of college level.

896 INDEPENDENT STUDEY

13 credits each

May be repeated for a total of six credits. Prerequisites: permission of adviser and department head. Selected areas of independent investigation as determined by adviser and related to student's academic needs.

899 DISSERTATION

12 credits

Prerequisites: permission of adviser and department head. Study and independent analysis of a research problem in elementary education.
530 INSTRUCTIONAL AND MANAGEMENT PRACTICES
3 credits
Prerequisite: 790. Students will learn to use both teaching models and management strategies to achieve effectiveness in instruction. Also included in this course are the relevant policies and requirements of the educational system.

535 CONCEPTS AND CURRICULUM DESIGNS IN ECONOMIC EDUCATION
3 credits
Economic education is a subject appropriate from grade K-12 and beyond. Economic education involves the development of curriculum and instruction that builds students' competencies in the field of economics.

545 MICROCOMPUTER APPLICATIONS FOR SECONDARY TEACHERS
3 credits
Prerequisite: 530. This course is designed to help secondary school teachers integrate microcomputer technology into their teaching. Topics include software, hardware, and the application of computers in the classroom.

575 VOCATIONAL BUSINESS EDUCATION
3 credits
Prerequisite: 510. This course focuses on the development of vocational education programs for both secondary and post-secondary students.

590.1.2 WORKSHOP
3 credits
This workshop is designed to enhance students' understanding of curriculum development and instruction.

619 SECONDARY SCHOOL CURRICULUM AND INSTRUCTION
2 credits
Application of findings of recent research to curriculum development and procedures for teaching.

625 READING PROGRAMS IN SECONDARY SCHOOLS
3 credits
For all graduate students in the teacher training programs in reading,both graduate and under graduate, curricula and procedures for developing reading improvement programs, for all secondary school and college students.

630 ADVANCED INSTRUCTIONAL TECHNIQUES IN BOOKKEEPING - ACCOUNTING AND BASIC BUSINESS SUBJECTS
3 credits
Intensive examination of teaching-learning strategies for improvement of instruction. Emphasis on teacher coordination of methods, preparation of objectives and evaluation to improve maximum student competency in subject knowledge and skill.

632 ADVANCED INSTRUCTIONAL TECHNIQUES IN TYPEWRITING AND TYPING-RELATED SUBJECTS
3 credits
Examines the role and mission of the training function in the modern industrial setting. Includes study of theories and models for developing an organized sequence of instructional units.

695 FIELD EXPERIENCE-MASTERS
16 credits
May be repeated for a total of six credits. Prerequisites: permission of adviser and supervisor.

697 INDEPENDENT STUDY
13 credits
May be repeated for a total of six credits. Prerequisites: permission of adviser and supervisor.

698 SEMINAR IN SECONDARY EDUCATION
3 credits
(May be repeated) Intensive examination of a particular area of secondary education.

781 RESIDENCY SEMINAR
1 credit
Must be repeated. One hour weekly meeting for seniors in secondary education.

782 RESIDENCY SEMINAR
1 credit
Must be repeated. One hour weekly meeting for seniors in secondary education.

895 FIELD EXPERIENCE-DOCTORAL
16 credits
May be repeated for a total of six credits. Prerequisites: permission of adviser and director of graduate study.

897 INDEPENDENT STUDY
16 credits
May be repeated for a total of six credits. Prerequisites: permission of adviser and director of independent study.

898 RESEARCH PROJECT IN SPECIAL AREAS
12 credits
Prerequisite: permission of adviser.

899 DOCTORAL DISSERTATION
120 credits
Prerequisite: permission of adviser.

515 TRAINING IN BUSINESS AND INDUSTRY
3 credits
Equips the learner with the skills and knowledge necessary to enter the field of business and industry.

521 INSTRUCTIONAL TECHNIQUES IN TECHNICAL EDUCATION
4 credits
Emphasizes the use of instructional methods, techniques, in classroom, laboratory, and industry settings.

530 CURRICULUM DEVELOPMENT IN TECHNICAL EDUCATION
2 credits
Emphasis is placed on instructional methods, techniques, and curriculum development.

531 CURRICULUM DEVELOPMENT FOR TECHNICAL EDUCATION LAB
1 credit
Prerequisite: permission of instructor. Knowledge and skills in the development of a technical curriculum.

535 INSTRUCTIONAL TECHNIQUES IN TECHNICAL EDUCATION
4 credits
Prerequisite: 520. Selected topics in instructional techniques appropriate to post-secondary technical education. Emphasis is placed on instructional methods, techniques, and curriculum development.

551 HOME ECONOMICS JOB TRAINING
3 credits
Prerequisite: permission of instructor. Knowledge and skills in the development of a home economics curriculum.

560 COMMUNICATION WITH BUSINESS AND INDUSTRY
2 credits
Prerequisite: permission of instructor. Knowledge and skills in the development of a business and industry curriculum.

561 CURRENT ISSUES IN HIGHER EDUCATION
2 credits
Prerequisite: permission of instructor. Knowledge and skills in the development of a higher education curriculum.

562 INTERNSHIP: TEACHING VOCATIONAL EDUCATION
6 credits
Prerequisite: permission of adviser. Knowledge and skills in the development of a vocational education curriculum.

563 INTERNSHIP: TEACHING TECHNICAL EDUCATION
6 credits
Prerequisite: permission of adviser. Knowledge and skills in the development of a technical education curriculum.

564 INTERNSHIP: POSTSECONDARY PROFESSION
2 credits
Prerequisite: permission of adviser. Knowledge and skills in the development of a postsecondary profession curriculum.

565 MASTER'S PROGRAM
13 credits
Prerequisite: permission of adviser. Knowledge and skills in the development of a master's program.

566 MASTER'S PROJECT
13 credits
Prerequisite: permission of adviser. Knowledge and skills in the development of a master's project.

567 MASTER'S DISSERTATION
4 credits
Prerequisite: permission of adviser. Knowledge and skills in the development of a master's dissertation.

569 MASTER'S PROBLEM
24 credits
Prerequisite: permission of adviser. Knowledge and skills in the development of a master's problem.

570 MASTER'S THESIS
4.6 credits
Prerequisite: permission of adviser. Knowledge and skills in the development of a master's thesis.

580 PHYSICAL EDUCATION
12 credits
This course is designed to provide students with skills in the field of physical education.

590.1.2 WORKSHOP
13 credits
Practical, integrated, and concentrated involvement with current curricular practices in areas such as physical education, health education, and recreation.

595 EDUCATIONAL INSTITUTIONS AND FOUNDATIONS
14 credits
Practical experience in current research or curricular practices involving the selection of research or curricular practices.

596 ADMINISTRATION OF PHYSICAL EDUCATION, ATHLETICS AND INTRAMURALS
3 credits
Practical experience in current research or curricular practices involving the selection of research or curricular practices.
650 CURRICULUM PLANNING IN HEALTH AND PHYSICAL EDUCATION 2 credits
Analysis of objectives, procedures and techniques in curricula and programs for developing sound programs.

650 PHYSIOLOGY OF MUSCULAR ACTIVITY AND EXERCISE 3 credits
Functions of body systems and physiological effects of exercise. Laboratory experiences, lectures, discussions.

650 STATISTICS: QUANTITATIVE AND QUALITATIVE 3 credits
Prerequisite: 560, 660. Research methods, design, statistical applications and interpretations, use of computers and appropriate software as they relate to various disciplines in the area of physical activity.

650 SUPERVISION OF PHYSICAL EDUCATION 2 credits
Principles involved in supervision of physical education service programs. Procedures and techniques of supervision of service classes at elementary, junior high and senior high school levels.

650 MOTIVATIONAL ASPECTS OF PHYSICAL ACTIVITY 3 credits
Analysis of factors influencing motivation of motor performance with emphasis on competitive, audience effects, aggression.

650 SPECIAL TOPICS IN HEALTH AND PHYSICAL EDUCATION 2 credits
May be repeated for credit. Prerequisite: Permission of instructor. Group study of special topics in health and physical education and sports medicine.

556 FIELD EXPERIENCE: MASTER'S 3 credits
Prerequisite: Permission of advisor. Participation in a work experience related to physical education. The experience may not be part of current position. Documentation of project required.

657 INDEPENDENT STUDY 1-3 credits
Prerequisite: Permission of advisor. In-depth analysis of current practices or problems related to physical education. Documentation of the study required.

658 MASTER'S PROBLEM 1-6 credits
Prerequisite: Permission of advisor. Independent study of a research problem in physical education. Subject must be able to demonstrate critical and analytical skills in dealing with a problem in physical education.

659 MASTER'S THESIS 1-6 credits
Prerequisite: Permission of advisor. Independent research investigation. Student must be able to demonstrate necessary competencies to deal with a research problem in physical education.

OUTDOOR EDUCATION 5560:

5560 APPLICATION OF OUTDOOR EDUCATION TO THE SCHOOL CURRICULUM 3 credits
Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.

5560 RESOURCES AND RESOURCE MANAGEMENT FOR THE TEACHING OF OUTDOOR EDUCATION 3 credits
Resources and instructional techniques which are applicable to outdoor education, and in-depth study of methods and designs, unique to the process of teaching.

5560 OUTDOOR PURSUITS 4 credits
Investigation and participation in practical experience in outdoor pursuits.

5560 WORKSHOP: OUTDOOR EDUCATION 1-3 credits
Practical application of contemporary ideas, methodologies, knowledge relevant to outdoor education. Emphasis on student involvement in educational practices, utilizing the natural environment.

5560 EDUCATIONAL INSTITUTIONS: OUTDOOR EDUCATION 14 credits
Practical experience with current research in outdoor curriculum involving expert resource persons.

6590 OUTDOOR EDUCATION: RURAL INFLUENCES 3 credits
Prerequisite: 5560. Use of resources of rural area as a learning/teaching environment. Content and methodology appropriate for teaching school-age children in rural setting.

6590 OUTDOOR EDUCATION: SPECIAL TOPICS 3 credits
May be repeated for credit. Prerequisite: Permission of instructor. Group study of special topics of current concern in outdoor education.

6590 PRACTICUM IN OUTDOOR EDUCATION 3 credits
Practicum in outdoor education; 3-6 credits (30-120 field hours). Prerequisite: Permission of advisor. Supervised clinical experience with existing outdoor education programs. In conjunction with practical work, student meets regularly with advisor.

6590 FIELD EXPERIENCE: MASTERS 2-6 credits (30-80 field hours)
Prerequisite: Permission of advisor. Participation and documentation of practical professional experience related to outdoor education.

6590 INDEPENDENT STUDY 1-3 credits (20-90 field hours)
Prerequisite: Permission of advisor. In-depth analysis of current practices or problems related to outdoor education. Documentation of study required.

6590 MASTER'S PROBLEM 4 credits
Prerequisite: Permission of advisor. Intensive research study related to a problem in outdoor education or related discipline.

6590 MASTER'S THESIS 4-6 credits
An original composition demonstrating independent scholarship in a discipline related to outdoor education.

EDUCATIONAL GUIDANCE AND COUNSELING 5560:

5560 COUNSELING PROBLEMS RELATED TO LIFE-THREATENING ILLNESS AND DEATH 3 credits
Prerequisite: permission. Consideration of the global issues, current research, coping behavior, support systems and family and individual needs in regard to life-threatening situations.

5560 WORKSHOP: COUNSELING PROBLEMS RELATED TO LIFE-THREATENING ILLNESS AND DEATH 3 credits
Special session designed as in-service and/or upgrading individuals on current issues and practices in counseling.

5560 WORKSHOP 14 credits
Special session 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.

6590 SEMINAR IN COUNSELING 1 credit
Prerequisite: counseling major must elect 690 prior to electing 6590 and during the first 10 credits of 5560 course work. Structured group experience designed to help a student assess his effectiveness as a counselor.

6590 INTRODUCTION TO COUNSELING 2 credits
Understanding and counseling theories including organization, operation and evaluation of guidance programs designed for non-counseling majors.

100 COUNSELING SKILLS FOR TEACHERS 3 credits
Prerequisite: 659 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.

660 TOPICAL SEMINAR 1 credit
Prerequisite: permission of instructor. Seminar on a topic of current interest in the profession. Staffing will be by department faculty and other professionals in counseling and related fields. Maximum of eight students may be enrolled.

661 ELEMENTARY SCHOOL GUIDANCE 2 credits
Introductory course examining guidance and counseling practices.

662 SECONDARY SCHOOL GUIDANCE 3 credits
In-depth course, examining guidance and counseling practices.

663 COMMUNITY COUNSELING 3 credits
Overview of community and college counseling services, their evaluation, philosophy, organization and administration.

664 COUNSELING THEORY AND PHILOSOPHY 2 credits
Examination of major counseling systems including client-centered, behavioral and existential theories. Philosophical and theoretical dimension stressed.

665 TESTS AND APPRAISAL IN COUNSELING 4 credits
Prerequisites: 530 and 504. Study of the nature of tests and appraisal in counseling including reliability, validity, test construction and selection, administration, scoring, and basic interpretation of test data and measures.

666 MULTICULTURAL COUNSELING 3 credits
Prerequisites: 643 and permission of instructor. Examination of multicultural counseling theories and other factors related to counseling with culturally diverse people.

667 CAREER DEVELOPMENT AND COUNSELING ACROSS THE LIFESPAN 3 credits
Overview of career development and choice over the lifespan. Personal, family, and societal characteristics that affect choice, career orientation, and implementation are discussed.

668 INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN 3 credits
An exploration of individual and family development. Emphasis will be placed on understanding the relationship between the individual and family.

669 COUNSELING AND PERSONNEL SERVICES IN HIGHER EDUCATION 3 credits
Prerequisites: 655 or permission of instructor. Counseling services as related to psychological needs and problems of the college student.

5610 TECHNIQUES OF COUNSELING 3 credits
Prerequisites: 643 and permission of instructor. Study and practice of selected counseling techniques and skills with emphasis on structuring, facilitating and establishing a counseling relationship.

5630 GROUP COUNSELING 4 credits
Prerequisites: 643 and 645 or 3750, 675 and 700 (2 credits). Emphasis is placed on the group's knowledge and understanding of theory, research and techniques necessary for conducting group counseling sessions.

5650 MARRIAGE AND FAMILY THERAPY: THEORY AND TECHNIQUES 3 credits
An overview of the theories and techniques of marriage and family therapy, including exposure to the history, terminology and contribution of significant persons in the field.

667 CONSULTATIVE COUNSELING 3 credits
Prerequisites: 631, 645, or permission. Examination of counseling models with focus on function and process.

669 ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES 3 credits
Prerequisites: 631 or 633 or permission. Development of a comprehensive articulated guidance program.

667 SEMINAR IN SCHOOL COUNSELING 3 credits
Prerequisites: 632, 643, 645 or 3750, 675 and 700. Study of specific guidance techniques and materials useful to counselors working with the secondary school student, teacher and parents.

667 SEMINAR: COUNSELING PRACTICE 3 credits
Prerequisite: permission. Study of topics of concern to a student specializing in school counseling. Time, money and college counseling topics may differ each semester according to students' needs.

667 MARRITAL THERAPY 3 credits
Prerequisite: 655. In-depth study of theories and interventions which focus on the nature and quality of marital relationships.

667 SYSTEMS THEORY IN FAMILY THERAPY 3 credits
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 studied.

667 ADDICTION COUNSELING I: THEORY AND PRACTICE 3 credits
Prerequisite: a graduate course in counseling or permission. A graduate course which is designed to help counselors understand the history, theoretical models and clinical foundations of addiction counseling.

667 PRACTICUM IN COUNSELING I 5 credits
Prerequisite: 653. Supervised counseling experience with individual and small groups.

667 PRACTICUM IN COUNSELING II 3 credits
Prerequisite: 657. Advanced supervised counseling experience.

665 INTERNSHIP IN COUNSELING 14 credits
May be repeated for a total of 7 credit hours.) Prerequisite: 675. Paid or unpaid supervised counseling experience in counseling.

665 FIELD EXPERIENCE: MASTERS 10 credits
Prerequisites: permission of advisor and department head. Placement in selected setting for purposes of acquiring experiences and/or demonstrating skills related to student's counseling program.

665 INDEPENDENT STUDY 13 credits
Prerequisite: permission of advisor and department head. Specific area of investigation determined in accordance with student needs.

665 MASTER'S PROBLEM 24 credits
Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in educational guidance and counseling.
540 DEVELOPMENTAL CHARACTERISTICS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. A survey of the developmental, psychological, sociological, and educational characteristics of individuals with mental retardation and developmental disabilities. The course will include individuals classified at all levels of mental retardation: mild, moderate, severe, and profound.

543 DEVELOPMENTAL CHARACTERISTICS OF THE SPECIFIC LEARNING DISABED 3 credits
Prerequisite: 440540. Survey of etiology, diagnosis, classification, and development characteristics of learning disabled individuals.

544 DEVELOPMENTAL CHARACTERISTICS OF INTELLECTUALLY HANDICAPPED INDIVIDUALS 3 credits
Prerequisite: 440540. Survey of etiology, diagnosis, classification and developmental characteristics of intellectually handicapped individuals.

545 DEVELOPMENTAL CHARACTERISTICS OF ORTHOPEDICALLY HANDICAPPED INDIVIDUALS 3 credits
Prerequisite: 440540. Survey of etiology, diagnosis, classification and developmental characteristics of orthopedically handicapped individuals.

546 DEVELOPMENTAL CHARACTERISTICS OF THE SEVERE BEHAVIOR HANDICAPPED 3 credits
Etiology, classification, developmental characteristics of the socially and emotionally maladjusted individuals.

550 SPECIAL EDUCATION PROGRAMMING: ELEMENTARY LEVEL 3 credits
Prerequisite: 405050. Educational implications in regard to assessment teaching strategies, adaptive materials, evaluations, that are necessary to meet the needs of elementary level exceptional children.

551 SPECIAL EDUCATION PROGRAMMING: ELEMENTARY LEVEL 3 credits
Prerequisite: 405050. Educational implications in regard to assessment teaching strategies, adaptive materials, evaluations, that are necessary to meet the needs of elementary level exceptional children.

552 SPECIAL EDUCATION PROGRAMMING: SECONDARY/VOCATIONAL 3 credits
Prerequisite: 405050. Special education implications for comprehensive programs designed to accommodate developmental patterns of secondary level exceptional children.

555 EDUCATIONAL INTERVENTION FOR INTELLECTUALLY DISABLED STUDENTS 3 credits
Prerequisite: 440540. Study of programs, services, and research experiences designed to accommodate developmental patterns of intellectually handicapped individuals.

556 SPECIAL EDUCATION PROGRAMMING: SEVERE BEHAVIOR HANDICAPPED 3 credits
Prerequisite: 440540. Study of programs, services, and research experiences designed to accommodate developmental patterns of behaviorally handicapped individuals.

559 COMMUNICATION AND CONSULTATION WITH PARENTS AND PROFESSIONALS 3 credits
Prerequisite: 440540. Provides the prospective special education teacher with skills in communication and consultation for working with parents of exceptional individuals and other professionals.

561 TECHNOLOGY AND MATERIAlS APPLICATION IN SPECIAL EDUCATION 3 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of special education students.

562 COMMUNICATION AND CONSULTATION WITH PARENTS AND PROFESSIONALS 3 credits
Prerequisite: 440540. Provides the prospective special education teacher with skills in communication and consultation for working with parents of exceptional individuals and other professionals.

564 SPECIAL EDUCATION PROGRAMMING: MENTALLY RETARDED 3 credits
Prerequisite: 440540. Survey of etiology, diagnosis, classification and management of exceptional individuals.

565 NEUROMOTOR ASPECTS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.

566 LEARNING DISABILITIES 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.

567 NEUROMOTOR ASPECTS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.

568 NEUROMOTOR ASPECTS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.

569 NEUROMOTOR ASPECTS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.

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581 NEUROMOTOR ASPECTS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.

582 NEUROMOTOR ASPECTS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.

583 NEUROMOTOR ASPECTS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.

584 NEUROMOTOR ASPECTS OF THE MENTALLY RETARDED 4 credits
Prerequisite: 440540. Focus on the etiology, diagnosis, classification and management of exceptional individuals.
ASSESSMENT AND EDUCATIONAL PROGRAMMING: 3 credits
Pre-requisite: Certification of individuals with exceptional needs. Instructional and psycho-educational approach to the assessment of handicapped individuals and examiners. Methods designed for students in the field of educational programming based on formal and informal assessment. Program management also examined.

EDUCATION AND MANAGEMENT STRATEGIES FOR PARENTS OF EXCEPTIONAL INDIVIDUALS: 3 credits
Pre-requisite: Certification in special education and/or permission of instructor. Methods of working with parents to facilitate effective programs for handicapped individuals. Strategies for providing support and educational services for parents examined

PROGR M DEVELOPMENT AND SERVICE DELIVERY SYSTEMS: 3 credits
Pre-requisite: Certification in special and/or permission of instructor. Provides strategies for community analysis, case findings, funding sources, and development of programs and service delivery systems to serve the handicapped.

RESEARCH DESIGN AND PRACTICE IN SPECIAL EDUCATION: 3 credits
Pre-requisite: PSY 660, 661, 664. An in-depth examination of qualitative research, single subject design, hypothesis and methodology, and examination of specific needs and application to special populations.

SEMINAR: ISSUES IN SPECIAL EDUCATION: 2 credits
Pre-requisite: 350 hours of special education in special education and/or permission of instructor. A culminating seminar for graduate students in special education designed to study, examine and reflect upon current trends, issues, and practices.

TEACHING SEMINAR: 1 credit
Taken concurrently with Student Teaching. Review and discussion of issues raised during teaching experience.

TEACHING SCHOOL AUDIOLoGY: 6 credits
Pre-requisite: Permission of Advisor. Directed teaching under supervision of a special teacher and a University supervisor.

TEACHING SPEECH LANGUAGE PATHOLOGY: 6 credits
Pre-requisite: Permission of advisor. Directed teaching under supervision of a special teacher and a University supervisor.

RESEARCH PROJECT IN SPECIAL AREA (SCHOLARLY PAPER): 3 credits
Pre-requisite: Completion of master's degree program. An independent study of an identified area in a special education area.

FIELD EXPERIENCE: MASTERS: 1-4 credits
May be repeated for a total of eight credits. Designed to prepare the student for special education in an individual basis.

INDEPENDENT STUDY: 1-3 credits
May be repeated for a total of nine credits. Pre-requisite: permission of advisor and supervisor of independent study. Specific area of investigation determined in accordance with student's needs.

MASTER'S THESIS: 24 credits
Pre-requisite: permission of advisor. Independent study of a research problem in special education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in special education.

MASTER'S THESIS: 24 credits
May be repeated for a total of nine credits. Pre-requisite: permission of advisor and supervisor of independent study. Specific area of investigation determined in accordance with student's needs.

SCHOOL PSYCHOLOGY 5520:

WORKSHOP: 1-2 credits
Pre-requisite: permission of instructor. Opportunity to gain experience provided periodically as needed and/or as resources become available.

WORKSHOP: 1-2 credits
Pre-requisite: permission of instructor. Opportunity to gain experience provided periodically as needed and/or as resources become available.

SCHOOL PSYCHOLOGY INSTITUTE: 1-4 credits
Pre-requisite: permission of instructor. Specifically designed learning experience for program graduate focusing on critical topics.

SEMINAR: ROLE AND FUNCTION OF THE SCHOOL PSYCHOLOGIST: 3 credits
Pre-requisite: permission of instructor. Seminar on role and function of school psychologist. The course is tailored to meet the individual needs of the training, a consideration of professional standards of school psychology practice.

COGNITIVE FUNCTION MODELS FOR DESCRIBING EDUCATIONAL PLANNING: 3 credits
Pre-requisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.

BEHAVIORAL ASSESSMENT: 3 credits
Pre-requisite: permission of instructor. Overview of behavioral theory and its application focusing upon the role of the school psychologist as an agent of behavior change.

CONSULTATION STRATEGIES IN SCHOOL PSYCHOLOGY: 3 credits
Pre-requisite: permission of instructor. A consideration of the role of therapist in the practice of school psychology as it relates to the consultation process with school and agency personnel, parents and children.

EDUCATIONAL DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS: 4 credits
Pre-requisite: permission of instructor. Seminar and examination of current assessment approaches applicable in assessment of children's learning problems.

PRACTICUM IN SCHOOL PSYCHOLOGY: 4 credits
Pre-requisite: 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 three credits.)

INTERNSHIP IN SCHOOL PSYCHOLOGY: FALL/Spring: 3 credits
Pre-requisite: permission of instructor. Full-time paid work assignment under supervision of qualified school psychologist for an academic year structure according to progress of State Department of Education. Additional arrangements required.

FIELD SEMINAR 1: CURRENT PROFESSIONAL TOPICS/ISSUES IN SCHOOL PSYCHOLOGY: 3 credits
Pre-requisite: permission of instructor. Consideration of pertinent topics/issues/interests of practitioners and candidates. Field experiences designed to enhance a working knowledge of the field.

FIELD SEMINAR 2: LOW INCOME/RELATED INQUIRIES: 3 credits
Pre-requisite: permission of instructor. Consideration of pertinent topics/issues in practice of school psychology with emphasis on field-based concepts of a practicing school psychologist.

RESEARCH PROJECT IN SPECIAL AREAS: 1-2 credits
Pre-requisite: permission of instructor. Study and evaluation of school psychology problem.

FIELD EXPERIENCE: MASTERS: 13 credits
Pre-requisite: permission of instructor. Practical school psychology-related experience in school setting.

INDEPENDENT STUDY: 14 credits
Pre-requisite: permission of advisor and supervisor of the independent study. Documentation of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.

MASTER'S THESIS: 24 credits
Pre-requisite: 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.

MASTER'S THESIS: 4 credits
Pre-requisite: permission of instructor. Through study analysis and reporting in-depth of an educational psychology problem, projects in special areas, synthesis of existing knowledge in relations to specific topic.

MULTICULTURAL EDUCATION 5530:

MULTICULTURAL EDUCATION IN THE UNITED STATES: 3 credits
Prerequisites: Pre-requisite to multicultural dimensions of American education. Comparison of urban, suburban, and rural educational settings with reference to socioeconomic differences.

CHARACTERISTICS OF CULTURALLY DIVERSE POPULATIONS: 3 credits
Pre-requisite: current understanding of culturally diverse populations with focus on youth in low-income areas. Emphasis on cultural, social, economic and educational considerations and their implications.

PREPARATION FOR TEACHING CULTURALLY DIVERSE POPULATIONS: 3 credits
Pre-requisite: Gain knowledge of learning styles, multicultural instructional, and management techniques, and preparatory instructional materials for diverse populations.

PRINCIPLES OF BILINGUAL/MULTICULTURAL EDUCATION: 3 credits
An introduction to the theoretical, cultural, sociopolitical bases of bilingual/multicultural education. Legislation, court decisions, program implementation included.

TEACHING READING AND LANGUAGE ARTS TO BILINGUAL STUDENTS: 4 credits
Pre-requisite: Permission of instructor. Course applies methodologies for teaching reading, language arts in the bilingual/multicultural classroom. The bilingual student's native language cultural studies.

TEACHING MATH, SCIENCE AND SOCIAL STUDIES TO BILINGUAL STUDENTS: 3 credits

TEACHING ENGLISH AS A SECOND LANGUAGE IN THE BILINGUAL CLASSROOM: 4 credits
Pre-requisite: Permission of instructor. Course includes teaching language skills to Limited English Proficient students in grades K-12, administration of language assessment battery, selection, and evaluation of materials.

WORKSHOP: BILINGUAL/MULTICULTURAL: 13 credits
Pre-requisite: Development of teaching skills and/or course content, demonstration of teaching techniques, utilization of community resources.

SEMINAR: EDUCATION OF CULTURALLY DIVERSE POPULATIONS: 2 credits
Pre-requisite: Designed to help students become more knowledgeable about working cooperatively with human service agencies to formulate risk factors associated with diverse populations.

EDUCATIONAL ADMINISTRATION 5570:

WORKSHOP: 1-2 credits
Pre-requisite: under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

EDUCATIONAL INSTITUTES: 14 credits
Pre-requisite: Some resources designated as in-service upgrading programs, frequently provided with the support of community units.

PRINCIPLES OF EDUCATIONAL ADMINISTRATION: 2 credits
A perspective of educational administration and the context in which it operates, with emphasis on the roles, tasks, relationships involved and career structures.

SCHOOL BUSINESS ADMINISTRATION: 2 credits
An examination of the changing role of today's school business administrator and study of major business functions from the perspectives of principals, business administrators and superintendents.

EDUCATION ADMINISTRATION OF EDUCATIONAL PERSONNEL: 2 credits
A perspective on human resources management and a practical orientation to the major dimensions of the personnel function.

SCHOOL-COMMUNITY RELATIONS: 3 credits
An analysis of the principles, practices, and materials that facilitate the adjustment and integration of schools to their internal and external publics.

EVALUATION IN EDUCATIONAL ORGANIZATIONS: 2 credits
An examination of the principal concepts, models, practical applications and considerations necessary for the evaluation of educational organizations including program evaluation, performance appraisal, and operational evaluation.

SCHOOL LAW: 2 credits
An examination of the legal principles underlying education in the United States as reflected in statutory provisions, court decisions and administrative orders.

THE UNIVERSITY OF AKRON 104
SPECIAL EDUCATIONAL PROGRAMS

5800:

590 WORKSHOP IN ECONOMIC EDUCATION OR IN SOCIAL STUDIES 3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

591 WORKSHOP IN MATHEMATICS OR IN PHYSICAL SCIENCE 3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

592 WORKSHOP IN READING 3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

593 WORKSHOP ON EXCEPTIONAL CHILDREN 3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

696 INTERNATIONAL STUDY 3 credits
On-the-scene study of education in foreign countries, usually by concentrating on the study of schools in one restricted geographical area.

HIGHER EDUCATION ADMINISTRATION

5900:

700 INTRODUCTION ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION 1 credit
Introductory examination of issues, trends, topics and activities in institutions of higher education.

715 ADMINISTRATOR IN HIGHER EDUCATION: ADMINISTRATION IN HIGHER EDUCATION 3 credits
Prerequisite: 5700:704 or permission. In-depth study of problems, procedures and principles of administration in institutions of higher education. Emphasis is placed on the administrative process and major administrative tasks involved.

720 FINANCE AND HIGHER EDUCATION 2 credits
Prerequisite: permission of instructor. Faculty's understanding of how higher education finances, identifies various methodologies used, and political and economic impacts and processes involved.

721 LAW AND HIGHER EDUCATION 2 credits
Prerequisite: permission of instructor. Legal aspects of higher education, sources of law and authority presented; impact, interaction with, and implications for administration of higher education discussed.

725 SEMINAR IN HIGHER EDUCATION: STUDENT SERVICES 3 credits
Prerequisite: permission. Topics of concern to student specializing in student personnel services in higher education. Topics may differ each semester depending upon specific student needs and interests.

730 HIGHER EDUCATION CURRICULUM AND PROGRAM PLANNING 3 credits
Study of strategies for implementing and monitoring the curricular change process. Broad aspects of higher education program planning shall be examined.

735 INSTRUCTIONAL STRATEGIES AND TECHNIQUES FOR THE COLLEGE INSTRUCTOR 2 credits
Selected topics in instructional theory, techniques and strategies which are appropriate to instructional planning and development of college-level courses. Co-requisite: 5700:704.

740 INDEPENDENT STUDY IN HIGHER EDUCATION 1 credit
May be repeated for a total of six credits. Prerequisite: permission. Special topics or independent investigation in an area of higher education as determined by advisor and student in relation to student's academic needs and career goals.

750 ADVANCED ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION 1 credit
May be repeated for a total of six credits. Prerequisite: permission. In-depth study of selected perspectives and topics which pose concerns to participation students.
INTERNSHIP IN HIGHER EDUCATION 1 credit
(May be repeated for a total of six credits) Prerequisite: permission; corequisite: 802. Intensive work experience in operation of an institution of higher education, related to student's own program of studies and professional goals. To be taken in conjunction with internship for synthesis of higher education internship experience and to provide the opportunity to share ideas and experiences from various areas of higher education internship placement. (May be repeated for a total of three credits)

INTERNSHIP IN HIGHER EDUCATION SEMINAR 1 credit
(May be repeated for a total of six credits) Prerequisite: permission; corequisite: 802. To be taken in conjunction with internship for synthesis of higher education internship experience in operations of an institution of higher education, related to student's own program of studies and professional goals. To be taken in conjunction with internship for synthesis of higher education internship experience and to provide the opportunity to share ideas and experiences from various areas of higher education internship placement.

ACCOUNTANCY

6200:

570 ADVANCED ACCOUNTING 3 credits
Prerequisite: 322. Examination of accounting theory emphasizing accounting for business combinations, partnerships, foreign operations, not-for-profit enterprises and consolidated statements.

580 TAXATION I 3 credits
Prerequisite: 320. Federal tax law related to individuals, partnerships, and corporations. Master of Taxation students will not be able to take this course to satisfy tax electives in the Master of Taxation program.

591 TAXATION II 3 credits
Prerequisite: 430/531 or permission. Additional aspects of individual taxation. Federal tax law related to property transfers and retirement and family tax planning.

600 TAXATION PROBLEMS 3 credits
Prerequisite: 321, 322. Independent research on advanced accounting problems in student's specific area of interest.

605 CPA PROBLEMS: AUDITING 2 credits
Prerequisite: 440/540 or permission of instructor. Preparation for auditing section of CPA examination, focusing on auditing principles, standards and ethics encountered by independent auditor.

650 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.

660 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.

670 WORKSHOP IN ACCOUNTING 2 credits
May be repeated. Prerequisites: 320, 321, 325, and 650:221 must be taken prior to or concurrently. Examination of auditing standards and procedures used by independent auditor in determining whether a firm has fairly represented its financial position.

680 GOVERNMENTAL AND INSTITUTIONAL ACCOUNTING 3 credits
Prerequisites: 320 or 490:1. Theory and procedures involved in application of fund accounting, budgetary control, appropriations, and various accounting systems to governmental units, educational, medical and other nonprofit institutions.

685 ACCOUNTING PROBLEMS 3 credits
Prerequisite: 322. Independent research on advanced accounting problem in student's specific area of interest.

690 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.

695 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.

700 FINANCIAL ACCOUNTING 1 credit
Introductory course for student with no accounting background. Examines accounting principles and applied to financial problems of firms.

701 BUSINESS SYSTEMS WITH PROCESSING APPLICATIONS 3 credits
Prerequisite: 620. Introduction to basic concepts in concepts in computer technology, stages in system development and logic of designing accounting systems by using a business-oriented language or related software.

710 ACCOUNTING MANAGEMENT AND CONTROL 3 credits
Prerequisite: 601 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.

720 SURVEY OF FEDERAL TAXATION 3 credits
Prerequisite: 620 or equivalent. 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.

730 BASIC TAX RESEARCH 1 credit
Prerequisites: 430/530 and 431/531 or permission. Designed to develop basic research competencies involving federal income, estate, and gift tax law.

731 CORPORATE TAXATION I 3 credits
Prerequisites: 430/530 and 431/531 or permission. Detailed examination of tax problems of corporations and their shareholders, formation, distribution, redemption, liquidation and penalty taxes covered.

732 TAXATION OF TRANSACTIONS IN PROPERTY 2 credits
Prerequisite: 430/530 and 431/531 or permission. Explores federal tax implications of gains and losses derived from sales, exchanges and other dispositions of property.

733 ESTATE AND GIFT TAXATION 3 credits
Prerequisites: 430/530 and 431/531 or permission. Analyzes provisions of federal estate and gift tax laws and tax consequences of testamentary and lifetime transfers.

734 ADVANCED ACCOUNTING THEORY 3 credits
Prerequisite: 321. Examination of accounting concepts and standards through critical analysis of articles on current trends in profession. Discussion and outside research stressed.

740 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.

750 TAXATION OF PARTNERSHIPS AND S CORPORATIONS 3 credits
Prerequisites: 430/530 and 431/531 or permission. Examines extensively provisions of subchapters K and L of Internal Revenue Code and uses of partnerships and subchapter S corporations for tax planning.
623 MANAGEMENT OF DEPOSITORY FINANCIAL INSTITUTIONS
Prerequisites: 652 and 650:602. Policy determination, administrative decision making in banks, savings and loan using computer simulation games.

645 INVESTMENT ANALYSIS
Prerequisite: 602 or equivalent. Study of the economic and market forces that influence security prices. Techniques of analysis used in evaluating limited income and equity securities.

680 OPTIONS, FUTURES AND SPECULATIVE MARKETS
Prerequisites: 602 or equivalent. A study of the applications and practice of options, futures and other speculative markets.

690 PORTFOLIO MANAGEMENT
Prerequisite: 645 or permission of instructor. Advanced techniques used by sophisticated individuals, professional managers of large portfolios.

690 ADMINISTERING COSTS AND PRICES
Prerequisites: 650:602 and 650:602. Provides an understanding of managerial elements: Short- and long-run decisions of firms analyzed. Analysis includes impact of costs and prices on business profitability.

695 GOVERNMENT AND BUSINESS
Prerequisite: 602 or equivalent. Public policy with regard to business institutions and issues are considered from an economic, legal, ethical, political framework.

696 FINANCIAL MANAGEMENT AND POLICY
Prerequisites: 602 and 650:602. Working capital management, controlling inventory, investments, administering cost and funds, managing investment portfolio and equipment, administering business income and forecasting for financial management.

675 MANAGEMENT OF FINANCIAL STRUCTURE
Prerequisite: 602 or equivalent. Emphasizes determination of value and composition of sources of funds. Primary attention directed to cost of capital for specific sources of financing.

676 CAPITAL BUDGETING
Prerequisite: 602 or equivalent. Attempts to integrate various theories of capital budgeting into a comprehensive conceptual scheme. Theoretical concepts and practical applications blended for better understanding of capital problems.

681 MULTINATIONAL CORPORATE FINANCE
Prerequisite: 602 or equivalent. Financial policies and practices of multinational corporations. Consideration of management of working capital and permanent assets, return on investment and capital budgeting for the global firm.

690 SELECTED TOPICS IN FINANCE
Prerequisite: 602 or equivalent. A study of topics in financial mathematics with an emphasis on international investments and risks in a rapidly changing global economy.

697 INDEPENDENT STUDY IN FINANCE
Prerequisite: 602 or equivalent. A study of special topics in finance on an independent basis.

698 INDEPENDENT STUDY: BUSINESS LAW
Prerequisite: 602 or equivalent. A study of special topics in study and research in finance on an independent basis.

MANAGEMENT 6500:

500 ENTREPRENEURSHIP
Prerequisites: upperclassman or graduate standing and 301 or 600 or equivalent. Examines the behavior and environment for entrepreneurship. Focuses on classic and contemporary entrepreneurship literature and the important of personal values and strategies. Case studies, projects.

510 SELECTED TOPICS IN ENTREPRENEURSHIP
Prerequisites: upperclassman or graduate standing and 301 or 600 or equivalent. Focuses on social dimensions of entrepreneurship, introduction of entrepreneurship to large organizations, or application of student's entrepreneurial skills. Six hour limit.

512 DEVELOPMENT OF MANAGEMENT THOUGHT
Prerequisites: upperclassman or graduate standing and 301 or 600 or equivalent. Review of development of managerial thought from 5800 to 6850.6. To present with consideration of their application to present organizational settings.

585 MANAGEMENT OF ARBITRATION: COMMERCIAL, INTERNATIONAL AND HUMAN RESOURCES
Prerequisites: upperclassman or graduate standing and 301 or 600 or equivalent. A comprehensive study of management strategies for commercial, international and human resource aspiration. Graduate requirement: research paper.

571 MANAGEMENT PROJECT
Prerequisites: 670. Student applies modern management principles, practices, theory to an actual problem in industry.

649 INTRODUCTION TO HEALTH-CARE MANAGEMENT
Prerequisites: upperclassman or graduate standing and 301 or 600 or equivalent. Students work in teams to develop an operational plan for health services organizations. For those registered for graduate credit, a major research paper is required.

587 HEALTH SERVICES OPERATIONS MANAGEMENT
Prerequisites: 602 or equivalent. A study of specific topics of study and research on the legal aspects of business administration.

MANAGEMENT 6400:

591 WORKSHOP IN FINANCE
Prerequisite: 620:602 or equivalent. A study of major financial markets and financial institutions with an emphasis on the decision-making processes within a rapidly changing, yet regulated operating environment.

572 MANAGERIAL FINANCE
Prerequisites: 620:602 or equivalent. A study of major financial markets and financial institutions with an emphasis on the decision making processes within a rapidly changing, yet regulated operating environment.

563 MANAGEMENT OF DEPOSITORY FINANCIAL INSTITUTIONS
Prerequisites: 652 and 650:602. Policy determination, administrative decision making in banks, savings and loan using computer simulation games.

645 INVESTMENT ANALYSIS
Prerequisite: 602 or equivalent. Study of the economic and market forces that influence security prices. Techniques of analysis used in evaluating limited income and equity securities.

680 OPTIONS, FUTURES AND SPECULATIVE MARKETS
Prerequisites: 602 or equivalent. A study of the applications and practice of options, futures and other speculative markets.

690 PORTFOLIO MANAGEMENT
Prerequisite: 645 or permission of instructor. Advanced techniques used by sophisticated individuals, professional managers of large portfolios.

690 ADMINISTERING COSTS AND PRICES
Prerequisites: 650:602 and 650:602. Provides an understanding of managerial elements: Short- and long-run decisions of firms analyzed. Analysis includes impact of costs and prices on business profitability.

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510 SELECTED TOPICS IN ENTREPRENEURSHIP
Prerequisites: upperclassman or graduate standing and 301 or 600 or equivalent. Focuses on social dimensions of entrepreneurship, introduction of entrepreneurship to large organizations, or application of student's entrepreneurial skills. Six hour limit.

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Prerequisites: 602 or equivalent. A study of specific topics of study and research on the legal aspects of business administration.
601 QUANTITATIVE DECISION MAKING
Prerequisite: MATH 330. Introduces optimization techniques and their applications. Treatment includes some fundamental optimization techniques such as: linear programming, networks, dynamic programming, decision theory, and simulation.
3 credits

605 COMPUTER TECHNOLOGIES FOR MANAGEMENT
Prerequisite: MATH 234. Computer systems and hardware, programming languages, management software, management information systems, and computer usage. 3 credits

644 MANAGEMENT INFORMATION SYSTEMS
Prerequisite: BUS 340. The management of business systems. Deals primarily with the role of information systems in management. 3 credits

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Prerequisite: BUS 340. The management of business systems. Deals primarily with the role of information systems in management. 3 credits

650 ADVANCED MANAGEMENT INFORMATION SYSTEMS
Prerequisite: BUS 340. The management of business systems. Deals primarily with the role of information systems in management. 3 credits

662 COMPUTER TECHNOLOGIES FOR MANAGEMENT
Prerequisite: MATH 234. Computer systems and hardware, programming languages, management software, management information systems, and computer usage. 3 credits

675 MANAGEMENT OF PRODUCTION AND OPERATIONS
Prerequisites: 600, 602, 662. Surveys the management of resources required to transform inputs into outputs. Some of the topics covered include process management; product design and development; inventory control and management; order processing; quality assurance activities; total quality management; resource management; and the development of new products and services. 3 credits

676 PROJECT MANAGEMENT
Prerequisites: BUS 340, 662, 665. Provides the methodologies and techniques required for the effective and efficient completion of projects. 3 credits

681 HEALTH SERVICES SYSTEMS MANAGEMENT
Prerequisites: BUS 340, 662, 665. Surveys the management of healthcare organizations. Explores the organization, delivery, and management of healthcare services. 3 credits

686 HEALTH SERVICES RESEARCH PROJECT
Prerequisites: BUS 340, 662, 665. Survey of recent research literature on the use of statistical methods in health services research. Students will complete a research project based upon the selected literature. 3 credits

687 GRADUATE SEMINAR IN HEALTH SERVICES RESEARCH AND ADMINISTRATION
Prerequisites: BUS 340, 662, 665. Advanced seminar in the application of statistical methods to the study of health services. 3 credits

688 INDEPENDENT STUDY IN HEALTH SERVICES ADMINISTRATION
Prerequisite: BUS 340, 662, 665. Independent study of current issues in health services management. Prerequisite: Approval of instructor. 3 credits

695 BUSINESS STRATEGY AND POLICY DOMESTIC AND INTERNATIONAL
Prerequisite: BUS 340, 662, 665. Surveys the major determinants of marketing strategy and policy domestic and international. Includes an examination of market research, marketing strategy, and competition in the international environment. 3 credits

697 INDEPENDENT STUDY IN BUSINESS STRATEGY AND POLICY
May be repeated for credit. 3 credits

670 BUSINESS TO BUSINESS MARKETING
Prerequisites: BUS 340, 662, 665. Surveys the marketing strategies of organizations selling products and services to other organizations. Topics include marketing to large and small companies, government agencies and institutions. 3 credits

680 SALES MANAGEMENT
Prerequisite: BUS 340, 662, 665. Surveys the development and management of industrial and institutional sales force organizations. 3 credits

690 MARKETING CONCEPTS
Prerequisites: BUS 340, 662, 665. Surveys the theoretical and empirical foundations of marketing strategy and policy. 3 credits

691 STRATEGIC MARKETING MANAGEMENT
Prerequisites: BUS 340, 662, 665. Surveys the planning, organizing, directing, and controlling of marketing operations. Includes the development and implementation of marketing strategy. 3 credits

692 MARKETING RESEARCH
Prerequisites: BUS 340, 662, 665. Surveys the development and use of statistical techniques in the planning, organizing, directing, and controlling of marketing operations. 3 credits

694 SERVICES MARKETING
Prerequisites: BUS 340, 662, 665. Surveys the development and use of statistical techniques in the planning, organizing, directing, and controlling of marketing operations. 3 credits

695 BUSINES S MARKETING
Prerequisites: BUS 340, 662, 665. Surveys the development and use of statistical techniques in the planning, organizing, directing, and controlling of marketing operations. 3 credits
PROFESSIONAL RESPONSIBILITY

690
Professional Responsibility
Prerequisite: Nine graduate credits. Seminar on the professional responsibilities of business men and women to make them and the business organization in which they work more responsible decision-makers.

1 credit

692
INTERNATIONAL BUSINESS

Prerequisite: Nine graduate credits. Enhances understanding of global business issues, presents relevant trends and updates, facilitates cross-cultural interaction, and explores applied practices of international business.

1 credit

694
APPLIED BUSINESS DOCUMENTATION AND CONTACT

This course is designed to offer a practical approach to the skills and strategies for handling specialized documents, correct protocols and business presentations.

1 credit

695
INTERNATIONAL BUSINESS

Prerequisite: Permission of instructor. On-the-job experience with cooperating private and government organizations. Individual assignments made by supervising faculty member. Periodic reports and research papers required. Credit/No Credit.

1.5 credits

696
SPECIAL TOPICS IN PROFESSIONAL DEVELOPMENT

Special topics and current issues in the MBA Program Professional Core. May be repeated with a change of subject, not to exceed 4 credits.

1 credit

698
COLLOQUIUM IN BUSINESS

Prerequisite: Permission of graduate director. Study of business administration through a seminar of several lectures in business research and practice. A broad range of topics in business research and issues will be discussed by guests, faculty and graduate students. May be repeated, but will not satisfy degree requirements. Credit/No Credit.

1.5 credits

INTERNATIONAL BUSINESS

6800:

605
INTERNATIONAL BUSINESS ENVIRONMENTS

3 credits

An introductory course designed to develop a broad understanding of global business environments.

690
INTERNATIONAL MARKETING POLICIES

3 credits

Prerequisite: 6800/620 and 6800/605 or permission of instructor. Explores the problems of formulating and implementing marketing strategies and tactics within complex and changing multinational organizations and international markets. A planning framework is emphasized.

685
MULTINATIONAL CORPORATIONS

3 credits

Prerequisite: 605. An advanced course designed to develop an in-depth understanding of global businesses, their functions, structures, and strategic operations.

690
SEMINAR IN INTERNATIONAL BUSINESS

3 credits

Prerequisite: 605 and a total of 15 graduate credits or permission of instructor. Advanced course covering major issues in international business.

697
INDEPENDENT STUDY IN INTERNATIONAL BUSINESS

1.5 credits

(May be repeated a total of six credit) Prerequisites: Graduate standing and permission of instructor. Focus on special topics of study and research in international business on an independent basis.

ART

7100:

500
ART IN THE UNITED STATES BEFORE WORLD WAR II

3 credits

Prerequisite: 103 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

1.5 credits

Prerequisite: 201 or permission. A lecture course focusing on a particular movement, period, artist, or medium. May be repeated when a different subject is indicated. Prerequisites: one art history course beyond 210 or permission of instructor. Lecture, individual research and evaluation, group discussion related to a specific time period or to an artistic problem.

505
HISTORY OF ART SYMPOSIUM

1.5 credits

(May be repeated for credit when a different subject is indicated) Prerequisites: one art history course beyond 210 or permission of instructor. Lecture, individual research and evaluation, group discussion related to a specific period or to an artistic problem.

500
WORKSHOP IN ART

1.5 credits

May be repeated for credit when a different subject or level of instruction is indicated. May be repeated for up to 4 credits. Prerequisite: 201 or permission of instructor. Group instruction in the instruction of art to the elementary grade. May be repeated when a different subject or level is indicated.

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: 491/492. Continuation of concepts covered in Architectural Presentations I with additional work in color rendering techniques. Emphasis on a variety of rendering mediums.

597
INDEPENDENT STUDIES

1.5 credits

May be repeated for credit when a different subject or level of instruction is indicated. May be repeated for up to 4 credits. Prerequisite: 201 or permission of instructor. Individual research in art history centered around limited topic, such as specific time period, history of specific techniques, a single artist or movement in art history. No more than 15 credits will be counted toward major.

599
SPECIAL PROBLEMS IN HISTORY OF ART

1.5 credits

(May be repeated for credit when a different subject is indicated) Prerequisites: 201 or permission of instructor. Individual research in art history centered around limited topic, such as specific time period, history of specific techniques, a single artist or movement in art history. No more than 15 credits will be counted toward major.

HOME ECONOMICS AND FAMILY ECOLOGY

7400:

501
FAMILY LIFE PATTERNS IN THE ECONOMICALLY DEPRIVED HOME

2 credits

Study of family life interaction and lifestyle patterns among economically deprived with emphasis on impact or socioeconomic and psychological deprivation on family members throughout family life span.

503
ADVANCED FOOD PREPARATION

3 credits

Prerequisite: 141 or 245 or permission of instructor. Study of advanced techniques of food preparation, introduction to and interpretation of classic and foreign cuisines. Emphasis on individualized experiences, skill development and evaluation of procedures and results. May be repeated when a different subject or level is indicated.

504
ADOLESCENCE IN THE FAMILY CONTEXT

1.5 credits

Prerequisites: 201 or 205 or permission of instructor. Ideas of adolescence behavior on the family and the influences 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 behavior. Case studies, exercises, problems and computer analysis.

518
HISTORY OF INTERIOR DESIGN I

4 credits

The study of furnishing, 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 social-cultural influences shaping their development.

520
EXPERIMENTAL FOODS

3 credits


523
PROFESSIONAL IMAGE ANALYSIS

3 credits

Prerequisites: Senior status. Comparison of theories associated with projecting and maximizing an appropriate professional image consistent with career goals and objectives.

524
NUTRITION IN THE LIFE CYCLE

3 credits

Prerequisite: 141. Study of the physiological factors for nutritional requirements; interrelations of factors which affect growth, development, maturation and nutritional status from conception through the elderly years.

525
ADVANCED TEXTILES

3 credits

Prerequisite: 201. Evaluation of physical, aesthetic, comfort and durability properties of textile products and testing procedures to determine suitability for desired end uses.

527
TEXTILE AND APPAREL INDUSTRIES

3 credits

Prerequisite: 202. Examines the global structure and scope of the textile and apparel industries facilitating an economic perspective.
352 INTERIOR TEXTILES AND PRODUCT ANALYSIS 3 credits
Prerequisite: 58. Examination, evaluation, and analysis of products for interior with emphasis on trade classification, selection criteria, economic factors, and legislative concern.

353 RESIDENTIAL DESIGN 3 credits
Prerequisites: 18A, 258, 333, 334, 7100/491. A comprehensive study of residential design with emphasis on conceptual, analytical, and graphic skills.

354 COMMERCIAL DESIGN 3 credits
Prerequisites: 183, 258, 333, 334, 7100/491. A comprehensive study of nonresidential design with emphasis on conceptual, analytical, and graphic skills.

355 PRINCIPLES AND PRACTICES OF INTERIOR DESIGN 3 credits
Prerequisite: 356 and 432. An overview of the business aspect of interior design, detailing procedures, manufacturing of home furnishings and principles and psychology of marketing furnishings.

356 TEXTILE CONSERVATION 3 credits
Prerequisites: 121, 123, 312. Principles and practices of textile conservation with emphasis on procedures appropriate for collectors and small historical agencies.

357 HISTORICAL COSTUME AND FASHION 3 credits
Study of costume and textiles from antiquity through the eighteenth century, with emphasis on social-cultural influences.

358 HISTORY OF FASHION SINCE 1700 3 credits
Prerequisite: 357. Study of nineteenth and twentieth-century Western fashions, textiles, and designs with emphasis on social-cultural influences.

359 FAMILY CRISIS 3 credits
Study of family stress and crisis, including internal and external variables and their influence on degree of disorganization, coping, and recovery. Includes theory, research, and application of stress and coping models.

360 BEFORE AND AFTER SCHOOL CHILD CARE 3 credits
Study of the development, implementation, and evaluation of school-age child-care programs before and after school and vacation periods.

361 FLAT PATTERN DESIGN 3 credits
Prerequisite: 120 or equivalent. Theory and practice in clothing design using flat pattern techniques.

361A CHILD IN THE HOSPITAL 3 credits
Prerequisite: 365, comparable course or permission of instructor. Seminar dealing with special needs and problems of hospitalized child and family. Literature related to effects, apportionment, illness, and stress. Emphasis on evaluation of strategies for coping.

362A PRACTICUM: ESTABLISHING AND SUPERVISING A CHILD-LIFE PROGRAM 3 credits
Prerequisite: 4515A. Explores problems for implementing and setting up child life programs.

363A ORGANIZATION AND SUPERVISION OF CHILD-CARE CENTERS 3 credits
Theory, principles and procedures involved in establishing and operating centers for infants, toddlers, preschoolers, and school-age children.

370 THE FOOD INDUSTRY: ANALYSIS AND FIELD STUDY 3 credits
Prerequisite: 245 or permission. Role of technology in extending the food supply. Chemical, physical and biological effects of processing and storage, on-the-job training in processing plants.

371 CULTURAL DIMENSIONS OF FOOD 3 credits
An examination of cultural and historical influences on development of food habits. Emphasis on evolution of diets; effects of religion, education, gender, role, and race.

375 ANALYSIS OF FOOD 3 credits
Prerequisite: 3510. General chemistry or equivalent. Comprehensive course in the chemical, physical and biological properties of foods. Emphasis on applications.

376 DEVELOPMENTS IN FOOD SCIENCE 3 credits
Prerequisite: 246. Advanced study of the chemistry and physics of food components, affecting the nutritional value of food. Critical evaluation of current basic and applied research. Emphasis on practical applications.

583 COMMUNITY NUTRITION I/LECTURE 3 credits
Corequisite: 482 for CP student only. Socio-cultural aspects of community assessment, program implementation and evaluation, and ratification for nutrition services.

584 COMMUNITY NUTRITION I/CLINICAL 1 credit (credit/no credit)
Prerequisite: CP students only. 478. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutrition care.

584 COMMUNITY NUTRITION II/LECTURE 3 credits
Prerequisites: 480/580 and 481/581 for CP student only. Corequisite: 483/583 for CP student only. This course will focus on the development of such services for productive economic, community, labor and resource, and evaluation, and adapting the dietetics "various publics about nutrition.

585 COMMUNITY NUTRITION II/CLINICAL 1 credit (credit/no credit)
Prerequisite: 480/580 and 481/581. Corequisite: 482/582. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutrition care.

586 ORIENTATION TO THE HOSPITAL SETTING 2 credits
Prerequisite: 365. Preparation for a career of nursing. Focuses on hospital as a major social institution, emphasizing the roles and functions of the hospital role, illness and hospital disease, plus a discussion of medical technology, common hospital diseases, illnesses and injuries.

587 SEMINAR IN HOME ECONOMICS 1 credit
Prerequisite: 133, 200-207, 310, 320 or permission of instructor. This course will include study of energy metabolism and utilization before, during, and after exercise, factors affecting nutrient needs and patterns of performance of various athletic activities are emphasized.

588 PRACTICUM IN DIETETICS 13 credits
Prerequisite approval of advisor/instructor. Practice rotation in affiliation of the principals of dietetics.

589 WORKSHOP IN HOME ECONOMICS AND FAMILY ECOLOGY 1 credits
Prerequisite: at least junior standing. Investigation on current issue or topic in selected areas of home economics and family ecology. May be on campus or off-campus School and home learning experiences.

589.1 WORKSHOP IN HOME ECONOMICS AND FAMILY ECOLOGY 1.2 credits
Prerequisite: Junior standing. Current topics and issues in selected areas of home economics and family ecology. Open only to students enrolled in combined home economics and family education.

594 PRACTICUM IN PARENT AND FAMILY EDUCATION 3 credits
Prerequisites: 596, 665. Provided on-site opportunities to apply parent and family education skills. Includes a review of strategies, ethical considerations, and supervision by the on-site director.

596 PARENT EDUCATION 3 credits
Prerequisite: 265, comparable course, or permission. Theoretical application that reviews and analyzes various teaching techniques with major emphasis on the evaluation of parent education programs.

601 FAMILY IN TRANSITION 2 credits
Study of family patterns and problems during middle and later years of life with emphasis on psychological and social changes and economic and social correlates. Research and trends in gerontology.

604 ORIENTATION TO GRADUATE STUDIES IN HOME ECONOMICS AND FAMILY ECOLOGY 1 credit
Introduction to the concepts and principles necessary for graduate study in the interdisciplinary field of Home Economics and Family Ecology.

605 DEVELOPMENTAL PARENT/CHILD INTERACTIONS 3 credits
Prerequisite: 265 or permission or permission. Study of developmental patterns found between parent and child from birth to adulthood. Conception of cross-cultural, social, historical and societal influences and varying family characteristics and structures.

607 FAMILY DYNAMICS 3 credits
Development of techniques in home economics programs utilizing role theory and systems theory in understanding the study of the family across the life cycle.

610 CHILD DEVELOPMENT THEORIES 3 credits
A comparative study of developmental theories of the child within the family context. Application of the theories to child rearing in the family will be emphasized.

611 INFANT AND CHILD NUTRITION 2 credits
Emphasis on current research trends in nutrition of infant and young child in relation to nutritional requirements and infant feeding.

624 ADVANCED HUMAN NUTRITION I 3 credits
Prerequisites: undergraduate level courses in nutrition and biochemistry. In-depth study of human nutrition emphasizing metabolism, physiological functions, and interrelatedness of carbohydrates, protein and lipids and the determinants of human energy requirements.

625 ADVANCED HUMAN NUTRITION II 3 credits
Prerequisite: 624 or instructor's written nutrition with emphasis on the utilization, physiological functions, and interrelationships of vitamins and minerals.

631 PROBLEMS IN DESIGN 3 credits
May be repeated, but no more than 6 credits will be applied to major. A prerequisite written proposal approved by faculty advisor. Individual solution of a specific design problem within the student's area of clothing, textiles and interior specialization.

632 ADVANCED FOOD THEORY AND APPLICATIONS 3 credits
Prerequisites: 352/552 or permission of instructor. Study of the chemistry and physics of food components, assessing the characteristics of foods, critical evaluation of current basic and applied research emphasis.

634 HISTORICAL CULTURE STUDIES 3 credits
Methods of studying clothing, textiles, and interiors from a cultural and historical perspective.

639 THEORIES OF FASHION 3 credits
In-depth analysis of the theories underlying fashion and evaluation of current research related to fashion cycles.

640 NUTRITION IN DISABILITIES HEALTH 3 credits
Prerequisite: 419 or permission. An examination of concepts related to nutritional intervention associates with selected pathophysiologic and diagnostic conditions throughout the life cycle. Emphasis on current literature.

651 FAMILY AND CONSUMER LAW 3 credits
Study of laws that control and protect individuals within family, Emphasis on current trends, legal rights, course taught by attorney.

652 PROFESSIONAL PREPARATION IN HOME ECONOMICS 3 credits
Develops effective home economics professionals. Emphasis on evaluation, demonstration, public relations, home economics, home economics, and learning.

653 PROGRAMMING FOR CHILD-CARE CENTERS 3 credits
Prerequisites: 596 or permission of instructor. Examination of new programs for child-care centers. Examination of all programs available for preschool children's development, literature analysis, application, and evaluation stressed.

655 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD 3 credits
Analysis of research and theoretical frameworks regarding infant and child development from conception through age five. Emphasis on selected issues and their implications.

657 SOCIAL PSYCHOLOGY OF DRESS AND THE NEAR ENVIRONMENT 3 credits
Prerequisites: 310 and 4511551. Study of the dress and the near environment to relate to human behavior in the micro and macro scale.

660 HISTORICAL AND CONCEPTUAL BASES OF HOME ECONOMICS AND FAMILY ECOLOGY 3 credits
Prerequisites: 596, 665, and 660. History of the field of home economics and family ecology with emphasis on the leaders and the conceptual bases of the field.

665 RESEARCH METHODS IN HOME ECONOMICS AND FAMILY ECOLOGY 3 credits
A study of home economics and family ecology research methods emphasizing concept and theory development, data collection and ethical considerations.
MUSIC
7500:

576 GRADUATE THEORY REVIEW
2 credits
Prerequisite: Undergraduate music theory equivalent to four semesters. Review of basic music theory concepts. Coverage includes the chromatic harmonic vocabulary of the 18th, 19th and 20th centuries.

577 GRADUATE MUSIC HISTORY REVIEW
2 credits
Prerequisite: Undergraduate music history equivalent to four semesters of music history or literature study; review of basic music history for graduate students. Coverage extends from antiquity to the present. Both reading and listening assignments will be required.

578 TEACHING AND LITERATURE: PERCUSSION INSTRUMENTS
2 credits
To train undergraduate and graduate prospective students in techniques of percussion instruction. Emphasis on history, literature, performance, and techniques from elementary through secondary levels.

581 ECONOMICS TODAY TO MUSICOLOGY
2 credits
Prerequisite: 320. Comparative musicology; aesthetics and psychology of music; music aesthetics; theory of music history; musical history.

583 MUSIC SOFTWARE SURVEY AND USE
2 credits
Prerequisite: 150 or permission of instructor. A survey and evaluation of available software in the various forms of musical instruction. Students will design a course suitable for submission to the publisher.

585 ADVANCED CONDUCTING INSTRUMENTAL
2 credits (30 clinical hours)
Baron techniques and problems relating to practice, reading and preparation of scores; organization of ensembles; programming; conducting large instrumental ensembles. One hour lab required.

586 ADVANCED CONDUCTION: CHORAL
2 credits
Prerequisite: 360 or equivalent. Conducting techniques to the choral ensemble; including lead sheets, error detection, tonal development, stylistic accuracy and analysis. One hour lab required.

592 REPERTOIRE AND PEDAGOGY: ORGAN
3 credits
Prerequisite: permission of instructor. Survey of organ literature of all areas and styles, and study of methods of teaching organ, applying principles to literature.

593 REPERTOIRE AND PEDAGOGY: STRING INSTRUMENTS
3 credits
Prerequisite: permission of instructor. Study in depth of the four bowed string instruments, with attention to their teaching and close relationship. Despite obvious difference in physical application of cellos and bass from violin and viola, fiddlers of bowing, sound production and coloring with close relationship, application of the instruments to solo, chamber and orchestral playing.

597 GUITAR PEDAGOGY
2 credits
Prerequisite: permission of instructor. A systematic analysis of prevailing schools of guitar pedagogy; study production psychology, method books and special problems in teaching addressed.

588 GUITAR ARRANGING
2 credits
Prerequisite: permission of instructor. After comparative analysis of selected examples, student make original solo guitar arrangements of works written for other solo instruments assembles.

599 HISTORY AND LITERATURE OF THE GUITAR AND LUTE
2 credits
Prerequisite: permission of instructor. Study of plucked, fretted, stringed instruments from the 16th Century to the present; construction, notation, literature and performance practices. Modern editions and recordings evaluated.

600 WORKSHOP IN MUSIC
1-3 credits
Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate student must fulfill additional requirements.

601 CHORAL LITERATURE
2 credits
Prerequisite: permission of instructor. Study in depth of style, structure, technical demands, manner of setting text, and special performance problems found in masterworks by great choral composers of various centuries.

604 DEVELOPMENT OF OPERA
2 credits
Prerequisite: permission of instructor. Growth and development of opera from 1600 to the present. Includes detailed examination of stylistic and structural changes as well as performance practices.

605 SEMINAR IN MUSIC OF THE WESTERN HEMISPHERE
2 credits
Prerequisite: permission of instructor. Designed to develop understanding of peoples and cultures of Western Hemisphere through study of music of each major area. Research and writing in area of special interest.

606 PEDAGOGY OF JAZZ IMPROVISATION
3 credits
A detailed study of the methods and materials as they relate to the teaching of jazz improvisation.

607 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION
3 credits
Prerequisite: permission of instructor. Study of basic philosophic, historical, sociological and psychological concepts among which public music programs function.

612 PRACTICES AND TRENDS IN MUSIC EDUCATION
3 credits
Prerequisite: permission of instructor. Indepth exploration of innovative practices and trends in music education. Findings of research and practical related to prevailing situations in public and private school programs.

615 INSTRUCTIONAL PROGRAMMING IN MUSIC FOR THE MICROCOMPUTER
3 credits
Prerequisite: 453/553. Introduction to programming languages for the microcomputer including BASIC, Pascal and Assembler. Programming will be directed towards music educational concepts.

614 MEASUREMENT AND EVALUATION IN MUSIC
3 credits
Prerequisite: A study and application of principles of music education, music achievement and content evaluation; and research as a function of evaluation.

616 MUSICAL STYLES AND ANALYSIS I
2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of Gregorian chant through music of Palestrina Gesualdo and others of late Renaissance.

617 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 Schoenberg.

618 MUSICAL STYLES AND ANALYSIS III
2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of late Beethoven through Mahler and Schoenberg.

619 MUSICAL STYLES AND ANALYSIS IV
2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music in 20th Century.

620 THEORY AND PEDAGOGY I
2 credits
Prerequisite: permission of instructor. Methodology of theory teaching in 20th Century. Focus on differing philosophies of approach to theory; instruction as noted from texts on subject. Recent innovations and techniques of teaching, such as programmed material, computer-assisted instruction studied.

621 COMPUTER ANALYSIS IN MUSIC
2 credits
Prerequisite: permission of instructor. A minimum of one semester in the 650-668 series. A systematic study of music techniques in music which make use of the computer. Hands-on experiences with music encoding, card manipulation, interactive, systems and computer writing as it relates to music technology.

622 MUSIC HISTORY SURVEY: MIDDLE AGES AND RENAISSANCE
2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of all aspects of music of the Middle Ages and Renaissance. Reading and writing in areas of special interest.

623 MUSIC HISTORY SURVEY: BAROQUE
2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of Baroque music; study in depth of specific examples, such as recordings, scores and live performances; continuation and synthesis of approaches normal to study of music history; selected readings related to each student's particular fields of interest; project papers.

624 MUSIC HISTORY SURVEY: CLASSIC AND ROMANTIC
2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of classic and romantic music; study in depth of specific examples, such as recordings, scores and live performances; continuation and synthesis of approaches normal to study of music history; selected readings related to each student's particular fields of interest; project papers.

625 MUSIC HISTORY SURVEY: 20TH CENTURY
2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of 20th century music; study in depth of specific examples from scores, recordings and live performances; continuation and synthesis of approaches normal to study of music history; selected readings and project papers.

626 GRADUATE BIBLIOGRAPHY AND RESEARCH IN MUSIC
2 credits
Prerequisite: Undergraduate music degree of equivalent. Examination of all types of printed music literature; research methods for thesis preparation and professional publishing; field trips to music libraries, computerized music research.

630 TEACHING AND LITERATURE: BRASS INSTRUMENTS
2 credits
Prerequisite: permission of instructor. Research on current trends and issues in brass teaching techniques and appropriate literature.

631 TEACHING AND LITERATURE: WOODWIND INSTRUMENTS
2 credits
Prerequisite: permission of instructor. To culminate contemporary techniques for teaching woodwind pedagogy and to develop a comprehensive understanding of woodwind literature.

633 TEACHING AND LITERATURE: PIANO AND HARP CHORDS
2 credits
Prerequisite: permission of instructor. The examination of piano and harp literature in historically chronological order with special attention to its pedagogical value and stylistic differences.

642 TEACHING AND LITERATURE: STRING INSTRUMENTS
2 credits
Prerequisite: permission of instructor. Research in current trends and issues in string teaching techniques and appropriate literature.

644,1,2,3 ADVANCED ACCOMOMPANYING I, II, III, IV
1 credit each
Prerequisite: Graduate standing in keyboard performance and/or accompanying, and permission of the instructor. An in-depth survey of principles of accompanying, sight reading, standard repertoire, and transposition.

645 INTERNSHIP IN MUSIC EDUCATION
1 credit
Prerequisite: permission of instructor. Composition student will present a recital of chamber music compositions (at least one-half hour in length) written while in residence at the University. Student will actively organize and coordinate the recital and will also participate either as performer or conductor.

657 STUDENT RESEARCH
0 credits
Prerequisite: approval of all music majors. Forum for student and faculty providing lectures, recitals, and opportunity to practice skills for successful music performance.

660 VOCAL PEDAGOGY
3 credits
Prerequisite: permission of instructor. This work is designed to acquaint students dealing with matching of vocal ability of vocal instrument, principles governing vocal production and application of vocal pedagogy.

665 ADVANCED SONG LITERATURE
3 credits
Prerequisite: permission of instructor. Systematic study of song literature of historical chronology according to national schools of composition. Stylistic compositional characteristics and representative works of all major composers of 400+ song literature.

675 SEMINAR IN MUSIC EDUCATION
1-3 credits
Prerequisite: 453/553. Intensive discussion of special topics in the field of music education.

676 ADVANCED PROBLEMS IN MUSIC
1 credit
Prerequisite: permission of instructor. Study of advanced problems related to problems in music.
MUSICAL ORGANIZATIONS

7510:

521 GUITAR CHAMBER MUSIC
Prerequisite: Open to upper and lower class instrumentals and voices. Includes an annual production of standard operas and contemporary chamber works. Registration for credit open to students and members of University Community. 1 credit

522 CLASSICAL GUITAR
1 credit

523 HARP
1 credit

524 VOICE
1 credit

525 PIANO
1 credit

526 ORGAN
1 credit

527 VIOLIN
1 credit

528 VIOLA
1 credit

529 CELLO
1 credit

530 STRING BASS
1 credit

531 TRUMPET OR CORNET
1 credit

532 FRENCH HORN
1 credit

533 TROMBONE
1 credit

534 BARITONE
1 credit

535 TUBA
1 credit

536 FLUTE OR REEDS
1 credit

537 OBOE OR ENGLISH HORN
1 credit

538 CLARINET OR BASS CLARINET
1 credit

539 BASSOON OR CONTRABASSOON
1 credit

540 SAXOPHONE
1 credit

541 HARP-CHORD
1 credit

542 PRIVATE LESSONS IN MUSIC COMPOSITION
2-4 credits each (As required. Prerequisite: 7500:292 and permission of instructor. 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.)

569 JAZZ VOCAL STYLES
2-4 credits each (May be repeated) Prerequisite: Undergraduate degree in music. Graduate standing and permission of instructor determined through audition.

581-681 GRADUATE STUDY IN APPLIED MUSIC
2 or 4 credits each (May be repeated) Prerequisites: graduate degree in music. Credit may vary. 690-780 student must consult with his/her major instructor.

591 PERSUSSION
1 credit

592 PERSUSSION
1 credit

593 HARP
1 credit

594 VOICE
1 credit

595 PIANO
1 credit

596 ORGAN
1 credit

597 VIOLIN
1 credit

598 VIOLA
1 credit

599 CELLO
1 credit

600 STRING BASS
1 credit

601 TRUMPET OR CORNET
1 credit

602 FRENCH HORN
1 credit

603 TROMBONE
1 credit

604 BARITONE
1 credit

605 TUBA
1 credit

606 FLUTE OR REEDS
1 credit

607 OBOE OR ENGLISH HORN
1 credit

608 CLARINET OR BASS CLARINET
1 credit

609 BASSOON OR CONTRABASSOON
1 credit

610 SAXOPHONE
1 credit

611 HARP-CHORD
1 credit

612 PRIVATE LESSONS IN MUSIC COMPOSITION
2-4 credits each (May be repeated. Prerequisite: 7500:292 and permission of instructor. 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.)

613 JAZZ VOCAL STYLES
2-4 credits each (May be repeated. Prerequisite: Undergraduate degree in music. Graduate standing and permission of instructor determined through audition.)

614 PERSUSSION
1 credit

615 PERSUSSION
1 credit

616 HARP
1 credit

617 VOICE
1 credit

618 PIANO
1 credit

619 ORGAN
1 credit

620 VIOLIN
1 credit

621 VIOLA
1 credit

622 CELLO
1 credit

623 STRING BASS
1 credit

624 TRUMPET OR CORNET
1 credit

625 FRENCH HORN
1 credit

626 TROMBONE
1 credit

627 BARITONE
1 credit

628 TUBA
1 credit

629 FLUTE OR REEDS
1 credit

630 OBOE OR ENGLISH HORN
1 credit

631 CLARINET OR BASS CLARINET
1 credit

632 BASSOON OR CONTRABASSOON
1 credit

633 SAXOPHONE
1 credit

634 HARP-CHORD
1 credit

635 PRIVATE LESSONS IN MUSIC COMPOSITION
2-4 credits each (May be repeated. Prerequisite: 7500:292 and permission of instructor. 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.)

636 JAZZ VOCAL STYLES
2-4 credits each (May be repeated. Prerequisite: Undergraduate degree in music. Graduate standing and permission of instructor determined through audition.)

637 PERSUSSION
1 credit

638 PERSUSSION
1 credit

639 HARP
1 credit

640 VOICE
1 credit

641 PIANO
1 credit

642 ORGAN
1 credit

643 VIOLIN
1 credit

644 VIOLA
1 credit

645 CELLO
1 credit

646 STRING BASS
1 credit

647 TRUMPET OR CORNET
1 credit

648 FRENCH HORN
1 credit

649 TROMBONE
1 credit

650 BARITONE
1 credit

651 TUBA
1 credit

652 FLUTE OR REEDS
1 credit

653 OBOE OR ENGLISH HORN
1 credit

654 CLARINET OR BASS CLARINET
1 credit

655 BASSOON OR CONTRABASSOON
1 credit

656 SAXOPHONE
1 credit

657 HARP-CHORD
1 credit

658 PRIVATE LESSONS IN MUSIC COMPOSITION
2-4 credits each (May be repeated. Prerequisite: 7500:292 and permission of instructor. 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.)

659 JAZZ VOCAL STYLES
2-4 credits each (May be repeated. Prerequisite: Undergraduate degree in music. Graduate standing and permission of instructor determined through audition.)

660 PERSUSSION
1 credit

661 PERSUSSION
1 credit

662 HARP
1 credit

663 VOICE
1 credit

664 PIANO
1 credit

665 ORGAN
1 credit

666 VIOLIN
1 credit

667 VIOLA
1 credit

668 CELLO
1 credit

669 STRING BASS
1 credit

670 TRUMPET OR CORNET
1 credit

671 FRENCH HORN
1 credit

672 TROMBONE
1 credit

673 BARITONE
1 credit

674 TUBA
1 credit

675 FLUTE OR REEDS
1 credit

676 OBOE OR ENGLISH HORN
1 credit

677 CLARINET OR BASS CLARINET
1 credit

678 BASSOON OR CONTRABASSOON
1 credit

679 SAXOPHONE
1 credit

680 HARP-CHORD
1 credit

681 PRIVATE LESSONS IN MUSIC COMPOSITION
2-4 credits each (May be repeated. Prerequisite: 7500:292 and permission of instructor. 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.)

682 JAZZ VOCAL STYLES
2-4 credits each (May be repeated. Prerequisite: Undergraduate degree in music. Graduate standing and permission of instructor determined through audition.)

683 PERSUSSION
1 credit

684 PERSUSSION
1 credit

685 HARP
1 credit

686 VOICE
1 credit

687 PIANO
1 credit

688 ORGAN
1 credit

689 VIOLIN
1 credit

690 VIOLA
1 credit

691 CELLO
1 credit

692 STRING BASS
1 credit

693 TRUMPET OR CORNET
1 credit

694 FRENCH HORN
1 credit

695 TROMBONE
1 credit

696 BARITONE
1 credit

697 TUBA
1 credit

698 FLUTE OR REEDS
1 credit

699 OBOE OR ENGLISH HORN
1 credit

700 CLARINET OR BASS CLARINET
1 credit

701 BASSOON OR CONTRABASSOON
1 credit

702 SAXOPHONE
1 credit

703 HARP-CHORD
1 credit

704 PRIVATE LESSONS IN MUSIC COMPOSITION
2-4 credits each (May be repeated. Prerequisite: 7500:292 and permission of instructor. 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.)

705 JAZZ VOCAL STYLES
2-4 credits each (May be repeated. Prerequisite: Undergraduate degree in music. Graduate standing and permission of instructor determined through audition.)

706 PERSUSSION
1 credit

707 PERSUSSION
1 credit

708 HARP
1 credit

709 VOICE
1 credit
COMMUNICATION 7700:

508 WOMEN, MINORITIES AND NEWS 3 credits
Study of images of women and minorities in U.S. news, along with the power women and minorities have as decision-makers in the news industry.

538 COMMUNICATION IN ORGANIZATIONS 3 credits
Overview of theories and approaches for understanding communication flow and practices in organizations: interdepartmental, networks, superordinate-subordinate, formal and informal communication.

556 ADVANCED COMMUNICATION 3 credits
Prerequisites: 201, 280. Study of dimensions of field of communication: information and social interaction and their effect on writing scripts for electronic production.

568 AUDIO AND VIDEO EDITING 3 credits
Prerequisites: 280, 388, or equivalent. Advanced computerized multimedia audio and video editing. Theory and practice of multimedia production for video production.

571 THEORIES OF RHETORIC 2 credits
Study of key figures in history of rhetorical theory, stressing interrelationships among theories of rhetoric, intellectual climate and social climates.

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.

609 ELECTRONIC MEDIA PRODUCTION 3 credits
Prerequisite: permission. Practical application of writing, directing, management, recording, and editing skills to problems in electronic media production.

610 INTRODUCTION TO GRADUATE STUDY IN COMMUNICATION 3 credits
Introduction to the ideas and scholarship that constitute the various research interests in the department.

639 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.

654 INTRODUCTION TO QUANTITATIVE RESEARCH IN COMMUNICATION 3 credits
Prerequisites: 201, 280, 290. Introduction to reading and understanding research designs employing basic parametric and nonparametric descriptive and hypotheses testing statistical models in mass media-communication.

660 COMMUNICATION ARTICULATION IN THE BASIC SPEECH COURSE 3 credits
Designed to train a graduate student in methods and techniques of introductory speech courses. Required of all teaching graduate assistants.

688 COMMUNICATION PEDAGOGY 2 credits
Familiarizes students with aspects of teaching communication and media courses at the college level.

692 AMERICAN MASS MEDIA SYSTEMS 3 credits
Analysis of role, performance and impact of media in America.

695 SURVEY OF COMMUNICATION THEORY 3 credits
Study of dimensions of field of communication: information analysis, social interaction and semantic analysis.

696 THEORIES OF MASS COMMUNICATION 3 credits
A review of theories of mass media and studies exploring the effect of media.

698 CONTEMPORARY ISSUES IN BROADCASTING 3 credits
Study of issues important to the management of radio and television broadcast station. Submissions required to professional journal required.

699 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.

711 SEMINAR: ADVANCED PRODUCTION DESIGN I 2 credits
Prerequisites: demonstration of competency in either photography, film or video production and permission of instructor. Analysis of communication problems and the design of solution mediated by film, video and photography. Emphasis on production research and writing in various media formats. Design and production of a major project.

712 SEMINAR: ADVANCED PRODUCTION DESIGN II 2 credits
Prerequisite: 611. Continuation of projects in 611 and an opportunity for students to work in additional media.

713 PRAXIS 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.

714 INTERCULTURAL COMMUNICATION THEORY 3 credits
Analysis of the impact on the communication process of cultural difference between communicators, examination of existing literature in intercultural communication.
625 LANGUAGE DEVELOPMENT: NORMAL AND DISORDERED 3 credits
626 VOICE PATHOLOGY 3 credits
627 STUTTERING: THEORIES AND THERAPIES 2 credits
628 TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDER 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
630 LANGUAGE SKILLS IN CHILDREN: ASSESSMENT AND INTERVENTION 3 credits Prerequisite: 621 or permission of instructor. Theoretical and applied study of child language assessment and intervention strategies.
631 COMMUNICATION DISORDERS: CLOSED HEAD INJURY 3 credits Prerequisite: permission of instructor. A study of behavioral deficits, stages of recovery, assessment techniques, and principles of cognitive rehabilitation related to closed head injury.
632 DYSPHAGIA 2 credits Outlines epidemiology, assessment, and treatment for infants, children, and adults with feeding and swallowing disorders (dysphagia). It provides actual experiences in diagnosis and feeding techniques.
634 ADVANCED CLINICAL TESTING 4 credits Theoretical basis for pure tone, speech tests, masking, and acoustic impedance measurement. Review of clinical and current literature relative to above tests.
635 SPECIAL TESTS/MEDICAL AUDIOLOGY 4 credits Prerequisite: 630 or permission of instructor. Underlying psychoacoustic principles of administration and interpretation of audiometric tests. Relations between otology and audiology, applications of clinical audiology in medical environment.
636 AMPLIFICATION 3 credits Prerequisite: 630 or permission of instructors. Principles of hearing aid design, hearing aid standards, and audiologic consultation with consumers.
637 AUDIOTRONIC CLINICAL APPLIANCES 2 credits Prerequisite: 630 or permission of instructor. Technical principles of noise measurement; psychoacoustic principles of noise measurement; and applications to therapy.
638 AURAL REHABILITATION 4 credits Prerequisite: permission of instructor. Review of current methodologies employed in adult rehabilitation of children and adults as well as current and potential lines of research.
639 EVOKED POTENTIALS 2 credits Prerequisite: permission of instructor. A study of auditory, visual, and somatosensory evoked potentials and their clinical applications in audiology and neurology.
640 EXPERIMENTAL AUDIOLoGY 2 credits Prerequisite: six graduate audiology credits or permission of instructor. Principles of psychophysics. Review of instrumentation and research techniques. Study of significant literature in the field.
641 ELECTROVYNISTOGRApHy 2 credits Systematic review of current literature on eye movements and the physiological bases of the activities. Prerequisite: 630 or permission of instructor. Prerequisites: 630 or permission of instructor.
642 ADVANCED CLINICAL PRACTICUM: DIFFERENT DIAGNOSES 1 credit Prerequisite: permission of instructor. (May be repeated for a maximum of six credits.) Supervised clinical practicum in diagnostic procedures. Includes preparation of reports.
643 ADVANCED CLINICAL PRACTICUM: VOWELS 1 credit Prerequisite: permission of instructor. (May be repeated for a maximum of six credits.) Supervised clinical practicum in treatment of voice disorders. Includes diagnosis/treatment procedures and presentation of reports.
644 ADVANCED CLINICAL PRACTICUM: FLUENCY 1 credit Prerequisite: 627 or permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in treatment of fluency disorders. Includes diagnosis/treatment procedures and presentation of reports.
645 ADVANCED CLINICAL PRACTICUM: DIAGNOSTIC AUDIOLOGY 1 credit Prerequisite: permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in diagnostic audiology. Includes diagnosis/treatment procedures and preparation of reports.
646 ADVANCED CLINICAL PRACTICUM: ARTICULATION 1 credit Prerequisite: 621 or permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in articulation disorders. Includes diagnosis/treatment procedures and preparation of reports.
647 ADVANCED CLINICAL PRACTICUM: LANGUAGE 1 credit Prerequisite: permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in treatment of language disorders. Includes diagnosis/treatment procedures and preparation of reports.
648 ADVANCED CLINICAL PRACTICUM: REHABILITATIVE AUDIOLOGY 1 credit Prerequisite: permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in hearing rehabilitation. Includes diagnosis/treatment procedures and preparation of reports.
649 EXTRAMURAL: SPEECH PATHOLOGY AND AUDIOLOGY 24 credits Prerequisite: permission. (May be repeated for a maximum of six credits.) Clinical practicum in a selected speech-language facility.
650 SPECIAL PROBLEMS: SPEECH PATHOLOGY AND/OR AUDIOLOGY 3 credits (May be repeated for total of six credits) Prerequisite: permission of instructor. Guided research or reading in selected topics in speech pathology, audiology, or language disorders.

699 MASTER'S THESIS 46 credits (May be repeated for a total of six credits) Prerequisite: permission of School Director.

SOCIAL WORK

7750:

601 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.
602 SOCIAL WORK PRACTICE II 3 credits Prerequisite: 406 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.
603 SOCIAL WORK PRACTICE III 3 credits Prerequisite: 408 or permission of instructor. Development of understanding and practice methods for utilization of community organization and social planning as social work practice in assessing problems and developing programs to meet needs.
604 SOCIAL WORK PRACTICE IV 3 credits Prerequisite: 406 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.
605 MINORITY ISSUES IN SOCIAL WORK PRACTICE 3 credits Prerequisite: 276 or permission of instructor; must be taken prior to or concurrently with 408 and one of the other practice courses (402, 403, 404). Social, ethnic and cultural issues in social work related to various theories and theoretical perspectives, to various types of social problems, to personal agency, to strategies for intervention, and to societal contexts integrated with the methodological processes of the social work practitioners.
606 WOMEN'S ISSUES IN SOCIAL WORK PRACTICE 3 credits Prerequisite: 276 or permission of instructor. Social work practice, knowledge and skill, welfare institutions and social policy in relation to women's issues and concerns in the United States.
625 SOCIAL WORK ETHICS 3 credits Prerequisite: 276 or permission of instructor. Social Worker's code of ethics as applied to practice, problems and issues in social work.
627 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT I 2 credits Prerequisite: 427 or permission of instructor; for 527: permission of instructor. Social work perspective on human development across the life cycle. Human diversity approach consistent with the needs of social work students preparing for practice.
630 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT II 3 credits Prerequisite: 430. 276, 427 or permission of instructor: for 530: permission of instructor. Emphasis on social workers' understanding of and use of individual interaction and growth processes as a theory in their practice as a systemic, role, organizational, community and culture.
640 SOCIAL WORK RESEARCH I 3 credits Prerequisite: 440. 276 or permission of instructor: for 540: permission of instructor. Social work practice in data collection and utilization of statistical methods. Introduction to the conduct of research. Application of research skills in social work research as found in social work and social science literature for improvement and advancement of social work practice.
641 SOCIAL WORK RESEARCH II 3 credits Prerequisite: 441.440 or permission of instructor for 541: permission of instructor. Evaluation of social work intervention with individual, group and community. Processing and interpreting agency information for better practice, policy and administrative decisions.
645 SOCIAL POLICY ANALYSIS FOR SOCIAL WORKERS 3 credits Prerequisite: 445. 276 or permission of instructor: for 545: graduate social work degree. Understanding and utilization of political, social and economic systems. 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.
651 SOCIAL WORK IN CHILD WELFARE 3 credits Prerequisite: 276 or permission of instructor. In-depth exploration of structure and functioning of social services designed to help children, and role of social work in child welfare settings; consideration of protective, supplementation, and substitute services.
652 SOCIAL WORK IN MENTAL HEALTH 3 credits Prerequisite: 276 or permission of instructor. Issues, organization, development, and methodologies of current professional social work practice in mental-health settings.
654 SOCIAL WORK IN JUVENILE JUSTICE 3 credits Prerequisite: 276 or permission of instructor (undergraduate). The theory and practice of social work with the juvenile justice system in the United States. Traditional procedures for intake, treatment, rehabilitation, and discharge, followed by the most current developments, prevention, diversion and community outreach, legal concerns, case management, institutional functioning.
655 THE BLACK FAMILY 3 credits Prerequisite: 276 or permission of instructor. Contemporary problems facing black families; male-female relationships; single parent households; black teens and elderly; public policy theoretical and practical models, explaining dynamics of the black family.
656 SOCIAL WORK IN HEALTH SERVICES 3 credits Prerequisite: 276 or permission of instructor. Policies, programs and practice in health-care setting. Short-term, intermediate and long-term, hospitals, outpatient services, emergency services, clinics, visitors' serving nurses, nursing homes, pediatrics, self-help organizations.
657 ADVANCED PRACTICE WITH INDIVIDUALS 3 credits Prerequisite: 406 or permission of instructor (undergraduate). Supervision of social work degree or permission (graduate). Advanced professional development of direct and indirect strategies and techniques of intervention and aid individuals in improving psychosocial functioning.
658 ADULT DAY CARE 2 credits Prerequisite for 458: 276 or permission of instructor; for 558: permission of instructor. Planning, development, implementing, evaluating, and delivery of adult day-care services.
659 SOCIAL WORK WITH THE MENTALLY RETARDED 2 credits Prerequisite: 276 or permission of instructor. Application of social work principles in the provision of social services to meet the needs of the mentally retarded and developmentally disabled and their families.
Courses of Instruction

115

565 ADMINISTRATION AND SUPERVISION IN SOCIAL WORK 3 credits
Prerequisite: 401 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 its organizational goal-setting and program implementation problems.

570 LAW FOR SOCIAL WORKERS 2 credits
Prerequisite: 278 or permission of instructor. Basic terminology, theories, principles, organization, and procedures of the law will be explored along with the relationships between social work and law and components of the theoretical bases of the two professions.

571 SOCIAL SERVICE LABORATORY AND SOCIAL WORK PRACTICE 2 credits
Prerequisite: 278 or permission of instruction. Provides students with the essential knowledge and skill for successful social work practice with people involved in substance abuse.

580 SPECIAL TOPICS IN SOCIAL WORK AND SOCIAL WELFARE 1-3 credits
Prerequisite: permission of instructor. Analysis of current social work and social welfare theory and policy, settings, innovative interventions and trends in delivery systems in relation to selected areas of concerns and skills available.

580 SOCIAL WORK EXHIBITION MAYBE REPEATED FOR A TOTAL OF SIX CREDITS
Prerequisite: permission of instructor. Group investigation of a particular subject of social work or social welfare not offered by other courses in curriculum.

585 SOCIAL WORK PRACTICE WITH SMALL SYSTEMS 3 credits
Prerequisite: graduate status or permission of instructor. Provides the basic knowledge, skills, professional ethics and values necessary for beginning social work practice with small client systems.

590 SOCIAL WORK PRACTICE WITH LARGE SYSTEMS 3 credits
Prerequisite: graduate status or permission of instructor. Provides the basic knowledge, skills, and strategies of social work practice with large settings such as hospitals, schools, and communities.

595 FOUNDATION FIELD PRACTICUM 6 credits
Prerequisites: graduate status; currently enrolled in or completed foundation coursework. A 2 semester course consisting of a 400 clock hour, supervised internship at 1 social service agency.

610 DYNAMICS OF RACISM AND DISCRIMINATION 3 credits
Prerequisite: graduate status or permission of instructor. Previous knowledge of analysis and understanding the factors leading to and sustaining racism, sexism, homophobia, and the like is an asset.

622 FUNDAMENTALS OF RESEARCH I 3 credits
Prerequisite: graduate status or permission of instructor. This course provides an introduction to the logic of scientific inquiry, the research process, and the relationship between research and social work practice.

623 FUNDAMENTALS OF RESEARCH II 3 credits
Prerequisite: 622. Qualitative course or permission of instructor. Provides students with an understanding of qualitative methods and the use of descriptive and inferential statistics in analyzing research data.

631 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT SMALL SOCIAL SYSTEMS 3 credits
Prerequisite: graduate status or permission of instructor. This course focuses on understanding human behavior and life cycle development of people and groups as members of families and other small groups.

632 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT LARGE SOCIAL SYSTEMS 3 credits
Prerequisite: 631 or permission of instructor. This course focuses on the human behavior of people as members of larger social systems including formal and informal organizations, communities, and institutions.

635 ADVANCED STANDARDS INTEGRATIVE SEMINAR 6 credits
Prerequisite: advanced standing. Provides an integrative view of social work practice with an emphasis on values, foundation knowledge and skills, and evaluation of professional interventions.

637 CONTEMPORARY SOCIAL WORK APPLICATIONS 3 credits
Prerequisite: 300 level social work courses and methods completed and applied in various traditionally, community service, educational, and health settings. Particularly useful for professionals from related fields or for advanced practitioners.

704 ADVANCED PRACTICE WITH SMALL SYSTEMS I 2 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-based techniques.

707 ADVANCED PRACTICE WITH SMALL SYSTEMS II 3 credits
Prerequisite: 704 or permission of instructor. As a continuation of Advanced Practice I, this course focuses on the development and implementation of intervention strategies with and on behalf of small systems.

706 ADVANCED FIELD PRACTICUM 3 credits
Prerequisite: graduate status or permission of instructor. Currently enrolled in or completed second year coursework. A 2 semester course consisting of a 600 clock hour, supervised internship in 1 social service agency, based on the student's concentration and specialization.

705 SOCIAL WELFARE POLICY I 2 credits
Prerequisite: graduate status or permission of instructor. Examines the historical, philosophical and value bases of social welfare as well as the relationship between social work practice, policy and service delivery.

707 SOCIAL WELFARE POLICY II 3 credits
Prerequisite: 646 or permission of instructor. This course examines the relationship of social policy and social service to the community at large.

710 IMPACTS OF DIVERSITY FOR SOCIAL WORK PRACTICE 2 credits
Prerequisite: second level graduate status or permission of instructor. Provides content on the cultural and social dimensions of diverse populations and the implications for social work practice at the community level.

715 SOCIAL WORK PRACTICE WITH GAYS AND LESBIANS 3 credits
Prerequisite: second level graduate status or permission of instructor. This course examines gay and lesbian culture, artistic expression, and discrimination based on sexual orientation, and interventions appropriate to practice with gays and lesbians.

723 PSYCHOPHYSIOLOGY AND SOCIAL WORK 3 credits
Prerequisite: second level graduate status or permission of instructor. An examination of the symptoms, theories, and psychophysiological aspects of mental illness, and the role of the social worker in the treatment of mental disorders.

724 SINGLE SYSTEM DESIGN 3 credits
Prerequisite: second level graduate student or permission of instructor. Provides students with advanced knowledge about the methodology of single system design and skills to implement an evaluation study of their intervention with clients.

725 SUPERVISION AND STAFF DEVELOPMENT 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination of the principles, concepts, and techniques of supervision, the impact of cultural and racial differences in supervision/staff development, and problems encountered.

726 SOCIAL WORK ADMINISTRATION 3 credits
Prerequisites: second level graduate student or permission of instructor. This course is based on supervisory and management principles and functions and as they are carried out at different hierarchical levels in human service organizations.

727 STRATEGIES OF COMMUNITY ORGANIZATION 3 credits
Prerequisite: second level graduate student or permission of instructor. Emphasizes the historical development and evolution of several community strategies used to identify community problems, and how to organize and empower diverse community groups.

729 INTRODUCTION TO COMMUNITY ORGANIZATION AND PLANNING 3 credits
Prerequisite: second level graduate student or permission of instructor. A description and analysis of various theoretical concepts and strategies that are used as a framework for Community Organization (COC) practice.

728 COMMUNITY, ECONOMIC SYSTEMS AND SOCIAL POLICY ANALYSIS 3 credits
Prerequisite: second level graduate student or permission of instructor. This course provides a base for understanding economic systems and analyzing the political framework at federal, state, and local levels and their impact on communities.

729 PROGRAM EVALUATION 3 credits
Prerequisite: second level graduate student or permission of instructor. This course provides students with methods of evaluating programs in agencies, including approach, measurement, design, data collection and analysis.

727 FISCAL MANAGEMENT OF SOCIAL AGENCIES 3 credits
Prerequisite: second level graduate student or permission of instructor. This elective course covers the major principles of fiscal management including, management of the financial and personnel aspects of agencies.

728 SOCIAL WORK AND PSYCHOPHARMACOLOGY 3 credits
Prerequisite: permission of instructor. Provides students with an understanding of implications of psychopharmacology for social work practice in mental health areas.

729 AGING AND SOCIAL WORK PRACTICE 3 credits
Prerequisite: second level graduate student or permission of instructor. Examination of the role and evaluation of aging programs and policies, demographic trends and the changing role of social work providers.

730 SOCIAL WORK PRACTICE: FAMILIES AND CHILDREN 3 credits
Prerequisite: second level graduate student or permission of instructor. Examines the major problems encountered by children and families in the life cycle and explores intervention strategies and methods to address their needs and strengths.

737 GENERAL WELFARE POLICY AND SERVICES: FAMILY AND CHILDREN 3 credits
Prerequisite: second level graduate student or permission of instructor. This course focuses on the historical, philosophical and value bases of social welfare as well as the relationship between social work practice, policy and service delivery.

738 HEALTH CARE: PLANNING AND POLICY ISSUES 3 credits
Prerequisite: second level graduate student or permission of instructor. This course is designed to orient students to the design of policy and planning issues in health care, and how social work providers can affect the development of important health care legislation.

739 EPIDEMIOLOGIC ANALYSIS OF HEALTH AND SOCIAL PROBLEMS 3 credits
Prerequisite: second level graduate student or permission of instructor. This course applies the biostatistical model to social welfare practice, such as training groups, making administrative decisions, in planning and evaluation, and doing preventive work.

THEATER 7800:

565 PERFORMANCE PROJECTS 3 credits
Prerequisite: permission of instructor. Preparation and presentation of programs and projects for community and campus organizations plus other projects as announced.

561 PLAYWRITING 2 credits
Prerequisite: permission. Principles of dramatic construction learned through analysis of playwriting and their basis, as well as through writing of individual dramatic compositions.

567 CONTEMPORARY THEATER STYLES 3 credits
A detailed examination of representative plays of the contemporary theater.

581 CHILDREN'S THEATER 1-3 credits
Prerequisite: permission. A course for all audience play selection, set design and construction, acting, directing. A full-length play for children produced by the class may culminate the course.

575 ACTING FOR THE MUSICAL THEATER 3 credits
Prerequisite: permission. A course for study in acting and performing roles in American musicals. Accompanist provided.

576 WORKSHOP IN THEATER ARTS 1-3 credits
Prerequisite: permission. A supervised 100 level class designed for a total of six credits toward degree. Prerequisite: advanced standing or permission. Group study or group projects investigating particular phase of theater arts not covered by other courses in curriculum.

580 INTRODUCTION TO GRADUATE STUDIES 3 credits
Prerequisites: permission. Preparation and methods to help students write effective dramatic compositions.

587 SPECIAL TOPICS IN THEATER ARTS 1-3 credits
Prerequisite: permission. Preparation and methods to help students write effective dramatic compositions.

587 SPECIAL TOPICS IN THEATER ARTS 1-3 credits
Prerequisite: permission. Preparation and methods to help students write effective dramatic compositions.
641. PRODUCTION PRACTICUM/DESIGN/TECHNOLOGY 3 credits
(May be repeated for a total of eight 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.

650. PERFORMANCE PRACTICUM 3 credits
(May be repeated for a total of 12 credits) Prerequisite: permission of project adviser. Preparation of work undertaken by the student while performing a role in a theater production. Credit assigned and work supervised by faculty project supervisor.

DANCE

7900:

590. WORKSHOP IN DANCE 13 credits
Prerequisite: Advanced standing or permission. Group study or group projects investigating particular phases of dance not covered by other courses in curriculum.

DANCE PERFORMANCE

7920:

590. WORKSHOP IN DANCE 13 credits
Prerequisite: Advanced standing or permission. Group study or group projects investigating particular phases of dance not covered by other courses.

THEATER ORGANIZATIONS

7810:

601. PRODUCTION PRACTICUM/DESIGN/TECHNOLOGY 12 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 12 credits
(May be repeated for a total of 12 credits) Prerequisite: permission of project adviser. Preparation of work undertaken by the student while performing a role in a theater production. Credit assigned and work supervised by faculty project supervisor.
NURSING

8200:

509 INTERNATIONAL NURSING 3 credits
Prerequisite: Admission to MSN program. A comparison of nursing roles and responsibilities in an international environment. The influences of education, ethics, government, demography, and culture on health care will be considered.

509 SPECIAL TOPICS: NURSING 1-4 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.

510 WORKSHOPS 1-4 credits
May be repeated as new topics are presented. Selected topics in nursing. May be used to meet undergraduate/adult requirements at the discretion of the college.

510 SPECIAL READINGS 1-4 credits
Prerequisite: permission of student's advisor or dean. Special readings in an area of concentration that cannot be taken for elective credit. Special readings may not be used to satisfy requirements of the major.

513 THEORETICAL BASIS FOR NURSING 2 credits
Prerequisite: Admission to Graduate Program. Overview of basic nursing science. Evaluation and critique of nursing conceptual models. Analysis of the relationships of theory, research, and practice.

515 COMPUTER APPLICATIONS IN NURSING 2 credits
Prerequisite: Admission to Graduate Program. Computer systems influencing nursing practice, research, education, and national knowledge exchange are examined. The complex issues surrounding their use in nursing are explored.

520 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. Examines methods to shape policy, distribution, and allocation of resources.

521 PATHOPHYSIOLOGICAL CONCEPTS OF NURSING CARE 2 credits
Prerequisite: Permission of the instructor. In-depth study of pathophysiological conditions and their treatment modalities. Focus on specific nursing interventions related to these pathophysiological abnormalities.

601 ADVANCED ADULT/GERONTOLOGICAL ASSESSMENT 2 credits
Prerequisites: Admission to Adult/Gerontological Nursing Practitioner Program; 606, Corequisites: 521 or 671. Advanced adult/gerontological assessment and clinical reasoning in primary health-care nursing with introduction to differential diagnostic and clinical management.

612 ADVANCED CLINICAL PHARMACOLOGY 2 credits
Prerequisite: 626. Examines principles of pharmacology and therapy for major pharmacological agents used by advanced practice nurses to manage adult/gerontological problems in primary health-care settings.

613 NURSING INQUIRY I 2 credits
Prerequisite: Admission to graduate program. Conceptual and ethical issues relating to scientific inquiry, emphasizing the phases of the research process. Students participate in critical analysis of published nursing research. Nursing interventions focus on promoting and maintaining function.

615 ADVANCED CLINICAL PRACTICE SEMINAR 2 credits
Prerequisites/corequisites: 627 or 657 or 667 or 677 Discusses issues, concepts, and theories relevant to the development of advanced clinical practice roles.

616 NURSING INQUIRY II 4-6 credits
Prerequisite: 653 and permission of instructor. Emphasis on development of competencies in scientific inquiry. Research project will involve a pilot study or bibliography in faculty directed programs.

621 GERONTOLOGICAL NURSING 3 credits
Prerequisite/corequisite: Nurse Practitioner students only, 610. Physiological, psychological, and sociological theories of aging are analyzed in relation to nursing practice and nursing research. Nursing interventions focus on promoting and maintaining function. 

625 GERONTOLOGICAL NURSING 6 credits
Prerequisite: 621. Corequisites: 627 or 631 or 680. Examines management of physical and fiscal resources in nursing service settings; analyses impact of economics and labor resources on nursing care and nursing practice.

627 GERONTOLOGICAL NURSING II 4 credits
Prerequisite: 626. Corequisites: 627, 631, 680. Examines management of physical and fiscal resources in nursing service settings; analyses impact of economics and labor resources on nursing care and nursing practice.

629 RESOURCE MANAGEMENT IN NURSING SETTINGS 3 credits
Prerequisites: 600, 612, 613, 630, 670. Examines management of financial and human resources in nursing service settings; analyses impact of economics and labor resources on nursing care and nursing practice.

630 FISCAL MANAGEMENT IN NURSING ADMINISTRATION 3 credits
Prerequisite: Admission to M.S.N. program. Examines management of fiscal resources in nursing service settings.

632 ORGANIZATIONAL BEHAVIOR IN NURSING SETTINGS 3 credits
Prerequisites: 603, 630, 670. Examines organizational behavior theories/principles related to team-building, efficiency, and effectiveness of organizational structure in nursing settings.

633 PRACTICUM: NURSING ADMINISTRATION 3 credits
Prerequisites: 630, 632 and 555. Leadership and management entities are utilized to guide study of the role of nurse administrator.

639 PRACTICUM: NURSING ADMINISTRATION II 5 credits
Prerequisite: 638. Leadership and management theories are utilized to guide practice of the role of nurse administrator.

640 ADVANCED COMPONENTS OF NURSE ANAESTHESIA 3 credits
Prerequisite: Acceptance Nurse Anesthesia. Corequisites: 613. The course presents content dealing with the chemical and physical components of anaesthesia agents.

641 PAHARMACOLOGY FOR NURSE ANAESTHESIA I 3 credits
Prerequisites: 503, 602. 612. The study of iatrogenic induction agents, injectable analgesics and inhaled anesthetics commonly used in the administration of general anesthesia. Includes use of muscle relaxants.

643 PRINCIPLES OF ANAESTHESIA I 4 credits
Prerequisite: 640. This course focuses on the acquisition of basic skills related to nursing anesthesia care and administration of anesthesia agents, with a focus on equipment.

644 PHARMACOLOGY FOR NURSE ANAESTHESIA II 3 credits
Prerequisite: 641. Includes an overview of drug transport within the human body for inhaled and injected medications. The effects of accessory drugs are also discussed.

645 PRINCIPLES OF ANAESTHESIA II 4 credits
Prerequisite: 643. Emphasis on pre-operative anesthetic care including induction techniques, discussion of airway management, fluid therapy, and ventilator use.

647 PROFESSIONAL ROLE SEMINAR 2 credits
Prerequisites: 646, 648. Discussed issues, concepts and theories related to the professional role of nurse anesthetists. Focuses on leadership/management content as well as professional ethical issues.

648 NURSE ANAESTHESIA RESIDENCY 0 credits
Prerequisites: 644 and 645. Structured supervisory clinical experiences allowing students to apply knowledge and skills learned in the didactic portion of the nurse anesthesia curriculum.

500 ADVANCED PEDIATRIC ANAESTHESIA 2 credits

651 CHILD AND ADOLESCENT HEALTH NURSING I 4 credits
Prerequisite: 654, 660. Primarily health-care nursing to enhance positive health behavior outcomes for well children/adolescents and those with minor health disorders and problems in family/community contexts.

652 NUTRITION: CHILD AND ADOLESCENT HEALTH NURSING 2 credits
Prerequisites: 651. Admission to Child and Adolescent Health Nursing I and II. Nutrition concepts unique to primary health-care nursing of children/adolescents with emphasis on interventions for health promotion, disease self-management, and lifestyle behavior change.

653 CHILD AND ADOLESCENT HEALTH NURSING II 4 credits
Prerequisites: 653, 660. Concepts of primary health care nursing to incorporate positive health behavior outcomes of children/adolescents with acute and chronic health disorders and problems in family/community contexts.

654 PHARMACOLOGY FOR CHILD AND ADOLESCENT HEALTH NURSING 3 credits
Prerequisites: Admission to Graduate Program. Emphasis on major categories of pharmacological agents that enhance developments outcomes of children/adolescents in ambulatory, acute and chronic care environments.

657 CHILD AND ADOLESCENT HEALTH NURSING III 4 credits
Prerequisite: 655. Emphasis on advanced practice in primary health care using consultation and collaboration with other health professionals to develop and management plans for common and complex childhood health problems.

659 PRACTICUM: CHILD AND ADOLESCENT HEALTH NURSING 4 credits
Prerequisites: 653, 660. Examination of knowledge and skills with a specified population of children/adolescents, and their families. Emphasis on implementation of programmatic intervention and evaluation.

661 LIABILITY-COMMUNITY MENTAL HEALTH NURSING I 3 credits
Prerequisites: 603, 604, 605, 606. Focuses on the mental health of individuals experiencing stress related to actual or potential health problems. Theoretical knowledge, interventions, and direct interventions are emphasized.

662 LIABILITY-COMMUNITY MENTAL HEALTH NURSING II 4 credits
Prerequisites: 661, 604, 605, 606. Examines on mental health problems related to stress of actual or potential health problems. Theoretical concepts of the fields of direct interventions are explored.

663 LIABILITY-COMMUNITY MEDICAL NURSING I 4 credits
Prerequisites: 661, 604, 605, 606. Focuses on mental health problems related to stress of actual or potential health problems. Theoretical concepts of the fields of direct interventions are explored.

664 PRACTICUM: LIABILITY-COMMUNITY MENTAL HEALTH NURSING 3 credits
Prerequisites: 661, 604, 605, 606. Review of community mental health care plans and coordination in psychiatric settings and inpatient settings. Emphasis on the implementation of programmatic interventions and evaluation.

667 ADULT HEALTH NURSING I 3 credits
Prerequisites: 655. Analysis of the current state of adult health care practice. Emphasis is on the application of comprehensive assessment, health promotion, and risk reduction.

668 INDEPENDENT STUDY 1-4 credits
Opportunity for the advanced graduate nurse practitioner in a selected area of specialization.

671 PRACTICUM: ADULT HEALTH NURSING II 4 credits
Prerequisite: 667. Corequisites: Nurse Practitioner students only, 660. Focuses on problems common to acute illness in adults in acute/subacute care settings. Multi-disciplinary care planning and coordination are emphasized, including transition to community-based care.

672 ADULT HEALTH NURSING II 4 credits
Prerequisite: 667. Corequisite: Nurse Practitioner students only, 660. Focuses on problems common to acute illness in adults in acute/subacute care settings. Multi-disciplinary care planning and coordination are emphasized, including transition to community-based care.

677 PRACTICUM: ADULT HEALTH NURSING III 4 credits
Prerequisites: 667, 668. Corequisites: Nurse Practitioner students only, 660. Focuses on problems common to acute illness in adults in acute/subacute care settings. Multi-disciplinary care planning and coordination are emphasized, including transition to community-based care.

682 NURSING CURRICULUM DEVELOPMENT 3 credits
Prerequisites: 603, 604, 605, 606. Focuses on the development of educational programs for selected health-care settings. Emphasis is on the process of identifying care needs.
College of Polymer Science and Polymer Engineering

POLYMER ENGINEERING
9841:

681 POLYMER ENGINEERING SEMINAR
1 credit
Presentation of recent research on topics in polymer engineering by internal and external speakers.

682 STRUCTURAL CHARACTERIZATION OF POLYMERS WITH ELECTROMAGNETIC RADIATION
2 credits
Characterization of orientation, morphology, superstructure in polymers using x-ray, light scattering, birefringence, dichroism, crys short, unit cell determination.

683 Rheology of Polymer Fluids
2 credits

684 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS
2 credits
Prerequisite: 621. Mathematical modeling and experimental design analysis of polymer processing operations including extrusion, injection molding, and fiber processes.

685 POLYMER ENGINEERING MATERIALS SCIENCE
2 credits
Focus on polymer materials and properties, including electron microscopy, mechanical behavior of elastomers and plastics, and the emphasis on experimental methods.

686 MECHANICAL STRENGTH OF POLYMERIC SOLIDS
2 credits
Includes study of failure behavior of polymers under dynamic and static mechanical properties, load bearing, and deformation.

687 ENGINEERING PROPERTIES OF POLYL COLOIDS
2 credits
Thermodynamic properties of polymer solutions, solution concentration, polymer-solvent interactions, rheology, and solution properties.

688 INTRODUCTION TO POLYMER ENGINEERING
2 credits
Basic concepts of polymer engineering taught in lecture-laboratory format intended for orientation of new graduate students.

689 POLYMER ENGINEERING LABORATORY
2 credits
Laboratory experiments on the rheological characterization of polymer melts fabrication of engineering products, and structure investigation of polymeric products.

690 POLYMERIZATION REACTOR ENGINEERING
3 credits
Focus on polymerization kinetics, chemical reactions, and the calculation of polymerization in batch and continuous stirred tank reactors. Course includes reactor design, reactor stability, reactor cost, and reactor reliability.

691 MASTER'S THESIS
14 credits
May be repeated. Supervised research in specific area of polymer engineering.

701 ADVANCED ELECTROMAGNETIC AND OPTICAL PROPERTIES AND INVESTIGATIONS OF POLYMERS
2 credits
Maxwell's equations with applications to anisotropic dielectrics, birefringence, and dielectric and resistivity measurements of orientation, optical instruments, piezoelectricity, scattering, and diffraction of x-rays and light, and x-ray and neutron scattering applications.

702 ANNEALING AND OPTICAL PROPERTIES
2 credits
Applications of the optical methods to the determination of stress fields and physical properties of the polymers in gases, and fluids, and the relationship of properties to chemical reactions.

703 RADIATION SCATTERING AND DIFFRACTION BY POLYMERIC MATERIALS
2 credits
Principles of scattering and diffraction theory applied to polymer crystallites, glasses, and amorphous materials. Theories of polymer and radiation interactions, and the relationships of experimental results.

704 NON-NEWTONIAN FLOW
2 credits

705 MOLEULAR ASPECTS OF POLYMER RHEOLOGY
2 credits
Prerequisite: 621. Molecular theory for concepts of polymer solutions, monomers, and polymer blends. Molecular models for nonequilibrium polymer solutions, and polymer blends.

706 RHEOLOGY AND PROCESSING TWO-PHASE POLYMER SYSTEMS
2 credits
Prerequisite: 622 or equivalent. Phase behavior interactions, mixing devices and design, rheological behavior of suspensions of rigid particles, and experimental studies of rheological behavior of polymer materials.
51 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS I 3 credits
Prerequisites: 308 or 302 or permission. Interdisciplinary course involving the principles of chemistry and physics we bring to bear on relationships between molecular structure and chemical composition of macromolecules and their physical properties.

52 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS II 2 credits
Prerequisite: 4167 or permission of instructor. This course covers the detailed structure of macromolecules, the Boltzmann superposition principle and free energy. Experimental techniques involving stress relaxation, stress creep, static and dynamic elasticity, and thermal analysis are studied. Computer exercises supplement the experiments.

53 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS III 2 credits
Prerequisite: 4215 or permission. Deformation of bounded rubber units, the correspondence principle, linear and nonlinear viscoelastic behavior, mechanical properties of polymers, and design considerations are discussed.

54 WORKSHOP IN POLYMER SCIENCE 1-3 credits
May be repeated with permission. Group studies on selected topics involving polymer science. May not be used to meet undergraduate or graduate major requirements in polymer science. May be used for elective credit only.

60 POLYMER CONCEPTS 2 credits
Prerequisites: 3562-204 and 3560-34 or equivalent courses or permission of instructor. Introduction to basic concepts in polymer science, including polymerization, copolymerization processes and naturally occurring polymers. Polymer nomenclature, definitions and classifications. Polymer stereochemistry and structure-property relationships.

62 SYNTHESIS AND CHEMICAL BEHAVIOR OF POLYMERS 2 credits
Prerequisite: 610 or instructor 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.

64 SPECIAL PROJECTS IN POLYMER SCIENCE 1-3 credits
Prerequisite: permission of instructor. Projects of limited nature assigned to student entering polymer science program. Intended to familiarize student with typical problems and techniques in the field.

65 POLYMER CHEMISTRY LABORATORY 2 credits
Prerequisites: Basic knowledge of organic chemistry and 602 or equivalent. The preparation and identification of polymers to illustrate different methods of polymerization such as step reactions and chain reactions.

66 POLYMER SCIENCE SEMINAR I AND II 1 credit each
Prerequisite: limited to first and second-year resident graduate students. Participants are to present and discuss a maximum of two lecture courses and to participate in discussions of lectures presented by other seminar participants.

69 INORGANIC POLYMERS 2 credits
Prerequisites: 3824-202 or 3940-308 or permission. Survey course designed to broaden the outlook of typical graduate student beyond chemistry and physics of carbon chemists.

619 POLYMER SCIENCE LABORATORY 3 credits
Prerequisites: or corequisites: at least one of the courses 601, 602, 617, or 702, or permission of instructor. Laboratory experiments in synthesis, characterization, physical properties, and processing of polymers.

615 LABORATORY COMPUTER APPLICATIONS IN POLYMER SCIENCE 3 credits
Prerequisites: basic knowledge of computer programming and permission of instructor. Laboratory equipment for computer science research digital signal analysis, image analysis, and preparation of reports and thesis.

616 PHYSICAL PROPERTIES OF POLYMERS I 3 credits
Prerequisites: permission of instructor. Thermodynamic and molecular theories of polymers, their physical properties, concepts of structure and behavior, and applications. Fundamental theories of polymers, their behavior, and applications. Thermodynamic fundamentals, macromolecular properties, and the behavior of polymers.

622 PHYSICAL PROPERTIES OF POLYMERS II 2 credits
Prerequisite: 602 or permission of instructor. Normal-coordinate theories of molecular motion and anelastic behavior. Theories of molecular motion and anelastic behavior. Theories of molecular motion and anelastic behavior.

656 SYNTHESIS AND TECHNOLOGY OF ELASTOMERS 2 credits
Prerequisites: 3562-051 and 3560-06 or permission of instructor. The preparation of natural and synthetic elastomers. Emphasis on polymerization methods, polymer structure and methods of vulcanization. The modification of vulcanizates and their effects on physical characteristics of vulcanizates described.

657 POLYMER STRUCTURE AND CHARACTERIZATION 2 credits
Prerequisites: 3562-300 and 3560-300 or permission of instructor. Presentation of practical descriptions of polymer molecular properties including structure, composition, and structure-property relationships.

658 POLYMER THERMO-DYNAMICS 2 credits
Prerequisite: 632 or permission of instructor. The preparation of natural and synthetic elastomers. Emphasis on polymerization methods, polymer structure and methods of vulcanization. The modification of vulcanizates and their effects on physical characteristics of vulcanizates described.

661 POLYMER TECHNOLOGY I 2 credits
Prerequisite: permission of instructor. Special topics in polymer science, under direction of faculty member, followed by submission of thesis.

701 POLYMER TECHNOLOGY I 2 credits
Prerequisites: 610 or permission of instructor. Rubber industry, rubber compounding and processing, vulcanization methods, rubber science and processing and testing of rubber, semiconductors, and electronic materials.

702 POLYMER TECHNOLOGY II 2 credits
Prerequisite: 602 or permission of instructor. Rubber technology, rubber compounding and processing, vulcanization methods, rubber science and processing and testing of rubber, semiconductors, and electronic materials.

703 POLYMER TECHNOLOGY III 2 credits
Prerequisites: 602 or permission of instructor. Rubber science and processing, vulcanization methods, rubber science and processing and testing of rubber, semiconductors, and electronic materials.

704 CONDENSATION POLYMERIZATION 2 credits
Prerequisite: 3562-4030 or permission of instructor. Survey of the theory and practice of condensation polymerization. Examples are presented of the effect of polymer properties on the polymers prepared and on the process of polymerization.

705 IONIC AND MONOMER INSERTION REACTIONS 2 credits
Prerequisite: 3562-4025 or permission of instructor. Covers the kinetics and mechanisms of free radical polymerization. Emphasis on laboratory experiments. A laboratory course may be taken in place of this course.

706 FREE RADICAL REACTIONS IN POLYMER SCIENCE 2 credits
Prerequisite: 3562-4030 or permission of instructor. Covers the kinetics and mechanisms of free radical polymerization. Emphasis on laboratory experiments. A laboratory course may be taken in place of this course.

707 KINETICS OF POLYMER PROCESSES 2 credits
Prerequisites: 602 and 671 or permission of instructor. Principles of kinetic theory and statistical mechanics are applied to polymerization reactions. Development of polymerization kinetics, polymerization, polymerization, and polymerization reactions.

708 MACROMOLECULAR CHAIN STRUCTURE 3 credits
Prerequisites: 3562-300, 3560-300, or 6230-300 or permission. Chain-like structure of long molecules, chemical structure and behavior of polymers, chemical reactions of polymers.

709 MACROMOLECULAR CHAIN STRUCTURE 3 credits
Prerequisite: 610 or permission of instructor. Concepts of reaction topologies in 708 including experimental techniques used in elucidation of chain structure.

711 SPECIAL TOPICS: POLYMER SCIENCE 1 credit
Prerequisite: permission. Topics of current interest in polymer science, encompassing chemical, physical or technological aspects of macromolecular structures.

712 SPECIAL TOPICS: POLYMER SCIENCE 2 credits
Prerequisite: permission. Topics of current interest in polymer science, encompassing chemical, physical or technological aspects of macromolecular structures.
713  CHAIN STRUCTURE LABORATORY  2 credits
Prerequisite or corequisite: 708 or permission of instructor. Designed to apply principles discussed in 708 to laboratory determination of polymer structure.

899  DOCTORAL DISSERTATION  1-16 credits
Open to properly qualified students accepted as candidates for Doctor of Philosophy in Polymer Science depending on the availability of staff and facilities.
Grievance Procedures for Graduate Students

Purpose

The procedures set forth in this document are intended to provide graduate students with a formal channel of appeal and redress of grievances arising out of their academic and/or employment relationship with the University.

Procedures

1. Any graduate student who believes that he or she has valid grounds for a complaint shall attempt to resolve the problem through a conference with the faculty member involved, the department head and/or the graduate advisor. Following that, the student may attempt to resolve the problem with the assistance of the academic dean. A graduate student presenting a case to the academic dean must provide a full written statement of the grievance, together with all appropriate supporting material. When or if the problem has not been adequately solved at that level or the student wishes to appeal that decision, the student shall prepare a written statement of the complaint setting forth clearly and specifically the allegations and shall have 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 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 Dean of the Graduate School. If the grievance is filed against the department, the Dean of the Graduate School will communicate with all appropriate supporting documents.

4. The complaint shall become a grievance to be filed with the Dean of the Graduate School. If the grievance is filed against the department, the Dean of the Graduate School will communicate with all appropriate supporting documents. The student must notify the Dean of the Graduate School in writing of the Dean of the Graduate School's decision on the complaint.

5. Upon receipt of the grievance, the Senior Vice President and Provost shall notify 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.

6. When the grievance has been filed with the Chairperson of the Hearing Committee, it shall be the responsibility of that Chairperson to notify in writing all parties involved in the grievance within two working days. This notification shall include the following information: that a grievance has been filed; the nature of the grievance; and the parties involved.

7. If the charged party in that grievance admits the validity of the grievance, the Chairperson of the Hearing Committee shall waive the hearing and shall direct an appropriate resolution in consultation with the Hearing Committee.

8. If the party charged in the grievance denies the validity of the grievance, the Hearing Committee shall conduct the hearing.

Hearing Committee

A Hearing Committee shall be established as follows:

1. Chairperson - The Chairperson shall be a member of the graduate faculty with full membership, but not from a department involved in the proceedings. This Chairperson shall be chosen at random from an established pool selected by the Graduate Council and shall serve only for 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.
   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.
   c. A graduate student not involved with the complainant and not from the complainant's department, selected by the Vice Chairperson of the Graduate Council.
   d. A member of the graduate faculty with full membership not involved in the complaint nor from the complainant's department selected by the Senior Vice President and Provost.

3. A Hearing Committee shall be organized anew each and every time a grievance is brought forth. A Hearing Committee shall serve through the adjudication and resolution of the complaint.

Hearing Procedure

1. The hearing must take place within two weeks of the Hearing Committee's formation.

2. At least three working days prior to the hearing, the Hearing Committee Chairperson shall provide the Hearing Committee and the Parties involved with:
   a. The student's written statement of the grievance.
   b. Written notification of when and where the Hearing Committee shall meet.
   c. A copy of "Grievance Procedures for Graduate Students" and all relevant documents.

3. Each party shall be required to appear in person before the Hearing Committee to present his/her case. Each party may have an advisor/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. At the hearing, the 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, pending the final 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 the process.

Decisions and Actions

1. The Hearing Committee shall decide as follows: there has been a violation of the complainant's rights, or there has been no violation of the complainant's rights.

2. Should the Hearing Committee determine that a violation of the complainant's rights occurred, the Committee shall, if practical, recommend a resolution to the Senior Vice President and Provost.

3. The Senior Vice President and Provost, exercising his/her judgment, shall act on the implementation of the resolution recommended by the Hearing Committee.

Record Keeping

The Chairperson of the Hearing Committee shall be responsible for keeping a summarized, written record of all the proceedings:

1. Records of all proceedings shall be prepared by the secretarial personnel of the Graduate School. Copies of all proceedings shall be distributed as follows:
   a. To all parties involved in the proceedings.
   b. To the Hearing Committee members.
   c. To the President of the Graduate Student Government.
   d. To the Dean of the Graduate School.
   e. To the Senior Vice President and Provost.

2. A copy of all proceedings shall be kept in the office of the Dean of the Graduate School pursuant to the University's record retention proposal.

Appeal

An appeal may be made to the President of the University after all of the above procedures have been followed. The President of the University shall assess each case on an individual basis and his/her decision shall be considered final.

Approved by Student Policy Committee, 3/29/93
Approved by Graduate Council, 3/29/93
Approved by Graduate Faculty, 4/2/93
Approved by the Academic Policies, Curriculum and Calendar Committee, 3/15/94
Approved by the Board of Trustees, 6/22/94
Revised 4/25/96
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 involve one or more of the above forms of intellectual property ownership.

Copyright

Copyright, by law, is automatically owned by the author 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 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 in any way related to your research work at 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 must 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 research advisor. If you have further questions or consider the matter unresolved, you should inform in the following order the appropriate department chair, the college dean, and finally the Dean of the Graduate School. (Questions are usually, and most quickly, resolved at the lowest administrative levels.)

In the event you think you have been omitted as an inventor on a patent application, you should first discuss the matter with your faculty research advisor and, thereafter, with your department chair and finally with your academic dean. Following such consultations, either you or your faculty advisor, or your department chair, or your dean can request the patent attorney who prepared the application to recheck the findings and then prepare a formal report on inventorship. The whole patent application file may then be referred to the Office of General Counsel for a re-evaluation of valid inventors. However such as re-evaluation by patent counsel shall only occur with the prior knowledge of your faculty advisor, Department Chair and Dean.
THE UNIVERSITY OF AKRON
INVENTION PATENT AGREEMENT

Name: ____________________________ Last, First, Middle Initial

Social Security No.: ____________________________

The University of Akron graduate students are required to sign this form as a condition of being permitted to participate in any research activity at the University.

1. As a condition of and in consideration of my participating in sponsored research or other financially supported activity at The University of Akron, I hereby agree to communicate fully with my Faculty Advisor, including discussing the details of any work conducted by me and the results which flow therefrom. I recognize that this communication is essential as it relates to any sponsored research, to any course and thesis/dissertation research, and to my safety and the safety of everyone else using the same facility that I use.

2. I further agree to disclose promptly to the director of the research and to my Faculty Research Advisor any invention conceived and/or reduced to practice by me whether jointly with others or solely, which results in whole or in part from such sponsored research or financially supported activity. I agree that I will comply with the provisions of any agreement between The University of Akron and any sponsor for any information and laboratory practice to which I am privileged to know. I will cooperate in assuring that the sponsor’s rights, including rights in inventions, patents, copyrights, are fully protected. Further, I hereby assign all rights, title and interest to The University of Akron for its disposal at its sole discretion.

3. I also acknowledge that certain technical information that may arise as a result of the sponsored research or supported activity may be of a confidential nature. I agree to be bound to the reasonable terms of any nondisclosure agreement as it has been agreed to by the University.

4. Finally, I acknowledge and agree that any rights which arise as a result of the sponsored research or supported activity belong to The University of Akron or to the sponsor as determined by agreement between The University of Akron and the sponsor.

Date ____________________________ Student’s Signature ____________________________
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May 1996

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MRS. HOWARD L. FLOOD: 106 South Main Street, Akron, Ohio 44308-1444 (Term expires 1999).

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May 1996

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CARYL KELLEY SMITH, Vice President for Student Affairs, Ph.D.

JOSEPH M. WALTON, Executive Assistant to the President, Ph.D.

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JEFFREY J. WALLACE, Special Assistant to the President for Minority Affairs, Ph.D.

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JANNE R. DUNHAM-TAYLOR, Interim Dean of the College of Nursing, Ed.D.

CHARLES M. DYER, Interim 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.

WILLIAM E. KUNGELE, Dean of the College of Education, Ed.D.

IRVING F. MILLER, Dean of the College of Engineering, Ph.D.

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FREDERICK J. STRUM, Dean of Wayne College, Ed.D.

DAVID SAM, Dean of the Community and Technical College, Ph.D.

DELMUS E. WILLIAMS, Dean of University Libraries, Ph.D.

Graduate Council

September 1996

CHARLES M. DYER, Ph.D., Dean of the Graduate School, Chair

Term expires August 31, 1997

TED ALLEN CONWAY, Ph.D., College of Engineering

GARY R. HAMED, Ph.D., College of Polymer Science and Polymer Engineering

JAMES M. LYNN, Ph.D., College of Fire and Applied Arts

GAY C. KITSON, Ph.D., College of Arts and Sciences: Social Sciences

MICHELLE HEATH, President, Graduate Student Government

Term expires August 31, 1998

THOMAS G. CALDERON, Ph.D., College of Business Administration

PHILLIP H. SCHMIDT, Ph.D., College of Arts and Sciences: Natural Sciences

THERESE L. LUECK, Ph.D., College of Fire and Applied Arts

AMY MILSTED, Ph.D., College of Arts and Sciences: At-Large

SUSAN J. OLSON, Ph.D., College of Education

Term expires August 31, 1999

DOUGLAS R. KAHN, Ph.D., College of Business Administration

SUSAN N. KUSHER, M.A., College of Education

BRIAN P. LEGNARD, Ph.D., College of Engineering

ROBERT F. POPE, JR., M.F.A., College of Arts and Sciences: Humanities

N. MARGARET WINEMAN, Ph.D., College of Nursing

Graduate Faculty

September 1996

MARION A. RUEBEL, President of the University; Dean Emeritus of University College, Professor Emeritus of Education (1970) (Ret. June 1994) B.A., M.A., University of Northern Iowa; Ph.D., Iowa State University, 1969.

ABDULLAH ABU-ONTAH, Associate Professor of Mathematical Sciences (1989) B.S., University of Dayton; M.S., Wright State University; Ph.D., Illinois Institute of Technology, 1996.


M. KAY ALDREDGE, Professor of Education (1979) B.S., University of Southern Mississippi, M.Ed., University of Texas at Austin; Ed.D., University of Houston, 1976.

TANA F. ALEXANDER, Associate Professor of Music (1978) B.M., The Ohio State University; M.M., University of Louisville, 1976.

ALFRED L. ANDERSON, Professor of Music (1985) B.M.E., Mississippi College; M.M., Indiana University, 1970.


CAROLYN M. ANDERSON, Assistant Professor of Communication (1995) B.A., University of Detroit; M.A., Wayne State University, Ph.D., Kent State University, 1992.

WILLIAM B. ARBUCKLE, Associate Professor of Political Science (1980) B.A., B.S., Missouri State University; M.S., University of Wisconsin, 1979; Ed.D., Stanford University, 1994.

STEVEN E. ARNOLD, Associate Professor of Philosophy; Associate Professor of Philosophy; Associate Professor of Mathematics; Associate Professor, Mechanical Engineering (1999) B.A., Princeton University; Ph.D., University of Illinois at Urbana, 1997.


GEORGE V. BARRETT, Professor of Psychology (1973) B.A., Western Reserve University, M.S., Ph.D., Case Western Reserve University, M.D., The University of Akron, 1985.


CEAL BATOR, Professor of Marketing (1990) M.B.A., St. Joseph's University; Ph.D., Temple University, 1996.

JOAN E. BAUMGARDNER, Assistant Professor of Nursing; Coordinator of Senior Year (1979) B.S.N., M.S.H.S., The Ohio State University; Ph.D., University of Akron, 1988.

JOHN D. BEE, Professor of Communication; Director of the School of Communication; General Studies Course Director; Speech; Director of Instructional Delivery Systems (1980) B.A., Ohio University; M.A., Ph.D., University of Wisconsin at Madison, 1972.


DAVID S. BERNSTEIN, Professor of Music (1972) B.M., M.M., Florida State University; D.M., Indiana University at Bloomington, 1934.

WILLIAM H. BEYER, Acting Associate Vice President for Administrative Support Services; Professor of Mathematical Sciences (1961) B.S., The University of Akron; M.S., Ph.D., Virginia Polytechnic Institute, 1961.

CLIFORD G. BILLIONS, Professor of Music (1978) B.M., Oklahoma Baptist University; M.M., Conservatory, 1971.

WIESLAW K. BIERZUNDA, Associate Professor of Civil Engineering (1988) M.S., Warsaw Technical University; M.S.M.E., Ph.D., Drexel University, 1988.


JEAN L. BLOSSER, Professor of Communicative Disorders; Director of the Speech and Hearing Center (January 1979) B.A., Ohio University; M.A., Kent State University; Ed.D., The University of Akron, 1986.


CONSTANCE B. BOURCOURT, Professor of History (1980) B.A., Middlebury College; M.A., Ph.D., University of Chicago, 1996.

LARRY J. BRADLEY, Associate Dean of the College of Education; Professor of Education (1969) B.A., Muskingum College; M.A., West Virginia University; Ph.D., Ohio University, 1969.

IRMA M. BRANDAL, Director of Psychology; Adjunct Associate Professor of Home Economics and Family Ecology (July 1969) B.S., Bowling Green State University; M.A., Michigan State University; Ph.D., The University of Akron, 1975.

SALLY M. BRANDAL, Director of Student Assistance Center; Counseling Psychologist (1961) B.S., Indiana University; M.S., Ph.D., The University of Akron, 1968.

WILLIAM T. BRANDY, Associate Professor of Communicative Disorders (August 1990) A.B., Heidelberg College; M.S., University of Pittsburgh; Ph.D., University of Oklahoma, 1969.


WILLIAM J. BRITTAIN, Associate Professor of Polymer Science (August 1980) B.S., University of Northern Colorado; Ph.D., California Institute of Technology, 1982.

STEPHEN D. BROOKS, Associate Director of the Ray C. Bliss Institute; Associate Professor of Political Science (1982) B.A., Colorado College; M.A., Ph.D., Northwestern University, 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.
Board of Trustees

May 1996

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M. A. ALDERMAN, Professor of Education (1975) B.S., University of Southern Mississippi; M.Ed., University of Texas at Austin; E.D.D., University of Houston, 1976. 
TANA S. ALEXANDER, Associate Professor of Music (1978) B.M., The Ohio State University; M.M., University of Louisville, 1974. 
ALFRED L. ANDERSON, Professor of Music (1989) B.M.E., Mississippi College; M.M., Indiana University, 1970. 
CAROLYN N. ANDERSON, Assistant Professor of Communication (1965) B.A., University of Detroit; M.A., Wayne State University; Ph.D., Kent State University, 1982. 
WILLIAM B. ARBRUCKLE, Associate Professor of Civil Engineering (July 1982) B.S.O.E., Ohio University; M.S.E.E., Ph.D., University of North Carolina, 1975. 
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JAMES F. AUSTIN, Associate Professor of Education; Coordinator of School Psychology (1987) B.A., M.A., Ph.D., Case Western Reserve University, 1971. 
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J. WAYNE BANKS, Professor of History; General Studies Course Director; Western Cultural Traditions (1980) B.A., Wheaton Baptist College; B.D., Tabbot Theological Seminary; B.A., Pepperline University; M.A., Ph.D., University of Iowa, 1970. 
PHILIP P. BALDWIN, Associate Professor of Physics; Associate Professor of Chemistry; Associate Professor of Mathematical Sciences; Associate Professor of Mechanical Engineering (1990) B.A., Princeton University; M.S. Engineering, University of Illinois at Urbana, 1987. 
GERALD V. BARRETT, Professor of Psychology (1973) B.A., Wilberforce University; M.S., Ph.D., Case Western Reserve University; J.D., The University of Akron, 1965. 
C. A. BAUS, Professor of Mechanical Engineering (February 1980) B.Sc., M.Sc., The Technical University of Istanbul; Ph.D., The University of Leicester, 1978. 
JOAN E. BAUMGARDNER, Assistant Professor of Nursing; Coordinator of Senior Year (1979) B.S.N., M.S.N. The Ohio State University; Ph.D., The University of Akron, 1988. 
JOHN D. BEE, Director of Community Outreach; Director of the School of Communication; General Studies Course Director; Speech; Director of Instructional Delivery Systems (1986) B.A., Ohio University; M.A., Ph.D., University of Wisconsin Madison, 1972. 
DAVID S. BERNSTEIN, Professor of Music (1972) B.M., M.M., Florida State University; D.M., Indiana University at Bloomington, 1974. 
WILLIAM H. BEYER, Acting Associate Vice President for Administrative Support Services; Professor of Mathematical Sciences (1981) B.S., The University of Akron; M.S., Ph.D., Virginia Polytechnic Institute, 1987. 
CLIFFORD G. BILLIONS, Professor of Music (1978) B.M., Oklahoma Baptist University; M.M., Converse College, 1971. 
WESLAW L. BIRK, Associate Professor of Civil Engineering (1968) M.S., Warsaw Technical University; M.S.M.E., Ph.D., Drexel University, 1988. 
JEAN L. BLOOM, Professor of Communication Disorders; Director of the Speech and Hearing Center (1979) B.S., The Ohio State University; M.A., Kent State University, 1972. 
DALE S. BOROWSKY, Professor of Mathematics (1969) B.S., M.S., The University of Akron; Ph.D., Bowling Green State University, 1980. 
CONSTANCE B. BOUCHARD, Professor of History (August 1990) B.A., Macalester College; M.A., Ph.D., University of Chicago, 1976. 
LARRY G. BRADLEY, Associate Dean in the College of Education, Professor of Education (1969) B.A., Muskingum College; M.A., West Virginia University; Ph.D., Ohio University, 1969. 
IRVIN W. BRANDL, Director and Psychologist; Adjunct Associate Professor of Home Economics and Family Ecology (July 1979) B.S., Bowling Green State University; M.A., Michigan State University; Ph.D., The University of Akron, 1979. 
SALLY M. BRADEL, Director of Student Assistance Center; Counseling Psychologist (1981) B.S., Indiana University; M.S., Ph.D., The University of Akron, 1979. 
WILLIAM T. BRANDY, Associate Professor of Communicative Disorders (August 1990) B.A., Heidelberg College; M.S., University of Pittsburgh; Ph.D., University of Oklahoma, 1989. 
MIREL S. B. BRAUN, Professor of Mechanical Engineering (1975) M.S., Ph.D., Carnegie Mellon University, 1975. 
WILLIAM J. BRIATIANN, Associate Professor of Polymer Science (August 1990) B.S., University of Northern Colorado; Ph.D., California Institute of Technology, 1982. 
STEPHEN C. BROOKS, Associate Director of the Ray C. Bliss Institute; Associate Professor of Political Science (1980) B.A., Colorado College; M.A., Ph.D., Northwestern University, 1982.
JOHN G. GREEN, Professor of Political Science; Director of the Ray C. Blass Institute of Applied Politics (1987 B.A.), University of Colorado at Colorado Springs, 1962.

C. FRANK GRIM, Professor of Physics (1967 B.S.), M.S., Texas Technological College, Ph.D., The Ohio State University, 1964.

RICHARD J. GROSS, Associate Professor of Mechanical Engineering (1967 B.S., M.E., University of Detroit; M.S., The University of Detroit, 1970; Ph.D., Michigan Technological University, 1976; P.E., Ohio State University, 1977).

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VIRGINIA L. GUNN, Professor of Home Economics and Family Ecology (1974 B.S., Kansas State University; M.S., Ohio State University; Ph.D., The University of Akron, 1992.

MICHAEL J. HABER, Professor of Music (1984 B.M., Brandeis University, M.M., Indiana University, 1986.

AL HAJJAR, Associate Professor of Mechanical Sciences (1980 B.S., M.S., University for Teacher Education in Tehran, Iran; M.S., Ph.D., University of Michigan, 1984.

DONALD L. HALL, Professor of Economics (1969 B.S., Ed.D., University of Pennsylvania; Ph.D., University of Pennsylvania; M.Ed., Vassar College, Ph.D., Ohio University, 1971.

ROUSSEAU J. HALL, Assistant Professor of Psychology (1969 B.S., Nebraska Wesleyan University; M.A., Ph.D., University of MaryLand, 1985.

STEPHEN R. HALLAM, Dean of the College of Business Administration; Professor of Management (July 1965 B.S., M.S., Rkson State University; Ph.D., University of Iowa, 1974.


CHAD D. HAN, Benjamin Franklin Gogoski Endowed Professor of Polymer Engineering (January 1995 B.S., Seoul National University; M.S., S.C.D., Massachusetts Institute of Technology; M.S., Chemical Engineering; Ph.D., New York University, 1971.

SUSAN H. HANLON, Associate Professor of Management (1980 B.A., Grove City College; M.B.A., Kent State University; D.B.A., Memphis State University, 1980.

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SURIYANUJ I. HARRISHAR, Professor of Mechanical Sciences; Professor of Electromechanical Engineering (1983 B.S., University of Sri Lanka; M.Sc., University of Belfast; England; M.Sc., Carnegie-Mellon University, 1980.

VERN R. HANNAPO, Professor of Geography and Planning (1972 B.S., Concordia Teachers College; M.S., Ph.D., University of Kansas, 1972.

STEPHEN L. HARP, Assistant Professor of History (1983 B.A., Manchester College; M.A., Indiana University, 1993.

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TOM T. HARTLEY, Professor of Electrical Engineering (1984 B.A., B.S.E.E., Ohio Northern University; M.S., Ph.D., Vanderbilt University, 1984.

DONALD E. HARVEY, Professor of Art (1973 B.A., Mankato State College; M.F.A., University of the Pacific, 1974.

H. JAMES HAWK, Professor of Chemistry; Professor of Polymer Science (October 1959 B.S.), The University of Akron, Ph.D., Yale University, 1958.

RICHARD H. HAUSDORF, Associate Professor of Psychology (1967 A.B.), Kanyon College; M.S., Ph.D., University of Pittsburgh, 1964.

DOUGLAS R. HAUSKNECHT, Associate Professor of Marketing (1980 B.S., B.A., Ph.D., University of Miami, 1981.

JON M. HAWES, Professor of Marketing; Director of Fisher Institute for Professional Selling (1988 B.S., California State University, B.S., University of Kansas, 1972.

J. HAWES, Professor of Marketing (1983 B.S.E., University of Toledo; M.S.I.E., Ph.D., Purdue University, 1975.


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PETE R. HENDRIKSEN, II, Professor of Physics; Professor of Chemistry (1970 B.S., Berry College, M.S., Ph.D., University of Georgia, 1989.

DAVID D. HICKS, Associate Professor of Music; Director of Computer Instruction in Music (1981 B.M., The University of Akron; M.M., University of Miami, 1991.

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H. HICKS, Associate Professor of Political Science (1973 B.A., M.S., The Ohio State University; J.D., The University of Akron, 1979.

GLEN F. HIEB, Assistant Professor of Electrical Engineering (1969 B.S.), University of Toledo; M.S.E., Ph.D., University of Michigan Ann Arbor, 1969.

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KATHERINE A. HINELEY, Associate Professor of Political Science (1972 B.S., University of Michigan; M.A.; Ph.D., Stanford University, 1971.

JEAN D. NINES, Associate Professor of Home Economics and Family Ecology (1960 B.S., B.S., Edinboro State University, Ph.D., Ohio State University, 1970.

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WILLIAM M. HIXSON, Professor of History (1969 B.A., University of Kentucky; M.A., Western Kentucky University; Ph.D., University of Colorado, 1969.

LORN L. HOF, Professor of Education (1969 B.S., Indiana Central College; M.A., Ball State University; Ed.D., Indiana University at Bloomington, 1969.

NATHAN J. HOLL, Associate Professor of Biology (1987 B.S., University of Michigan at Ann Arbor; Ph.D., Wayne State University, 1993.

NANCY K. KANTZ, Associate Dean of Buehler College of Arts and Sciences; Professor of Public Administration and Urban Studies (1984 B.A.), University of Dallas; M.A., Ph.D., The University of Texas, 1982.
The Yale School of Business Administration; M.A.T., University of Toronto; M.A., University of Vienna, 1954.

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WARREN W. LEIGH, 1953-1962, Ph.D.
RICHARD C. REIDNACH, 1962-1967, Ph.D.
ARTHUR K. BRINTALL, 1967-1968, Ph.D. (acting)
WILBUR EARLE BENSON*, 1968-1970, Ph.D.
JAMES W. DUNLAP, 1970-1977, Ph.D.
RUSSELL J. PETERSEN, 1969-1984, Ph.D.
JAMES RINNAN, 1994-1995, LL.M. (interim)
STEPHEN F. HALLAM, 1995-

Wayne College

MARVIN E. PHILLIPS, 1972-1974, M.A. (acting director)
JOHN G. HEDRICK, 1974-1974, M.A. (director)
JOHN G. HEDRICK, 1974-1979, M.A. (interim)
FREDERICK J. STURM, 1995-, Ed.D. (dean)

College of Polymer Science and Polymer Engineering

FRANK N. KELLEY, 1988-, Ph.D. (dean)

School of Law

STANLEY A. SAMAD, 1959-1979, J.S.D.
ALBERT RAKAS, 1979-1981, J.D. (interim)
DONALD M. JENKINS, 1961-1987, LL.M.
ISAAC C. HUNT, JR., 1987-1995, LL.B.
RICHARD L. PAYNES, 1995-, J.D.

Graduate School

CHARLES BULGER*, 1933-1951, Ph.D., Litt.D. (Dean of Graduate Work)
ERNEST H. CHERRINGTON, JR.*, 1955-1960, Ph.D. (Director of Graduate Studies)
ARTHUR K. BRINTALL, 1967-1968, Ph.D. (Dean of Graduate Studies and Research)
EDWIN L. UVELY, 1968-1974, Ph.D. (Dean of Graduate Studies and Research)
CLAIBOURNE E. GRIFFIN, 1974-1977, Ph.D. (Dean of Graduate Studies and Research)
JOSEPH M. WALTON, 1977-1978, Ph.D. (Associate Dean of Graduate Studies and Research)
PATRICIA L. CARRELL, 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 SUMNER*, 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, 1994-1995, Ph.D. (acting)
KARLA T. MUGLER, 1995-, Ph.D.

Evening College

L. L. HOLMES, 1932-1934, M.A. (director)
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Community and Technical College

W. M. PETRY*, 1964-1974, M.S.M.E.
ROBERT C. WEYRICK, 1974-1985, M.S.
JAMES P. LONG, 1987-1989, Ph.D.

College of Fine and Applied Arts

RAY H. SANDFUR*, 1967-1978, Ph.D.
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College of Nursing

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. . . operating under non-discrimination provisions of Titles VI, VII, of the Civil Rights Act of 1964 as amended and
Title IX of the Educational Amendments of 1972 as amended, Executive Order 12134, Vocational Rehabilitation
Act Section 504, Vietnam Era Veterans' Readjustment Act, and Americans with Disabilities Act of 1990
as related to admissions, treatment of students, and employment practices.

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 and racial or ethnic orientation in employment and admissions.

Complaint of possible discrimination should be referred to:
Affirmative Action and Equal Employment Opportunity Officer
Nell Miles Russell
222 Broadway Building, Room 212
The University of Akron
Akron, Ohio 44325-4709
(330) 972-7900

Information on Title IX (sex discrimination) may be obtained from
Nell Miles Russell, Title IX Coordinator
(330) 972-7900

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