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**Fall Semester 1989**
Day and Evening Classes Begin: Mon., Aug. 28
*Labor Day*: Mon., Sept. 4
Veterans Day (staff holiday): Fri., Nov. 10
**Thanksgiving Recess**: Thurs.-Sat., Nov. 23-25
Final Instructional Day: Mon., Nov. 27
Final Examination Period: Sun.-Mon., Dec. 13-15

**Spring Semester 1990**
*Martin Luther King Day*: Mon., Jan. 15
Day and Evening Classes Begin: Tues., Jan. 16
Spring Recess: Mon.-Sat., March 19-24
†Spring Holiday: Fri., May 4
Final Instructional Day: Sat., May 5
Final Examination Period: Mon.-Sat., May 7-12
Commencement for Law School: Sat., May 19
Commencement: Sat., May 26

**Summer Session I**
First 5-and 8-Week Sessions Begin: Mon., June 11
*Independence Day*: Wed., July 4
First 5-Week Session Ends: Fri., July 13

**Summer Session II**
Second 5-Week Session Begins: Mon., July 16
Eight-Week Session Ends: Fri., Aug. 3
Second 5-Week Session Ends: Fri., Aug. 17

**Fall Semester 1990**
Classes Begin: Mon., Aug. 27

Inquiries
Address inquiries concerning:
Admissions information, campus tours, and housing, transfer of credits to the Office of Admissions, 166 Fire Hall (216) 375-7100.
Financial aids, scholarships, loans, and student employment to the Office of Student Financial Aid and Employment, Spicer Hall, (216) 375-7032.
Athletics to the Athletic Director, James A. Rhodes Health and Physical Education Building, (216) 375-7080.
Registration, scheduling, residency requirements, and veteran's affairs to the Office of the Registrar, Spicer Hall, (216) 375-7844.
Continuing education and noncredit programs to Buckingham Center for Continuing Education, (216) 375-7171.
Graduate study to the Graduate School, Fire Hall Center, (216) 375-7663.
The University switchboard number is (216) 375-7111.
The University of Akron Akron, OH 44325.
About
The University of Akron
Background

HISTORY

The self-conscious connection between The University of Akron and its surrounding community has been a recurring theme from the institution's founding as a small denominational college in 1870 to its current standing as a major metropolitan state university. It is significant that the efforts, energy, and financial support of a einzon manufacturer of farm equipment, John R. Buchtel, were instrumental in persuading the Ohio Universalist Convention to build its college on a hill overlooking the town stretched along the Ohio Canal. The grateful trustees responded by naming the school Buchtel College. It is also significant that during its first four decades, the struggling institution was repeatedly aided in its efforts to survive by various local entrepreneurs who pioneered and prospered in such industries as cereals, clay products, matches, rubber. Buchtel College's emphasis on local rather than denominational interests became increasingly clear, and by 1913 those strong ties and the school's financial situation caused its trustees to transfer the institution and its assets to the city. For the next 50 years, the Municipal University of Akron received its principal support from city tax funds and swelled from an enrolment of 158 nearly to 10,000.

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

And 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 (1953), law (1959), the Community and Technical College (1964), fine and applied arts (1967), and nursing (1967).

Considering the institution's location in the heart of the burgeoning rubber industry, it is perhaps not surprising that the world's first course 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 prestigious College of Polymer Science and Polymer Engineering (1988), a world leader in polymer research. In the 1930s and 1940s, with the establishment in Akron of the Guggenheim Airship Institute, UA scientists studied the structure and design of zeppelins, and 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.

But research, innovation, and creative activity take many forms at the University in the sciences and in the arts and humanities as well. Today UA faculty members study ways of matching workers with jobs to maximize performance; they devise more effective methods of extracting oil from shale; they write and produce plays, pen poetry, choreograph dance works; they design values for artificial hearts and explore improved methods of tumor detection; they evaluate the quality of water in Northeast Ohio; they draft new maps to meet specialized needs of local businesses and industries; and they study laws of taxation and their effects on commerce. UA's continuing and central commitment to the liberal arts is signified by the perpetuation of the institution's original name in the Buchtel College of Arts and Sciences.

And the University has maintained an openness to innovation in other ways. As early as the 1880s Buchtel College was liberating 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.

The University's first doctoral degree was, appropriately enough, awarded in polymer chemistry in 1959, but master's degrees were granted as early as 1882. Doctoral work has now extended to programs leading to the highest academic degrees in 18 different fields of study.

In 1963 the receipt of state tax monies made UA a state-assisted municipal university, and on July 1, 1967, The University of Akron officially became a state university. Today some 27,500 students from 43 states and 83 foreign countries are enrolled in its 10 colleges, making it the third largest university in Ohio, and 4th largest in the nation. Its 80,000 alumni are worldwide. The 182-acre campus with its 77 modern buildings is within walking distance of downtown Akron and its shopping, restaurants, entertainment, and cultural centers. The Northeast Ohio metropolitan area, with its 1.5 million population, provides numerous opportunities in recreation, major collegiate, amateur and professional sports, concerts, cultural events, and commerce, all within easy driving distance and many accessible via public transportation.

For more than a century, the college on the hill has been an integral part of the city whose name it bears, an active participant in Akron's renaissance of commercial and artistic endeavor, a leader in the city's intellectual and professional advancement, a center for internationally lauded 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, our world.

MISSION AND GOALS

The University of Akron's mission is influenced by its location, its heritage, its teaching and research objectives, and its responsibility to serve the local, national, and international communities.

These influences, combined with the University's commitment to provide the highest quality educational opportunity possible to each person regardless of race, creed, color, sex, age, national origin, or handicapping condition, shape the institution's distinctive character.

The foremost goals of The University of Akron are to create and maintain the highest standards of excellence in its curriculum, its teaching/learning process, its development of students, its research, and its service to the public. Existing and proposed programs alike are evaluated in terms of their contributions to these goals.

The historically strong, interrelationship between The University of Akron and the surrounding community confirms UA's responsibility to serve the community in ways that will reflect the needs of both the institution and the region of which it is a part. The University will continue to serve those pursuing a traditional educational program as well as those seeking a nontraditional program for a career change, for professional development, or for self-enrichment.

Mission

The University of Akron maintains a commitment to:

- Provide learning opportunities for the full spectrum of students.
- Create and discover knowledge through basic and applied research.
- Create a learning environment with emphasis on a full collegiate experience for each student leading to opportunities for cognitive, social and personal development.
- Provide a forum for the examination of ideas and concepts and the generation of scholarly dialogue within the established principles of academic freedom.
- Encourage opportunities for interdisciplinary study and research.
- Strive for continued improvement of the teaching and learning environment.
- Prepare career oriented persons for professional leadership roles in regional, national, and international organizations and institutions.
- Offer appropriate educational and professional services to its various publics within available resources and established continuing education and outreach philosophies.
- Maintain its firmly established tradition of concern for the higher educational and cultural needs of our area.

Goals

The following goals provide further definition of the University's mission and serve as the bases upon which the colleges, departments, and service units of the University establish program objectives.

GOAL I

The University will plan, develop, implement, and evaluate its programs in light of its major goal of teaching, and will provide optimal learning opportunities for students of various ages, diverse backgrounds, and different needs.

GOAL II

The University will meet its challenge and responsibility to discover and create new knowledge through continued support of faculty in their research, publication, and creative activities by providing resources for basic and applied research and by encouraging professional and intellectual development.

GOAL III

The University will design programs and the teaching/learning process to fulfill the students' and society's varied educational needs but will also provide opportunities for intellectual, personal, cultural, and social development on the campus so as to enhance the ability of students to participate effectively in a complex society.
GOAL IV
The University will provide public service through its traditional and continuing education programs, its faculty, its students, and its facilities, and encourage the development of outreach and cooperative education efforts in all colleges, departments, and service units.

GOAL V
The University will coordinate the growth and emphasis of its programs with the long-range plans and needs of the local area, the region, nation, and, where appropriate, the international community.

GOAL VI
The University will contribute, in cooperation with local and regional institutions, to the development of improved quality of life for the future of the region, the nation, and the world.

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 approved 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
American Assembly of Collegiate Schools of Business
American Chemical Society
American Dietetic Association
American Speech-Language-Hearing Association

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
Council on Social Work Education
International Association of Counseling Services
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 Council for Accreditation of Teacher Education
National League for Nursing
North Central Association of Colleges and Schools
Ohio Board of Nursing Education and Nurse Registration
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 for Continuing Higher Education
Department of Baccalaureate and Higher Degree Programs (National League for Nursing)
International Council on Education for Teaching (associate)
National Association of Summer Sessions
Ohio College Association
Ohio Council on Continuing Higher Education
United States Association of Evening Students
University Council on Education for Public Responsibility

The School of Law is accredited by:
American Bar Association
Association of American Law Schools
League of Ohio Law Schools
Council of the North Carolina State Bar
State of New York Court of Appeals

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

The University of Akron covers a broad academic spectrum. Programs are available leading to the associate (two-year), bachelor's (four-year), master's (graduate), and doctoral (graduate or professional) degrees. A student may study in the College of Business Administration, Buchtel College of Arts and Sciences, Community and Technical College, College of Education, College of Engineering, College of Fine and Applied Arts, University College, School of Law, College of Nursing, and College of Polymer Science and Polymer Engineering.

ASSOCIATE PROGRAMS

In this fast-paced age of technological development, a need has grown for a person trained specifically for work in the semiprofessional, technical, and highly skilled professions. Most critically needed are laboratory technicians, health technicians, engineering assistants, salespeople, supervisors, secretaries, and management assistants. The following is a list of associate degree programs.

Arts
- Automated Manufacturing Technology (2 + 2)
- Business Management Technology
- Accounting
- Banking
- Credit Union
- Data Administration
- Small Business Management
- Commercial Art
- Commercial Photography
- Community Services Technology
- Alcohol
- Gerontology
- Social Services
- Volunteer Programming
- Criminal Justice Technology
- Corrections
- Security Administration
- Social Work Emphasis
- Computer Programming Technology (2 + 2)
- Drafting Technology
- Educational Technology
- Child Development
- Elementary Arts
- Library Technician
- Electronic Technology (2 + 2)
- Fire Protection Technology
- Handicapped Services
- (Interpreting for the Deaf)
- Histologic Technology
- Hospitality Management
- Culinary Arts
- Hotel/Motel Management
- Marketing and Sales
- Individualized Study
- Manufacturing Technology
- Computer Aided Manufacturing
- Industrial Supervision
- Marketing and Sales Technology
- Advertising
- Computer Sales
- Fashion
- Industrial
- Retailing
- Sales
- Mechanical Technology (2 + 2)
- Medical Assisting Technology
- Executive
- International
- Legal
- Office Information Management
- Word Processing
- Office Services Technology
- Radiologic Technology
- Real Estate
- Respiratory Therapy Technology
- Surgical Assisting Technology
- Surgeon's Assistant
- Surgical Technology
- Surveying and Construction Technology
- Construction
- Surveying
- Transportation
- Airline/Travel Industry
- Commercial Aviation
- BACCALAUREATE PROGRAMS

The University of Akron believes that the student should master basic courses in the humanities, social sciences, and physical sciences and thus supports the idea of the University College concept. A student seeking a baccalaureate degree and having attained less than 30 college semester credits studies in the University College before transferring to a degree-granting college. Study in the University College develops students' ability to understand and express ideas effectively and to comprehend the processes involved in accurate thinking. After completing the general studies phase, students are admitted to a degree-granting college where they then concentrate on courses in their specific academic interests.

Programs are offered in:
- Accounting
- Advertising
- Art
- Art History
- Ceramics
- Crafts
- Drawing
- Graphic Design
- Metallurgy
- Painting
- Photography
- Printmaking
- Sculpture
- Studio Art
- Biology
- Botany
- Cytotechnology
- Ecology
- Medical Technology
- Microbiology
- Psychology
- Pre-Professional
- Pre-Dental
- Pre-Medical
- Pre-Pharmacy
- Pre-Veterinary
- Zoology
- Business Administration
- Chemical Engineering
- Chemistry
- Civil Engineering
- Classics
- Greek
- Latin
- Classical Civilization
- Communication
- Broadcasting
- Business and Organizational Communication and Rhetoric
- Corporate Video
- Mass Media
- Communicative Disorders (Speech Pathology and Audiology)
- Computer Science
- Business
- Mathematics
- Construction Technology (2 + 3)
- Cytotechnology
- Dance
- Economics
- Labor Economics
- Electrical Engineering
- Computer Engineering
- Elementary Education
- Dual Certification
- Kindergarten
- Prekindergarten
- English
- French
- Geography
- Geography/Cartography
- Geology
- Engineering Geology
- Geophysics
- History
- Home Economics and Family
- Ecology
- Dietetics
- CUP
- Traditional
- Family and Child Development
- Child Development
- Child Development:
- Prekindergarten Certification
- Child-Life Specialist
- Family Development
- Food Science
- Business
- Food Science/Product Development
- Home Economics Education
- Clothing, Textiles and Interiors
- Business
- Communication
- Theatre Costume
- Humanities
- Management
- Industrial Accounting
- Marketing
- Industrial and Organizational Sales
- International
- Marketing Communications
- Physical Distribution
- Retail Management
- Mathematical Sciences
- Applied Mathematics
- Computer Science
- Mathematics
- Statistics
- Mechanical Engineering
- Medical Technology
- Modern Languages
- French
- German
- Russian
- Spanish
- Music
- Accompanying
- History and Literature
- Jazz Studies
- Music Education
- Performance
- Theory-Composition
- Natural Sciences
- Combined BS/MD
- Nursing
- Philosophy
- Physical Education and Health Education
- Health Education
- Outdoor Education
- Athletic Training for Sports Medicine
- Physics
- Applied Physics/Engineering
- Biophysics
- Chemical
- Computer
- Geophysics
- Physics/Astronomy/Astronomy
- Polymer
- Political Science
- Criminal Justice
- Government Service
- International Service
- Pre-Law
- Public Policy Management
- Psychology
- Secondary Education (all fields)
Social Sciences
Social Work
Sociology
Anthropology
Corrections
Law Enforcement
Special Education
Developmentally Handicapped
Multihandicapped
Orthopedically Handicapped
Severe Behavior Handicapped
Specific Learning Disabled

Speech Pathology and Audiology
(see Communicative Disorders)
Technical Education
Theatre
Acting
Design/Technology
Musical Theatre
Theatre Arts

in their respective fields. Additional standards may be required by some departments or employers. Final hiring decisions are made by the employers.

Students and employers participating in cooperative education are subject to all federal, state, and local labor laws. Additionally, students on a work assignment must abide by all the rules and regulations of the participating employer and of cooperative education.

Student Volunteer Programs

Student volunteer programs, operated by Cooperative Education, seek to recruit and refer students for volunteer positions with social service and nonprofit agencies in the Akron and Northeast Ohio area.

Like Cooperative Education, student volunteer programs offer students a wealth of experience — experience which will enable the student to discover the reality of American life in ways which cannot be as graphically communicated in the classroom. In addition, the rendering of public service by student volunteers will help them develop an understanding of professional requirements and expectations; regard community service as an integral part of their preparation for the role as truly educated citizens; enhance their educational experiences; give concrete form to the abstract learning of the college curriculum by applying it to immediate human need; help the student to know that a truly successful life must include helping others.

Students who are in good academic standing may participate in the program's volunteer activities. Students are also expected to respect the rules and regulations of their volunteer agency.

Certificate Programs

Students may add a dimension of depth to their education beyond a chosen major by pursuing one of the University's interdisciplinary or interdepartmental programs, which provide concentrated work in the following areas:

Afro-American Studies
Aging Services
Alcohol Services Aide
Bilingual Education
Cartographic Specialization
Child-Care Worker
Composition
Computer Physics
Computer Science
Computer Software for Business
Criminal Justice
Criminal Justice/Security Emphasis
Dispute Resolution
Environmental Health
Environmental Studies
Fire Protection Technology
Gerontology
Higher Education
Home-based Intervention Therapy
Hospitality Management
Interior Design
Latin American Studies

Library Studies
Local Government
Management
Marketing
Office Administration
Peace Studies
Planning
Professional Communication
Programming Skills Enrichment
Public Policy
Real Estate
Small Business Management
Small Business Studies
Supervision and Management
Surgeon's Assistant
Surgical Technology
Teaching English as a Second Language
Transportation Studies
Volunteer Program Management
Women's Studies
GRADUATE SCHOOL

The Graduate School offers advanced study to students who wish further education beyond the baccalaureate degree. Graduate degree programs are listed below; a dagger (†) indicates programs that offer doctorates only; an asterisk (*) signifies programs that offer both master’s and doctoral degrees; the remaining disciplines offer master’s degrees only.

Accounting
Biomedical Engineering
Biology
Business/Law Joint Program
*Chemical Engineering
*Chemistry
*Civil Engineering
Communication
Communicative Disorders
Speech Pathology
Audiology
Counseling and Special Education
†Counseling Psychology
Economics
Labor and Industrial Relations
*Educational Administration and Supervision
†Higher Education
Educational Foundations
*Electrical Engineering
*Elementary Education
Engineering
Biomedical Engineering
English
Family Ecology
Child Development
Family and Child Development
Finance
Geography
Geology
Earth Science
Geophysics
Engineering Geology
Environmental Geology
*Guidance and Counseling
*History
Home Economics and Family Ecology
Child Development
Child Life
Clothing Textiles and Interiors
Family Development
Food Science
Nutrition/Dietetics
International Business
Management
Marketing
Mass Media Communication
Mathematical Sciences
Mathematics
Statistics
Applied Mathematics
*Mechanical Engineering
Modern Languages
Spanish
Music
Accompanying
Composition
Music Education
Music History and Literature
Performance
Theory
Nursing
Physical Education 1-12
Athletic Training for Sports Medicine
Outdoor Education
Physics
Political Science
*Polymer Engineering
*Polymer Science
*Psychology
School Psychology
*Secondary Education
Multicultural
*Sociology
Special Education
Taxation
Technical and Vocational Education
Theatre
Arts Management
*Urban Studies
Public Administration
Urban Planning

SCHOOL OF LAW

The School of Law provides legal education through day and evening classes leading to the Juris Doctor degree. An applicant must have an undergraduate degree from an accredited college or university in an appropriate field of study.

SUMMER SESSIONS

The University's Summer Sessions provide educational opportunities for the student who wishes to attend college classes over the summer. Summer Sessions include work toward associate, baccalaureate, and advanced degrees as well as additional education in students’ chosen professions.

OFF-CAMPUS PROGRAMS

As a metropolitan institution of higher learning, the University clearly identifies and supports its public service role through a variety of off-campus programs. The University offers special institutes, workshops, and courses to professional groups through the academic departments, through continuing education, and through Developmental Programs.

THE UNIVERSITY OF AKRON — WAYNE COLLEGE

To meet the needs of citizens in Wayne, Holmes, and Medina counties, The University of Akron’s Wayne College opened its doors in 1972. Four technical programs as well as the first two years of a traditional four-year liberal arts program are offered leading to one of the following degrees: Associate of Arts or Sciences, Associate in Applied Business in business management technology and office administration, Associate in Applied Science in microprocessor service technology or social services technology.
The Campus

During recent years, the University campus has undergone many major changes. In 1951, the University's 13 acres encompassed only 10 buildings. Currently, the campus covers 162 acres, and includes 77 buildings, with plans 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, is set apart from the downtown area. Students have easy access to retail outlets, transportation, and churches. Akron is easily reached by automobile from major national east-west routes (Interstates 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 from the Cleveland-Hopkins International Airport and the Akron-Carinton Airport, south of Akron, is available.

BUILDINGS

Many of the buildings on campus bear the names of prominent persons who are recognized for their contributions in administration, education, business, science, or University service. Major buildings include:

Admissions Building. This office is 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.

Auburn Science and Engineering Center. Named for 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, the Department of Biology, the Institute of Polymer Science (research activities), the scientific and engineering holdings of the University Library, and the Library for the Division of Rubber Chemistry-American Chemical Society.

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, studios, and offices for the Ohio Ballet and the Dance Institute.

Bierce Library. Named for Gen. Lucius V. Bierce, an Akron mayor, lawyer, historian, state senator, philosopher, philanthropist, and soldier, the building opened in spring 1973. In addition to the book and periodical collections, the facility houses archival and audio-visual materials, maps, and microforms. The University library, including the Science and Technology Department, has 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 the campus, Buchtel Hall (III) was completely restored in 1973 following a devastating fire in 1971. It is the University's link with Buchtel College. It provides office space for numerous administrative officials of the University.

Buckingham Center for Continuing Education. The center was renovated in 1979 at a cost of $2.8 million. The building houses offices for the executive dean of Continuing Education, Public Service, and Outreach, the Adult Resource Center, the Office for Noncredit Courses, the Nursing Home Training Center, the Law School Clinical Program, as well as a lecture hall and general classrooms.

Carroll Hall. Adjacent to the Gardiner Student Center, Carroll Hall houses classrooms, laboratories, and offices for the departments of counseling and special education, geography, developmental programs, and computer-based education, as well as the University's media services, electronic systems, and the Learning Resources Center.

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

Computer Center. Purchased and renovated in 1981 for $1.3 million, this building at 185 Carroll Street houses the University's computer center offices, main computer, and workrooms, as well as student and faculty keypunch areas and time-sharing terminals.

Crouse Hall. Crouse Hall houses the Department of Geology, Center for Environmental Studies, classrooms, and some offices for the College of Education.

East Hall. Located on South Union Street, the hall houses the University nursery school, Black Cultural Center, and University Honors Program.

Exchange Building. This recently acquired building at 222 East Exchange Street houses the Department of Social Work.

Fir Hill Center. This recently remodeled building, north of East Buchtel Avenue at Fir Hill, houses the offices of the Associate Vice President for Research and Graduate Studies, the dean of Graduate Studies, and Research Services and Sponsored Programs.

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

Folk Hall. This recently remodeled building at 150 East Exchange Street provides modern, well-equipped art facilities in one location. Studios are available for graphic arts, photography, drawing, painting, metalsmithing, ceramics, and weaving. The 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 and computer lab and classroom space.

Galluccio Hall. This building at 200 East Exchange Street, formerly a Holiday Inn, is a coed residence hall. The north wing houses the Department of Urban Studies, the Center for Urban Studies, and the Department of Hospitality Management.

Gardner Student Center. This complex was named for Donfred H. Gardner, who was appointed dean of men in 1926, named the University's first dean of students in 1937, in 1955 named the University's first dean of administration, and later, in 1959, 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 billiard room, a bookstore, bank facilities, the Perkins Art Gallery, the Gardiner Theatre, a cafeteria, and other dining facilities.

Gladwin Hall. Housing the College of Nursing and allied health and biology laboratories, this building was purchased in honor of Mary E. Gladwin (1887), who rendered unparalleled service as a war nurse. The $10 million complex opened in 1979, adjacent to Knight Chemical Laboratory, the facility includes a multipurpose nursing laboratory, a simulated 13-bed hospital containing a surgical-labor delivery suite, a nursery suite, and a well-patient clinic.

Guzzetta Hall. Complementing the Edwin J. Thomas Performing Arts Hall, this facility was constructed directly across from Thomas Hall on Hill Street. The $5.5 million structure dedicated in October 1976 houses the office of the dean of the College of Fine and Applied Arts, and the departments of communication, music, theatre, and dance. In addition to providing more than 40 student practice rooms, the complex houses radio and television studios, WZIP-FM, a small experimental theatre, and a 300-seat recital hall.

James A. Rhodes Health and Physical Education Building (JAR). This recently completed structure on Carroll Street is connected to Memorial Hall by a pedestrian bridge over Brown Street and contains an intercollegiate basketball facility seating 7000, an indoor jogging track, physical education laboratories, classrooms, the athletic director's office, the sports information office, athletic offices, and a ticket office.

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

Knight Chemical Laboratory. This new $10 million complex is named in honor of Dr. Charles M. Knight, who taught the first courses in rubber chemistry in Buchtel College as early as 1905. Opened in 1979, the building features numerous innovative laboratories with the latest, most sophisticated safety equipment along with classrooms and faculty and administrative offices.
Kolbe Hall. Identified by its colonnade arch, this complex was named for the first president of the Municipal University of Akron, Parke R. Kolbe. It houses the University Theatre, the Center for Community and Public Television, the office of the dean of the College of Business Administration, as well as classrooms and offices for the College of Business Administration.

Leigh Hall. Named in honor of Warren W. Leigh, first dean of the College of Business Administration, the facility on Buchtel Common houses the College of Business Administration. John S. Knight Auditorium, located on the street level, is the site of many programs open to both campus and community.

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 $26 million, it provides space for the 160,000-volume library, classrooms, moot courtroom, appellate-review office, seminar rooms, and faculty offices. A $2.8 million addition provides additional library and support space. The center stands at the corner of East Center and Grant streets.

Memorial Hall. Dedicated to the memory of Summit County men and women who died in World War II, this is the companion facility to E. J. Thomas Physical Plant Operations Center. It was named for Harry P. Schrank, longtime member and chairman of UA's Board of Trustees, this complex, which adjoins Auburn Science and Engineering Center, is composed of two academic structures and a parking deck. Schrank Hall North contains offices and classroom space. Schrank Hall South provides facilities for the Department of Home Economics and Family Ecology, the divisions of Engineering and Science Technology and Associate Studies, and the Army and Air Force ROTC units.

Simmons Hall. Named for Hazletton Simmons, University president from 1933 to 1951, this hall houses the University Counseling and Testing Center, the Department of Psychology, and Public Services Technology offices and laboratories. The Institute for Life-Span Development and Gerontology and the History of American Psychology Archives also occupy a portion of the building. A student interested in employment counseling and assistance will find the Office of Career Planning and Placement in this facility.

Spicer Hall. This major student contact building, renovated in 1975, houses the registrar's office, academic advising services, the Office of Student Financial Aid and Employment, University College, the Office of Cooperative Education, the parking systems office and offices for the University auditor, controller, cashier, accounts payable and receivable, and the student striker.

The University Club of Akron. Located at 105 Fir Hill Street, the University Club has recently 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 Alumni Relations and the Department of Development as well as offices of the division of Institutional Advancement are located on the upper floors of the building.

West Hall. This renovated structure on Grant Street next to the McDowell Law Center houses the Department of Communicative Disorders and the outpatient Speech and Hearing Clinic as well as classrooms and law school offices.

Whitby Hall. Named for G. Stafford Whitby, a pioneer in the development of polymer science, this addition to the polymer program was opened in fall 1975. It houses the offices of the Department of Polymer Science and some of the research laboratories of the Institute of Polymer Science. The hall was purchased, renovated, and equipped at a cost of $3.2 million. The institute's research activities continue in Auburn Science and Engineering Center.

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 260, general classrooms, a handicrafts room, a teaching demonstration classroom, a microteaching laboratory, an educational media lab, the Center for Educational Research, 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, of up-to-date facilities and equipment. Some of these facilities are as follows.

**Buchtel College of Arts and Sciences**

The Department of Biology houses modern laboratories and equipment, including advanced light microscopes (phase interference contrast, fluorescence), electron microscope (scanning and transmission), scintillation counters, and psychographs; vehicles and boats are available for fieldwork.

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

The Department of English shares with the humanities and social sciences departments a bank of 19 IBM computer terminals in Olin Hall. This facility is used extensively for courses in creative, expository, and professional writing. Additionally, these terminals, along with terminals linked to the University mainframe, are used in computerized analysis of style.
The Department of Geography houses a modern cartographic drawing laboratory, with adjoining darkroom and major equipment rooms, a remote sensing laboratory, and a selected map, air photo, and periodicals research transfer scope, overhead map enlarger, field plotters, three-dimensional Perspektomat, headliner and varityper, industrial camera, vacuum frame, and map scale changers. A laboratory for cartographic and spatial analysis equipped with a remote computer terminal operates as a part of the department.

The Department of Geology has modern instrumentation for field and laboratory studies. Among the equipment are an automated electron microprobe, automated x-ray diffraction system, atomic absorption spectrometer, chromatograph, coal and sulfur analyzers, oxygen bomb calorimeter, gravimeter, resistivity gear, refraction seismograph, magnetometers, image analyzer, cathodoluminescope, microcomputer laboratory with printers, plotters and a digitizer, core laboratory, research microscopes, a well-equipped darkroom, rock saws, thin section equipment, portable rock core, and three four-wheel-drive vehicles.

The Department of History in Olin Hall is housed in a modern office suite with space for graduate assistants as well as professors. The Clara G. Roe Seminar Room is used for graduate seminars. The history department shares its office space with the Department of General Studies and the Center for Peace Studies.

The Department of Mathematical Sciences is located on the upper floors of Ayer Hall. Students of mathematics, statistics, and computer science have access to a wide variety of computing facilities, languages, and software in laboratories maintained in and by the department.

Two of the labs provide access to University computers which are located in the Computer Center. These include an IBM 4381 dual processor machine which runs VM/SP Release 5 with HPO Release 5, IBM's interactive operating system for mainframes, an IBM 3090 Model 200 with a vector facility which runs MV/IXA, a batch operating system; and a DEC VAX 11/785 which runs UTLRIX, Digital Equipment's version of UNIX. One of these labs has IBM PCs available and the other has 12 SUN workstations which run UNIX. These labs are specifically maintained for undergraduate students. The IBM 4381 and the VAX are also accessible by phone.

The department also maintains a graduate research lab, in which SUN workstations are installed, and a statistical consulting laboratory staffed by faculty and graduate students in statistics.

All of these facilities are interconnected and connected to universities, research facilities, and industries in the outside world via BITNET and internet. Thus, it is possible to send mail and transfer files not only on campus, but around the world. Persons with a user identification at that site may log on to the CRAY located at Ohio State or on to any one of many other computers.

In addition to this variety of computers and operating systems, the student has available the programming languages Pascal, FORTRAN, PL/I, APL, LISP, ICON, COBOL, and C. Major software packages in use include SAS, SPSS, and BMDF for statistical analysis; IMSL, a FORTRAN accessible subroutine library; MACSYMA, for symbolic computation; and Model 204, INGRES, SQL/DS with QMF (Query Management Facility) and MDBS III for database management.

A computer lab containing Apple IIe, Apple IIgs, and IBM PC microcomputers without any connection to the Computer Center is available for individual courses which use Apple Works, and for BASIC language programming courses.

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

A most important resource of The Department of Modern Languages is the language laboratory in Olin Hall. The language laboratory schedules working sessions for all beginning and some advanced language classes as an integral part of the course, as well as for individual and voluntary student study time.

The Department of Physics is housed in Ayer Hall with space and facilities for research and instruction. The laboratories include experimental facilities for electron tunneling spectroscopy, pulsed, continuous wave and high resolution NMR, and Mössbauer spectroscopy; magnetic susceptibility and Shubnikov-deHaas measurements. The experimental projects in progress include studies in surface physics and thin filmBehaviors, as well as other research in NMR in polymers, molecular spectroscopy, solid state physics, and computer-assisted instruction. Theoretical projects in progress include critical phenomena and phase transitions, renormalization group, supersymmetry, polymer physics, and solid state physics. Studies of physical properties of polymeric materials utilize the extensive facilities of the College of Polymer Science and Polymer Engineering.

The Department of Political Science supervises a computer-assisted telephone interviewing laboratory available to the campus research community. The laboratory consists of 24 IBM PS/2 microcomputers connected via a network to a variety of system servers. Each interviewer station is acoustically insulated from other stations and has specialized telephone and automatic dialing equipment. The survey facility is used for grant and contract research covering national, state, and local. When not required for survey projects, the computer network is used for a variety of classroom exercises and student research projects.

The Department of Psychology laboratory resources include undergraduate laboratories and advanced computer controlled laboratories for the study of human information processing (e.g., signal detection, automobile driving, motor skill acquisition, attention, concept formation, perceptual style, laterality differences, and memory). Research areas for the study of small-group behavior and a psychology clinic complete with video-tape capabilities for the study of counseling process and outcome are also available. The department owns several IBM-XT PCs for on-line collection of data and control of experiments; the perceptual laboratory includes a G & W eye scan and eye movement apparatus. The department is affiliated with the Institute for Life-Span Development and Gerontology, including emphasis in adult development, gerontology, and women's studies.

The Department of Sociology facilities include a five-room research and teaching laboratory equipped with audio and video equipment used for teaching demonstrations and small-group research projects. The department houses a number of computer terminals and printers. In addition, a computer-assisted telephone interviewing (CATI) system laboratory is used for student training and an annual Akron survey. The anthropology laboratories contain hominin fossil casts, archaeological collections, and a variety of equipment used in archaeological research.

The Department of Urban Studies has a microcomputer laboratory equipped with five IBM personal computers networked to a central PC equipped with a 30 megabyte hard disk. Both color graphics and letter-quality printers are available. Students are trained in software useful for public administration and urban planning administration, as well as statistical software packages such as SPSS-X, SAS. The statistics laboratory is housed with the microcomputer lab. Moderns connect with the PCs to the IBM mainframe providing a full range of mainframe computer applications.

Community and Technical College

Most offices and specialized laboratories of the Community and Technical College are located in Schrank Hall North and Schrank Hall South. However, the college also uses portions of Mary Gladwin Hall, Gallucci Hall, Folk Hall, and Simmons Hall. In addition, Community and Technical College classes are frequently scheduled in classrooms a j over the University campus.

The Business Technology Division has many extensive laboratories in Schrank Hall North. The Computer Programming program has a cluster of well-equipped personal computer labs, plus connections to the University mainframe computer. The Office Administration program has labs dedicated to word processing, typing, business machines, shorthand/tape dictation, and information management. The Hospitality Management program is located in Gallucci Hall where a complete restaurant (with kitchen and a 120-seat din­ ing room) serves food to the general public as part of its curricula in food service management and culinary arts.
The Engineering and Science Technology Division is located primarily in Schrank Hall South. A Hewlett-Packard computer lab provides hands-on experience for students. The Drafting Technology program maintains a technical computer laboratory which provides all students in the engineering and science technology the opportunity to develop basic computer programming skills. Computer-assisted drafting is done using both the Hewlett-Packard system and a new system of stand-alone microcomputers. The Electronic Technology program provides a circuits laboratory, electronics laboratory, control system laboratory, digital circuits, and system laboratory equipped with IBM personal computers and a facility for fabricating printed circuit boards. The Mechanical Technology program maintains four drafting laboratories, a fluids and thermal laboratory, a machine shop for machine tool fabrication, and a numerically controlled milling machine. Manufacturing Technology labs include equipment for precision inspection and the study of robotics. A variety of surveying instruments including new electronic instruments is available for use in the Surveying and Construction program. In addition, the division has laboratories for physics courses in mechanics, electricity, and heat, light and sound. A specialized laboratory for the study of chemical analysis and instrumentation methods is also available.

The Allied Health Technology Division is located in Mary Gladwin Hall where laboratories are dedicated to Radiologic Technology, Medical Assisting, Respiratory Therapy, Surgical Assisting, and Histologic Technology.

The Division of Associate Studies is located in Schrank Hall South. Its Commercial Art program, however, has a wide range of laboratories in Folk Hall equipped with computers, photographic equipment, and other art-related equipment.

The Public Service Technology Division is located primarily in Simmons Hall where its Criminal Justice lab is utilized. The Interpreting for the Deaf program makes use of labs elsewhere on campus, and the Child Development program interfaces with the University Nursery Center in East Hall.

College of Education

The offices, laboratories, and other facilities of the College of Education are located in Zook Hall, Carroll Hall, Crouse Hall, the James A. Rhodes Health and Physical Education Building, Memorial Hall, and East Hall.

The Department of Educational Foundations is responsible for the core curriculum of social, philosophical, and historical foundations of both the undergraduate and the graduate education programs of all departments. Within this department is the Educational Media Laboratory, which serves as a resource in teaching education students the selection, production, use and evaluation of audiovisual materials, media, and microcomputer technology.

The Department of Physical Education and Health Education prepares students for careers in teaching, coaching, related recreational fields, and related health fields. Within the department, the Human Performance Laboratory is equipped as a teaching and learning center for preservice personnel studying areas such as cardiorespiratory functions, stress, nutrition, and sports medicine. The James A. Rhodes Health and Physical Education Building and Memorial Hall house a gymnasium, weightlifting room, and several laboratories for education in physical skills.

The Department of Secondary Education houses the Microteaching Laboratory, which is managed by department faculty. The laboratory offers several rooms for simulated teaching with videocam recording and feedback to facilitate students' self-assessment of teaching behaviors. The facility serves all departments in the college.

The Center for Economic Education serves as an instructional site for preservice teachers, college faculty, and area schools. Workshops, seminars, materials, and visiting experts provide in-service training in economic issues. An extensive inventory of educational media includes books, periodicals, lesson outlines, games, films, videotapes, and computer software which address economic education.

The Department of Counseling and Special Education operates the Materials Resources Center, which serves as a repository of curricular aids for both the preservice teacher and those in the classrooms. Kwan's Kinder Camp, located several miles from the campus, provides an instructional opportunity for teacher education students while serving the needs of handicapped children in the Akron area during the summer. The Clinic for Child Study and Family Therapy, housed in this department, offers support and therapy for the public while providing a clinical teaching and research setting for University students and faculty. Several therapy and counseling rooms offer viewing from an adjoining room for practitioners' supervision and feedback.

The Department of Educational Administration operates the Center for the Study of Higher Education, which provides support for those seeking advanced study. The department operates the annual conferences for Northeast Ohio educational administrators and houses the regional office for the Ohio School Boards Association.

The Department of Elementary Education uses those strategies appropriate for the K-8 child in the teaching-learning situation as a basis for the broad offering of courses in the disciplines of reading, mathematics, social studies, science, and art. A reading center, mathematics lab, and art lab facilitate the instruction of preservice teachers. The University Nursery Center, directed by department faculty, provides day care for children while serving as an experiential learning site for teacher education students.

College of Engineering

The college maintains a computer graphics facility which has more than 70 terminals, 20 Hewlett-Packard 68030 based workstations, 10 microcomputers with medium resolution color monitors, an HP 9300 computer server, laser printers, other printers, plotters and an "ethernet" connection to the other College of Engineering minicomputers and workstations and the University Computer Center data center.

The Department of Biomedical Engineering has 11 major laboratories for instructional and research use. The neurophysiology laboratory for research of the auditory system is equipped with a semi-anechoic room, sound synthesizers, and state of the art data acquisition and analysis equipment. The biomechanics laboratory is equipped with anemometers and materials testing equipment including Instron testing machines. The musculoskeletal laboratory includes frequency analysis equipment and a MTS testing system. The biostereometrics laboratory is equipped to perform spatial analysis using three-dimensional sensing technology which include a Kern MAPS 200 Digitizing System, a Qume QVT-211X Graphics Terminal. The ocular motor control laboratory is equipped for eye tracking. The stereophotogrammetry eye movement recording. The gait analysis laboratory contains a 40' x 6' raised walkway with embedded force plates and a VICOM three dimensional motion analysis system. The image analysis laboratory contains a Technicare 2020 CT system and supporting equipment. The vascular dynamics laboratory provides facilities to analyze blood flow using Laser Doppler flowmetry and Doppler ultrasound techniques. The biomechanical instrumentation laboratory is equipped with continuous wave and Doppler ultrasonic equipment, surface temperature devices, and PC computers equipped with data acquisition boards.

The Department of Chemical Engineering possesses a variety of modern research equipment. The Particle and Catalyst Characterization Laboratory has a Quantasorb surface area analyzer, a flow BET unit, a temperature programmed chromatography and adsorption unit, and a mercury intrusion porosimeter. There is also a particle shape and image analyzer by Shape Technology.

The Process Research and Development laboratories have five microplotted plants for diverse chemical process applications, element analyzer, sulfur analyzer, automated chlorine analyzer, coulter particle counter, ash fusion analyzer, TGA/DSC, oxygen bomb calorimeter, Titel-A-Mix reactor, FTIR, CDS Automated Micropilot Plant, ICP, and four fermenter systems.

The Chemical Reaction Engineering laboratories have a continuous high pressure catalytic reactor which is controlled by an on-line computer working in a real-time, multistaging mode to evaluate results. A slurry-reactor, micro-pilot plant operates in a three-phase catalytic mode and is ideal for carrying out various fundamental and engineering studies on three-phase catalytic reactions. A gas chromatograph/mass spectrometer is available for product stream analysis.

The Applied Collloid and Surface Science Laboratory has a state-of-the-art laser light scattering facility including a Laser argon-ion laser, a vibration isolated optical bench, a Brookhaven correlation and probability analyzer, and an IBM PC-based data acquisition system.

The focal point of the undergraduate laboratories is the Corning Glassplant six-inch and 12-inch distillation unit which includes a 12-platel bubble-cap column and an eight-foot high packed-bed column. The unit is 24 feet high. There is also a pilot plant with a five-gallon agitated reactor and a packed-column stripping facility.

The Department of Civil Engineering staffs four major laboratories. In the environmental engineering laboratory, a student learns to analyze water and wastewater and assess its quality. Laboratory equipment includes analytical balances, incubators, UV-visible spectrophotometers, and a total organic carbon analyzer. Water/wastewater analytical kits and pH and dissolved oxygen meters are also available for field studies.

In the hydraulics laboratory a tilting flume enables the student to visualize water flow in streams and rivers. Models of bridges and dams can be studied; the wave tank simulates the effect of random wave action, wave over washovers, and run-ups; the model basin can be used for wave analysis, harbors, breakwaters, and offshore structures; the mobile bed tank is used to demonstrate erosion and sediment deposition patterns around bridges, piers, and culvert and storm drain outlets.

In the soil mechanics and foundation engineering laboratory, a student learns how to analyze soil by triaxial cells, direct shear machines, and compression machines to determine soil characteristics, and seismic and electrical resistivity equipment for geophysical exploration of soil and rock deposits.

In the structural materials laboratory the opportunity to observe experimental verifications of earlier training on the behavior of structural members subjected to tension, compression, bending, and torsion is accomplished with the use of three universal testing machines, an MTS closed-loop system which has a
loading capacity to 100,000 pounds, and twoInstron dynamic testing machines which can be used in either uniaxial or torsional loading.

The Department of Electrical Engineering maintains a broad range of measurement, electronics, control/robotics computer, digital electronics, signal processing, microwave/transmission line, optics, and machinery laboratories. Measurement and Electronics Laboratories: Students learn to do basic electronic measurements and simple electronic circuits and instruments. The equipment includes oscilloscopes, transistor curve tracers, and an assortment of voltmeters, ammeters, and wattmeters.

Control/Robotics Laboratories: There are analog computers for control system simulation and programming, and digital computers for interfacing with the controlled systems. A variety of robotic devices and systems are also available for robotic control and robotics vision study.

Computer Laboratory: A number of personal computers are available for instructional and research purposes.

Digital Electronics Laboratory: We have several troll and Hewlett-Packard microcomputer development systems for digital prototype design, emulation, and debugging work.

Signal Processing Laboratory: There are computer systems with digitizing, computing, and signal reconstruction capabilities. An anechoic chamber and a key digital sonograph are also available for signal recording and analysis.

Microwave/Transmission Line Laboratory: Students perform the experiments on the basics of wave guide, transmission line property, and wave propagation.

Optics Laboratory: There is an optics table, laser, and holograph apparatus.

Machine Laboratory: Students learn the operating principles of generator and motors, and perform motion control experiments; the laboratory is equipped with an assortment of motors, generators, and motor starters.

The Department of Mechanical Engineering maintains laboratories in the Auburn Science and Engineering Center and in Simmons Hall for both undergraduate and graduate instruction and research. These laboratories include a thermal and fluid science laboratory with internal combustion and gas turbine engines, a supersonic wind tunnel and a subscale wind tunnel; a heat transfer laboratory with thermal conductivity, radiation and temperature measurement systems, a gas laser and various heat exchangers; a measurements laboratory with a full complement of transducers, calibration standards, signal conditioners, analog signal processors, and microprocessor-based data acquisition systems; a mechanical laboratory with anInstron-uniaxial testing machine with computer control, several hardness testers, photelastic strain measuring equipment and a full range of strain gage instrumentation for static and dynamic measurements; a mechanical design laboratory with major software packages for computer-aided design connected to the engineering computer graphics facility; a systems and controls laboratory with microprocessor, analog computers, and digital control equipment for process control and robotics; and a vibration and acoustics laboratory with electro-mechanical shakers, sound pressure level instrumentation and frequency spectrum analyzers for modal analyses.

College of Fine and Applied Arts

The School of Art provides students with a solid background in art history supported by a collection of more than 90,000 slides and an auditorium classroom setting. The department's studios and classrooms are housed in a contemporary 57,000 square foot building which features a ceramics studio with pottery wheels and kilns; a metalsmithing/jewelry laboratory offering casting and fabricating equipment; photographic tools and darkrooms; weaving looms; a printmaking workshop; and a sculpture shop with equipment for construction with wood, metal, clay, plaster stone, and foundry work including bronze and aluminum.

The graphic design/commercial art program has students fab complete with traditional metal type, state-of-the-art computer typesetting systems, Art-O-Graph enlargers, typotools, plate makers, black-and-white and color still cameras, advertising photography and studio and laboratories, color proof systems, and two offset lithography presses. The computer graphics area utilizes two turn-key graphic systems with video input and still film recorders plus Apple II and Macintosh computers set up for graphic use to keep current with new trends in the art field. Emily Davis Gallery, Perkins Gallery, and the Guzzetta Hall Attrum Gallery display, staff-curated national and regional exhibitions, as well as student and faculty work, on a continuous basis. The University Galleries initiate exhibitions as well as host traveling shows. The art gallery maintains a program of catalog publications.

The Department of Communication features a television classroom/studio equipped with color cameras, lights, audio and video control boards, slide and film chain, video and audio tape recorders and character/ticker generator. Portable video and audio equipment is available for location use. A multitrack audio recording facility is located in Guzzetta Recital Hall. Radio facilities, located in WZIF-FM, include control boards, turntables, tape machines, mikes, studios, and newsrooms. A multimedia production/editing laboratory/classroom supports class instruction. News and other writing classes have access to a typing lab and a computer text editing/VT system. The department cooperates with local professional agencies in a strong internship program.

The Department of Communication Disorders provides preprofessional and professional training to students who wish to become speech-language pathologists and/or audiologists. The department houses the Speech and Hearing Center, which functions as a practicum training arm as well as a service agency for persons in the Akron community who have speech, language, or hearing problems.

The Department of Dance is located in the Ballet Center. The activities in the building include the undergraduate dance programs for the B.A. and B.F.A., the Dance Institute for students ages 8-18, continuing education for adults, and the Ohio Ballet. There are five studios, each with mirrors, barres, sprung marble floors, and pianos. There is also an athletic training room with a graduate assistant and a jacuzzi. All offices for the dance faculty, staff, and Ohio Ballet are located in the Ballet Center. Annual performances are held in the Ballet Center stage; the intimate University Theatre, Kolbe Hall; and E.J. Thomas Performing Arts Hall.

The School of Home Economics and Family Ecology has food and nutrition laboratories, an executive dining room, textile conservation and clothing laboratories, and a human resource center. Within the department is a multipurpose lecture laboratory area, designed for demonstration and study in the areas of home management, equipment, home computers, consumer education, housing, interiors, home furnishings, and community involvement.

The School of Music utilizes Guzzetta Recital Hall, which houses a 45-stop Möller pipe organ. The University has available student use a number of wind, string, and percussion instruments. $50,000 worth of equipment is available to complement instrumentation for the marching and symphony bands and the University Orchestra. The department also owns two trumpet soloists, a nine-stop tracker organ, a Möller practice organ, a computer-based instructional laboratory of 10 Apple computers with sound synthesizers, an electronic piano laboratory, and 11 Baldwin concert grand pianos for the recital hall, classrooms, teaching studios, and 40 practice rooms/acoustical sound modules.

The Department of Social Work offers professional training to social work students by linking them to a variety of health and human services community agencies and organizations in this area. The strong commitment and interaction with a network of agencies in the community serves as a laboratory for our students.

The Department of Theatre Arts utilizes three different performing spaces to present its annual season of four to six productions. Guzzetta Hall houses the versatile "black box" experimental theatre as well as rehearsal, teaching, and shop facilities. Kolbe Hall is the site of the 244-seat University Theatre, complete with support facilities. This conventional prosenium theatre is the home of theatre productions as is the multipurpose E.J. Thomas Performing Arts Hall.

College of Nursing

The College of Nursing, housed in Mary Gladwin Hall, has a multipurpose Learning Resource Laboratory where nursing practice is simulated through organized and independent activities. Typical equipment found in hospitals, health agencies, and the home are available for students to practice simple and complex nursing techniques. The laboratory features a hospital setting, study cars, robots, computers, interactive video, a graduate research room, and the Center for Nursing, which is the research, education, and practice arm for the study of Family Nursing.

Students in the College of Nursing have their clinical experience in hospitals, health departments, visiting nurse services, and many local health care agencies. The entire community thus becomes an interactive learning center for the College of Nursing.

College of Polymer Science and Polymer Engineering

The facilities of the Department of Polymer Science and the Institute of Polymer Science support fundamental and applied research in polymer chemistry, physics, and many aspects of polymer behavior. They include extensive laboratories for polymer synthetic chemistry and for the characterization of macromolecules and polymer morphology. A minipilot plant facility is available to provide large quantities of experimental polymers for studies of their rheology and mechanical properties. A nuclear magnetic resonance laboratory is maintained with several high resolution instruments supervised by professional staff.

The applied research section of the Institute of Polymer Science operates a variety of local and national funding programs to serve both industry and government agencies for a reliable source of polymer materials and data. The total value of major instrumentation and equipment housed in the polymer science laboratories exceeds $5 million.

The Department of Polymer Engineering and Center for Polymer Engineering maintain a broad based range of processing, structural, and rheological/mechanical characterization apparatus. Processing facilities include unique blen-
The University of Akron

The University of Akron provides a variety of facilities for polymer science and engineering research, including compounding facilities with various twin screw extruders and internal mixers with flow visualization capability; five screw extrusion lines with single/multiple bubble tubular film and cast film extrusion capability as well as a biaxial film stretcher; molding facilities including screw injection molding capability three machines, blow molding, plug assist thermoforming and compression molding with composites capability. The Center for Polymer Engineering is the home of the Rotational Molding Development Center, established by the Association of Rotational Molders in 1987, and has state-of-the-art rotational molding apparatus. Characterization capability includes scanning and transmission electron microscopy, X-ray diffraction (including a rotating anode X-ray generator), Fourier transform infrared, small angle light scattering, optical microscopy and retardation, radiography, differential scanning calorimetry, thermogravimetric analysis, dielectric thermal analysis, and surface profiling, rheological and mechanical testing, including elongational flow, rotational and capillary shear rheometry, dynamic mechanical, tensile, and impact testing.

**Computer Center**

The Computer Center is at the west end of campus and provides computational support to those academic efforts of research and instruction where such support is feasible, and administrative data processing to assist in the conduct of the business of the University.

The center is equipped with an IBM 3090/200 Dyadic processor for academic and general administrative use. The academic community uses a loosely coupled IBM 4361-R14 and an IBM 3090-200. The IBM runs the VM-HPO operating system, and the IBM 3090-200 runs the MVS-XA operating system for both academic and administrative computing. A variety of peripheral equipment is attached to these computers including magnetic tape drives, disk drives, and remote terminals. A DEC VAX 11/785 is installed to aid research conducted in the computer science and engineering fields. The IBM 3090-200 has one Vector Processor for local supercomputer applications. The VAX, IBM 4381-R14, and the IBM 3090-200 have links to the Cray supercomputer located in Columbus, Ohio. There is also a PRIME 850 computer which is dedicated for support of the College of Engineering Graphics Laboratory. A Scranton Mark Sense Reader creates computer-readable tables from mark sense forms providing fast and reliable data entry for scoring services and surveys.

The center also has widely used computer languages (e.g., FORTRAN, COBOL, PL/I, BASIC, PASCAL, SAS, SPSS, APL, ADEPT, as well as some lesser known, e.g., SNOBOL, FORMAC, WATFIV, ASSIST, XPL, ALGOL, PHOENIX, SIMSCRIPT). Plotting may be done using either a Gould electrostatic plotter or a 30-inch CalComp plotting machine. There is a variety of personal computer and terminal clusters that interact with the IBM-VM/CMS online system.

The Academic Systems Section assists the student and faculty member in making effective use of the Computer Center. It provides consultation and help in preparing usable computer programs and in analysis and solution of problems where the use of the computer is indicated. It will also acquire and install prepackaged programs for specific departments.
Student Services

The Office of Student Services exists to provide whatever help a student needs to develop academically, personally, and socially. Special services are also available to the nontraditional adult student who wishes to return to or continue studies in higher education. Several facilities provide various forms of help to students.

STUDENT DEVELOPMENT

Concerned with each student’s University experience outside the classroom, the Office of Student Development provides a wide range of resources, programs, and professional consulting to assist students with their overall growth as individuals and to assist them in becoming involved and accepting responsibility within campus organizations.

The Office of Student Development also serves as the central coordination point for major campus events such as Homecoming, May Day, Parents/Family Day, the All-Campus Leadership Conference, and the International Festival.

The Office of Student Development, located in Gardner Student Center 104, 375-7021, has current information about all registered student organizations, cocurricular activities procedures, and information to assist students in starting a new group. It also advises registered student groups about planning programs, promoting activities, recruiting and retaining members, developing budgets, and bookkeeping procedures.

The staff serves as the professional advisers for University Program Board, Associated Student Government, and programming efforts of fraternities and sororities, including the Interfraternity Council, Penhellenic Council, and the Black Greek Council.

STUDENT FINANCIAL AID AND EMPLOYMENT

This office serves students who may need financial assistance to attend the University. Six professional staff members provide information on available aid programs. A detailed statement regarding all financial assistance programs can be found in Section 3 of this Bulletin.

CAREER PLANNING AND PLACEMENT

Career placement assistance in business, industry, government, private agencies, and education is provided to students by this office, located in Simmons Hall.

For the graduating student, on-campus interviews with representatives of businesses, industries, branches of the government and military services, and elementary and secondary education can be scheduled through this office. Information on administration or teaching careers in higher education is also available. Other services to registrants include direct job referrals, the maintenance and distribution of students’ credential files, the availability of company literature, and counseling in career planning.

Both students and alumni may take advantage of the facilities and services of this office, and more than 400 interviewers come to the University each fall and spring to interview degree candidates.

Additionally, the Career Planning and Placement Office is part of a cooperative effort with the Counseling and Testing Center to provide for the comprehensive career development needs of students. These programs and services are described below under Career Development Service.

CAREER DEVELOPMENT SERVICE

The Career Development Service is a cooperative effort of the Counseling and Testing Center, the Career Planning and Placement Office, and Cooperative Education Office.

Major Objectives

- To provide specialized services for students to help them:
  - explore, clarify, and assess their interests, values, needs, abilities, and personality characteristics;
  - understand broad career areas and specific occupations;
  - decide on a career direction and an appropriate educational program;
  - develop lifelong decision-making skills.
- To provide services to students who have made a tentative decision regarding their career direction to help them:
  - reassess their interests, aptitudes, needs, and educational and experiential backgrounds as well as their desired life-style to clarify, reevaluate or reinforce their choice;
  - sharpen decision-making skills;
  - apply this knowledge to the realities of the world of work through experiential education;
  - develop lifelong job skills.

Services

- Individual counseling for career and life planning.
  This individualized approach provides a systematic, in-depth exploration of self and the identification of possible career alternatives.
- Interest, aptitude, personality, and values testing for career and life planning.
  A wide range of vocational and psychological tests and inventories are available for self-assessment in individual and group counseling.
- Career and life-planning groups.
  Groups usually meet for three or four one-hour sessions using the self-assessment career planning approach: “Puzzling Your Career” workshops.
  This is a well-developed and flexible approach to career planning especially useful for the nontraditional student.
- SIGI — a computerized system of interactive guidance and information.
  SIGI is a computer program designed specifically to help college students make rational and informed career decisions.
- OCIS — computerized Ohio Career Information System.
  OCIS is a computer-based information system designed to provide remote, instantaneous access to state and national data regarding occupations, educational institutions, and financial aid.
- Career library.
  In addition to standard references, general and specific information is available about career opportunities with hundreds of companies, government agencies, and school systems in Ohio and throughout the country.
- Career advisement and consultation.
  Information and consultation is available about various career fields and their requirements, as well as about job outlooks, salaries, job hunting skills, and University of Akron alumni follow-ups.
- Workshops on interviewing skills, resume writing, and job hunting skills.
  These are practical how-to sessions that deal with a topic in a clear, concise, informative manner.
- Experiential Education.
  Cooperative education work assignments provide eligible students with the opportunity to apply the theory learned in the classroom, prescreen career choices, develop professional skills and competence, and earn a reasonable income.
- Interviews with employers.
  Campus interviews with representatives of business, industry, government, and private organizations are scheduled throughout the year.
- Contacts.
  Names of people to contact within organizations and addresses and locations for all types of employment are available.
• Current job opportunities.
  Employers regularly notify the Career Planning and Placement Office of current
  positions available.

• Computerized job matching.
  A computerized system matching jobs to students registered in the CPPO is in
  operation. This will facilitate information flow between employers and potential can-
  didates for employment.

You are invited to contact the Career Development Service to take advantage of
any of the services described. This contact may be made through the Counseling
and Testing Center, Simmons Hall 163, (216) 375-7062, the Career Planning
and Placement Office, Simmons Hall 178, (216) 375-7747; or Cooperative Educa-

tion, Spicer Hall 119, (216) 375-6722.

COUNSELING AND TESTING
In addition to participating with the Career Planning and Placement Office and
Cooperative Education Office in the Career Development Service, the Counseling
and Testing Service, in Simmons Hall, provides a wide range of psychological
counseling, therapy, testing, and consulting services to the University community.

Counseling Service
The center's counseling service offers assistance in the following areas:
• Career counseling involves discovering one's interests, needs, values, aptitudes, abilities,
  and goals; relating these to the world of work; exploring appropriate ma-
  jor subjects and career fields. Occupational information is available through
  reference books and two computerized vocational guidance and information
  systems, SIGI and OCIS.
• Personal emotional counseling deals with feelings of loneliness, inadequacy, guilt,
  anxiety, and depression; harmful involvement with alcohol and drugs, interper-
  sonal relationships, especially with the immediate family, dating partners, and room-
  mates; 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. Descriptive brochures are available.
• Consulting services deal with concerns of nontraditional students; understanding
  individual and group behavior; problem-solving and decision-making skills; com-
  munication and human relations skills; referral for social, psychological, and medical
  services; and counseling psychology theory and technique.

Testing Service
The center's testing service offers a variety of testing programs such as the
American College Test, the Admissions Testing Program of the College Entrance
Examination Board, mathematics and foreign language placement test, Graduate
Record Examination, Miller Analogies Test, Law School Admissions Test, and the
College Level Examination Program (successful completion of CLEP tests can be substi-
tuted for certain course requirements of the University College).

Individual psychological and vocational testing is offered in conjunction with
counseling. Tests cover such areas as vocational interests, aptitudes, achieve-
ment, personality, and assessment of learning disabilities.

STUDENT HEALTH SERVICES
Health service facilities are located in Robinson Dining Hall, immediately adja-
cent to the residence halls. First aid services and limited medical care are available in
the health services.

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 Security
or an ambulance immediately. The University assumes no legal responsibility or
obligation for the expenses of such transportation or for medical services
at the hospital.

The University constructs every facility with high safety standards and carries
out this principle of maintaining physical security for its students by following
stringent accident prevention measures. However, the University assumes no
responsibility for student accidents incurred while attending or participating in
classroom, gymnasium, or laboratory work.

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

To identify existing or potential health problems, a Health History Profile form
is included in the packet containing other admission forms and information.
Explanations for completion and mailing of this form are included. Completion
of this form is essential.

The completed health form and other health-related records are treated as con-
idential and are kept in the Student Health Services offices.

UNIVERSITY LIBRARY AND LEARNING RESOURCES

Library
Library facilities are housed in three separate locations: in Bierce Library on
Buchtel Common, the Science and Technology Department in Autumn Science
Hall, the Science and Engineering Center 104, and the Psychology Archives in Simmons Hall 10.

Library services include reference and research assistance, user education,
bibliographic instruction, and computer-based information searching. Materials can be borrowed
from the University libraries or obtained through interlibrary loan from other libraries through the circulation department.
Archival Services collects and makes available materials which have historical or other research
interest and which relate primarily to the University of Akron, to an eight-county region in Northeast Ohio, or to American psychology.

The University libraries' collections contain more than 2.6 million items: books, periodicals, government documents, curricular materials, microforms, maps, audio-visual materials, and archival documents. The library receives more than
6,000 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 Northeast Ohio Major Academic and Research Libraries Consortium, the Online Computer Library Center (OCLC) and the Ohio Network of American History Research Centers, access to vast resources is greatly increased for University
students, faculty, and staff.

University identification cards function as library cards. Photocopy services and
equipment for use in making paper copies from microforms are available in the
main library and the sciences and technology department. A machine for
making a duplicate microfiche copy is available in the main library, where group
study rooms and typing facilities are also available.

Learning Resources
Audio-Visual Services, the Computer-Based Education Center, and University
Media Productions comprise the Learning Resources services.

Audio-Visual Services, located in Bierce Library 63B, maintains an extensive
centralized collection of media hardware and audio-visual resources and materials
for student and faculty use. It also has a collection of instructional materials in
various media formats (filmstrips, slides, etc.) to supplement classroom instruc-
tion. Satellite stations for equipment distribution are located in Olin Hall 116,
Schrank Hall South 238; Bierce Library 63; and Gardner Student Center on
the second floor.

University Media Production prepares original artwork and photographic
materials for use by faculty. This division prepares non-broadcast, educational
videotapes that support classroom instruction and provides general informa-
tion, along with films, slide/sound sequences, audiotapes, and multi-image
presentations.

University Media Productions also produces cultural, public affairs, and sports
television programs. University Media Production TV studios are located in Kolbe
Hall 106 and 57. The film and graphic arts facilities are located in Carroll Hall
20 and 57.

The Center for Computer-Based Education works with faculty to develop and
acquire computer-based education courseware. The unit also acts in the capacity
of consultant on Computer Based Education-related projects. The center operates
and supervises a student lab that is open 72 hours per week during the semester
and has 20 computer work stations available for student use. The Computer
Based Education Center is located in Carroll Hall 308 and 325B.
RESIDENCE HALLS

The Office of Residence Halls has the responsibility for providing comfortable, safe, and healthful living accommodations for the noncommuting student. The residence hall program is committed to providing a living experience that contributes to the educational, social, and personal development of each resident student.

The University residence hall program is administered from the Office of Residence Halls on the first floor of Bulger Residence Hall. Currently the residence hall system includes 16 facilities housing approximately 2,200 students from 17 states and several foreign countries.

Living in each hall is a trained hall director and selected returning students who serve as resident assistants. Most of the halls are fully air-conditioned and feature semiprivate rooms with bathroom facilities on each floor. Recently acquired residence halls that were formerly apartments house more students per unit and include private bathroom facilities. Rooms are furnished with beds, desks, chairs, bookshelves, closets, storage space, lamps, wastebaskets, drapes, and pillows. A student is not permitted to have pets.

The residence halls have coin-operated washers and dryers as well as lounge and study areas. A resident may have a car on campus but must purchase and display a student parking permit. There are open parking lots adjacent to the halls as well as a deck below the Robertson Dining Hall.

Robertson Dining Hall

A student who lives in the residence halls must participate in the board plan. A residence hall occupant receives a meal ticket, which is not transferable, entitling the holder to 20 meals per week in the dining hall. Meals are served cafeteria style with an "unlimited seconds" policy. Meals are planned under the supervision of a professional dietitian.

Cost: Room and Board

The current rate for housing accommodations and food service is $2,950 per year ($1,475 per semester).

Housing is also available during the summer on a limited basis. The charges are: per night, $7; per session, $220; and for the entire summer session, $440. These prices reflect the cost of room only. A student is responsible for meals.

In the event surplus space becomes available in University residence halls, the University shall enforce a rule requiring occupancy of facilities by students attending the University.

Residence Hall Program Board (RHPB)

RHPB is a student-operated programming organization that provides a variety of social activities for residence hall students. RHPB's seven standing committees — major events, musical entertainment, telecom, media, publicity, technical, and special features — sponsor an array of activities such as Freshman Orientation, Little Site Weekend, Hall Fest, dances, miniconcerts, contests, talent shows, movies, and trips to sports events.

Residence Hall Student Council Government

Residence Hall Council (RHC) is the major governmental body for residence hall students. The purpose of RHC is to facilitate communication among students, faculty, and administration; to provide services for the residence hall community; and to plan educational and recreational activities to enhance residence hall living.

RHC consists of executive officers and representatives from each individual residence hall. Each residence hall has its own hall government responsible for supporting and enriching hall environment and sponsoring group activities for its residents.

University Residence Halls

<table>
<thead>
<tr>
<th>Hall</th>
<th>Number of Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulger Hall (men)</td>
<td>504</td>
</tr>
<tr>
<td>Galluccio Hall (men and women)</td>
<td>469</td>
</tr>
<tr>
<td>200 E. Exchange Street</td>
<td>220</td>
</tr>
<tr>
<td>Grant Residence Center</td>
<td>431</td>
</tr>
<tr>
<td>Highrise (women) 151 Wheeler Street</td>
<td>128</td>
</tr>
<tr>
<td>Townhouses (men and women) Sherman and Grant streets</td>
<td></td>
</tr>
<tr>
<td>Orr Hall (women)</td>
<td>102</td>
</tr>
<tr>
<td>188 S. College Street</td>
<td>126</td>
</tr>
<tr>
<td>Ritchie Hall (women)</td>
<td>129</td>
</tr>
<tr>
<td>269 Buchtel Common</td>
<td>360</td>
</tr>
<tr>
<td>Sisler-McFawn (women)</td>
<td>66</td>
</tr>
<tr>
<td>211 E. Center Street</td>
<td>44</td>
</tr>
<tr>
<td>Sargent Hall (women)</td>
<td>333 Brown Street</td>
</tr>
<tr>
<td>190 S. College Street</td>
<td></td>
</tr>
<tr>
<td>Richard S. Garson Hall (men)</td>
<td>106</td>
</tr>
<tr>
<td>282 Torrey Street</td>
<td></td>
</tr>
<tr>
<td>Brown Street Hall (men)</td>
<td></td>
</tr>
<tr>
<td>333 Brown Street</td>
<td></td>
</tr>
<tr>
<td>Private Residence Halls</td>
<td></td>
</tr>
<tr>
<td>Berns Hall (women) 503-505 Vine Street</td>
<td>106</td>
</tr>
<tr>
<td>Concord Hall (women) 369 Sherman Street</td>
<td>35</td>
</tr>
<tr>
<td>Glenville House (men) 478 Orchard Street</td>
<td>50</td>
</tr>
<tr>
<td>Sherman Hall (men) 477 Sherman Street</td>
<td>50</td>
</tr>
<tr>
<td>Sumner Hall (women) 430 Sumner Street</td>
<td>40</td>
</tr>
<tr>
<td>Wallaby Hall (men and women) 323 Brown Street</td>
<td>92</td>
</tr>
</tbody>
</table>

NURSERY CENTER

The University of Akron Nursery Center provides a variety of child-care programs, all of them open to the general public as well as to students, faculty, and staff. The curriculum covers planned, spontaneous, and facilitated experiences for children and is supervised by trained teachers and aides. Opportunities are provided for youngsters to engage in arts, language arts, table toys, socio-dramatic play, rug toys, science exploration, sandbox, and water play. Field trips provide real-life experiences. Resource people from the community are invited to the school to share their talents and vocations. The program emphasizes positive self-image, racial awareness, and anthropological differences among people.

The Nursery Center, which is open between 7:40 a.m. and 6 p.m. Monday through Friday during the fall and spring semesters, offers on-hourly half day, and full-day preschool for children three to five years old. The half-day preschool sessions run from 8 a.m. until noon Monday through Friday. Full-day sessions are available for up to 45 hours of child care per week year around.

A summer program is also offered for school-aged children from three to eleven years old during the center's summer hours, from 6:45 a.m. until 6 p.m. Hourly, half-day, and full-day care can be provided.

Fees for the Nursery Center services are the same during both the academic year and the summer session. Hourly preschool care is $2 per hour; for half-day sessions, $40 per week; and for the full-day program, $65 for up to 45 hours of child care.
ECUMENICAL
CAMPUS MINISTRY

The Ecumenical Campus Ministry is a cooperative enterprise supported by many Protestant and Roman Catholic churches, working together to proclaim the Christian gospel to and within the academic community. The church cooperates with the University in shaping values, in creating awareness of self-identity, and in providing intellectual preparedness for tasks relating to God and His children. Thus the campus ministry programs focus on all facets of the academic community—faculty, students, staff—through discussion groups, worship celebrations, retreats, social projects, personal counseling, and reflection.

A student is invited to share in this ministry through participation in any of its programs and services. The Catholic campus ministers and the Protestant minister are available at the Newman Center, 143 S. Union Street (north of Olin Hall). Catholic mass is offered on Sundays and weekdays. Other services are offered at local churches.

A priest is available to all of the Eastern Orthodox faith at the Greek Orthodox Church of the Annunciation adjacent to the campus at 129 S. Union Street.

There are synagogues in the city for the student of orthodox, conservative, and reformed Jewish faith. The Akron Jewish Center, located on the west side of the city, provides cultural opportunities for all students and residents of the city.

Many of the extracurricular groups have a faith as a focal point of the organization. These are listed in the student handbook, the A-Book.

THE BLACK CULTURAL CENTER (BCC)

The Black Cultural Center develops, coordinates, and implements noncredit instructional and educational programs and activities on the total black experience for The University of Akron. The center serves as a coordinating agency for all black student groups on campus although each group maintains its autonomy. The BCC provides other limited auxiliary services to minority students in pursuit of academic and cultural excellence. Also, the center provides limited outreach service to the black community of Greater Akron.
Cocurricular Activities

Experiences obtained through social life and cocurricular activities add an important dimension of learning to formal coursework.

Eligibility for participation in an officially registered cocurricular activity is based on the student’s eligibility to continue in the University. Participants in certain selected activities, e.g., honor societies, recognition societies, varsity athletics, etc., must also satisfy requirements for eligibility as specified by the national and/or conference organizations governing such activities.

Cocurricular offerings range from athletics to communications and publications from recognition societies and honoraries to personal interest groups, from performing arts groups to religious organizations, and from academic department interest clubs to social fraternities and sororities. Participation in these activities provides an opportunity to make new acquaintances and contacts with various people in the University and community; they also provide the chance to broaden classroom learning experiences, develop skills that will be marketable in the search for a career position, introduce the student to additional interests, and teach him leadership and human relations skills.

Listed here are some of the most popular activities. A complete listing may be found in the Office of Student Development, Gardner Student Center 104.

PERFORMING ARTS

Opportunities are abundant for students to develop the ability to face the public through such live audience performances as plays, debates, recitals, and dance, as well as media presentations through radio, television, and film.

A student who aspires to act, write, or produce in theatre is encouraged to attend auditions and to apply for technical positions. The experimental theatre in Guzzetta Hall is one of the most flexible theatre designs to date. The University Theatre in Kolbe Hall, with its intimate proscenium stage, is the scene for many University productions.

Those interested in mass media communication will find that Guzzetta Hall contains fully equipped television and radio stations. A student may participate in the operation and broadcast of public radio station, WZIP (88.1 FM).

A University student interested in music may audition for membership in the famous 250-piece Marching Band, the Concert Choir, the Vocal Jazz Ensemble, the award-winning Jazz Ensemble, the University Orchestra, the Concert Band, the Symphonic Band, the outstanding Opera Theatre, the Evening Chorus, which performs regularly with the Akron Symphony Orchestra, or any number of other small or specialized musical ensembles or clubs.

A final opportunity in the area of performing arts is offered in ballet, in the form of the Repertory Dance Ensemble, which is intimately associated with the world-renowned Ohio Ballet.

SPORTS

The University of Akron believes that intercollegiate athletics are an important and wholesome adjunct to the principal mission of the University. The University believes that it serves a purpose for the physical well-being and health of its students, as well as for their mental development. Accordingly, it provides programs of intercollegiate and intramural sports. Participants in either program must be, first and foremost, full-time students whose fundamental aim is to obtain a sound education.

The University of Akron currently competes in 17 NCAA Division I intercollegiate sports. The three athletic seasons include: Fall — football, soccer, men's and women's cross country, and women's volleyball; Winter — men's and women's basketball, men's and women's indoor track, and tennis; Spring — women's fast-pitch softball, baseball, golf, and men's and women's tennis and outdoor track.

The athletic program actively seeks participants from its campus population and annually attracts some 400 students for participation in various intercollegiate sports. Likewise, the athletic department selects each spring a cheerleader squad from its campus community and incoming high school seniors.

Intercollegiate athletic programs enhance the educational opportunities of the students who participate in those activities. The men and women who are involved in intercollegiate athletic programs at The University of Akron shall be expected to maintain the academic standards required of all students at the University and adhere to applicable NCAA and conference regulations.

Students are admitted free to all regular season home intercollegiate contests with a validated I.D. Likewise, students who wish to work for the promotion of intercollegiate athletics on campus are urged to join the student sports committee.

DEPARTMENTAL ORGANIZATIONS

To enhance and expand classroom learning, many academic departments sponsor organizations that provide social and educational programs in a particular field of study. Guest speakers, community service projects, and career nights are a few of the activities offered.

PERSONAL INTEREST ORGANIZATIONS

From religious groups to chess tournaments, the personal interest organizations cover a wide range of activities and interests.
Some of the most prominent, broadly appealing groups are: Associated Student Government (ASG), the representative government for the undergraduate which provides student input into University governance and recommends budget allocations to campus organizations; Black United Students, which offers enrichment for the black student supplemented through Black History Month, orientation programs for the black student, the BUS Ball, and other cultural programs; the Residence Hall Program Board, which schedules entertaining activities such as coffeehouses, dances, films, and video entertainment in order to fill resident students’ leisure time.

Students at The University of Akron have the opportunity to hold positions on the all-campus activities board, the University Program Board. UPB is open to interested students and is actively involved in the selection, promotion, and presentation of concerts, evening and afternoon entertainment, lectures, recreational activities, art exhibits, minicourses, and many other special events for the University community.

STUDENT PUBLICATIONS
The Buchtelite is a student newspaper issued twice weekly during the regular academic year. This is the campus "voice" with news, columns, and photographs concerning campus events. Copies of each edition are distributed to students free of charge at various locations on campus.

The Tel-Buch is a yearbook with comprehensive editorial and photographic coverage of student life at the University. This impressive publication of approximately 300 pages is free to students in attendance during the school year that the yearbook summarizes.

ARETE is composed of journals and newsletters produced by law students to advance the goals of the profession, present opinions of contemporary issues related to law, and to facilitate communication among law students.

Akros Review is a literary journal of creative writing and artwork primarily by students at The University of Akron and secondarily by artists and writers in the Northeast Ohio area.

DIRECTORY OF STUDENT ORGANIZATIONS

April 1989
Nontraditional
Alpha Sigma Lambda (evening student honorary)

Nontraditional Student Government
Gamma Beta Sorority (for nontraditional age women)

Graduate
Association of Chemistry Graduate Students
Chi Sigma Iota
Graduate Student Government
Industrial/Organizational Psychology Graduate Students
International Graduate Student Organization

Polymer Science Student Organization
Society of Plastics Engineers

Law
Arete
Black American Law Student Association
Bradford's Inn
Delta Theta Phi Law Fraternity
International Law Society
Law Association for Women's Rights
Phi Alpha Delta Law Fraternity
International Student Bar Association

Communications/Publications
Akros Review
Buchtelite
Tel-Buch

Departmental
Accounting Association
Advertising Club
Akon Council of Education Students
Akon District Society of Professional Engineers
Alpha Alpha Alpha (social work)
American Production and Inventory Control Society (APICS)
Biography Club
Black Computer Science Assembly
College Secretaries International
Computer Science Club
Computer Society of the Institute of Electrical & Electronic Engineers
Council for Exceptional Children
Data Processing Management Association
Delta Nu Alpha (Transportation)
Der deutsche Studentenklub
Economics Club
Electronics Club
Financial Management Association
Fire Protection Society
Geography Club
Geology Club
Honors Club
Institute of Electrical & Electronic Engineers
International Business Club
Johnson Club (English)
Kappa Kappa Psi (Marching Band fraternity)
Le Cercle Français
League of Black Communicators
Math Club
Medical Technology Club
Minority Business Students Association
Organization for Children's Health Care
Philosophy Club
Press Club
Psychology Club
Society for Students in Construction
Society of Interior Design Students
Society of Physics Students
Society of Signers
Sociology Club
Student Art League
Student Dietetic Association
Student Social Work League
Tau Beta Sigma (Marching Band sorority)
Theatre Guild

Governing Body
Associated Student Government
Black Greek Council
Nontraditional Student Government
Graduate Student Government
Interfraternity Council
Panhellenic Association
Residence Hall Council
Student Bar Association

Honorary
Alpha Alpha Alpha (social work)
Alpha Epsilon Phi (communications)
Alpha Kappa Delta (sociology)
Alpha Lambda Delta
(freshman-scholarship)
Beta Alpha Psi (accounting)
Beta Gamma Sigma (business)
Delta Phi Alpha (German)
Eta Kappa Nu (electrical engineering)
Kappa Omicron Phi (home economics)
Mortar Board (leadership/scholarship)
Mu Kappa Tau (marketing)
National Residence Hall Honorary
Omicron Delta Epsilon (economics)
Omicron Delta Kappa (leadership/scholarship)
Order of Omega (Interfraternity Council)
Phi Alpha Phi (history)
Phi Eta Sigma (freshmen/scholarship)
Phi Theta Kappa (Community and Technical College)
Pi Delta Phi (French)
Pi Lambda Theta (education)
Pi Mu Epsilon (mathematics)

Ps Chi (psychology)
Rho Lambda (Pan-Hellenic)
Sigma Delta Pi (Spanish)
Sigma Theta Tau (nursing)
Tau Alpha Pi (engineering & science technology)
Tau Beta Pi (engineering)

International
Chinese Society
Chinese Student Association
Hellenic Club
Indian Students’ Association
International Students’ Club
Italian Club
Japanese American Friendship Association
Palestine Club
Phi-American Students of Akron
Slavic Society
Turkish American Students’ Association
Vietnamese Student Association

Military
Arnold Air Society
James A. Garfield Company
National Society of Pershing Rifles
Rangers
Silver Wings Society of Angel Flight

Political
American Friends Service Committee/ Central American Solidarity Association
College Republicans

Professional
American Chemical Society Student Affiliates
American Institute of Aeronautics and Astronautics
American Institute of Chemical Engineers
American Society of Personnel Administration
American Society of Civil Engineers
American Society of Mechanical Engineers
Delta Sigma Pi (business)
Financial Management Association
International Association of Business Communicators
National Society of Black Engineers
Pi Sigma Epsilon (marketing)
Public Relations Student Society of America
Women in Communications, Incorporated

Programming
Residence Hall Program Board
University Program Board

Religious
ABC’s of Salvation
Agape Fellowship
Alpha Omega Christian Fraternity
Baptist Student Union
Campus Crusade for Christ
Campus Focus
Christian Science Organization
Ecumenical Christian Association
Great Commission Students
Inter-Varsity Christian Fellowship
Newman Catholic Community
True Vine Campus Ministry
University Christian Outreach

Social Fraternity
Alpha Kappa Delta
Delta Psi Phi
Gamma Xi Lambda
Chi Alpha

Omega Psi Phi
Phi Beta Sigma
Phi Delta Theta
Phi Gamma Delta
Phi Kappa Psi
Phi Kappa Tau
Phi Sigma Kappa
Pi Kappa Epsilon (Lone Star)
Sigma Nu
Sigma Tau Gamma
Tau Kappa Epsilon
Theta Chi

Social Sorority
Alpha Delta Pi
Alpha Gamma Delta
Alpha Kappa Alpha
Alpha Phi
Chi Omega
Delta Gamma
Delta Sigma Theta
Kappa Kappa Gamma
Sigma Gamma Rho
Zeta Phi Beta

Special Interest
Akron Rainbow Coalition
Alpine Ski Team
Amateur Radio Club
American Friends Service Committee/Central America Solidarity Association
Association of Collegiate Entrepreneurs
Black United Students
Cheerleaders
Chess and Go Club
Circle K Club
Contemporary Students Organization
Forensic Union
Future Physicians Club
Gay/Lesbian Task Force
Gospel Choir
Green Dragon Kung Fu Club (formerly Chinese Martial Arts)
Karate/Judo Club
Outing Club
Pre-Law Club
Senior Class Board
Ski Club
Stargate
Student Toastmasters
Students for Life
Table Tennis Club
University Gaming Society
Women’s Network
SECTION 3

Admissions, requirements, procedures and costs
Admissions

Admission is necessarily limited by the University's capacity to provide for the student's educational objectives. The University reserves the right to approve admission only to those whose ability, attitude, and character promise satisfactory achievement of University objectives.

RECOMMENDED HIGH SCHOOL COURSES

Students should pursue the following college preparatory curriculum:

- 4 units of English
- 3 units of mathematics
- 3 units of science
- 3 units of social science
- 2 units of a foreign language

Applicants intending to major in business, computer science, engineering, natural science, or statistics should take a fourth year of high school mathematics. Appropriate preparation for natural science or engineering includes biology, chemistry, physics, and a fourth year of science if available. It is strongly recommended that students interested in nursing complete additional credits in mathematics and science.

The high school courses mentioned above are recommendations, not requirements. Variations in degree requirements for different majors may cause variations in recommended high school courses. Students may obtain specific high school course recommendations by major area of study from the Office of Admissions.

Students whose preparation differs from that recommended by the University or those who show a deficiency in English or mathematics will be required to take developmental courses in those areas. Developmental courses do not count as degree credit; however, they do count toward full-time status.

CLASSIFICATION OF STUDENTS

The University of Akron classifies its 27,500 students according to their needs, goals, and abilities. Classifications include:

- Undergraduate — A student who has not earned the baccalaureate degree and is eligible to enroll in undergraduate-level credit courses.
- Postbaccalaureate — A student who holds the baccalaureate degree from an accredited institution, who is eligible to enroll in credit courses on the undergraduate level, and who has not been admitted to the Graduate School. A postbaccalaureate student applies for admission to the college (arts and sciences, education, etc.) where undergraduate credit is to be earned.
- Graduate — A student who holds the baccalaureate degree from an accredited institution, has been admitted to the Graduate School, and is eligible to enroll in graduate-level credit courses.
- Professional — A student who holds the baccalaureate degree from an accredited institution and has been admitted to the School of Law.
- Special Nontraditional — A student who desires to complete a minimum number of credits to fulfill a specific objective such as personal growth or job training. The student must be graduated from high school at least one year prior to application and/or have attended another college or university for at least one year. A special nontraditional student will be limited to two courses or six credits per term to a maximum of 18 credits total.
- Special Student — A student who does not meet the regular admissions requirements but qualifies by certain abilities or maturity and is admitted by the dean after special petition.
- Auditor — A student who wishes to enroll in a course without obtaining a grade-point value ("A-F") or a grade of noncredit or credit. A student must indicate that he is an auditor at the time of registration. Audit status may be denied if space is not available. An auditor is expected to do all prescribed coursework except the writing of examinations.

- Guest — (from another institution) A student who is regularly enrolled and eligible to continue at another institution, and who desires to enroll at The University of Akron for specified courses.
- (from The University of Akron) A student enrolled at The University of Akron who must obtain written permission from the dean of the student's college before enrolling (guest student status) for credit work at another institution. Credit for such work may be granted at the discretion of the dean.

ADMISSION PROCEDURE

The University of Akron operates under a policy of rolling admissions, which means an applicant receives a letter of admission as soon as all credentials are processed. There is no set date for notification of admission; it is an ongoing process. However, it is advisable for a prospective student to submit all credentials as early as possible to be assured the best selection of classes and/or a room in the residence halls.

Admission procedures vary slightly for different types of students. The various admissions categories include: recent high school graduate, adult student, transfer student, postbaccalaureate student, special student, guest student, and international student. For information on admission to the Graduate School, see Section 7 of this Bulletin.

Recent High School Graduates

A recent high school graduate should apply for admission as follows:

- Obtain an application form from the Office of Admissions, either by calling (216) 375-7100 or writing the Office of Admissions, The University of Akron, Akron, OH 44325-2001. Fill it out and return it as soon as possible with the nonrefundable application fee (a one-time charge). All checks should be made payable to The University of Akron and should specify what fees and for which student the payment is being made.
- Send a student transcript to the Office of Admissions at the time of application. This record must be received before any admission action can be taken by the University.
- Take entrance exams. Arrangements may be made through the student's high school to take the ACT or SAT (The University's Counseling and Testing Center also serves as a testing site for the ACT test). Test scores must be submitted before an applicant can be formally admitted to the University.
- The University requires enrollment in basic mathematics and/or English if the student's academic adviser determines that deficiencies exist in one or both of these areas. This recommendation will be based on the following work completed at a previous institution in mathematics and/or English, high school academic record (if available), standardized test results (ACT or SAT if available), and University mathematics and/or placement test results. If a mathematics or English placement test is deemed necessary to comply with this policy, the student must take the appropriate placement test(s) by the completion of the first term of attendance. To arrange for the mathematics test, contact the Testing Bureau, Simmons Hall 161, at (216) 375-7084. The English test can be taken by contacting the Department of Developmental Programs, Carroll Hall 219, at (216) 375-7087. Have test score(s) interpreted by contacting the dean of the University College, Spicer Hall 214, at (216) 375-7066 two days after taking the appropriate test(s). Please note...
that failure to take the required test(s) prohibits enrollment in college-level mathematics and/or English courses.

• A health record will be sent from the Office of Admissions after the student has been admitted. Please complete the form and return it. This provides the University with the information necessary for a complete health record on every student.

• In the letter of admission, the student will receive directions concerning academic counseling. University College freshmen and some sophomore-students receive academic advisement through Academic Advising Services of the University College. A student in the Community and Technical College or a degree-granting college will be advised by a faculty member in the appropriate department.

Postbaccalaureate Students

A student who holds the baccalaureate degree from an accredited college and wishes to continue educationally but has not been admitted to the Graduate School, should apply as a postbaccalaureate student through the Office of Admissions.

This procedure should be followed:

• Obtain an application form from the Office of Admissions, either by calling (216) 375-7100 or writing the Office of Admissions, The University of Akron, Akron, OH 44325-2001. Fill it out and return it as soon as possible with the nonrefundable application fee (a one-time charge). All checks should be made payable to The University of Akron, and should specify what fees and for which student the payment is being made.

• A health record will be sent from the Office of Admissions after the student has been admitted. Please complete the form and return it. This provides the University with the information necessary for a complete health record on every student.

• In the letter of admission to the University, the student will receive directions concerning academic counseling. All freshmen receive academic advisement through Academic Advising Services of the University College.

Special Students and the High School/College Program

A special student is one who does not qualify for regular admission to the University or who is participating in a special short-term academic program. A special student may not take more than 15 credits unless official status as a regular student is gained.

This procedure should be followed:

• Obtain a special student application from the Office of Admissions.

• A student presently enrolled in high school must also submit written permission from either the high school principal or guidance counselor to participate.

• Information regarding registration for classes and academic advising will be forthcoming in the letter of admission to the special student program.

Guest Students

(Non-University of Akron Students)

An undergraduate guest student must apply to the Office of Admissions. A graduate student must apply through the dean’s office of the Graduate School. A guest student may not, as a general rule, attempt more than 16 credits in any semester or session and is subject to all rules and regulations of The University of Akron.

The following procedures should be followed when applying to the University as a guest student:

• Obtain a guest student application from the Office of Admissions, The University of Akron, Akron, OH 44325-2001. Complete it and return it with the nonrefundable application fee (a one-time charge),

• Receive advice and written approval by the home institution of the coursework for which the student plans to enroll.

• After admittance, information regarding registration will be sent to the student. The admissions officers act as guest student counselors. Guest students may register for classes during open registration.
INTERNATIONAL STUDENT PROGRAM

The University of Akron welcomes qualified students from other countries and seeks to make their educational experiences pleasant and meaningful. During the 1987-88 academic year, approximately 1,000 students with citizenship other than the United States attended the University. These students represent 88 countries and are pursuing studies in a number of major fields.

Admission Procedures

Applicants may be accepted for any academic term. All admission requirements should therefore be completed at least 45 days prior to the start of the term the student wishes to seek to make their educational experiences meaningful.

The following application procedures should be followed:

• Obtain an international student application form from the Office of Admissions. If your request is by mail, use this address: Office of Admissions, The University of Akron, Akron, OH 44325-2001 USA. Fill it out and return it with the nonrefundable application fee (a one-time charge).

• Submit official transcripts from all secondary or middle schools and all universities attended previously. Original records in languages other than English must be accompanied by exact English translations and certified by the school or consulate or must be accompanied by appropriate verifications.

• International students must also include an autobiographical essay with the application. This essay should cover any significant personal, occupational, and educational experiences.

• 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 throughout the world in major cities. Applications may be obtained from binational agencies, USIS offices, or by applying directly to Educational Testing Service, Princeton, NJ 08540. Because it normally takes six to eight weeks for the University to receive the results of the TOEFL, the student is encouraged to take the examination in October or January. The University cannot guarantee the student who takes the examination in March that the results will be processed completely before the July 1 application deadline.

The English Language Institute at the University offers a program in English for the student who has not reached the level of proficiency required for full admission. A student who has not yet taken or passed the TOEFL can still enroll in the English Language Institute.

• Proof of adequate financial support. An international student is requested to submit a Declaration and Certification of Finances and bank statement showing that the student has sufficient funds to cover the cost of the student's education while attending the University and that these funds will be available to the student in this country. It is estimated that an international student will need a minimum of $10,395 per academic year for undergraduate study and living expenses while attending. If the student remains in the United States to attend summer sessions, approximately $2,000 more should be added to that amount. Immigration regulations prevent a student from earning any substantial portion of this amount. There are virtually no scholarships available to an undergraduate from abroad, although a graduate student may request and often receive financial aid through fellowships and graduate assistantships. A graduate student interested in applying for this aid should request the necessary forms at the time of admission to the Graduate School. Each international student will be held responsible for obtaining and maintaining appropriate health and accident insurance coverage while enrolled at this institution.

Orientation

The international student is required to attend a special orientation program which begins one week before classes. The schedule for orientation will be mailed with the Certificate of Eligibility (F-1 or J-1) from the office of the immigration specialist. The student may be required to participate in noncredit English classes if the results of his placement examination warrant such action.

English Language Institute

The University offers an intensive English Language Institute for the international student whose command of the English language has not reached a level of proficiency sufficient to enable the student to begin full-time academic coursework. The English Language Institute operates on a schedule of two 15-week semesters and a 10-week summer session.

Special Note

The University has an immigration specialist, an international student adviser, and program specialist and instructors of English as a second language. If an international applicant has questions about housing, climate, or immigration regulations, he is encouraged to contact the Office of International Students directly.

The University is a member of The National Association for Foreign Student Affairs.

Special International Education Programs

The University sends students to different parts of the world as part of its continuing programs, classrooms around the world. This program, offered for graduate or undergraduate credit, began in 1960.
Orientation

A day-long orientation program is required for all new students. During this program students view a multimedia presentation of campus life and facilities, tour the campus, take appropriate placement tests, meet with an academic adviser to plan a program of study, obtain an I.D. card, and register for fall and spring classes. The purpose of orientation is to insure a smooth transition from high school to college life.

Academic Advising

New students are required to meet with academic advisers upon initial entry to the University. Thereafter, only students on academic probation are required to see academic advisers prior to subsequent registrations. Other students are strongly encouraged to see advisers each term, however, to discuss degree requirements, career goals, major choice, course selection, and other academic concerns.

Registration

Each term it is necessary for a student to select courses, complete required forms, and pay the appropriate fees to register officially for classes. The student may elect to register by telephone or in person. Details about these options are described in the Schedule of Classes published every academic period and available upon request from the student’s advising agency, the Office of Academic Advising Services, or the degree-granting college. Students enrolling after the official open registration period will be charged a nonrefundable late registration fee.

Class Attendance

A student is expected to attend all meetings of a class for which he is registered. A student may be dropped from a course by the dean if absence is repeated and the instructor recommends this action; a student can gain readmission only with permission of both dean and instructor. A student dropped from a course receives an “F” which counts as work attempted whenever grade-point ratio calculations are made.

Student Schedules

Modification of Student Schedules

A student must register for a course before the end of the first week of the term. Alterations in the student’s official schedule may be made only with the permission of the dean or the dean’s designate. A student in the University College should make all changes through an adviser in the Office of Academic Advising Services, Spicer Hall.

Withdrawal Policy

A student may withdraw from a course up to the midpoint of a course with the signature of their adviser. After the midpoint of a course, a student must have the written approval of both the course instructor and the adviser. Such approval must be dated and processed through the offices of the registrar and cashier one week prior to the beginning of the final examination period. Should the instructor or adviser refuse to sign the withdrawal form, the student may appeal to the dean of the student’s college, who shall make the final decision after consultation with the instructor and adviser who declined to approve the withdrawal. An approved withdrawal will be indicated on the University official academic record by a “W.” A student who leaves a course without going through the withdrawal procedure will be given an “F” in the course.

Transfer Credit

Coursework taken at an institution of higher education in the United States which is fully accredited or has been granted candidacy status by Middle States Association of Colleges and Schools/Commission on Higher Education (MSA/CHE); New England Association of Schools and Colleges (NEASC); North Central Association of Colleges and Schools (NCA); Northwest Association of Schools and Colleges (NASC); Southern Association of Colleges and Schools — Commission on Colleges (SACS); Western Association of Schools and Colleges — Accrediting Commission for Senior Colleges (WASC Sr); Western Association of Schools and Colleges — Accrediting Commission for Community and Junior Colleges (WASC-Jr) as designated in Accredited Institutions of Postsecondary Education — Programs/Candidates as published by The Council on Postsecondary Accreditation (COPA) by the American Council on Education will be listed on The University of Akron official academic record. Each course will reflect the course number, title, grade, and credit value; no grade-point value will appear on the record and no grade-point average will be calculated for the coursework listed; however, grade-point average may be considered for purposes of evaluating, ranking, or otherwise determining admisibility to the University or to specific programs. In addition, the name of the institution as well as the time period during which the courses were taken, will be listed on The University of Akron official academic record. For courses that have been taken at an institution of higher education noted in the reference document above, the dean of the college in which the student intends to obtain a degree will specify which courses listed, other than general studies, will apply toward the degree requirements at the University. This specification will be made at the time the student enters the degree-granting college. The dean of the University College will specify which courses listed will apply toward the general studies requirements when the student enters the University.

Guest Student — (University of Akron Students)

A University of Akron student may take coursework at another institution of higher education as a guest student. For all courses other than general studies, the student must obtain prior written permission from the dean of the college in which the student is enrolled; for general studies courses, prior written permission must be obtained from the dean of the University College. These courses will be listed on the University official academic record. Each course will reflect the course number, title, grade, and credit value; no grade-point value will appear on the record and no grade-point average will be calculated for the coursework listed. The name of the institution will be listed on the University official academic record as well as the date that the coursework was taken.

Credit by Examination

A student interested in earning credits by special examination may do so with the permission of the dean of the student’s college and the dean of the college in which a particular course is offered and by payment of a special examination fee. The grade obtained in such an examination will be recorded on the student’s permanent record. Credit by examination is not permitted in the semester before graduation. Credit by examination may not be used to repeat for change of grade.
Bypassed Credit

Certain courses designated in this Bulletin by each department enable a student to earn "bypassed" credit. A student who completes such a course with a grade of "C" or better is entitled to credit for designated prerequisite courses which carry the same departmental code number. Credit for such bypassed prerequisites shall be included in the total credits earned but shall not count in the quality point ratio, class standing or hours required for graduation with honors. Bypassed credit is not awarded on the basis of completing a course either credit-by-examination or credit/noncredit.

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**University College**

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**Community & Technical**

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**Buchtel College of Arts and Sciences**

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**Modern Languages**

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**Philosophy**

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**College of Engineering**

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**Nursing BSN-RN Sequence**

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**Nursing MSN-RN Sequence**

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite</th>
<th>Approved for Bypassed Credit</th>
</tr>
</thead>
</table>

**GRADE POLICIES**

**Credit/Noncredit Option (undergraduate and postbaccalaureate only)**

A student who takes a course on a “credit” or “noncredit” (“CR/NC”) basis, and who earns a grade equivalent of “A” through “C−,” shall receive credit (“CR”) for the course and have the grade, “CR,” placed on the permanent record; a grade equivalent of “D+” through “F” will be recorded with the noncredit grade, “NC.”

A student who has completed 50 percent of the number of credits required for a degree with a grade-point average of at least 2.50, shall be allowed, with the consent of an adviser, to take one free elective (not in major field) course per term on a “CR/NC” basis.

With the consent of the student’s adviser, the first or second year of foreign languages may be taken on a “CR/NC” basis at any time the student is registered, regardless of the grade-point average.

No more than 16 credits of nonlanguage courses and no more than 20 credits in total, including language courses, may be taken on a “CR/NC” basis (for an associate degree, half this number is permitted).

*Free electives are defined for the present purposes as courses other than those required for all undergraduate students for graduation by their respective colleges, or by their major department.

*An ACT English score of 26 and an SAT verbal score of 625 is needed to enroll in University College without the prerequisites.
The election to take a course on a "CR/NC" basis can be made only at the
time of registration for that course. A student who elects to take a course on
a "CR/NC" basis cannot withdraw and register to take that course for a letter
grade after the first week of that term. The registrar will notify the instructor by
means of the final class list of students who have elected to utilize the "CR/NC"
option.

Courses for which "CR" is awarded will be counted as hours completed only;
courses for which "NC" is awarded shall not be counted as hours attempted;
in neither case shall "CR" or "NC" be considered in calculating grade-point
average, but in both instances the course shall be entered on the student's of-
ficial academic record.

A student may repeat a course for credit ("CR"), or a grade ("A-F") after receiving
a grade of "NC.

A college may, due to a closed class problem, designate in the printed schedule,
on an annual basis, a course as not available to be taken on a "CR/NC" basis.

A student taking a course on a noncredit basis is expected to meet the full re-
quirements of the course as required by the instructor.

Re-Examination
A student may not request re-examination in order to raise a grade.

Repeating Courses
Any course may be repeated as many times as necessary by an undergraduate
student subject to the following conditions:

- To secure a grade ("A-F") or a grade of "NC," "CR" or "AUD," a student may repeat
  a course in which the previously received grade was "C," "D+," "D," "D-," "F," "AUD" or "NC." Registrations under the "CR/NC" option are subject to the restric-
tions of the "CR/NC" policy.
- The student must repeat the same course within 12 months of the completion of
  the prior attempt. With the dean's permission, a student may extend this period
  to substitute another course if the previous course is no longer offered. Courses
  must be repeated at The University of Akron.
- Grades for all attempts at a course will appear on the student's official academic
  record.
- Only the grade for the last attempt will be used in the grade-point average.
- All grades for attempts at a course will be used in grade-point calculation for the
  purpose of determining graduation with honors and class standing.
- For purposes of this section, credit for this course or its equivalent will apply only
  once toward meeting degree requirements.

Academic Reassessment
An undergraduate student who has not attended The University of Akron for
at least three calendar years and re-enrolls and maintains a grade-point average
of 2.50 or better for the first 24 credits may petition the dean to delete from the
grade-point average the grades attained under his previous University of
Akron enrollment.

This policy is to apply only to the grade-point average. All grades will remain
on the student's official academic record. A student may utilize this academic re-
assessment policy only once.

In the determination of graduation with honors and class standing, all grades
obtained at the University shall be used in the calculations.

Discipline
Continuation as a student of the University is dependent on the maintenance of
satisfactory grades and conformity to the rules of the institution.

Grades and the Grading System
A student will receive grades on various types of classroom performance dur-
ing the process of most courses and a final grade at the end of the term. At
the end of the term, the Office of the Registrar mails grade reports to a stu-
dent's home address; summer grade reports are mailed for both summer ses-
sions at the end of the second summer session.

Individual tests are usually graded with percentage or letter marks, but official
academic records are maintained with a grade-point system.

This method of recording grades is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points Per Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.70</td>
</tr>
<tr>
<td>B+</td>
<td>3.30</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.70</td>
</tr>
<tr>
<td>C+</td>
<td>2.30</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.70</td>
</tr>
<tr>
<td>D+</td>
<td>1.30</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.70</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
</tr>
<tr>
<td>AUD (Audit)</td>
<td>0.00</td>
</tr>
<tr>
<td>CR (Credit)</td>
<td>0.00</td>
</tr>
<tr>
<td>NC (Noncredit)</td>
<td>0.00</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
coursework 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 instruc-
tor's dean have for special reason authorized the change of an incomplete ("I")
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 current 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.

Importance of Grades
Grades determine whether a student is either eligible or ineligible to remain
at the University. A student who maintains specified levels of scholastic achieve-
ment receives privileges to participate in extracurricular activities.

On the basis of grades, a student receives opportunities to take additional courses
to accelerate academic progress.

A student should transfer from the University College to a degree-granting col-
lege upon meeting the grade and credit hour requirements of that college. Ac-
ceptance is dependent on the approval of the dean of the college which the
student chooses to enter and on academic performance to date.

To receive a degree, each student must have attained a grade-point average
of at least 2.00 for all work taken at The University of Akron.

Finally, high grades are essential for a student who intends to go on to graduate
work.

Probation-Dismissal
A student who fails to maintain a grade-point average of 2.00 ("C") is placed
on academic probation and may be subject to a change of courses, suspen-
sion, or some other form of discipline. Academic discipline is determined by
the dean of the college in which the student is enrolled. Reinstatement of a
student is determined by the dean of the college from which the student was
dismissed.

Once dismissed from the University, a student is not eligible to register for credit
courses until readmitted.

**If instructors wish to extend the "I" grade beyond the following term for which the student is
registered, prior to the end of the term they must notify the Office of the Registrar in writing of
the extension and indicate the date of its termination. It is the responsibility of the student to make
arrangements to make up the incomplete work. The faculty member should submit the new grade
to the Office of the Registrar in writing.
Graduation with Honors
For a student who entered the University after December 1981 who is being awarded an initial baccalaureate degree and who has completed 60 or more credits at the University, the degree will be designed if the overall grade-point average is...
### COURSE NUMBERING SYSTEM

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

```
3300 220   English Literature
```

In the above example, the first four digits of the number (3300) indicate the college and department. In this case, 3000 represents the Buchtel College of Arts and Sciences; 300 refers to the Department of English. The second set of digits (220) 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:

- **First-year-level courses**
  - 100-199
- **Second-year-level courses**
  - 200-299
- **Third-year-level courses**
  - 300-399
- **Fourth-year-level courses**
  - 400-499
- **Master's-level courses**
  - 500-599
- **J.D.-level courses**
  - 600-699
- **Doctoral-level courses**
  - 700-899

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 to receive graduate credit.

---

*Grade point average of 2.50 in major field is required.*
## Fees and Expenses

### Fees subject to change without notice.

Despite the willingness of taxpayers and generous friends of the University to help support higher education, some portion of the total expense must be borne by the student. Typical costs for one year (September through May) based on an average academic load of 32 credits for the two semesters are as follows:

<table>
<thead>
<tr>
<th>Commuting Residents</th>
<th>Non-Ohio Living on Campus</th>
<th>Non-Ohio Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Tuition and Fees (regular load)</td>
<td>$2,977</td>
<td>$2,977</td>
</tr>
<tr>
<td>Room and Board</td>
<td>$1,950</td>
<td>$2,950</td>
</tr>
<tr>
<td>$4,927</td>
<td>$5,927</td>
<td>$8,492</td>
</tr>
</tbody>
</table>

Following are comprehensively outlined fees for the student at the University who is studying for credit and noncredit in all areas of instruction. Included also are the additional expenses required for special academic services available to a student such as private music lessons, thesis-binding, etc.

It is the responsibility of the student to know the correct amount of all fees including the non-Ohio resident surcharge.

In any question concerning fees, surcharge or residence, it is the responsibility of the student, parents, or court-appointed guardian, to furnish such proof as may be required by The University of Akron. A student who is in doubt about residency status should consult with the University registrar.

It is the responsibility of the registrar to assess fees and surcharges at the time of registration; information given by the student at that time is used in the assessment. Each registration is audited by the University auditor, and appropriate charges or refunds will be made.

All fees and surcharges are due at the time of registration or on the specified fee payment deadline. The status of the student as of the opening day of the semester or session for which registered will determine the final, correct amount of fees and surcharges.

### Fees

- **Instructional Fee (all students):**
  - Undergraduate:
    - 1-12.5 credits: $880.00 per credit
    - 13-16 credits: $980.00 per credit
    - Over 16 credits: $108.50 per credit
  - Graduate:
    - Over 12 credits: $10,485.00 per semester
    - Law:
      - One or more credits: $10.00 per credit

### Course Fees:

For the following courses, the fee noted will be assessed to cover the cost of instructional materials distributed by the instructor.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Course Fee</th>
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<tbody>
<tr>
<td>100 103</td>
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</table>

### Tuition Surcharge:

- Undergraduate:
  - One ore more credits: $1035.00 per credit
  - Graduate:
    - Over 12 credits: $10,485.00 per semester
  - Law:
    - One or more credits: $785.00 per credit

### General Fee:

- Undergraduate:
  - $135 per credit to a maximum of $251.65 per semester
  - Graduate:
    - 1-12 credits: $8.30 per credit
    - 13 credits and over: $10.00 per credit
  - Law:
    - 1-13 credits: $98.00 per credit
    - 14 credits and over: $118.00 per semester

### Course Fees:

For the following courses, the fee noted will be assessed to cover the cost of instructional materials distributed by the instructor.

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<th>Course Number</th>
<th>Course Title</th>
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Delayed Registration Fee
Assessed for any continuing student (enrolled immediately preceding regular semester) who registers other than during the time specified for his or her rank-rolled group.
$10

Schedule Adjustment Fee
Assessed for any schedule change form processed in person after an official registration occurs to a particular term.
$5

Music Fees
Private lessons in band instrument, organ, piano, violin and voice (in addition to normal instructional fees).

One-hour lesson per week (undergraduate and graduate)
$140

One 1/2-hour lesson per week (undergraduate and graduate)
$70

Thesis and Binding Fees
Binding (per volume)
$950

Microtyping (for Ph.D. degrees only)
$60

Copyright
$25

Graduation Fees (nonrefundable)
Each degree (except law)
$30
Each Juris Doctor degree
$40
Graduate Late Application Fee
$10

Minor Application Fee and/or Second Major Application Fee
$5

Debtors of a veteran covered under other provisions of the Act
$200*

Graduate Late Registration:

Co-op course fee
$55

1.0. late fee
$75

75 and over**
$110

Hower House
$200*

Transfer student, per session
$2

Washington Student, per session
$2

First-year student, per session
$2

Other campus student, per session
$2

Temporary Permit (per week)
$3

Room and Board

Residence hall facilities are available for the housing of a limited number of undergraduate students. The current total cost of housing accommodations and food service is $1,475 per semester or $2,950 per year. All students who live in the residence halls must participate in the provided 20 meals per week board plan.

A student living off campus may participate in the residence hall board program, the current rate being $309 per semester.

Veterans Expenses

A disabled veteran who is eligible for admission to the University may register for courses without payment of fees if the disabled veteran has been authorized for training by the V.A. If the disabled veteran has not been authorized, payment of all fees is required. However, the University will return to the veteran the payment made when the official authorization is received.

A nondisabled veteran must pay fees at the time of registration. The non-disabled veteran will receive direct payment from the V.A. after enrollment has been certified under the provision of USC Title 38.

An Ohio Veterans Bonus Commission recipient may arrange with the Accounts Receivable Office to have the Ohio Bonus Commission billed directly for tuition charges only.

Dependents of a veteran covered under other provisions of USC Title 38 must pay fees at the time of registration. The V.A. will make direct payment to the payee.

Auditors

The fees for an auditor in any course or group of courses are the same as if taken for credit.

Student Health and Accident Insurance

Student health and accident insurance designed specifically for a student of The University of Akron is required of all residence hall students and all international students except those who present proof that they already have similar coverage. Other students carrying nine or more credits, or graduate students carrying six or more credits may purchase this insurance, at the same annual individual rate, through the Student Health Services Office.

**The University will provide additional restroom facilities.

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*First three hours: $50 each additional hour.
**The University will provide additional classroom facilities.
$3.75 per week or $75 per year.
†First three hours: $75 each additional hour.
THE UNIVERSITY OF AKRON
RESIDENCY REQUIREMENTS

Payment of nonresident tuition 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 Ohio student residency for state subsidy and tuition surcharge purposes.

A. Intent and Authority

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

2. This rule is adopted pursuant to Chapter 119 of the Revised Code, and under the authority conferred upon the Ohio board of regents by Section 3333:31 of the Revised Code.

B. Definitions

For purposes of this rule:

1. A "resident of Ohio for all other legal purposes" shall mean any person who maintains a 12-month place or places of residence in Ohio, who is qualified as a resident to vote in Ohio and receive state welfare benefits, and who may be subjected to tax liability under Section 574702 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 reside 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 guardians has been a resident of the state of Ohio for at least 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, any income from any other jurisdiction 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 of enrollment, has accepted full-time 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 rental residential property in the state, a copy of the closing statement on residential real property located in Ohio of which parent or spouse is the owner and occupant; or if parent or spouse is not the lessee or owner of the residence in which he or she has established domicile, a letter from the owner of the residence certifying that parent or spouse resides at that residence.

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

1. Criteria evidencing residency:
   a. If a person is subject to tax liability under Section 574702 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 of 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 purposes

1. A person who is living and is gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who is pursuing a part-time program of instruction at an institution of higher education.

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

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

4. A person who is transferred by his employer, beyond the territorial limits of the fifty 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 who or her dependents shall be considered a resident for these purposes provided such person has worked in Ohio at least four months during at least the three years preceding the proposed enrollment.
**F. Procedures**

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

2. In considering residency, removal of the student or the student's parents or legal guardian from Ohio shall not, during a period of 12 months following such removal, constitute relinquishment of Ohio residency status otherwise established under paragraphs C. 1. or C. 2. of this rule.

3. Any person once classified as a nonresident, upon the completion of 12 consecutive months of residency, must apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes if such person in fact wants to be reclassified as a resident. Should such person present clear and convincing proof that no part of his or her financial support is or is in the preceding 12 consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident. Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student's actual financial support.

4. 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.

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

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**Regulations Regarding Refunds—Credit/Noncredit**

Registration does not automatically carry with it the right of a refund or reduction of indebtedness in cases of failure or inability to attend class or in cases of withdrawal. The student assumes the risk of all changes in business or personal affairs.

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**Fees Subject to Refund—Credit**

Certain fees are subject to refund.

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

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**Amount of Refund—Credit**

Amount of refund is to be determined in accordance with the following regulations:

- In full
  - if the University cancels the course;
  - if the University does not permit the student to enroll or continue;
  - if the student dies before or during the term or is drafted into military service by the United States; or if the student enlisted in the National Guard or Reserve prior to the beginning of the term called to active duty, presents notice of induction or orders to Active Duty. A student who enlists voluntarily for active duty should see "in part" below.

- In part
  - less $5 per enrolled credit to a maximum of $50 if the student requests in writing to the dean or designate official withdrawal from all credit courses on or before the second day of the enrolled term.
  - if the student requests in writing to the dean or designate official withdrawal after the second day of the fall or spring semesters, the following refund percentages apply:
    - 13 through 24 calendar days*: 50%
    - 25 through 33 calendar days*: 30%
    - Thereafter: 0%
  - if the student requests in writing to the dean or designate official withdrawal after the second day of any Summer Session the following refund percentages apply:
    - 3 through 7 calendar days*: 60%
    - 8 through 15 calendar days*: 40%
    - Thereafter: 0%

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

- Refunds will be determined as of the date of formal withdrawal unless proof is submitted that circumstances beyond control of the student prevented the filing of the formal withdrawal earlier, in which case the refund will be determined as of the last day of attendance. 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 dismissed or suspended for disciplinary reasons.

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**Amount of Refund—Noncredit**

- In full less $5
  - upon written request of the student who is officially withdrawn from any course before the first class meeting.

- In part
  - Courses of 6 to 11 weeks:
    - After the first class meeting: 60%
    - After the second class meeting: 30%
    - After the third class meeting: 0%
  - Courses of 12 weeks or more:
    - After the first class meeting: 60%
    - After the second class meeting: 45%
    - After the third class meeting: 30%
    - After the fourth class meeting: 0%

- No refund on courses of less than six weeks.

Refunds will be determined by the date (postmark of written request) of formal withdrawal, unless proof is submitted that circumstances beyond the control of the student prevented filing of the formal withdrawal earlier. In this case, the refund will be determined from the date of the last attendance in class. Refunds will be mailed within six weeks after the beginning of the session.

The University reserves the right to cancel a course should there be insufficient enrollment. A full refund will be mailed to the student within four to six weeks when a course is cancelled.

*If the 7th, 8th, 12th, 15th, 22nd, 24th, or 33rd day falls on Friday, Saturday or a holiday, the deadline will become the next business day.
RESIDENCE HALL REFUNDS

Refund/Release and Forfeiture Policy

A contract for housing accommodations and food services at The University of Akron upon being breached by the student or otherwise terminated by The University of Akron is subject to the following refund provisions:

- A full refund of any prepaid fees and release of other financial liability therefore under the following circumstances: graduation of the student from The University of Akron; academic dismissal of the student from The University of Akron; non-attendance or complete withdrawal by the student from The University of Akron prior to the start of the contract term (except the advance rental payment of $150 which shall be forfeited); or, in the event of mandatory or recommended participation in academic programs of The University of Akron requiring the student to commute regularly beyond the Akron metropolitan area (e.g., student teaching or co-op engineering assignments).

- A partial refund of prepaid fees according to the refund schedule below, and release of financial liability for subsequent semesters covered by the contract term, in the event the student completely withdraws from The University of Akron after the start of the contract term. In such instances, the student shall not be liable for further forfeiture.

- A partial refund of prepaid fees according to the refund schedule below: First, in the event the University, in its sole discretion, terminates the contract for reasons related to the orderly operation of the residence halls, or for reasons relating to the health, physical, or emotional safety and well-being of the student, or property of other students, faculty, staff, or University property. In such instances, the student shall not be liable for further forfeitures and shall be released of further financial liability beyond the date of termination. Second, in the event the student breaches the contract for any reason, except when under dismissal or suspension, prior to the end of the terms thereof but continues to be enrolled as a student at The University of Akron. In addition, if the student has contracted for any subsequent semester beyond that semester in which the contract is terminated, the student shall pay as forfeiture for breach of the term of the contract an additional amount of $200. Last, in the event that the student is dismissed or suspended from The University of Akron for disciplinary reasons in accordance with laws or rules and regulations of the Board of Trustees, or if the student is placed on terms of disciplinary probation in accordance with law or rules and regulations of the Board of Trustees, whereby such terms of probation prohibit the student from residing in University housing accommodations.

These conditions do not release the student from financial liability for any fees which are due not later than the effective date of such termination, dismissal, suspension or probation.

Refund Schedule

Beginning with the first day of the fall and spring semesters, the following refund percentages shall apply for all contracts for housing accommodations and food services:

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<td>1-12 calendar days</td>
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<td>13-24 calendar days</td>
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<td>25-36 calendar days</td>
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<tr>
<td>Thereafter</td>
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Notice Requirements

All notices of intent to break this contract must be submitted in writing to the Office of Residence Halls. If the student is a minor (under the age of 18 years), the written notification of termination must be cosigned by the student’s parent or legal guardian.
Financial Aid

When applying for financial aid at The University of Akron, the student is not unusual for a student to have partial help. Generally, financial aid is provided in three forms: gift aid, loans, and work.

Financial aid programs were developed by the federal and state governments as well as by institutions of postsecondary 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 and Employment determines a budget that best suits the family’s expenses. The amount of the grant is determined by the Student Financial Aid and Employment office. The office then calculates the amount of the grant which is based on financial need, and the amounts are determined by the Office of Student Financial Aid. Repayment begins nine months after ceasing to be at least a half-time student. Interest upon repayment is five percent.

Generally, financial aid is provided in three forms: gift aid, loans, and work. It is not unusual for a student to have all three forms of aid. This is called a “financial aid package.” If a person receives a proper financial aid package, it is assumed that the family will not be expected to contribute more than is reasonable for a family member’s education. The word “family” is crucial because the financial aid system assumes that the family will work together to assist a family member meet college expenses.

Sources of Aid

To meet the needs of the financial aid applicant there are a number of sources from which aid can be received. The following programs represent those sources of aid for which The University of Akron selects recipients and/or distributes the funds. The application(s) for these programs can be obtained at the Office of Student Financial Aid and Employment.

Federal Programs

Pell Grant
The Pell Grant is the foundation of student financial aid. The grant is awarded to the student by the federal government. After applying for the grant, the student will receive a Student Aid Report (SAR) which must be taken to the Office of Student Financial Aid. The office then calculates the amount of the grant which is based on financial need and enrollment status (full or part time).

Supplemental Educational Opportunity Grant
The Supplemental Educational Opportunity Grant (SEOG) is a federal grant that is awarded by The University of Akron. The amount of the grant is determined by the school attended, and is based on the need and the costs at that school. Entering freshmen and continuing students must have a 2.00 grade-point average to be eligible for the SEOG.

College Work-Study Program
The College Work-Study Program (CWS) is a program that provides an eligible student with a job on campus. Eligibility for CWS is determined on the basis of need. The job must be paid, and the student is expected to work a minimum number of hours each week. Federal law guarantees that students receive at least $500 per year for the CFSA Scholarship. The student and job supervisor adapt working hours to meet the student’s class schedule. Students must have a 2.00 grade-point average to be eligible.

Perkins Loan
The Perkins Loan Program offers low interest, long-term loans for an eligible student. Generally, financial aid is provided in three forms: gift aid, loans, and work.

Nursing Student Loan
A low-interest federal loan is available to an eligible student who is pursuing the Bachelor of Science in Nursing. It is based on need, and the amounts are determined by the Office of Student Financial Aid. Repayment begins nine months after ceasing to be at least a half-time student. Interest upon repayment is five percent.

PLUS/Supplemental Loan
This loan is available to parents, independent students, and all graduate/professional students. Unlike the other federal loan programs, eligibility is not based on financial need. Low monthly payments for this variable-interest rate loan, however, begin 30-60 days after loan receipt unless alternative arrangements are made with the lender. Apply through a bank, savings and loan, or credit union.

ROTC Scholarships
Two- and three-year scholarships paying tuition, fees, and subsistence allowances of $100 per month are available to full-time students. Contact the Army or Air Force offices for additional information.

State Programs

Ohio Instructional Grant (OIG)
The OIG is available to an eligible student who is an Ohio resident. Eligibility is based on family income. The grant is awarded by the Ohio Board of Regents. If eligible, the student will receive an award certificate which must be taken to the financial aid office.

Ohio Academic Scholarship
Ohio Academic Scholarships are awarded to the continuing student as well as the outstanding high school student who plans to enroll. These academic scholarships are renewable each year based on continued high academic performance. A University Scholarship Application must be submitted, but a need analysis form is not required. The majority of awards are $500.

Ohio National Guard Scholarship
This scholarship is available to the student who enlists in the Ohio National Guard. Contact a local recruiter for information.

Ohio War Orphans Scholarship
Scholarships are available to a student whose father or mother was a veteran from Ohio and has been disabled or deceased. For information contact the Ohio Board of Regents.

University Programs

Scholarships
The University offers scholarships to the student with high academic achievement. Academic scholarships are awarded to the continuing student as well as the outstanding high school student who plans to enroll. These academic scholarships are renewable each year based on continued high academic performance. A University Scholarship Application must be submitted, but a need analysis form is not required. The majority of awards are $500.

National Merit Finalists are awarded full scholarships for the freshman year.

Installment Payment Plan
The University offers an installment payment plan (IPP) to the student who needs temporary help in 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 5) (216) 375-5100.

Special long-term loans are available to selected students in certain fields who need partial help.
Student Employment
Check the "Student Job Board" near Spicer Hall 119 for on- and off-campus part-time job listings. Register for the applicant pool in Room 119.

Application for Financial Aid
• To apply for the Pell Grant, Supplemental Educational Opportunity Grant, Perkins Loan, Nursing Student Loan, Stafford Loan, and the College Work-Study Program, the student must complete and submit the Financial Aid Form (FAF) to the College Scholarship Service.
• To apply for the Ohio Instructional Grant, a student must complete and submit the Ohio Instructional Grant application to the Ohio Board of Regents.
• The Stafford Loan application is secured through lending institutions such as the local bank, savings and loan associations, or credit unions. This should be given to the Office of Student Financial Aid when the FAF Acknowledgement Form is received.
• Applications are available in January for the following school year.

Computation of Financial Aid
Government formulas determine what the family may be able to contribute toward the student's education. This amount is called the family contribution. Some of the key factors involved in computing the family contribution are as follows:
• Family income.
• Family assets.
• Family size.
• Number of family members in college.
• Medical bills.
• Unusual expenses.

The difference between the cost of education and the family contribution is called the unmet need. The unmet need is the amount the Office of Student Financial Aid attempts to cover through various financial aid programs to assist a student in meeting educational costs.

Notification of Award
A student will be notified of the aid package by a Financial Aid Award Proposal sent to the mailing address. If accepting the proposal, the student must sign the proposal and return it to the Office of Student Financial Aid as soon as possible.

If questions arise regarding your Financial Aid Award Proposal, either call or write the office for clarification.

If denied aid, (the family contribution exceeds the cost of education), the student will be informed by mail. Advisement as to alternatives such as the PLUS/Supplemental Loan and/or University loans, will be made.

Distribution of Aid
Financial aid will be applied directly to the tuition fee invoice. Awards are based on full-time enrollment (12 semester credits). If the student is not taking at least 12 credits, contact the Office of Student Financial Aid and Employment so that financial aid may be adjusted.

The student is awarded aid for the entire academic year; however, the aid is disbursed proportionately each semester. A booklet giving specific instructions will be included with the student's award proposals.

12 credits, contact the Office of Student Financial Aid and Employment so that financial aid may be adjusted.

Revision of Awards
After receipt of the financial aid award, situations may arise which may necessitate a revision in the aid package. A revision may result from receipt of an outside scholarship; a dramatic change in the family income such as unemployment or a divorce, etc.

If family circumstances change, contact the Office of Financial Aid and Employment so the aid package may be reviewed.

Eligibility for Aid as it Applies to Certain Classifications of Students

Transfer Students
A student transferring to The University of Akron at the beginning of fall semester must have the previous college complete a financial aid transcript and send it to the Office of Student Financial Aid and Employment.

If a student transfers to the University during the academic year and has received a Pell Grant and/or OIG the previous session, the student must:
• Receive a duplicate Student Aid Report from Pell Grant. This duplicate Student Aid Report must be sent to the Office of Student Financial Aid before any funds can be disbursed to the student.
• Instructions for receiving a duplicate Student Aid Report can be obtained from the Office.
• Have the former Financial Aid Office provide a transfer of remaining funds request to the Office of Student Financial Aid before any funds can be disbursed to the student.

Perkins Loans, College Work-Study Programs, Supplemental Educational Opportunity Grants, and scholarships do not automatically transfer. The student must reapply for these programs at The University of Akron.
Graduate Students, Law Students and Postbaccalaureate Students

A student who has already received a bachelor's degree can apply for the Perkins Loan, Stafford Loan, PLUS or Supplemental Loan, and the College Work-Study Program. The Pell Grant, Ohio Instructional Grant and Supplemental Educational Opportunity Grant may not be received.

A graduate assistantship is available through various graduate departments. A graduate fellowship and other graduate awards are distributed by the Graduate School; therefore, a separate application is required.

Guest Students

A guest student is one who is taking classes at The University of Akron but will receive the degree at another institution. Contact the Office of Student Financial Aid for written instructions on how to receive financial aid.

International Students

A student in the United States on a student or other temporary visa is not eligible for any state or federal financial aid. Application for scholarships, short-term loans, and some types of employment may be made.

Veterans

A veteran may be eligible to receive educational benefits through the Veterans Administration and should contact the Veterans Office at the University for details.

Student Rights and Responsibilities

A student who applies for student financial aid has the right to expect confidentiality regarding all personal information. After submitting applications, the student should expect to receive a reply in a reasonable amount of time. It is the student's responsibility to notify the Office of Student Financial Aid of any changes in name, address, graduation plans, etc. A student must also report any outside scholarships received. It is the student's responsibility to be aware of the types and amounts of aid received.

Standards of Satisfactory Progress

To receive or maintain eligibility for federal financial aid, the student must meet the requirements outlined in the "Standards of Satisfactory Progress" policy. The policy states that a student must make progress toward a degree. This rule applies to each potential financial aid recipient, whether a previous aid recipient or not. A copy of this policy is available in the Office of Student Financial Aid.

Inquiries

Since the process of applying for financial aid may at first seem complicated, it is suggested that families contact a high school counselor or a University financial aid officer for additional information. Direct inquiries to:

Office of Student Financial Aid and Employment
Spicer Hall 115
The University of Akron
Akron, OH 44325-6211
Phone: (216) 375-7032
Community and Technical College

James P. Long, Ph.D., Dean
Frederick J. Sturn, Ed.D., Associate Dean
Holly C. Slack, M.Ed., Assistant to the Dean

OBJECTIVES

The Community and Technical College helps to further the goals and purposes of the University by emphasizing the following objectives:

- The college serves the student by providing the means to examine academic and career opportunities considering interests, abilities and achievements.
- The college provides for industry, business, government agencies, health-care establishment and human service occupations; pre-service and in-service training for entry-level positions or advancement in employment.
- Consistent with the philosophy of learning as a life-long experience, the college provides educational opportunities for the student no matter the age, background and need; full- or part-time day or evening.
- The college provides quality instruction with qualified and experienced teachers who are encouraged to use the community as a "laboratory" for achieving educational goals.

The college recommends each student for the appropriate degree in accordance with the level of accomplishment.

The college offers both pre-service and in-service training; pre-service for the recent high school graduate who can receive an associate degree upon the satisfactory completion of two years of full-time studies; and in-service through evening courses where employed persons may pursue the same degrees while working full time. The college also offers some bachelor's degree programs.

COLLEGE REQUIREMENTS

Baccalaureate Degrees

The baccalaureate-level programs in engineering technology are intended to fill the widening gap in modern industry between the professional engineer and the engineering technician. The graduate of a program works in close support of engineers, translating conceptual ideas into functioning systems and providing supervisory direction for the implementation of these ideas by technicians and craftsmen.

These programs are designed as transfer programs to permit the qualified engineering technology student to continue education at the baccalaureate degree. During the first and second years, a student follows an associate degree program in the corresponding engineering technology. The third and fourth years provide the additional study required for the baccalaureate degree. Emphasis is placed on advanced training in the student's field of specialization, broadening knowledge of related technical fields, extended general education and basic management training.

The programs are available in electronic technology and mechanical technology. It is intended that a graduate will find employment in manufacturing, technical sales and service, application engineering, inspection and testing and the more standardized aspects of engineering design.

The requirements for the Bachelor of Science in Automated Manufacturing Technology, the Bachelor of Science in Electronic Technology, or the Bachelor of Science in Mechanical Technology are as follows:

- Compliance with the general University requirements for a baccalaureate degree as listed in this Bulletin.
- Compliance with the requirements of the general studies program as outlined in this Bulletin.
- Completion of the requirements for the associate degree in a related engineering technology at The University of Akron or other accredited institution.
- Successful completion of a minimum of 135 credits (136 in the BMT Program) including associate degree program, general studies courses and the following course requirements.

Bachelor of Science in Automated Manufacturing Technology

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<th>Course Code</th>
<th>Course Title</th>
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<td>3</td>
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<tr>
<td>6500:331</td>
<td>Production and Systems Management</td>
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<tr>
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<td>Technical Electives</td>
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</tr>
</tbody>
</table>

Bachelor of Science in Electronic Technology

( Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology)

For the first- and second-year requirements, see associate degree program in 2860: Electronic Technology.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>1100:106</td>
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</tr>
<tr>
<td>1100:112</td>
<td>English Composition</td>
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<tr>
<td>1100:320</td>
<td>Western Cultural Traditions</td>
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<td>Western Cultural Traditions</td>
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<tr>
<td>1100:333</td>
<td>Eastern Civilizations</td>
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<tr>
<td>1100:334</td>
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</tr>
<tr>
<td>2030:334</td>
<td>Mathematics for Technical Applications</td>
<td>3</td>
</tr>
<tr>
<td>2840:247</td>
<td>Survey of Basic Economics</td>
<td>3</td>
</tr>
<tr>
<td>2840:210</td>
<td>FORTRAN for Technologists</td>
<td>2</td>
</tr>
<tr>
<td>3470:261</td>
<td>Introduction to Statistics</td>
<td>2</td>
</tr>
<tr>
<td>6500:301</td>
<td>Management Principles and Concepts</td>
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<td>6500:331</td>
<td>Production and Systems Management</td>
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<tr>
<td></td>
<td>Technical Electives</td>
<td>5</td>
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</tbody>
</table>

Bachelor of Science in Mechanical Technology

( Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology)

For first- and second-year requirements, see associate degree program in mechanical technology.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>1100:112</td>
<td>English Composition</td>
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<tr>
<td>1100:320</td>
<td>Western Cultural Traditions</td>
<td>4</td>
</tr>
<tr>
<td>1100:321</td>
<td>Western Cultural Traditions</td>
<td>4</td>
</tr>
<tr>
<td>1100:333</td>
<td>Eastern Civilizations</td>
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</tr>
<tr>
<td>1100:334</td>
<td>Eastern Civilizations</td>
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</tr>
<tr>
<td>2030:334</td>
<td>Mathematics for Technical Applications</td>
<td>3</td>
</tr>
<tr>
<td>2840:247</td>
<td>Survey of Basic Economics</td>
<td>3</td>
</tr>
<tr>
<td>2840:210</td>
<td>FORTRAN for Technologists</td>
<td>2</td>
</tr>
<tr>
<td>2840:101</td>
<td>Introductory Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>2840:290</td>
<td>Introductory and Analytical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>2860:270</td>
<td>Survey of Electronics I</td>
<td>3</td>
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<tr>
<td>2860:271</td>
<td>Survey of Electronics II</td>
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</tr>
<tr>
<td>2860:241</td>
<td>Quality Control Procedures</td>
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</tr>
<tr>
<td>2840:290</td>
<td>Economics of Technology</td>
<td>3</td>
</tr>
<tr>
<td>2920:346</td>
<td>Mechanical Design III</td>
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</tr>
<tr>
<td>2920:347</td>
<td>Production Machinery and Processes</td>
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<tr>
<td>3920:348</td>
<td>Introduction to Numerical Control</td>
<td>3</td>
</tr>
</tbody>
</table>
2920:402 Mechanical Projects 1
2920:405 Introduction to Industrial Machine Control 3
2920:448 Numerical Control Programming 3
6500:301 Management Principles and Concepts 3
Technical Electives 1

Prior to enrolling in the program, a student must have completed at least 45 credits of the two-year program with a grade-point ratio of 2.00 or higher in Mathematics, Analytical, Basic Physics and technical courses (2920 series) in the two-year program; and a minimum overall grade-point ratio of 2.00.

**Associate Degrees**

Specialized technical programs are offered in the following divisions of the college:

- Allied Health Technology
- Associate Studies
- Business Technology
- Engineering and Science Technology
- Public Service Technology

These programs lead to the Associate in Applied Science or Associate in Applied Business degree (carrying a designation of the specific program). In addition, a program in liberal arts leading to the Associate of Arts degree and programs leading to the Associate of Labor Studies and Associate of Individualized Studies degrees are offered in the Associate Studies Division.

**Requirements for Graduation**

Candidates for the associate degree must have the following:

- Complete the required courses listed in the program.
- Complete as a minimum, the number of credits listed for each program.
- Earn a minimum grade-point average of 2.00 in all work taken at The University of Akron.
- Be recommended by the faculty.
- Spend the last semesters in residence (earning a minimum of 16 credits) at the University unless excused by the dean of the college.
- Complete all University requirements as in "Requirements for Graduation," Section 3 in this Bulletin.

A student who expects to receive a second associate degree must earn a minimum of 16 credits in residence which have not counted toward the student's first degree.

**Cooperative Education**

Minimum requirements for cooperative education students include the following:

- Enroll in a program of study offered by the Community and Technical College wherein cooperative education has been established.
- Minimum grade-point average of 2.00 for all University of Akron course work and a minimum of 2.00 for all course work applicable to program of study.
- Completion of specific courses and/or credits for a particular program as approved by the college faculty.

**Minor Areas of Study**

For an explanation of minor areas of study in the Community and Technical College, see Section 5 of this Bulletin.

**PROGRAMS OF INSTRUCTION**

**Allied Health**

**2730: Histologic Technology**

A histologic technician prepares sections of body tissues for microscopic examination by a pathologist. The technician specializes in techniques involving the use of the electron microscope and special studies which determine a patient's diagnosis.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>1100:105</td>
<td>Physical Education</td>
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<td>2025:122</td>
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<tr>
<td>2025:130</td>
<td>Introduction to Technical Mathematics</td>
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</table>

**2040:240** Human Relations 3
**2040:242** American Urban Society 3
**2720:225** Hegeler Technology Practicum 5
**2740:120** Medical Terminology 3
**2740:130** Medical Assisting Techniques I 5
**2840:101** Introduction to Chemistry 3
**2840:102** Introductory and Analytical Chemistry 3
**3100:111** Principles of Biology 4
**3100:112** Principles of Microbiology 4
**3100:365** Introduction to Human Physiology 4
**3100:366** Histology I 2
**3100:367** Histology II 3
**3100:385** Laboratory Techniques and Instrumentation in Biology 3
**3100:386** Techniques and Instrumentation Laboratory in Biology 1
**3100:388** Electives 3

**2740: Medical Assisting Technology**

This program provides students with the background to perform receptionist, record keeping and general office duties and to assist physicians in examining patients, performing simple laboratory tests and helping with treatment in physicians' offices, clinics and hospital outpatient departments.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
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<td>1100:106</td>
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<td>Business English</td>
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<tr>
<td>2540:120</td>
<td>Introduction to Office Procedures</td>
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<td>2540:121</td>
<td>Introduction to Information Management</td>
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<td>2540:125</td>
<td>Beginning Keyboarding</td>
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<td>2540:151</td>
<td>Intermediate Keyboarding</td>
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<td>2740:160</td>
<td>Introduction to Medical Assisting</td>
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<td>2740:165</td>
<td>Medical Technology</td>
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<tr>
<td>2740:170</td>
<td>Study of Disease Process for Medical Assisting</td>
<td>2</td>
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<tr>
<td>2740:135</td>
<td>Medical Assisting Techniques I</td>
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<td>Medical Assisting Techniques II</td>
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<td>2740:240</td>
<td>Medical Machine Transcription</td>
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<td>2740:241</td>
<td>Medical Records</td>
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<td>2740:250</td>
<td>Medical Assisting Specialties</td>
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<td>Externship in Medical Assisting</td>
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<td>First Aid</td>
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<tr>
<td>5320:211</td>
<td>General Electives</td>
<td>3</td>
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</table>

**2760: Radiologic Technology**

This program prepares graduates to perform radiologic examinations under a physician's direction for diagnosis and treatment of physical diseases and injuries. Although the University is authorized to offer the associate degree in radiologic technology, this degree program is not fully operational on campus at this time but is offered in conjunction with area hospitals and clinics. A student who satisfactorily completes an accredited program in radiologic technology at a hospital school having an affiliation with the University will then be excused by the dean of the college.

The degree requirements for the student are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1100:106</td>
<td>Effective Oral Communication</td>
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<tr>
<td>2020:121</td>
<td>English</td>
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</tr>
<tr>
<td>2030:130</td>
<td>Introduction to Technical Mathematics</td>
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<tr>
<td>2040:240</td>
<td>Human Relations</td>
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<tr>
<td>2780:106</td>
<td>Anatomy and Physiology for Allied Health I</td>
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<tr>
<td>2780:107</td>
<td>Anatomy and Physiology for Allied Health II</td>
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<td>Basic Physical Science for Radiologic Technology</td>
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<td>2760:165</td>
<td>Radiographic Principles</td>
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<tr>
<td>2760:241</td>
<td>Physical Science for Radiologic Technology</td>
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<td>3750:100</td>
<td>Introduction to Psychology</td>
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</tr>
<tr>
<td>5320:211</td>
<td>Credits for Hospital Program</td>
<td>3</td>
</tr>
</tbody>
</table>

**Radiology schools at the following hospitals are affiliated with the University:**

- Akron City Hospital
- Children's Hospital Medical Center of Akron
- Akron General Medical Center
- Barberton Citizens Hospital
- St. Thomas Hospital Medical Center (Akron)
- Robinson Memorial Hospital (Ravenna)

Applications for admission to these programs should be made directly to the hospital school.
2770: Surgical Assisting Technology*

This program trains people to prepare equipment and assist the physician and other members of the surgical team with patient care and related services in the hospital operating room. Selective admission.

1100. 106. Physical Education 1
1100. 104. Effective Oral Communication 3
2020. 121. English 4
2020. 130. Introduction to Technical Mathematics 3
2040. 240. Human Relations 3
2040. 242. American Urban Society 3
2740. 120. Medical Terminology 3
2740. 230. Basic Pharmacology 3
2770. 100. Introduction to Surgical Assisting Technology 4
2770. 121. Surgical Assisting Procedures I 2
2770. 122. Surgical Assisting Procedures II 4
2770. 232. Clinical Application I 5
2770. 148. Surgical Anatomy I 3
2770. 222. Clinical Application II 2
2770. 247. Anatomy and Physiology 4
2770. 244. Anatomy and Physiology 4
3030. 201. Principles of Microbiology 3
3030. 206. Anatomy and Physiology 4
3030. 207. Anatomy and Physiology 4
General Electives 2
Technical Electives 2

Surgeon’s Assistant Option

1100. 106. Physical Education 1
1100. 104. Effective Oral Communication 3
2020. 121. English 4
2040. 240. Human Relations 3
2040. 242. American Urban Society 3
2740. 120. Medical Terminology 3
2740. 230. Basic Pharmacology 3
2770. 100. Introduction to Surgical Assisting Technology 4
2770. 121. Surgical Assisting Procedures I 2
2770. 146. Surgical Anatomy I 3
2770. 151. Clinical Experience I 2
2770. 152. Clinical Experience II 3
2770. 153. Clinical Experience III 5
2770. 243. Introduction to Medicine 2
2770. 244. Medical History and Physical Examination 2
2770. 267. Roentgenogram Assessment 5
2770. 246. Medical Laboratory Procedures 1
2770. 247. Pulmonary Assessment and Electrocardiography 2
2770. 295. Clinical Experience V 5
2770. 256. Primary Care: Clinical Experience I 2
3100. 131. Principles of Microbiology 3
3100. 206. Anatomy and Physiology 4
3100. 207. Anatomy and Physiology 4
General Electives 3

2790: Respiratory Care*

This program prepares persons, under the supervision of a physician, to administer medical gases, medications and operate equipment in the medical care of patients with respiratory disorders. Selective admission.

1100. 106. Physical Education 1
1100. 104. Effective Oral Communication 3
2020. 121. English 4
2030. 132. Introduction to Technical Mathematics 3
2040. 240. Human Relations 3
2040. 242. American Urban Society 3
2780. 1067. Anatomy and Physiology for Allied Health I, II 6
2790. 121. Introduction to Respiratory Care 3
2790. 122. Respiratory Patient Care 3
2790. 123. Mechanical Ventilators 3
2790. 131. Clinical Application I 3
2790. 132. Clinical Application II 5
2790. 133. Clinical Application III 5
2790. 134. Clinical Application IV 5
2790. 141. Pharmacology 2
2790. 142. Pathology for Respiratory Care 2
2790. 201. Anatomy and Physiology: Cardio pulmonary System 3
2790. 223. Advanced Respiratory Care 3
2790. 224. Pulmonary Rehabilitation and the Respiratory Care Department 2
2840. 100. Basic Chemistry 3
3100. 110. Principles of Microbiology 3

*Deadline for application to the program is March 15.

Associate Studies

2020: Arts

Through basic course work and general education, this program is intended to produce a socially intelligent individual, one who understands effective social values as well as scientific facts.

1100. 105. Introduction to Public Speaking 3
1100. 106. Effective Oral Communication 3
1100. 120. English Composition 3
1100. 121. Science Requirement 6
1100. 122. Eastern Civilizations 2
1100. 123. Western Civilizations 2
1100. 320. Western Cultural Traditions 4
1100. 321. Western Cultural Traditions 4
2020. 121. English 4
2020. 240. Human Relations 3
2040. 242. American Urban Society 3
2040. 247. Survey of Basic Economics 3
3450. 207. Modern University Mathematics 3
Electives 22

2100: Individualized Study

Designed for students whose educational goals cannot be met through one of the structured associate degree programs. It makes available a program of study which combines course work from various disciplines and focuses on education for individual development.

2240: Commercial Art

This program enables individuals to gain skills as artists and designers for employment involving the development of materials included in visual advertising and commercial art studies, advertising agencies and industry.

1100. 106. Physical Education 1
2020. 121. English 4
2030. 131. Psychological Analysis 1
2240. 122. Introduction to Commercial Photography 3
2240. 123. Design in Commercial Art 3
2240. 130. Mechanical Drawing 3
2240. 140. Typography and Lettering 3
2240. 242. Advertising Layout Design 3
2240. 245. Designing for Production 3
2240. 247. Packaging Design 3
2240. 248. Publication Design 3
2520. 103. Advertising Principles 3
700. 131. introduction to Drawing 3
700. 132. Instrument Drawing 3
700. 233. Life Drawing 3
700. 275. introduction to Photography 3
Commercial Art Electives 10
General Electives 7

Commercial Photography Option

1100. 106. Physical Education 1
2020. 121. English 4
2030. 131. Psychological Analysis 1
2240. 110. Multi Image Production 3
2240. 124. Design in Commercial Art 3
2240. 126. Commercial Color Applications 3
2240. 140. Typography and Lettering 3
2240. 222. Introduction to Screen Printing 3
2240. 224. Illustration Advertising 3
2240. 245. Designing for Production 3
2240. 250. Advanced Commercial Photography 3
2240. 252. Professional Photographic Practices 3
2540. 103. Advertising Principles 3
700. 131. introduction to Drawing 3
700. 132. Instrument Drawing 3
700. 275. Introduction to Photography 3
Commercial Art or
700. 275. Technical Studio Electives 6
General Electives 7

The 6 hours of technical studio electives must come from the following list of courses:

2240. 290. ST (Any and all listings) 1-3
2240. 295. Practicum in Commercial Art 3
700. 185. Computer Graphics for Art I 3
700. 214. Introduction to Screen Printing 2
700. 215. Introduction to Relief Printing 3
700. 216. Introduction to Intaglio Printing 3
700. 221. Design Applications 3
700. 246. Introduction to Watercolor Painting 3
700. 262. Architectural Presentations I 3
700. 283. Drawing Techniques 3

*Two of the following are required: 1100. 201-234.
†See "The University College," section 4 of this Bulletin for alternate course options.
## Business Technology

### 2280: Hospitality Management

Through educational and technical skills offered in a professional environment, this program emphasizes the development of expertise in food service management, hotel/motel management or culinary arts.

#### Options

**Restaurant Management**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>1100</td>
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<td>2020</td>
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<td>2040</td>
<td>Human Relations</td>
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<td>2040</td>
<td>Survey of Basic Economics</td>
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<tr>
<td>2280</td>
<td>Safety and Sanitation</td>
<td>3</td>
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<tr>
<td>2280</td>
<td>Fundamentals of Food Preparation I</td>
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<tr>
<td>2280</td>
<td>Fundamentals of Food Preparation II</td>
<td>3</td>
</tr>
<tr>
<td>2280</td>
<td>Meat Technology*</td>
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<tr>
<td>2280</td>
<td>Menu Planning and Purchasing</td>
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<tr>
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<td>Dining Room Service and Training</td>
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<td>2280</td>
<td>Internship</td>
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<tr>
<td>2280</td>
<td>Systems Management and Personnel</td>
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<tr>
<td>2280</td>
<td>Food Equipment and Plant Operations</td>
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<tr>
<td>2420</td>
<td>Business Mathematics</td>
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<tr>
<td>2420</td>
<td>Basic Accounting I</td>
<td>2</td>
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<td>2420</td>
<td>or</td>
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<td>2540</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>2420</td>
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<tr>
<td>2520</td>
<td>Principles of Advertising</td>
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**Culinary Arts**

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<td>Safety and Sanitation</td>
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<tr>
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<td>Fundamentals of Food Preparation I</td>
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**Hotel/Motel Management**

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**Accounting**

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**Banking**

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*Not required for hospitality marketing and sales emphasis.

*Course is not transferable to College of Business Administration.
2420:273 Monetary Systems and the Payments Mechanism 3
2420:280 Essentials of Law 3
2430:106 Real Estate Principles 2
2430:245 Real Estate Finance 2
2440:120 Computer and Software Fundamentals 2
2540:199 Business English 3
2540:263 Business Communications 3

**Credit Union**

1100 — Physical Education 1
1100:106 Effective Oral Communication 3
2020:121 English 3
2020:240 Human Relations 3
2040:247 Survey of Basic Economics 3
2420:101 Elements of Distinction 3
2420:104 Introduction to Business 3
2420:115 Credit Union Operations 2
2420:125 Personal Financial Counseling 3
2420:170 Business Mathematics 3
2420:202 Principles 2
2420:211 Basic Accounting I 3
2420:222 Basic Accounting II 3
2420:241 Administrative Office Supervision 2
2420:225 Credit Union Lending and Collections 2
2420:243 Survey in Finance 2
2430:213 Credit Union Financial Management 2
2430:280 Essentials of Law 2
2440:120 Computer and Software Fundamentals 2
2540:119 Business English 3
2540:263 Business Communications 3
2540:280 Technical Electives 2

**Recommended Electives:**
2420:101 Elements of Distribution 3
2420:211 Administrative Office Supervision 2
2440:239 RPG II Programming 1
2540:233 Labor-Management Relations 3
2540:125 Electronic Business Calculations 2

**Data Administration**

1100 — Physical Education 1
1100:106 Effective Oral Communication 3
2020:121 English 3
2020:130 Introduction to Technical Mathematics 3
2420:101 Elements of Distinction 3
2420:240 Human Relations 3
2420:247 Survey of Basic Economics 3
2420:103 Role of Supervision in Management 3
2420:114 Introduction to Business 4
2420:207 Business Mathematics 3
2420:202 Personnel Practices 3
2420:211 Basic Accounting I 3
2420:212 Basic Accounting II 3
2420:241 Basic Accounting III 3
2420:243 Survey in Finance 3
2420:260 Essentials of Law 3
2440:210 Computer and Software Fundamentals 2
2440:121 Introduction to Programming Logic 2
2440:125 Lotus 1-2-3 2
2440:133 COBOL Programming 2
2440:136 PC DOS Fundamentals 2
2440:220 Software Applications for Business 2
2440:267 "ALL for Micros: dBase III +" 3
2540:119 Business English 3
2540:263 Business Communications 3
2540:280 Technical Electives 4

**Small Business Management**

1100 — Physical Education 1
1100:106 Effective Oral Communication 3
2020:121 English 4
2040:240 Human Relations 3
2040:247 Survey of Basic Economics 3
2420:101 Elements of Distinction 3
2420:103 The Role of Supervision in Management 3
2420:114 Introduction to Business 4
2420:217 Small Business Development 3
2420:218 Small Business Management and Operations 3
2420:270 Business Mathematics 3
2420:202 Personnel Practices 3
2420:211 Basic Accounting I 3
2420:212 Basic Accounting II 3
2420:227 Entrepreneurship Projects 4
2420:243 Survey in Finance 3
2420:280 Essentials of Law 3
2440:120 Computer and Software Fundamentals 2
2450:119 Business English 3
2520:203 Principles of Advertising 3
2540:263 Business Communications 3
2540:280 Technical Electives 2

**Recommended Electives:**
2040:254 The Black American 7
2420:111 Public Relations 2
2530:106 Visual Promotion 3
2520:201 Principles of Wholesaling 2
2520:202 Retailing Fundamentals 3
2520:210 Consumer Service Fundamentals 3
2526:211 Marketing for Retail Distribution 3
2526:212 Principles of Sales 3

2520:233 Installment Credit 2
2520:125 Electronic Business Calculations 2
2540:140 Keyboarding for Normans 2
2560:200 Manufacturing Profitability* 3

### 2430: Real Estate

Designed to educate the student in all areas of the field, this program prepares students for entry-level positions in sales and management in the real estate industry through the study of products, professions and processes involving real estate.

1100 — Physical Education 1
1100:106 Introduction to Public Speaking 3
1100:108 Effective Oral Communication 3
2020:121 English 4
2040:240 Human Relations 3
2040:247 Survey of Basic Economics 3
2420:104 Introduction to Credit Unions 2
2420:115 Credit Union Operations 2
2420:116 Surveys in Business 3
2420:121 Office Administration 3
2420:170 Business Mathematics 3
2420:173 Personnel Practices 3
2420:211 Basic Accounting I 3
2420:212 Basic Accounting II 3
2420:241 Basic Accounting III 3
2420:243 Survey in Finance 3
2420:244 Essentials of Law 3
2420:105 Real Estate Principles 2
2420:105 Real Estate Law 2
2420:245 Real Estate Financing 2
2420:265 Valuation of Residential Property 2
2420:265 Real Estate Brokerage 2
2420:275 Real Estate Project 2
2420:210 Computer and Software Fundamentals 2
2420:211 Principles of Sales 3
2540:219 Business English 3
2540:267 Business Communications 3

### 2440: Computer Programming Technology

This program prepares graduates to enter the job market as computer programmers for business and industry. Emphasis of the curriculum is on programming computers to solve business problems.

1100 — Physical Education 1
1100:106 Introduction to Public Speaking 3
1100:108 Effective Oral Communication 3
2020:121 English 4
2040:240 Human Relations 3
2040:247 Survey of Basic Economics 3
2420:211,12 Introduction to Business 3
2420:121,12 Business Mathematics 3
2420:222 Technical Report Writing 7
2420:263 Business Communications 3
2420:240 Human Relations 3
2420:244 Essentials of Law 3
2420:245 Real Estate Financing 2
2420:265 Real Estate Brokerage 2
2420:275 Real Estate Project 2
2420:211,12 Basic Accounting I 6
2420:211,12 Basic Accounting II 6
2420:211,12 Basic Accounting III 6
2420:222 Technical Report Writing 7
2440:151 PC DOS Fundamentals 2
2440:210 Computer and Software Fundamentals 2
2440:121 Introduction to Programming Logic 2
2440:121 Introduction to Programming Logic 2
2440:132 Assembly Programming 3
2440:133 Structured COBOL Programming 2
2440:234 Advanced COBOL Programming 2
2440:239 RPG II Programming 2
2440:241 Systems Analysis and Design 3
2440:251 Computer Applications Projects 5
2440:252 Job Control Language 3
2440:252 Job Control Language 3
2440:125 Lotus 1-2-3 2
2440:151 PC DOS Fundamentals 1
2440:235 Current Programming Topics 3
2440:247 Information Center Practices 2
2440:261 CICS 3
2440:262 COBOL Efficiency 2
2440:265 OOps Base Concepts 3
2440:267 "ALL for Micros: dBase III Plus" 3

**Prerequisites are 2420:104,211**

### 2520: Marketing and Sales Technology

This program prepares graduates to fill entry-level positions in distributive business areas including retailing, industrial distribution and fashion.

1100 — Physical Education 1
1100:106 Introduction to Public Speaking 3
2020:121 English 4
2040:240 Human Relations 3
2040:247 Survey of Basic Economics 3
2420:101 Elements of Distribution 3
2420:123 Business Mathematics 3
2420:202 Personnel Practices 3
2420:211 Basic Accounting I 3
2420:240 Survey in Finance 3
2420:260 Essentials of Law 3
2440.120 Computer and Software Fundamentals
2520.215 Advertising Projects
2520.219 Sales Projects
2520.103 Principles of Advertising
2520.106 Visual Promotion
2520.202 Retailing Fundamentals
2520.210 Consumer Service Fundamentals
2520.211 Mathematics of Retail Distribution
2520.212 Principles of Sales
2520.217 Merchandizing Projects
2520.219 Sales Projects

Suggested Electives:
2520.221 AAF Advertising Campaign I
2520.222 AAF Advertising Campaign II

Options

Advertising
Required Technical Courses:
2020.224 Writing for Advertising
2520.215 Advertising Projects
2520.217 Merchandizing Projects
2520.219 Sales Projects
2520.234 Humor in Advertising

Suggested Electives:
2020.222 Personal Practices
2420.243 Survey of Finance
2440.120 Introduction to Information Processing
2520.221 AAF Advertising Campaign I
2520.222 AAF Advertising Campaign II

Computer Sales
1100.105 Introduction to Public Speaking
2020.121 English
2040.240 Human Relations
2040.247 Survey of Basic Economics
2420.101 Elements of Distribution
2420.111 Public Relations
2420.170 Business Mathematics
2420.202 Retailing Fundamentals
2420.211 Accounting I
2420.260 Essentials of Law
2440.120 Computer and Software Fundamentals
2440.125 Lotus 1-2-3
2440.131 PC DOS
2440.245 DBMS
2440.247 Microcomputer Hardware and Software Selection
2520.103 Principles of Advertising
2520.106 Visual Promotions
2520.210 Consumer Service Fundamentals
2520.212 Principles of Sales
2520.211 Math of Retail Merchandising
2520.217 Merchandizing Projects
2520.219 Sales Projects
2540.119 Business English
2540.140 Keyboarding for Non-Majors
2540.141 PC-Word Processing for Non-Majors

Fashion
7600.121 Textiles
7600.317 History of costumes
7400.339 The Fashion Industry
7400.419 Clothing Communication

Suggested electives:
2440.120 Computer and Software Fundamentals
2520.217 Merchandizing Projects

Industrial
2520.203 Fundamentals of Industrial Distribution
2520.207 Techniques of Merchandising

Suggested Electives:
2420.202 Personnel Practices
2420.243 Survey of Finance
2440.120 Introduction to Information Processing
2520.219 Sales Projects

Retailing
2440.120 Survey of Finance
2440.121 Introduction to Information Processing
2520.215 Advertising Projects
2520.217 Merchandizing Projects
2520.219 Sales Projects

Sales
Required Courses:
2420.202 Personal Practices
2420.243 Survey of Finance
2440.120 Introduction to Information Processing
2520.215 Advertising Projects
2520.217 Merchandizing Projects
2520.219 Sales Projects

Suggested Electives:
2520.221 AAF Advertising Campaign I
2520.222 AAF Advertising Campaign II

2540: Office Administration

Preparing students for the different but often overlapping fields of secretarial, word processing, stenographic or clerical work, this program is based on personal career objectives. Students choose from program options that prepare them for positions in executive, legal, international, information management, or word processing secretarial work.

Options

Executive Secretarial (Two-Year Shorthand Emphasis)
1100.121 Physical Education
2020.121 English
2040.240 Human Relations
2420.170 Business Mathematics
2420.202 Personnel Practices
2420.211 Basic Accounting I
2540.119 Business English
2540.121 Introduction to Office Procedures
2540.125 Electronic Business Calculations
2540.130 Introduction to Information Management
2540.134 Beginning Keyboarding
2540.135 Intermediate Keyboarding
2540.171 Shorthand Principles
2540.173 Shorthand and Transcription
2540.234 Advanced Keyboarding
2540.263 Business Communications
2540.274 Advanced Dictation and Transcription
2540.276 Executive Dictation and Transcription
2540.286 Machine Transcription
2540.286 Keyboarding on Word Processing Equipment

Executive Secretarial (One-Year Shorthand Emphasis)
1100.121 Physical Education
2020.121 English
2040.240 Human Relations
2420.170 Business Mathematics
2420.211 Basic Accounting I
2540.121 Beginning Keyboarding
2540.134 Intermediate Keyboarding
2540.171 Shorthand Principles
2540.173 Shorthand and Transcription
2540.234 Advanced Keyboarding
2540.263 Business Communications
2540.274 Advanced Dictation and Transcription
2540.276 Executive Dictation and Transcription
2540.286 Machine Transcription
2540.286 Keyboarding on Word Processing Equipment
2540.288 Word Processing on Computers

International Secretarial

Executive Secretarial (Two-Year Shorthand Emphasis)
1100.121 Physical Education
2020.121 English
2420.170 Business Mathematics
2540.119 Business English
2540.121 Introduction to Office Procedures
2540.125 Electronic Business Calculations
2540.130 Introduction to Information Management
2540.134 Beginning Keyboarding
2540.135 Intermediate Keyboarding
2540.171 Shorthand Principles
2540.173 Shorthand and Transcription
2540.234 Advanced Keyboarding
2540.263 Business Communications
2540.274 Advanced Dictation and Transcription
2540.276 Executive Dictation and Transcription
2540.286 Machine Transcription
2540.286 Keyboarding on Word Processing Equipment
2540.288 Word Processing on Computers

International Secretarial (One-Year Shorthand Emphasis)
1100.121 Physical Education
2020.121 English
2420.170 Business Mathematics
2540.119 Business English
2540.121 Introduction to Office Procedures
2540.125 Electronic Business Calculations
2540.130 Introduction to Information Management

*Not required to take 2420.111.

**Associate degree courses may be applied toward a four-year business education degree.
### Legal Secretarial (Two-Year Shorthand Emphasis)

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<td>Advanced Keyboarding</td>
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### Legal Secretarial Science (Non-Shorthand Emphasis)

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<td>Introduction to Information Management</td>
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<td>2540:150</td>
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<td>Legal Office Procedures</td>
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### Office Information Management

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<tr>
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### Word Processing

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### 2550: Office Services

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<td>2420:288</td>
<td>Elements of Distribution</td>
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<td>Introduction to Office Procedures</td>
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<td>Machine Transcription</td>
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### 2560: Transportation

This program is aimed at providing technical knowledge and skills in the area of transportation management.

#### Options

**Airlines/Travel Industry**

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<th>Course Title</th>
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#### General

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<td>2040:247</td>
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<td>Personnel Practices</td>
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This page is part of the University of Akron's course catalog, detailing various courses offered in different fields such as Office Information, Legal Secretarial, and Office Information Management. The courses listed cover a range of topics including both general education and specific skills training, such as keyboarding, business communications, and basic accounting.
Engineering and Science Technology

**2860: Electronic Technology**

(Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.)

This program prepares individuals for work as technicians in developing, manufacturing, installing, testing and maintaining electronic equipment and systems.

**Options**

**Computer-Aided Manufacturing Option**

1100 — Physical Education
2020:121 English
2020:222 Technical Report Writing
2030:152 Elements of Mathematics II
2030:153 Elements of Mathematics III
2030:154 Math for Engineering Technology I
2030:255 Math for Engineering Technology II
2040:240 Human Relations
2040:242 American Urban Society
2040:247 Survey of Basic Economics
2920:151 Basic Physics: Mechanics
2920:153 Basic Physics: Heat, Light and Sound
2920:120 DC Circuits
2920:22 AC Circuits
2920:123 Electronic Devices
2920:225 Linear Integrated Circuits
2920:231 Control Principles
2920:237 Digital Circuits
2920:238 Microprocessor Fundamentals
2920:242 Machinery and Controls
2920:251 Communications Circuits
2920:255 Electronic Design and Construction Manufacturing
2920:260 Electronics Project
2940:151 Technical Computations

**2880: Manufacturing Technology**

Through the study of basic technical subjects and through concentration on work measurement, safety procedures, computer applications and quality control, this program educates the student in the areas of analysis, design and management of the resources, facilities and people involved in industrial processes.

**Industrial Supervision Option**

1100 — Physical Education
1100:106 Effective Oral Communication
2020:121 English
2020:222 Technical Report Writing
2030:152 Elements of Mathematics II
2030:153 Elements of Mathematics III
2030:154 Math for Engineering Technology I
2030:255 Math for Engineering Technology II
2040:240 Human Relations
2040:242 American Urban Society
2040:247 Survey of Basic Economics
2040:251 Work Relationships
2040:254 The Black American

**2920: Mechanical Technology**

(Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.)

This program prepares individuals for work as technicians in developing, designing, manufacturing, testing and servicing mechanical equipment.

**Options**

**Computer-Aided Manufacturing Option**

1100 — Physical Education
1100:106 Effective Oral Communication
2020:121 English
2020:222 Technical Report Writing
2030:131 Mathematical Analysis I
2030:132 Mathematical Analysis II
2030:233 Mathematical Analysis III
2040:240 Human Relations
2040:242 American Urban Society
2040:247 Survey of Basic Economics
2040:255 Mechanical Design
2040:260 Technical Design
2040:180 Technical Drawing I

**2940: Drafting Technology**

This program is designed to give the student in-depth knowledge of various types of drafting. It will prepare the individual to compile detailed drawings based on rough sketches, specifications and calculations made by engineers, architects and designers.

**Options**

**Computer-Aided Manufacturing Option**

1100 — Physical Education
1100:106 Effective Oral Communication
2020:121 English
2020:222 Technical Report Writing
2030:151 Elements of Mathematics I
2030:152 Elements of Mathematics II
2030:240 Human Relations
2040:240 Human Relations
2040:247 Survey of Basic Economics
2040:251 Work Relationships
2040:254 The Black American

**2960: Surveying and Construction Technology**

(Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.)
Options

Construction

1100 — Physical Education 1
1100.106 Effective Oral Communications 3
2020.121 English 4
2030.130 Introduction to Technical Mathematics and effective (one) 4
2030.131 Mathematical Analysis ** 4
2040.240 Human Relations 3
2040.242 American Urban Society 3
2060.245 Infant/Toddler Day-Care Programs 3
2140.250 Observing and Recording Children's Behavior 3
2040.247 Survey of Basic Economics *** 3
5100.250 Development and Learning, and Elective (one) 4
5200.211 Introduction to Early Childhood Education 3
5200.213 Issues and Trends in Early Childhood Education 3
5200.270 Teaching in the Nursery Center 3
5200.272 Nurse Center Laboratory 2
3500.211 First Aid 2
3610.450 Spinal Education Programming: Early Childhood 3
5850.295 Field Experience 5
7400.132 Early Childhood Nutrition 3
7400.265 Child Development 3
7400.270 Theory and Guidance of Play 3
7400.280 Creative Activities for the Pre-Kindergarten Child 4
7400.448 Before and After School Child Care 2
Elective 2

Voluntary Pre-Kindergarten Associate Certification is available. See coordinator for other requirements for certification.

Elementary Aide

5200.335 Teaching Language Arts 5
5810.207 Mechanics of Study 3
Elective 18

Library Technician

2020.100 Introduction to Library Technology 3
2020.201 Processing, Cataloging, and Classifying Materials 3
2020.202 Organizing and Operating Library Media Centers 3
2220.203 Materials Selection 2
2220.204 Reference Procedures 3
2230.205 Information Retrieval Systems in Library Technology 3
Elective 9

2210: Handicapped Services

Interpreting for the Deaf

The purpose of this program is to train and educate the student who wishes to interpret for deaf and hearing impaired persons and those persons who desire to communicate through sign language.

1100 — Physical Education 1
1100.106 Effective Oral Communications 3
2020.121 English 4
2040.240 Human Relations 3
or
3750.100 Introduction to Psychology 3
2040.242 American Urban Society 3
2120.100 Introduction to Interpreting for the Deaf 4
2120.104 Sign Language Gestures and Mime 3
2120.115 Specialized Interpreting I 3
2120.150 Handicapped Services Practicum## 2
2122.200 Reverse Interpreting 3
2122.230 Specialized Interpreting II 3
2420.170 Business Mathematics 3
7700.100 Manual Communication I 5
7700.120 Introduction to Audiology/Rural Rehabilitation 3
7700.121 Psycho-Social Aspects of Deafness 3
7700.150 Manual Communication II 4
7700.210 Manual Communication III 4
7700.222 Introduction to the Deaf Culture and Its Origins 2
7703.223 Speech and Language of Deaf Child and Adult 4
7704.270 Language of Signs I 3
Elective 1

Public Service Technology

2200: Educational Technology

This program prepares individuals for employment as elementary aides, assisting the professional teacher; library technicians, assisting the professional librarian or information specialist; or child development workers, filling a variety of staff positions in either a day-care center, nursery school or Head Start program.

Core Program

1100 — Physical Education 1
1100.106 Effective Oral Communications 3
2020.121 English 4
2040.240 Human Relations 3
2040.242 American Urban Society 3
2540.140 Keyboard for Non-Majors 2
3450.130 Modern University Mathematics 3
3750.100 Introduction to Psychology 3
5100.150 Introduction to Professional Education 5
5100.250 Human Development and Learning 3
5100.280 Auditory/Vision Education 2
5550.211 First Aid 2
5850.295 Education Technician Field Experience 5
Option Requirements 26
Elective 1

†May substitute 2030.130. 3 credits. Child development and library students may substitute 2420.170. 3 credits.

††Must complete 7400.265, 275 and 5200.260 before doing 5850.295. 7400.265 can be taken concurrently. See coordinator the previous semester.

* A "3-2" program is available for students interested in earning an-associate of Applied Science degree. Child Development Option, and the Bachelor of Arts degree in Child Development. Students must substitute 2030.111 Math Analysis I and 2040.247 Survey of Basic Economics in the Associate degree program.

†††Must complete required courses before doing 5850.295. See coordinator the previous semester.

‡‡‡Elective credits; students may substitute 5100.350.

§§§Library courses are offered in alternate years. See adviser or coordinator.

##Must be repeated for a total of eight credits.
**2220: Criminal Justice Technology**

This program prepares persons to serve governmental, industrial, and other fire protection agencies in fire fighting and prevention, property protection and in handling emergency situations.

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<thead>
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<td>Criminal Law for Police</td>
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<td>2220:104</td>
<td>Evidence and Criminal Legal Process</td>
</tr>
<tr>
<td>2220:106</td>
<td>Juvenile Justice Process</td>
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<tr>
<td>2220:108</td>
<td>Social Values and Criminal Justice</td>
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<tr>
<td>2220:200</td>
<td>Criminal Justice Theory and Practice</td>
</tr>
<tr>
<td>2220:250</td>
<td>Dynamics of Vice Crime and Substance Abuse</td>
</tr>
<tr>
<td>2220:250</td>
<td>Criminal Case Management</td>
</tr>
<tr>
<td>2220:260</td>
<td>Administration and Supervision in the Public Service</td>
</tr>
<tr>
<td>2220:101</td>
<td>Introduction to Security</td>
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<tr>
<td>2220:102</td>
<td>Criminal Law for Police</td>
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<tr>
<td>2220:104</td>
<td>Evidence and Criminal Legal Process</td>
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<tr>
<td>2220:200</td>
<td>Criminal Justice Theory and Practice</td>
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<tr>
<td>2220:108</td>
<td>Juvenile Justice Process</td>
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<td>2220:110</td>
<td>Social Values and Criminal Justice</td>
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<td>Criminal Justice Theory and Practice</td>
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**Options**

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<td>Administration, Supervision, and Public Services</td>
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<td>Introduction to Business</td>
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<td>2440:120</td>
<td>Computer and Software Fundamentals</td>
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**Social Work Emphasis**

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<td>Criminal Justice Theory and Practice</td>
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<td>Basic Chemistry</td>
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<td>Poverty in the United States</td>
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<td>Introduction to Social Welfare</td>
</tr>
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<td>Fundamentals of Volunteer Management</td>
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<td>Recruitment and Interviewing of Volunteers</td>
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<td>Juvenile Justice Process</td>
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<td>Criminal Justice Theory and Practice</td>
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<td>Administration and Supervision in the Public Service</td>
</tr>
<tr>
<td>2220:100</td>
<td>Basic Chemistry</td>
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<td>3520:100</td>
<td>Poverty in the United States</td>
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<tr>
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<td>Introduction to Social Welfare</td>
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2230: Fire Protection Technology

This program prepares persons to serve governmental, industrial, and other fire protection agencies in fire fighting and prevention, property protection and in handling emergency situations.

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<th>Title</th>
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<tbody>
<tr>
<td>2230:100</td>
<td>Physical Education</td>
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<tr>
<td>2230:105</td>
<td>Effective Oral Communication</td>
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<td>2230:121</td>
<td>English</td>
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<td>2230:222</td>
<td>Technical Report Writing</td>
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<tr>
<td>2230:131</td>
<td>Mathematical Analysis I</td>
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<td>2040:240</td>
<td>Human Relations</td>
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<td>2040:242</td>
<td>American Urban Society</td>
</tr>
<tr>
<td>2230:100</td>
<td>Fire Protection Technology</td>
</tr>
<tr>
<td>2230:102</td>
<td>Fire Safety in Building Design and Construction</td>
</tr>
</tbody>
</table>

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**Notes:**

- *required for Social Services Emphasis (2+2) majors
- *not required for Social Services Emphasis (2+2) majors
- *for students who wish to pursue a baccalaureate degree in social work in a "2+2" arrangement.
Wayne College

Tyone M. Turning, Ed.D., Dean
Robert L. McElwee, M.A., Associate Dean

HISTORY AND MISSION
Wayne College — The University of Akron is located one mile northwest of Orrville, Ohio. Wayne College was founded in 1972, and is authorized by the state of Ohio through the Ohio State Board of Regents to offer general studies, including baccalaureate-oriented preparation, technical education programs, and continuing education experiences for those who live in Medina, Wayne and Holmes counties.

Wayne College provides a general studies transfer program integral to a variety of professional and pre-professional majors. This program can lead to the degree of Associate of Arts or Associate of Science. In addition, students at Wayne College are prepared for a variety of careers in business, industry and public/social service. Technical programs culminate in the degree of Associate of Applied Science or Associate of Applied Business.

ADMISSIONS
Admission applications are available at Wayne College (216-375-7348) in Orrville or at the Office of Admissions of The University of Akron. The student enrolled at Wayne College may also take courses at the main campus of The University of Akron while attending Wayne College. Likewise, a student enrolled on the main campus may take courses at Wayne College concurrently. Wayne College is accredited at the associate degree level by the North Central Association of Colleges and Schools.

WAYNE COLLEGE PROGRAMS
The following associate degree programs are available at Wayne College. The structure of these programs may differ significantly from similar programs within the Community and Technical College of The University of Akron. All required courses for these programs are available at the college for students attending day or evening classes. A diploma is awarded following the completion of one of these programs and the Wayne College designation. In some instances, specific course sequencing is necessary, especially to the student attending full time, to accommodate completion of the program in two years. Please consult an advisor at Wayne College for further details.

2260: Social Services Technology

This program prepares the individual for employment in support of social workers or other professional human services personnel. It includes courses in social work, sociology, psychology and various aspects of community services.

General Options

1100 — Physical Education 3
1100.105 Effective Oral Communication 3
1100.110 English Composition 1
1100.111 English Composition 4
2260.101 Human Relations 3
2260.200 The Arts and Human Experience 3
2260.285 Social Services Practicum 3
2260.288 Techniques of Community Work I 4
2260.294 Social Services Practicum Seminar 2
2370.100 Introduction to Psychology 3
2370.230 Developmental Psychology 4
2380.100 Introduction to Sociology 3
2380.104 Social Problems 3
7750.201 Relationship Patterns: Marriage and Family 3
7750.270 Poverty in the U.S. 3
7750.274 Introduction to Social Welfare 3

Data Management Option

1100 — Physical Education 1
1100.105 Effective Oral Communication 3
1100.110 English Composition 4
2260.101 Human Relations 3
2260.285 Social Services Practicum 3
2260.288 Techniques of Community Work I 4
2260.294 Social Services Practicum Seminar 2
2370.100 Introduction to Psychology 3
2370.230 Developmental Psychology 4
2380.100 Introduction to Sociology 3
2380.104 Social Problems 3
7750.201 Relationship Patterns: Marriage and Family 3
7750.270 Poverty in the U.S. 3
7750.274 Introduction to Social Welfare 3

2+2 Option with four-year Social Work degree

1100 — Physical Education 1
1100.105 Effective Oral Communication 3
1100.110 English Composition 4
1100.111 English Composition 4
1102.221 Natural Science Biology 3
2260.150 Introduction to Gerontological Services 3
2260.290 Introduction to Alcohol Use and Abuse 3
2260.278 Social Services Practicum 3
2260.285 Social Services Practicum Seminar 2
2370.100 Introduction to Psychology 3
2370.230 Developmental Psychology 4
2380.100 Introduction to Sociology 3
2380.104 Social Problems 3
7750.201 Relationship Patterns: Marriage and Family 3
7750.270 Poverty in the U.S. 3
7750.274 Introduction to Social Welfare 3

2420: Business Management Technology

The General Option provides training in varied business activities in preparation for an entry-level management position in business, industry, government, and nonprofit organizations or as a self-employed manager. The Accounting Option provides paraprofessional training for a variety of accounting positions. Graduates will be prepared for immediate employment in the areas of financial accounting, sales, procurement, credit and collections, business research, data compilation and reporting. The Data Management Option provides for an introduction to the uses of computers in Business by requiring the student to develop useful skills in that area. The Sales Option equips graduates for entry-level positions in distributive business fields and includes courses in advertising, marketing, sales and visual promotion.

Accounting Option

1100 — Physical Education 1
1100.105 Effective Oral Communication 3
1100.110 English Composition 4
2420.102 Survey of Basic Economics 3
2420.211 Basic Accounting I 3
2420.212 Basic Accounting II 3
2420.213 Basic Accounting III 3
2420.214 Essentials of Intermediate Accounting 3
2420.215 Survey of Cost Accounting 3
2420.216 Survey of Taxation 3
2420.217 Survey in Finance 3
2420.220 Essentials of Law 3
2420.230 Computer and Software Fundamentals 3
2440.119 Business English 3
2440.263 Business Communications 3

Recommended Electives

2420.240 Human Relations 3
2440.245 BASIC Programming for Business 3
2440.246 Introduction to Database III-IV 3
2450.239 Career Development for Office Professionals 3

Data Management Option

1100 — Physical Education 1
1100.105 Effective Oral Communication 3
1100.110 English Composition 4
2420.240 Human Relations 3
2420.247 Survey of Basic Economics 3
2420.250 The Arts and Human Experience 3
2420.261 Elements of Distribution 3
2420.262 Elements of Management 3
2420.263 Introduction to Business 3
2420.264 Personnel Practices 3
2440.120 BASIC Programming for Business 3
2440.250 Computer and Software Fundamentals 3
2440.261 Computer and Software Fundamentals 3
2440.262 Essentials of Law 3
2440.263 Business Communications 3

2420.240 Human Relations 3
2440.245 BASIC Programming for Business 3
2440.246 Introduction to Database III-IV 3
2450.239 Career Development for Office Professionals 3
General Business Option

1100 —— Physical Education 1
1100.106 Effective Oral Communication 3
1100.111 English Composition 4
2040.240 Human Relations 3
2040.247 Survey of Basic Economics 3
2040.251 Work Relationships 3
2040.260 The Arts and Human Experience 3
2420.102 The Role of Supervision in Management 3
2420.104 Introduction to Business 3
2420.171 Business Calculations 4
2420.202 Personnel Practices 3
2420.211 Basic Accounting I 3
2420.212 Basic Accounting II 3
2420.243 Survey in Finance 3
2420.280 Essentials of Law 3
2440.120 Computer and Software Fundamentals 2
2540.119 Business English 3
2540.140 Keyboarding for Nonmajors 2
2540.263 Business Communications 3
2890.232 Labor Management Relations 3
Electives 3
64

Sales Option

1100 —— Physical Education 1
1100.106 Effective Oral Communication 3
1100.111 English Composition 4
2040.240 Human Relations 3
2040.247 Survey of Basic Economics 3
2040.260 The Arts and Human Experience 3
2420.101 Elements of Distribution 3
2420.103 The Role of Supervision in Management 3
2420.171 Business Calculations 4
2420.202 Personnel Practices 3
2420.211 Basic Accounting I 3
2420.243 Survey in Finance 3
2420.280 Essentials of Law 3
2440.120 Computer and Software Fundamentals 2
2520.103 Principles of Advertising 3
2520.106 Visual Promotion 3
2520.201 Principles of Wholesaling 2

or
2520.202 Retailing Fundamentals 3
or
2520.203 Fundamentals of Industrial Distribution 3
2520.21 Consumer Service Fundamentals 2
2520.212 Principles of Sales 3
2540.119 Business English 3
2540.263 Business Communications 3
Electives 5
64

2540: Office Administration

The following programs provide thorough training in typing, shorthand and communications and are designed to prepare the individual for secretarial, stenographic or clerical positions in a variety of business settings.

Executive Secretory Option

1100 —— Physical Education 1
1100.111 English Composition 4
2040.240 Human Relations 3
2040.260 The Arts and Human Experience 3
2420.171 Business Calculations 4
2420.202 Personnel Practices 3
2420.211 Basic Accounting I 3
2420.212 Basic Accounting II 3
2420.243 Survey in Finance 3
2420.280 Essentials of Law 3
2520.103 Principles of Advertising 3
2520.106 Visual Promotion 3
2520.201 Principles of Wholesaling 2

or
2520.202 Retailing Fundamentals 3
or
2520.203 Fundamentals of Industrial Distribution 3
2520.21 Consumer Service Fundamentals 2
2520.212 Principles of Sales 3
2540.119 Business English 3
2540.263 Business Communications 3
Electives 5
64

Legal Secretary Option

1100 —— Physical Education 1
1100.111 English Composition 4
2040.240 Human Relations 3
2040.260 The Arts and Human Experience 3
2420.171 Business Calculations 4
2420.211 Basic Accounting I 3

Medical Secretary Option

1100 —— Physical Education 1
1100.111 English Composition 4
2040.240 Human Relations 3
2040.260 The Arts and Human Experience 3
2420.171 Business Calculations 4
2420.202 Personnel Practices 3
2420.211 Basic Accounting I 3
2420.119 Business English 3
2420.121 Office Procedures 3
2420.150 Beginning Keyboarding 3
2420.151 Intermediate Keyboarding 3
2420.243 Survey in Finance 3
2420.280 Essentials of Law 3
2520.103 Principles of Advertising 3
2520.106 Visual Promotion 3
2520.201 Principles of Wholesaling 2

Electives 3
64

Office Services Option

1100 —— Physical Education 1
1100.106 Effective Oral Communication 3
1100.111 English Composition 4
2040.240 Human Relations 3
2040.260 The Arts and Human Experience 3
2420.101 Elements of Distribution 3
2420.104 Introduction to Business 3
2420.121 Office Procedures 3
2420.202 Personnel Practices 3
2420.211 Basic Accounting I 3
2420.280 Essentials of Law 3
2520.103 Principles of Advertising 3
2520.106 Visual Promotion 3
2520.201 Principles of Wholesaling 2

or
2520.202 Retailing Fundamentals 3
or
2520.203 Fundamentals of Industrial Distribution 3
2520.21 Consumer Service Fundamentals 2
2520.212 Principles of Sales 3
2540.119 Business English 3
2540.263 Business Communications 3
Electives 5
64

Word Processing Option

1100 —— Physical Education 1
1100.116 Effective Oral Communication 3
2040.240 Human Relations 3
2040.260 The Arts and Human Experience 3
2420.104 Introduction to Business 3
2420.150 Beginning Keyboarding 3
2420.151 Intermediate Keyboarding 3
2420.152 Advanced Keyboarding 3
2420.280 Essentials of Law 3
2520.103 Principles of Advertising 3
2520.106 Visual Promotion 3
2520.201 Principles of Wholesaling 2

Electives 3
64
2600: Microprocessor Service Technology

This program is designed to prepare students to carry out preventive maintenance and repair on microprocessor-based systems in varied manufacturing and service organizations. Graduates will be equipped to maintain a microprocessor-based system; repair it by performing appropriate software diagnostics; isolate and correct hardware failures; and troubleshoot the interface between the system and ancillary and peripheral equipment.

Students completing this program may assume associate degrees. These courses can later be applied toward the Associate of Applied Science in systems and repairs on microprocessor-based systems in varied manufacturing and service technology.

1100 — Physical Education 1
1100.106 Effective Oral Communications 3
1100.111 English Composition 4
2020.222 Technical Report Writing 3
2030.131 Mathematical Analysis I 4
2040.251 Human Behavior at Work 3
2040.266 The Arts and Human Experience 3
2340.131 PC DOS Fundamentals 1
2570.210 Consumer Service Fundamentals 2
2600.100 Basic Electronics for Technicians 5
2600.125 Boolean Algebra and Equation Mechanization 3
2600.150 Test Equipment and Measurement 3
2600.155 Microprocessor Assembly Language 3
2600.190 Microprocessor Systems Architecture 4
2600.200 Electronics Troubleshooting 5
2600.230 Microprocessor and Digital Technology 4
2600.250 Microprocessor Diagnosis & Repair Techniques 5
2600.275 Digital Data Communications 4
2850.101 Basic Physics, Mechanics 3
2850.153 Basic Physics, Heat, Light & Sound 2

Recommended Electives:
2440.121 Introduction to Programming 2
2430.121 Introduction to BASIC Programming 2

ONE-YEAR CERTIFICATE PROGRAMS

Certificate programs are designed to provide students with specialized job training in two 15-week semesters. The programs offer courses from the college's associate degree programs. These courses can later be applied toward the Associate of Applied Science degree in Business Administration or the Associate of Applied Science degree in Social Services Technology.

Administrative Secretary Certificate

The administrative secretarial program provides intensive administrative secretarial training. The certificate is designed for those who seek to enhance their career opportunities with administrative secretarial skills. Students who complete this certificate are prepared to fill positions in areas of personnel, sales, secretarial or administration.

2420.103 The Role of Supervision in Management 3
2420.171 Business Calculations 4
2540.109 Business English 3
2540.121 Office Procedures 3
2540.150 Beginning Keyboarding 3

2540.151 Intermediate Keyboarding 3
2540.171 Shorthand Principles 4
2541.173 Shorthand and Transcription 3
2540.241 Information Management 7
2540.263 Business Communications 3
2540.286 Keyboarding on Word Processing Equipment 3

Data Management Certificate

This certificate will provide collegiate credit for those who find themselves in supervisory or managerial positions without formal training or education and who wish to obtain specialized training in data management.

2420.240 Human Relations 3
2420.103 The Role of Supervision in Management 3
2420.184 Introduction to Business 3
2420.211 Basic Accounting I 3
2440.120 Computer and Software Fundamentals 2
2440.125 Lotus 1-2-3 2
2440.130 Basic Programming for Business 3
2440.245 Introduction to Database III+IV 2
2440.255 Introduction to Data Communications 2
2440.267 4GL for Micros: Database III+ 3
2540.119 Business English 3
2540.283 Business Communications 3

Gerontological Social Services Certificate

Jobs in gerontological social services are expected to increase significantly in coming years because of rapidly growing numbers of older persons in our society. This one-year certificate program is designed to respond to the need for individuals with specialized knowledge and skills for employment in nursing homes, retirement communities, senior centers, nutrition sites and similar programs.

1100.111 English Composition 4
1100.221 Natural Science Biology 3
2260.217 Exploratory Experience in a Social Service Agency 1
2260.150 Introduction to Geomatical Services 3
2270.211 Community Services for Senior Citizens 3
2260.278 Techniques of Community Work 4
2260.285 Social Services Practicum 2
2260.288 Techniques of Community Work II 4
2550.284 Social Services Practicum Seminar 1
3100.108 Introduction to Biological Aging 3
7750.276 Introduction to Social Welfare 2

Word Processing Certificate

This certificate prepares a student for an entry-level job in word processing. Applicants for this program must have one year of formal typewriting instruction or two years of work experience as a typist. Recipients of this certificate are prepared to fill positions in secretarial or clerical areas.

2420.171 Business Calculations 4
2420.211 Basic Accounting I 3
2540.119 Business English 3
2540.121 Office Procedures 3
2540.151 Intermediate Keyboarding 3
2540.241 Information Management 7
2540.263 Business Communications 3
2540.266 Word Processing Concepts 2
2540.281 Machine Transcription 2
2640.286 Keyboarding on Word Processing Equipment 3
GENERAL STUDIES/TRANSFER PROGRAM
Wayne College offers the first two years of general baccalaureate-oriented education for transfer to the main campus of The University of Akron or to any other college or university. The following list indicates four-year programs of The University of Akron for which students may take one or two years of coursework at Wayne College.

Arts and Sciences
- Biology
- Chemistry
- Computer Science
- Economics
- English
- Geology
- History
- Mathematics & Statistics
- Medical Technology
- Political Science
- Psychology
- Sociology/Anthropology

Business Administration
- Accounting
- Advertising

Finance
- International Business
- Management
- Marketing

Education
- Elementary
- Physical
- Secondary
- Special

Engineering
- Chemical
- Civil
- Electrical
- Mechanical

Fine and Applied Arts
- Art
- Communication
- Home Economics and Family Ecology
- Social Work

Nursing
The general studies transfer program also leads to the Associate of Arts or the Associate of Science degree.
University College

Marion A. Ruebel, Ph.D., Dean
Thomas Yuvovich, Ph.D., Assistant Dean
Dan Newland, Ph.D., Assistant Dean
Martin McKoski, Ph.D., Director, Developmental Programs
David C. Riede, Ph.D., Head, Department of General Studies

OBJECTIVES

The purpose of the University College is to further the objectives of The University of Akron by providing a quality program of general collegiate education and to pursue the following aims:

- To offer the student a basic program of general studies and the prerequisite courses for advancement to the degree-granting colleges.
- To counsel the student with respect to adjustment to the collegiate environment and to academic, personal and occupational objectives.
- To direct the student to the proper curricula so that the student will enter the degree-granting colleges prepared to undertake advanced work.

The college recommends the student for advancement to the degree-granting colleges upon satisfactory completion of the appropriate requirements.

A student who completes 30 semester credits and achieves a grade-point average of 2.00 ("C") or better is eligible for transfer to a degree-granting college. A student should always check with the advisor to determine specific requirements for transfer to the programs of the student's choice.

Acceptance of a student in a degree-granting college is the responsibility of the respective collegiate dean, the dean of the University College and heads of departments concerned.

1100: GENERAL STUDIES

The Department of General Studies of the University College provides a student with courses aimed at developing ability to understand and express ideas effectively, to comprehend the processes involved in accurate thinking and to learn the responsibilities of an educated member of society. Also, these courses help a student gain knowledge which helps to develop intelligent behavior patterns, self-understanding and the recognition of individual abilities.

The General Studies program provides a wide foundation of general knowledge to serve as the structural basis for the development of students' intellectual abilities to their cultural or professional height. This foundation includes English composition, literature, speech, mathematics, natural science, social science, Western Cultural Traditions, Eastern Civilizations and physical education. The General Studies program, as it is now presented, is the result of half a century of planning, revision and developing.

A student, well grounded in the General Studies, is academically prepared to continue into realms of higher education; this curriculum has proved the most advantageous starting point for a student, no matter the student's eventual scholastic goal. It is equally valuable to the enrollee who is indecisive about a professional future and to the enrollee who arrives at the University convinced of what the enrollee wishes to become.

PROGRAM OF INSTRUCTION

The required General Studies courses are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100:105</td>
<td>Introduction to Public Speaking</td>
<td>3</td>
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<tr>
<td>1100:106</td>
<td>Effective Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>1100:111.1</td>
<td>English Composition</td>
<td>8</td>
</tr>
<tr>
<td>1100:115.1</td>
<td>Institutions in the United States*</td>
<td>6</td>
</tr>
<tr>
<td>1100:130.1</td>
<td>Physical Education*</td>
<td>1</td>
</tr>
<tr>
<td>1100:200.1</td>
<td>Western Cultural Traditions</td>
<td>8</td>
</tr>
<tr>
<td>1100:330.3</td>
<td>Eastern Civilizations**</td>
<td>4</td>
</tr>
<tr>
<td>1100:334.3</td>
<td>Mathematics</td>
<td>3</td>
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</table>

Natural Science Courses:

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<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
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<td>1100:221</td>
<td>Biology</td>
<td>3</td>
</tr>
<tr>
<td>1100:222</td>
<td>Chemistry</td>
<td>3</td>
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<tr>
<td>1100:223</td>
<td>Geology</td>
<td>3</td>
</tr>
<tr>
<td>1100:224</td>
<td>Physics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science</td>
<td>6</td>
</tr>
</tbody>
</table>

STUDENT SERVICES FOR THE HANDICAPPED

One of the provisions inherent in Section 504 of the Rehabilitation Act of 1973, and the subsequent amendments of 1978, requires that, to ensure equal access for students with disabilities, certain academic adjustments or accommodations must be made by the institution.

The Office of Student Services for the Handicapped is under the direction of the University College. It is the responsibility of that office to provide handicapped students with the necessary adjustments and accommodations that will ensure them the opportunity for full participation in University academic programs, activities and services.

Some of the services provided by the Office of Student Services for the Handicapped include: tutors, taped textbooks, readers, test proctoring, interpreters, notetaking, scribe assistance, academic advising, mobility orientation and preferred registration.

*The six credit requirement in the social science area may also be met through one of the following options:
A. Completion of a minimum of two courses totaling at least six credits selected from two of the following four sets of course offerings:
   - 3200:201 Principles of Microeconomics, three credits.
   - 3200:202 Principles of Macroeconomics, three credits.
   - 3200:100 Introduction to Economics, three credits.
   - 3200:100 United States History, four credits.
   - 3200:201 United States History and Civil War, four credits.
   - 3200:202 United States History since Civil War, four credits.
   - 3200:100 Government and Politics in United States, four credits.
   - 3200:100 Introduction to Sociology, four credits.
   - 3200:100 Cultural Anthropology, four credits.
B. For a Community and Technical College major only, completion of the following three courses (total of nine credits):
   - 2040:240 Human Relations, three credits.
   - 2040:242 American Urban Society, three credits.
   - 2040:247 Survey of Basic Economics, three credits.

**An engineering student is only required to take two credits; all other students must take four credits.

1Minimum of six credits of science. This requirement may be met by taking courses in the departments of biology, chemistry, geology or physics, or by any combination of two out of four of the natural science courses, 1100:221, 222, 224 (three credits each).
ACADEMIC ADVISING SERVICES FOR DAY AND EVENING STUDENTS

This division is responsible for the academic counseling and advising of all day and evening freshman- and sophomore-level students prior to their admittance into degree-granting colleges. The advisers are professionally trained to deal with career planning, major selection, course loads, choices of subject, scholastic achievement, study habits, outside work loads and other circumstances, both personal and academic, that impact classroom performance.

DEVELOPMENTAL PROGRAMS

The Department of Developmental Programs provides academic support for all University students, especially those who wish to strengthen their educational preparation in specific areas or who have been out of school for a number of years and feel the need for remediation. Through developmental courses, individual tutoring and work in the writing, reading, and math laboratories, such a student can develop the skills necessary for acceptable performance at the college level.

Developmental courses are offered in English, reading, college reading and study skills, mathematics and chemistry. Classes are small to provide maximum time for individual help. Peer-tutoring is provided for most subjects taught in the first two years and is free.

The writing, reading and math laboratories are open to all undergraduate students without charge and provide professional diagnosis and remedy of weaknesses in these vital skills.

DIPLOMA NURSING PROGRAM

The University, in cooperation with the hospital schools of nursing at Akron City Hospital and St. Thomas Hospital Medical Center in Akron, provides a program of studies basic to a diploma in nursing.

Nursing students must meet the University entrance requirements and are enrolled in regular credit courses.

Applications for this program are handled through the hospital schools of nursing, which award the diploma.

The programs for the two schools of nursing differ slightly in regard to courses taken and their sequence.

The following courses are offered:

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<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>3100:130</td>
<td>Microbiology</td>
<td>3</td>
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<tr>
<td>3100:206</td>
<td>Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>3700:207</td>
<td>Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>3150:124</td>
<td>Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>3750:00</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>3750:120</td>
<td>Developmental Psychology</td>
<td>4</td>
</tr>
<tr>
<td>3850:100</td>
<td>Introduction to Sociology</td>
<td>4</td>
</tr>
<tr>
<td>7400:133</td>
<td>Nutrition Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>
Reserve Officer Training Corps (ROTC)

1500: AEROSPACE STUDIES

The Department of Aerospace Studies provides the student with the opportunity to pursue a commission in the United States Air Force while qualifying for graduation from The University of Akron. The United States Air Force has been in the forefront of contributions to flight, research and development, effective management of resources and people and education largely because of the existence of a well-educated, versatile and professional officer corps. The primary source of these officers is the Air Force ROTC.

The program is designed to prepare the student to become an officer who is dedicated and responsible, critical and creative in thinking, able to communicate clearly, and skilled in effective management.

Both the four- and two-year programs are open to the full-time male and female student who will have completed at least one course in mathematical reasoning and a baccalaureate degree at commissioning.

Programs

Four-Year Program

Full-time students of The University of Akron may pursue the four-year program. Enrollment procedures for the first two years of Air Force ROTC known as the General Military Course (GMC) are the same as for any other University courses. The GMC consists of one hour of classroom work and one hour of Aerospace Studies Laboratory (Leadership Laboratory) each week and provides 1.5 semester credits.

Portions of the GMC may be accredited for completion of two or more years of high school junior ROTC, participation in Civil Air Patrol, military school training or prior service in any branch of the United States Armed Forces.

GMC cadets who wish to compete for the last two years of the AFROTC program, the Professional Officer Course (POC), must meet the additional qualifications.

Two-Year Program

The basic requirement for entry into the two-year program is to have two academic years remaining, either at the undergraduate or the graduate level, or a combination of the two. Entry into the POC is competitive in nature. A two-year program applicant must meet the qualifications described below. A student in the POC receives a non-taxable monthly subsistence allowance of $100. Applications for the two-year program should be made as early in the academic year as possible so that all requirements may be completed in time for summer field training. The POC consists of three hours of classroom work and one hour of Aerospace Studies Laboratory (Leadership Laboratory) each week, and provides three semester credits.

Supplemental Courses

All GMC scholarship cadets are required, and nonscholarship cadets encouraged, to demonstrate proficiency or successfully complete a course in English composition. One year of college instruction in a major Indo-European or Asian language is also required for all scholarship cadets. All POC cadets must demonstrate proficiency or complete a course in mathematical reasoning.

Field Training

In the summer prior to entering the POC, all four-year program AFROTC cadets and student applicants for the two-year program must attend field training at an Air Force base where they will learn and make use of training and leadership techniques in close contact with other cadets.

The four-year program student spends four weeks at an encampment, while field training for the two-year program applicant lasts six weeks. The additional two weeks for the two-year program applicant are used to cover the academic work taken by the cadet that completed the General Military Course (GMC). Uniforms, lodging and meals are provided without charge, and travel pay is authorized to and from the individual's home or school. The cadet and applicant receive pay at approximately half the rate of a second lieutenant.

Flight Training

Pilot-qualified students must either possess a private pilot's license or successfully complete the Flight Screening Program (FSP). The FSP is held in conjunction with field training. In addition to participation in a ground school covering aircraft systems, navigation, and regulations pertaining to flying, cadets will receive flight instruction from qualified civilian or Air Force instructors.

Base Visits

Classroom instruction is made more meaningful for the cadet through visits to Air Force bases. To bring the scope of Air Force operations into a clearer perspective, Air Force ROTC strives to enable every cadet to make at least one such visit each year. Many cadets have the opportunity to make more.

Requirements for Admission

General Qualifications

- Be a citizen of the United States or applicant for naturalization.
- Be a full-time student.
- Be in sound physical condition.
- Be of good moral character.
- Meet age requirements as follows:
  - AFROTC four-year scholarship recipients must be at least 17 years of age and able to complete commissioning requirements prior to age 25.
  - If not on scholarship status, but designated for pilot or navigator training, be able to complete all commissioning requirements prior to age 26.
- If not on scholarship status and not qualified for flying training, be able to complete commissioning requirements prior to age 30.

Additional Qualifications for Professional Officer Course

- Be at least 17 years of age.
- For the four-year program cadet, complete the General Military Course or receive credit for junior ROTC, Civil Air Patrol, military school training or prior service.
- For the two-year program applicant, complete the six-week field training course.
- Receive a satisfactory score on the Air Force Officer Qualifying Test (AFOQT).
- Pass an Air Force physical examination.
- Be interviewed and selected by a board of Air Force Officers.
- Enlist in the Air Force Reserve prior to entry into the Professional Officer Course.

Requirements for Commissioning

- Complete the POC and field training.
- Earn at least a baccalaureate degree.
- Agree to accept, if offered, a commission in the United States Air Force.
- Agree to serve for a period of not less than four years on active duty after commissioning; or, if accepted for a flying training program, agree to serve for five years after navigator training or eight years after pilot training.

Scholarships

Air Force ROTC college scholarships are available to a qualified applicant in both the two- and four-year AFROTC programs covering periods of four, three and two years. Every scholarship pays for tuition, and most laboratory, textbook and incidental fees.

Four-year scholarships are available for an applicant in scientific engineering and some nontechnical fields. An applicant will be evaluated on the basis of:

- CEEB Scholastic Aptitude Test (SAT) or the American College Test (ACT) results.
- High school academic record.
- Extracurricular and athletic activities.
- Interview.
- Passing an Air Force medical examination.

All three- and two-year scholarships are awarded on a competitive basis and an applicant is evaluated on:

- Air Force Officer Qualifying Test.
- Collegiate grade-point averages.
- Extracurricular and athletic activities.
- Screening and nomination board rating.
- Academic major and potential active duty career.

Scholarship information may be obtained by contacting the Department of Aerospace Studies.
Financial Allowances
A cadet enrolled in the POC will receive a non-taxable subsistence allowance of $100 per month.

Uniforms and Textbooks
All AFROTC uniforms and textbooks are provided by the Air Force both for on-campus courses and at field training.

1600: MILITARY SCIENCE
The University's Army Reserve Officer Training Corps (ROTC) was established in 1919, making it one of the oldest in the country. The main goal of the Army program is to provide both the active Army and Army Reserve and National Guard with commissioned male and female officers whose civilian education and attitudes contribute to the development of a military defense structure which reflects as well as defends our society. The graduate perpetuates and strengthens the tradition of our nation's citizen soldier concept.

A student enrolled in Army ROTC has an unusual opportunity to study and participate in leadership and management experiences which are unique to the college curriculum. Leadership, self-discipline, responsibility and physical stamina are stressed as the student learns to plan, organize, motivate and lead others. Program goals are to develop decision-making capabilities through detailed examination of leadership factors; expand oral and written communication arts; provide some technical training in basic military skills; and develop an understanding of the relationship between the student's basic degree field and its application in one of 47 management fields in the United States Army.

Programs
Four-Year Program
A full-time student enrolled in The University of Akron or Wayne College may enroll in the Army four-year program. Freshmen and sophomores enroll in the basic military course Military Science I and II (MS I, MS II) of the four-year program for two credits per semester MS I and II classes are held three hours each week, to include a mandatory one-hour leadership laboratory, and cover studies in: military history, leadership fundamentals, basic military skills, first aid, leadership assessment program, and Army organization. Enrollment in MS I or MS II constitutes no obligation to military service or continuance into the advanced course and the credits received can be applied toward elective requirements.

A student who completes the basic course (MS I and MS II) is eligible for and may apply for enrollment into the advanced course, which may lead to a commission. Advanced course studies are held four hours per week, to include a mandatory one-hour leadership laboratory, for three semester credits. The material includes: advanced leadership, application of tactics, ethics and professionalism, methods of instruction, resource management, and the responsibilities of an officer. The advanced course includes a six-week paid summer camp attended usually between the junior and senior year. A student in the advanced course is paid $100 per month, or approximately $1,000 per school year. Upon commissioning, the student will serve either with the Reserves, the National Guard or on active duty.

Two-Year Program
A student can also enter the advanced course by attending a basic military skills summer camp at Fort Knox, Kentucky just prior to or after the MS III year, or by having prior military service or training. This equals the basic course of the four-year program, and makes the student eligible to enter the advanced course as described under the four-year program.

Cadet Activities
The Department of Military Science offers numerous activities to enrich classroom instruction; provide a better understanding of the military and military life; and improve technical skills. These include the following:

- Military post orientation visits (at least one per year).
- Adventure training: marksmanship, rappelling, backpacking, cross-country skiing and survival training.
- Social organizations.
- Fraternal organizations.
- Battlefield tours.
- Intercollegiate military skills competition.

Requirements for Admission
Basic Course: None.

Advanced Course:
- Completion of basic course, basic summer camp or prior service.
- Qualify on the Army physical evaluation.
- Permission of the professor of military science.
- Be in good academic standing with the University.

Requirements for Commissioning
- Completion of a baccalaureate or advanced degree to include the following types of college courses:
  - Written Communications
  - Human Behavior
  - Computer Literacy
  - Math Reasoning
- Completion of the advanced ROTC course (MS III and IV).
- Completion of advanced summer camp.
- Pass Army physical fitness test.
- Agree to fulfill a service obligation as follows:
  - ROTC in the Army Reserve or in the Army National Guard.

Scholarships
The Army ROTC has four-year scholarships available to high school seniors. Additionally, there are three- and two-year scholarships available on a competitive basis to students attending the University, whether or not they are enrolled in ROTC when applying for the scholarship. These scholarships provide tuition, fees, a flat rate for texts, and $100 per month allowance to the student for up to 10 months of the school year. Scholarship students may spend three to four years on active duty.

Uniforms and Textbooks
Textbooks for all courses and equipment for adventure training are provided free by the Department of Military Science. Uniforms are issued free to all students while enrolled in the program.

Financial Allowances
An advanced course cadet and scholarship students are paid a non-taxable allowance of $100 per month for up to 10 months of the school year. A student attending basic summer camp or advanced camp is paid for travel expenses, meals, housing and a salary.

SPECIAL RESERVE AND NATIONAL GUARD PROGRAMS

Reserve and National Guard Early Commissioning Program
The student who enters the advanced program may be commissioned in the Reserve or National Guard upon completion of advanced ROTC and prior to receiving a baccalaureate degree. Upon completion of a baccalaureate degree the officer may apply for active duty.

Simultaneous Membership Program (SMP)
A member of the Reserves or National Guard who is enrolled full-time in the University may enroll in advanced ROTC if he applies for SMP membership through his unit, is accepted by the professor of military science, and meets all other admission requirements for the advanced course (MS III and MS IV). Commissioning may occur upon completion of the advanced ROTC course, and the member will serve as an officer in the Reserves or national Guard. An SMP member receives $100 tax-free per month while in ROTC, is promoted to an E-5 officer trainee in the reserve guard unit and receives E-5 pay.
Buchtel College of Arts and Sciences

Claibourne E. Griffin, Ph.D., Dean
Paul S. Wingard, Ph.D., Associate Dean
William A. Francis, Ph.D., Assistant Dean

OBJECTIVES

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

- The commitment to humanity— that loyal devotion to the heritage contained in those disciplines growing out of the ancient liberal arts which teach man both his limitations and potentials. The college seeks to provide an appropriate environment for a student to acquire an ability to evaluate, integrate and understand the conditions of man's existence, to understand himself in the natural world and in a particular civilization or society. No course or combination of courses can ensure such understanding, and there is no schooling that can guarantee wisdom. Therefore, the college requires the student to study ideas and experiences that are the subject matter of a variety of disciplines:
  - the nature of society—those actions whereby virtue, the advancement of society, and wise and humane government are encouraged;
  - the advancement of learning—that substantive knowledge discovered and cultivated by critical curiosity, tested by experimentation, propagated by instruction and capable of affecting the life of man so that he may in a free society exercise a responsible liberty. The most enduring contribution which the college can make is to help the individual acquire the skill, motivation and breadth of knowledge to continue his intellectual development throughout his lifetime.

The college recommends each student for the appropriate bachelor's, master's or doctoral degrees in accordance with the level of accomplishment.

Buchtel College is one of nine degree-granting colleges at the University. Its name truly implies that its traditions date back further than those of the other undergraduate colleges, since the University itself is an outgrowth of Buchtel College, a liberal arts institution founded in 1876.

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

The college is composed of the following three administrative divisions:

Humanities Division

It is concerned with the intellectual traditions that have formed man and with their application to the present and future growth of the human being by affording insights into contemporary life and by promoting the development of the individual as a creative, critical and articulate person through the study of the classics, languages, literature and philosophy.

Natural Sciences Division

It is the most professionally oriented division in this college, with the highest number of graduates continuing their education in specific areas of advanced study. In undergraduate years, a natural sciences student has a course of study with a strong emphasis in biology, chemistry, computer science, geology, mathematics, physics or statistics.

Social Sciences Division

It stresses intelligent participation in community affairs through education in economics, geography, history, political science, psychology and sociology.

COLLEGE REQUIREMENTS

Admission

To be admitted to the college the student must have completed 30 credits of work and have the approval of the dean of the college.

Degrees Awarded

Humanities Division: Bachelor of Arts.
Natural Sciences Division: Bachelor of Arts, Bachelor of Science, Bachelor of Science in Cytotechnology, Bachelor of Science in Medical Technology.
Social Sciences Division: Bachelor of Arts, Bachelor of Science in Geography, Bachelor of Science in Labor Economics, Bachelor of Science in Political Science/Criminal Justice, Bachelor of Science in Political Science/Public Policy Management.

Baccalaureate Degrees

A student transferring into the college must have completed the equivalent of, or taken, 1100:111,2 English Composition, three credits of Modern University Mathematics and the remainder of the lower-division General Studies program.

Requirements for the bachelor's degree include:

- Completion of the General Studies program.
- Three credits of mathematics or statistics earned in the Department of Mathematical Sciences.
- A minimum of 47 credits (exclusive of workshops and General Studies courses) consisting of either:
  - 300/400-level courses both in and outside the student's major;
  - any courses outside major department as specified in and approved by the student's major adviser and the department or division head (permission should be obtained prior to enrollment, except workshops and General Studies courses).
- Demonstration of ability to use English and another language: for English, this ability will be shown by the completion of the General Studies sequence of 1100:111,2 English Composition; for the other language, this ability will be shown by the completion of a second year of a foreign language on the University level or by demonstrating equivalent competence through a test approved by the Department of Modern Languages.
- Completion of requirements in a major field of study (see Programs of Instruction) and the recommendation of the student's major department.
- Attaining a minimum grade-point average of 2.00 in all work attempted in the major field at The University of Akron.
- Attaining a minimum grade-point average of 2.00 in all work in the major field, including transfer credits.
- Fulfilling the University requirements for a baccalaureate degree set forth in Section 3 of this Bulletin.

Any student who wishes to receive a second baccalaureate degree must complete 32 credits of coursework in addition to the credits necessary for the first degree; 16 of the 32 credits must be in 300/400-level courses or other approved courses.

Major Field

To qualify for graduation, a student must concentrate or major in the work of either a department or a division of the College. Part or all of these credits may be taken in specifically required courses depending upon the major chosen. The longer and more professionally oriented majors should be started during the first year when the student is still under the guidance of the Office of Academic Advising Services.

Ordinarily a student will select a department in which to major. The exact requirements for each major will be found on the following pages. Some departments offer more than one type of major. No minor is required; but in some cases, the major includes certain courses in other departments. As soon as the student is transferred to the college the head of the student's major department or designate becomes the academic adviser.

A student who desires a broader education than the departmental major offers may elect a divisional major and qualify in the general area of the humanities, natural sciences or social sciences. The exact requirements for these majors will be found on the following pages. As soon as the student contemplating a divisional major is transferred to the college, the chairman of the student's major division becomes the academic adviser.
Preparation for High School Teaching

A student interested in teaching on the high school level may qualify for secondary school certification by the Ohio State Department of Education while enrolled in the Buchtel College of Arts and Sciences. Generally the arts and sciences major subject will also constitute a teaching major, although a second teaching field usually is required. The education and psychology courses required for the secondary school teaching certificate may be taken as electives toward the arts and sciences degrees. Additional elective credits will generally enable the student to meet the requirement of a second teaching field, without exceeding the credits necessary for graduation.

The number of credits in a teaching field required for certification can be determined by referring to “Teaching Fields: College of Education,” Section 4 of this Bulletin.

In addition to meeting the requirements in a teaching field, a student must also take the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:150 Introduction to Professional Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:200 Human Development and Learning</td>
<td>2</td>
</tr>
<tr>
<td>5100:350 Educational Measurement and Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>5200:350 Introduction to Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>5300:275 Exploratory Experience</td>
<td>1</td>
</tr>
<tr>
<td>5301:301 Principles of Teaching in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>5310:315 Content Reading in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>5320:253 Managing Classroom Behavior at the Secondary Level</td>
<td>3</td>
</tr>
<tr>
<td>5330:375 Exploratory Experience</td>
<td>1</td>
</tr>
<tr>
<td>5330:411 Instructional Techniques Secondary Education</td>
<td>4</td>
</tr>
<tr>
<td>5330:445 Microcomputer Applications in Secondary Classroom</td>
<td>1</td>
</tr>
<tr>
<td>5330:403 Student Teaching Seminar</td>
<td>1</td>
</tr>
<tr>
<td>5330:455 Career Options in Secondary Education</td>
<td>1</td>
</tr>
<tr>
<td>5330:495 Student Teaching</td>
<td>6</td>
</tr>
</tbody>
</table>

Minor Areas of Study

For an explanation of minor areas of study in the Buchtel College of Arts and Sciences, see Section 5 of this Bulletin.

PROGRAMS OF INSTRUCTION

3100: Biology

Bachelor of Science

- The General Studies and the second year of a foreign language*

Core requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100:111 Principles of Biology</td>
<td>8</td>
</tr>
<tr>
<td>3100:221 General Genetics</td>
<td>3</td>
</tr>
<tr>
<td>3100:227 General Ecology**</td>
<td>3</td>
</tr>
<tr>
<td>3100:316 Evolutionary Biology**</td>
<td>3</td>
</tr>
<tr>
<td>3100:311 Cell Biology**</td>
<td>3</td>
</tr>
<tr>
<td>3150:132 Principles of Chemistry</td>
<td>7</td>
</tr>
<tr>
<td>3150:124 Qualitative Analysis</td>
<td>2</td>
</tr>
<tr>
<td>3150:201, 2 Organic Chemistry and Biochemistry I and II††</td>
<td>8</td>
</tr>
<tr>
<td>3150:263, 265 Organic Chemistry</td>
<td>10</td>
</tr>
<tr>
<td>3450:145 College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>3450:149 Precalculus Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>3470:261 Statistiscs</td>
<td>2</td>
</tr>
</tbody>
</table>

- 300400-level courses: the student is required to complete one course in anatomy/physiology and one course in organismal biology which have been approved by the department.

- A student majoring in biology or medical technology should consult a member of the biology faculty during the first year.

Areas of Specialization

Specialization in one of the areas listed below during the third and fourth years:

Botany

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100:342 Flora and Taxonomy II</td>
<td>3</td>
</tr>
<tr>
<td>3100:440 Mycology</td>
<td>4</td>
</tr>
<tr>
<td>3100:443 Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>3100:445 Plant Morphology</td>
<td>4</td>
</tr>
<tr>
<td>3100:450 Plant Physiology</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives:

- 3100:441 Plant Development | 4 |
| 3100:442 Plant Anatomy | 3 |
| 3100:400 Food Plants | 2 |

Ecology

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100:422 Conservation of Biological Resources</td>
<td>4</td>
</tr>
<tr>
<td>3100:424 Freshwater Ecology</td>
<td>4</td>
</tr>
<tr>
<td>3100:464 General and Comparative Physiology</td>
<td>4</td>
</tr>
<tr>
<td>3200:275 Specialized Writing</td>
<td>3</td>
</tr>
<tr>
<td>3250:305 Soil and Water Field Studies</td>
<td>3</td>
</tr>
<tr>
<td>3370:101 Introductory Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>3450:221, 2 Analytic Geometry-Calculus I and II</td>
<td>6</td>
</tr>
<tr>
<td>3470:231, 2 Statistics</td>
<td>6</td>
</tr>
<tr>
<td>4100:206 FORTRAN Programming</td>
<td>2</td>
</tr>
</tbody>
</table>

- 3100:331 Microbiology | 4 |
| 3100:426 Applied Aquatic Ecology | 3 |
| 3100:440 Mycology | 4 |
| 3100:443 Microbiology | 4 |
| 3100:432 Advanced General Bacteriology | 4 |
| 3100:435 Virology | 4 |
| 3100:437 Immunology | 4 |

Electives:

- 3100:355 Parasitology | 4 |
| 3100:433 Pathogenic Bacteriology | 4 |
| 3100:440 Mycology | 4 |
| 3100:443 Microbiology | 4 |
| 3100:481 General Entomology | 4 |
| 3100:486 Advanced Genetics | 4 |
| 3150:401, 2 Biochemistry | 6 |
| 3150:481, 2 Human Physiology | 8 |
| 3150:481, 2 Physiological Chemistry | 8 |

Microbiology

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100:331 Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>3100:435 Bacterial Physiology</td>
<td>3</td>
</tr>
<tr>
<td>3100:433 Pathogenic Bacteriology</td>
<td>4</td>
</tr>
<tr>
<td>3100:432 Advanced General Bacteriology</td>
<td>4</td>
</tr>
<tr>
<td>3100:435 Virology</td>
<td>4</td>
</tr>
<tr>
<td>3100:437 Immunology</td>
<td>4</td>
</tr>
</tbody>
</table>

Electives:

- 3100:355 Parasitology | 4 |
| 3100:433 Pathogenic Bacteriology | 4 |
| 3100:440 Mycology | 4 |
| 3100:443 Microbiology | 4 |
| 3100:461, 2 Human Physiology | 8 |
| 3150:401, 2 Biochemistry | 6 |
| 3650:261, 2 Conservation of Biological Resources | 6 |
| 3660:267, 8 Life Sciences Physics Conversions I and II | 2 |

Physiology and Pre-Professional

(Pre-medical, pre-dental, pre-veterinary and pre-pharmacy student)

- 3100:461, 2 Human Physiology | 8 |
| 3100:466, 7 Developmental Anatomy | 8 |
| 3650:261, 2 Physics for Life Sciences I and II | 9 |

Electives:

- 3100:365 Histology I | 3 |
| 3100:465 Advanced Cardiovascular Physiology | 3 |
| 3100:486 Radiation Biology | 3 |
| 3150:401, 2 Biochemistry | 6 |
| 3450:211, 2 Calculus for the Life Sciences I and II | 6 |
| 3650:267, 8 Life Sciences Physics Conversions I and II | 2 |

Zoology

A minimum of 13 credits from the following:

- 3100:351 Invertebrate Zoology | 4 |
| 3100:428 Physiology of Behavior | 2 |
| 3100:458 Vertebrate Zoology | 4 |
| 3100:456 General and Comparative Physiology | 4 |
| 3100:466, 7 Developmental Anatomy | 6 |

At least one of the following courses should also be included:

- 3100:342 Flora and Taxonomy II | 3 |
| 3100:440 Mycology | 4 |
| 3100:443 Microbiology | 4 |
| 3100:445 Plant Morphology | 4 |

Electives:

- 3100:353 General Entomology | 4 |
| 3100:355 Parasitology | 4 |
| 3100:365, 6 Histology | 6 |
| 3100:400 Food Plants | 2 |
| 3100:402 Conservation of Biological Resources | 4 |
| 3100:466 Entomology | 3 |

**Second year of foreign language and Eastern Civilizations not required for B.S. in Medical Technology.
** Not required for B.S. in medical technology.
†† Required for B.S. in veterinary technology.
Bachelor of Science in Medical Technology*

- A foreign language and Eastern Civilizations are not required.
- The following credits are required:
  
  3100:111 Principles of Biology 8
  3100:206 Anatomy and Physiology 8
  3100:311 General Genetics 3
  3100:331 Microbiology 4
  3100:355 Pathology 4
  3100:383 Laboratory Techniques and instrumentation 2
  3100:394 Techniques and Instrumentation Laboratory 1
  3100:433 Pathogenic Bacteriology 4
  3200:437 Immunology 4

- The first three years of instruction are given in the University. The senior year consists of a minimum of 32 credits of course work in the 3120 series. These courses will be available only to the student selected for the clinical experience portion of the B.S.M.T. program in a CAHEA-approved hospital school; normal tuition will be charged. The University is affiliated with the following hospital schools: Cleveland Clinic Foundation, Cleveland Metropolitan General Hospital, Cooperative Medical Technology Program of Akron, Ohio Valley Hospital (Steubenville), Saint Alexis Hospital (Cleveland), and Saint Thomas Hospital Medical Center (Akron). The student must apply to a hospital school for separate admission. The University cannot guarantee placement. A student may train at other approved schools after obtaining special permission from the head of the Department of Biology.
- The University grants the B.S. in Medical Technology after receipt of evidence of satisfactory completion of the hospital instructional program.

A minimum of 36 credits in biology is necessary to qualify for a Bachelor of Science degree. Additional courses in biology or other sciences are usually necessary to satisfy the admission requirements of graduate and professional schools for advanced work and professional studies.

All majors for a Bachelor of Science in Biology take the sequence of courses listed above which will provide an understanding of the fundamentals of modern biology. During the first year, a student intending to major in biology should consult a member of the biology faculty.

*See Bachelor of Science for additional requirements.

Bachelor of Arts

- The General Studies and the second year of a foreign language.
- At least 17 credits in the humanities or social sciences, including at least two of the following:
  
  3400:477 Western Science since 1800 3
  3400:478 Western Science since 1800 3

3400:47 Western Technology
3500:464 Philosophy of Science

At least 24 credits in the biological sciences which must include:

- 3100:111 Principles of Biology 8
- 3100:211 General Genetics 3
- 3100:217 General Ecology 3
- 3100:311 Cell Biology 3
- 3100:130 Principles of Microbiology (with permission) 3
- 3100:316 Exclusionary Biology 3

At least one year of chemistry, including, preferably, some biological chemistry (3150:129) General Chemistry is suggested.

3150: Chemistry

Statement of Policies — Admission

For students enrolled at The University of Akron and for students wishing to transfer directly to BUCHTEL College of Arts and Sciences from other institutions, the following criteria must be satisfied for admission to the Department of Chemistry:

- The student must be admitted to BUCHTEL College of Arts and Sciences.
- Principles of Chemistry I and II, Qualitative Analysis, Organic Chemistry Lecture I, Analytical Geometry and Calculus I and II, and Elementary Classical Physics I must be completed, and the grades must have been recorded. For the Bachelor of Arts in Chemistry program, Elementary Classical Physics I may be replaced by Physics for Life Sciences I.
- A minimum grade point average of 2.30 must be met in all university work, including transfer credits.
- A minimum grade point average of 2.30 must be met in all work in major field, including transfer credits.
- A minimum grade point average of 2.30 must be met in all work in the major on The University of Akron campus.
- A minimum grade point average of 2.00 must be met in all work in mathematics, including transfer credits.
- A minimum grade point average of 2.00 must be met in all work in physics, including transfer credits.

Only credits earned at an accredited institution of postsecondary education, as recognized by The University of Akron, will be considered for transfer credit, and only those grades will be considered in the grade-point average. An exception to this admission policy is that Honors Program students who choose chemistry as their major are automatically admitted to the department.

Retention

Students in the chemistry programs must maintain a minimum grade point average of 2.30 overall and a minimum of 2.30 grade point average in chemistry courses in order to remain in the program. A student who fails to maintain the 2.30 cumulative average, including transfer credits, will be placed on academic probation. Failure to raise the average to 2.30 in a period of one semester or one 10-week summer session will result in dismissal from the program. A student may not apply for readmission for at least one semester. A student receiving a grade below C- in a required chemistry course will be required to repeat the course.

Graduation

The student must earn a 2.30 cumulative grade point average in chemistry coursework on The University of Akron campus and a 2.30 cumulative grade point average for all chemistry coursework including transfer credits. Grades below C- obtained in any course at other institutions will not apply toward a chemistry degree at The University of Akron. Grades below C- obtained in chemistry coursework will not apply toward the chemistry degree.

The student must earn a 2.30 cumulative grade point average in all degree coursework.

Bachelor of Science

- The General Studies and the second year of a foreign language.
- At least 45 departmental credits including:
  
  3150:132 Principles of Chemistry I 4
  3150:133 Principles of Chemistry II 3
  3150:134 Qualitative Analysis 2
  3150:263 Organic Chemistry Lecture I 3
  3150:264 Organic Chemistry Lecture II 3
  3150:265 Organic Chemistry Laboratory I 2
  3150:296 Organic Chemistry Laboratory II 2
  3150:313 Physical Chemistry Lecture I 3
  3150:314 Physical Chemistry Lecture II 3
  3150:380 Advanced Chemistry Laboratory I 2
  3150:381 Advanced Chemistry Laboratory II 2
  3150:427 Analytical Chemistry I 3
Cooperative Education Program in Chemistry

Qualifications

Arrangements for entry into the program are on an individual basis and are initiated by the student during the second year of undergraduate study. Full-time B.S. chemistry majors at The University of Akron must meet the following requirements:

- Satisfactory completion of 60 credits with a quality point average of at least 2.5 "C" in chemistry courses and on schedule in their curriculum.
- Acceptance by a cooperative education coordinator or director following a series of interviews.

Part-time students must have completed 60 credits with a "C" average and be on schedule in their curriculum. They are expected to become full-time students while not on their co-op job.

Transfer students must have preparation equivalent to the minimum requirements for The University of Akron students and must have completed at least one semester of full-time study at The University of Akron.

Placement in an industrial or other position is not guaranteed, and foreign students should recognize that many companies require U.S. citizenship or possession of a permanent visa. In any case, final acceptance of a student for any position is the decision of the employer.

Schedule

The work-study schedule for students in the co-op program is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
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<tbody>
<tr>
<td>1</td>
<td>School</td>
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<td>4</td>
<td>School</td>
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Admission to Program

A student who desires to participate in the Cooperative Education Program should fill out a Personal Data Form and submit it to the chemistry department head. The student should then meet with a member of the Cooperative Education staff to discuss the availability of prospective employers and to sign a Cooperative Education Agreement and a grade release form which will become effective upon employment. Students will be expected to remain with their employer for all co-op work periods in order to provide a progression of experience and responsibility. Employment must have approval of the department and the Cooperative Education director, but the University does not guarantee employment.

Registration

Students register for Cooperative Work Periods in the same manner that a student registers for any other University courses. The courses are:

3150:300 Cooperative Education Work Period
3150:301 Cooperative Education Work Period
3150:302 Cooperative Education Work Period
3150:483 Cooperative Education Work Period

A certificate is awarded upon completion of the Cooperative Education Program. Courses required for certification are 3150:301, 302 and 403: 3150:300 is optional.

A registration fee for each work period is charged to offset the expenses of administering the Co-op Program. Upon completion of a work period, a statement will appear on the student's official transcript listing the course number, title, and name of employer. in place of a grade, "credit" or "no credit" will be given, depending upon the student's satisfactory or unsatisfactory completion of the following:

- Work performance as evaluated by the employer.
- Submission of a written Work Report and its approval by the department head and the Cooperative Education staff.
- Submission of a Cooperative Work Period Summary Form.

3200: Classics

3200: Classics; 3210: Greek; 3220: Latin

Bachelor of Arts

Classics

- The General Studies.
- At least 39 departmental credits including four semesters of 3220:403/404 Advanced Greek or four semesters of 3220:303/304 Advanced Latin. 3220:497/498 Greek Reading and Research or 3220:497/496 Latin Reading and Research may be substituted with the approval of the department adviser — 12 credits.
320:189  Mythology  3
320:313  Archaeology of Greece  3
320:314  Archaeology of Rome  3
320:361  Literature of Greece  3
320:362  Literature of Rome  3

• Two of the following courses:
  340:304  The Ancient Near East  3
  340:305  Greece  3
  340:306  Rome  3
  340:307  The Eastern Roman Empire (324-1453)  3

• Electives in Classics  6

• Language courses must be above the 200 level in order to be included in the total of 39 credits. In the case of a Latin major, three credits in this language (preferably in Latin grammar and idiom) must be taken during the senior year.

• The student wishing to be certified for public school teaching with Latin as the principal teaching field must complete 26 credits in that language. In addition, the required credits in a second academic teaching field must be completed. See "Teaching Fields," College of Education, Section 4 of this Bulletin.

**Classical Civilization**

• The General Studies and the second year of a foreign language:
  320:189  Mythology  3
  320:313  Archaeology of Greece  3
  320:314  Archaeology of Rome  3
  320:361  Literature of Greece  3
  320:362  Literature of Rome  3
  3670:151  Physical Anthropology  3
  3620:211  History of Ancient Philosophy  3

• Three of the following courses:
  340:304  The Ancient Near East  3
  340:305  Greece  3
  340:306  Rome  3
  340:307  The Eastern Roman Empire (324-1453)  3

Electives in Classics  3

It is strongly recommended that a major in classical civilization fulfill the foreign language requirement by taking 3210:121/222/223/224 or 2220:121/222/223/224.

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3250: Economics

**Bachelor of Arts**

• The General Studies and the second year of a foreign language.

• At least 30 departmental credits including:
  3250:201  Principles of Macroeconomics  3
  3250:202  Principles of Microeconomics  3
  3250:400  Macroeconomics  3
  3250:410  Microeconomics  3

• Electives — 15 credits.

• Mathematics:
  3450:149  Precalculus Mathematics  4
  3450:215  Concepts of Calculus I  4

• Statistics (one of the following):
  6500:321,2  Quantitative Business Analysis I and II  6
  3470:251  Descriptive Statistics and Problems  1
  3470:252  Distributions  1
  3470:253  Hypothesis Testing  1
  3470:255  Regression and Correlation  1
  3470:256  Experimental Design  1
  3470:257  Time Series and Index Numbers  1
  3470:461  Applied Statistics  4

• At least eight credits in 300/400-level courses geography, history, political science, psychology or sociology.

• Electives — 45-47 credits.

Note: 3250:300 Introduction to Economics cannot be used to satisfy the requirements for a major or minor in economics.

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3300: English

**Bachelor of Arts**

• The General Studies and the second year of a foreign language.

• At least 35 credits in the department including the following course and distribution requirements:

  Required courses:
  3300:310  English Literature I  4
  3300:320  English Literature II  4
  3300:316  Shakespeare: The Mature Plays  3
  3300:341  American Literature I  3
  3300:342  American Literature II  3

  Distribution of requirements:
  One linguistics or English language course. A minimum of four 400-level courses.

  Of the total number of courses taken for the major, at least two must be in literature written before 1800 and two after: 3300:301, 316, 341 and 342 may not be used to meet this requirement. Courses which satisfy the language requirement and the literature before and after 1800 requirements are identified in the course descriptions.

  Recommended:
  3300:280  Poetry Appreciation  3
  3300:310  - an advanced course in composition  3

• Electives — 40 credits.

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3350: Geography

**Bachelor of Arts**

• The General Studies and the second year of a foreign language.

• At least 26 departmental credits including the following:

  3350:310  Physical and Environmental Geography  3
  3350:320  Economic Geography  3
  3350:330  Rural and Urban Settlement  3
  3350:340  Cartography  3
  3350:341  Maps and Map Reading  3
  3350:481  Geographic Research Methods  3
  3350:482  Spatial Analysis  3
  3350:496  Field Research Methods  3

• At least one course from the following:

  3350:330  Geography of the United States and Canada  3
  3350:350  Latin America  3
  3350:356  Europe  3
  3350:358  U.S.R.  3
  3350:390  Asia  3
  3350:367  Africa South of the Sahara  3

• Electives — 46 credits.

**Bachelor of Science in Geography/Cartography**

• Completion in the Community and Technical College of the surveying option in the associate degree program in surveying and construction technology or the associate degree program in drafting technology.

• Completion of General Studies requirements.

• Completion of at least 47 credits of 300/400-level courses in addition to the General Studies requirement.

• At least nine credits of course work which will introduce students to a foreign culture. Such courses shall be selected by the student with the approval of the adviser in the Department of Geography. Such courses may be chosen from those foreign culture courses offered in any of the following departments: anthropology, classics, non-U.S. history and modern languages. Foreign language is strongly recommended.

*Students planning to pursue the Bachelor of Science in Geography/Cartography should select courses 2040:242 American Urban Society and 247 Survey of Basic Economics as general electives.*
3370: Geology

Bachelor of Science

Engineering Geology

• The General Studies and the second year of a foreign language.
• At least 39 departmental credits including the following:
  3370 101  Introductory Physical Geology
  3370 102  Introductory History Geology
  3370 230  Crystallography and Non-follicite Mineralogy
  3370 231  Sialic Mineralogy and Petrology
  3370 324  Sedimentation and Stratigraphy
  3370 350  Structural Geology
  3370 446  Exploration Geophysics
  3370 496  Geology Field Camp

• Non-Geology Required Courses:
  3150 132, 3 Principles of Chemistry
  3450 231, 2, 3 Sialic Mineralogy and Petrology
  3370 350  Structural Geology
  3370 360  Introductory Invertebrate Paleontology

Geology Elective List

• Geology Elective List
  3370 310  Geomorphology
  3370 416  Coal Geology
  3370 437  Economic Geology
  3370 470  Geochemistry
  3370 474  Groundwater Hydrology
  3370 432  Optical and X-Ray Methods
  3370 435  Petroleum Geology

• Non-Geology Elective List
  3460 401  Introduction to Fortran Programming or equivalent
  4300 404  Introduction to Rock Mechanics (proposed)
  4300 430  Surveying
  4600 303  Thermal Science

3370: Geology

Electives

• Additional work in a supporting science, mathematics or engineering is strongly recommend-
  ed. During the last year, a student intending to major in geology should consult a member of
  the geology faculty.

Geophysics

• The General Studies and the second year of a foreign language.

• At least 30 departmental credits including the following:
  3350 442  Thematic Cartography
  3350 444  Map Compilation and Reproduction
  3350 447  Introduction to Remote Sensing
  3350 448  Automated Computer Mapping
  3350 449  Advanced Remote Sensing
  3350 491  Introduction to Geographic Research
  3350 483  Introduction to Spatial Analysis
  3350 496  Field Research Methods

3370 101  Introductory Physical Geology
  3370 102  Introductory History Geology
  3370 230  Crystallography and Non-follicite Mineralogy
  3370 231  Sialic Mineralogy and Petrology
  3370 324  Sedimentation and Stratigraphy
  3370 350  Structural Geology
  3370 446  Exploration Geophysics

3650: Mathematics

Bachelor of Science

Electives

• Complete nine credits of course work outside the major and beyond the General
  Studies in a suitable area of concentration as approved by the department.
• For the Bachelor of Arts degree, complete 18 credits of humanities or social
  sciences beyond the General Studies. The 18 credits are to be from more than
  one department.

Electives — 17 credits.
Cooperative Education Program — Mathematical Sciences

Schedule
The work-study schedule for a student participating in the Cooperative Education Program is as follows:

<table>
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<tr>
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Admission
Arrangements for student entry into the program are on an individual basis, and must be initiated by the student during the second year of undergraduate study. The Cooperative Education Program is an optional program available only to all full-time mathematical sciences students at The University of Akron who have satisfactorily met the following requirements:

- Sixty credits with a grade-point average of at least 2.00 out of a possible 4.00 in the program of mathematical sciences curriculum and be on schedule in the curriculum.
- Acceptance by a cooperative education coordinator or director following interviews.
- A transfer student must complete 16 credits of academic work at The University of Akron with a grade-point average of at least 2.00 out of a possible 4.00. Be on schedule in the mathematical sciences curriculum.

A student who desires to participate in the program will fill out a Personal Data form and submit it to the department head. The student will then meet with a member of the cooperative education staff to discuss the availability of prospective employers. During this interview, the student will be asked to sign a Cooperative Educational Agreement and a grade release form which will become effective upon employment. Employment must be coordinated or have approval of the department and the cooperative education director. The University does not guarantee employment for the student. The student will be expected to remain with the employer for all cooperative work periods in order to provide a progression of experience and responsibility.

Registration
While no academic credits are assigned, each student must register for 3000.301 Cooperative Education in the same manner that a student registers for any other University course. See department adviser before enrolling for this course.

A cooperative program fee for each work period is charged. Upon completion of a work period, a statement will appear on each student's official transcript listing the course number, title, and name of the employer. In the place of a grade, "credit" or "no credit" will be given, depending upon the student's satisfactory or unsatisfactory completion of the following:

- Work performance as evaluated by the employer.
- Written report as approved by department head and cooperative education staff.
- Cooperative Work Period Summary form.

Usually, work progresses satisfactorily on the job and a grade of "credit" is assigned at the end of the semester. If all the above conditions are not met, a change of grade to "no credit" will be submitted.

### 3460: Computer Science

#### Bachelor of Science
- The General Studies and the second year of a foreign language.
- Core Curriculum:
  - 3460.209 Computer Programming I
  - 3460.210 Computer Programming II
  - 3460.306 Assembly Language Programming
  - 3460.307 Applied Systems Programming
  - 3460.316 Introduction to Data Structures
  - 3460.330 Survey of Programming Languages
  - 3460.418 Introduction to Discrete Structures
  - 3460.420 Structured Programming
  - 3460.426 Operating Systems

#### Options
- Mathematics
  - Other required courses:
    - 3450.221 Analytic Geometry-Calculus I
    - 3450.222 Analytic Geometry-Calculus II
    - 3450.223 Analytic Geometry-Calculus III
    - 3450.427 Introduction to Numerical Analysis
    - 3470.461 Applied Statistics
  - Select one of the following two courses:
    - 3450.312 Linear Algebra
    - 3460.426 Numerical Linear Algebra

- Electives — approved upper-level computer science courses — 12 credits.

#### Business
- Other required courses:
  - 3256.201 Principles of Microeconomics
  - 3250.202 Principles of Macroeconomics
  - 3450.215 Concepts of Calculus I
  - 3450.216 Concepts of Calculus II
  - 3450.217 Concepts of Calculus III
  - 3450.115 Linear Programming
  - 3460.302 Programming Applications with COBOL
  - 3460.475 Data Base Management
  - 3470.461 Applied Statistics

- Select one of the following three courses:
  - 6400.371 Business Planning
  - 6500.301 Management: Principles and Concepts
  - 6600.300 Marketing Principles

- Electives — approved upper-level computer science courses — six credits.

### 3470: Statistics

#### Bachelor of Arts
- Bachelor of Science
- The General Studies and the second year of a foreign language.
- Core Curriculum:
  - 3450.221-2,3 Analytic Geometry-Calculus I, II and III
  - 3450.225 Differential Equations
  - 3450.312 Linear Algebra
  - 3470.459.2 Theoretical Statistics I, II
  - 3470.461 Applied Statistics I, II

#### Options
- **Option I**
  - Other Required Courses:
    - 3450.421 Advanced Calculus I
    - 3450.422 Advanced Calculus II
    - Electives — approved 300/400-level mathematical sciences courses

- **Option II**
  - Other Required Courses:
    - 3470.480 Statistical Computer Applications
    - 3470.481 Statistical Consulting
    - 3470.482 Mathematical Concepts for Statistics

- Electives — approved 300/400-level statistical sciences courses

- For the Bachelor of Science degree: complete 18 credits of course work outside the major and beyond the General Studies in a suitable area of concentration as approved by the department.

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*The courses 3450.115-39 Modern University Mathematics, 3450.1478 Elementary Functions, 3450.149 Pre-Calculus Mathematics, 3450.301 History of Mathematics and 3470.251 Introduction to Statistics do not meet major requirements.*
3500: Modern Languages
3520: French; 3530: German; 3550: Italian; 3570: Russian; 3580: Spanish.

Bachelor of Arts (French, German, Spanish)
• The General Studies.
• Completion of 24 credits above the second year (200 level); six credits in literature, six credits in culture, six credits of electives in the major language and six credits in composition and conversation.*

3600: Philosophy

Bachelor of Arts
• The General Studies and the second year of a foreign language.
• A minimum of 30 departmental credits including:
  3600:211 Introduction to Ethics
  3600:212 History of Ancient Philosophy
  3600:213 History of Medieval Philosophy
  3600:312 History of Modern Philosophy
  3600:313 History of Modern Philosophy (Of the additional credits, six must be earned in 300/400 level courses)
• Electives (selected concentration) — 12-16 credits.
• Electives — 29-33 credits.

3650: Physics

Bachelor of Science

This degree is intended for the student seeking the most detailed and quantitative preparation in physics available in an undergraduate curriculum.

• The General Studies and the second year of a foreign language.

Physics:

A minimum of 40 credits at 200 level or higher, including:

3650:291.2 Elementary Classical Physics I and II
3650:301 Elementary Modern Physics
3650:322.2 Intermediate Laboratory I, II
3650:340 Thermal Physics
3650:431 Mechanics I
3650:436 Electromagnetism I
3650:441 Quantum Physics I

Highly recommended courses for all students:
3650:432 Mechanics II
3650:437 Electromagnetism II
3650:442 Quantum Physics II
3650:451.2 Advanced Laboratory I, II
3650:451.2 Methods of Mathematical Physics I, II
3650:452.2 Methods of Mathematical Physics I, II

Physics electives

Mathematics:

3450:235 Differential Equations
3450:252.23 Analytic Geometry-Calculus I, II
3150:123 Principles of Chemistry I, II

Chemistry

3150:123 Principles of Chemistry I, II

Computer Science:

4100:206 FORTRAN (Science and Engineering)

Electives — 20 credits.

Bachelor of Arts

This degree is primarily for the student desiring a useful background in physics, but whose professional objectives may not require graduate study in physics or a related physical science.

• The General Studies program and the second year of a foreign language.

Physics:

A minimum of 24 credits including:

3650:291.2 Elementary Classical Physics I and II
3650:301 Elementary Modern Physics
3650:322.2 Intermediate Laboratory I

Electives — 11 credits.

Mathematics:

3450:221,23 Analytic Geometry-Calculus I, II and III

Electives — 48 credits.

Areas of Specialization

Applied Physics/Engineering Physics
(Bachelor of Science degree recommended)
A suggested program of 32 credits including the following:

3650:321 Physics Laboratory Techniques
3650:325 Methods of Applied Physics
3650:326 Materials Science
3650:327 Introduction to Mechanics of Solids
4400:291-2 Circuits I, II
4400:332-3 Circuits III, IV
4600:135 Engineering Graphics
4600:310 Fluid Mechanics

Biophysics
(Bachelor of Science or Bachelor of Arts degree)
A suggested program of 27 credits to include the following:

3100:112 Principles of Biology
3100:211 General Genetics
3100:214 Organic Evolution
3100:301 Cell Biology
3100:480 Radiation Biology
3150:263.4 Organic Chemistry

Chemical Physics
(Bachelor of Science or Bachelor of Arts degree)
A suggested program of 25 credits to include the following:

3150:263.4 Organic Chemistry
3150:313.4 Physical Chemistry Laboratory I, II
3150:315.6 Physical Chemistry Laboratory I, II
3650:471 NMR Spectroscopy

Computer Physics
(Bachelor of Science degree recommended)
A suggested program of 21 credits to include the following:

4400:221-2 Circuits I, II
4400:332-3 Circuits III, IV
4450:306 Assembly Programming
4450:407 Systems Programming
4450:410 Computer Methods

Geophysics
(Bachelor of Science or Bachelor of Arts degree)
A suggested program of 18 credits to include the following:

3370:101 Introduction to Physical Geology
3370:102 Introduction to History Geology
3370:350 Structural Geology
3370:441 Fundamentals of Geophysics
3370:446 Exploration Geophysics

Polymer Physics
(Bachelor of Science degree recommended)
A suggested program of 24 credits to include the following:

3150:263.4 Organic Chemistry
3150:313.4 Physical Chemistry Laboratory I, II
3987:401 Introduction to Elastomers
3987:402 Introduction to Plastics
3987:411.2 Molecular Structure and Physical Properties of Polymers I, II, III

Physics/Astronomy/Astrophysics/Astronomy Pre-Graduate School
(Bachelor of Science degree recommended)
A suggested program of 34 credits to include the following:

3650:321 Physics Laboratory Techniques
3650:331.2 Astrophysics I, II
3650:404 Energy and the Environment
3650:320 Optics
3650:432 Mechanics II
3650:437 Electromagnetism II
3650:438 Methods of Applied Physics

**For Spanish majors some distribution among languages, literature and culture courses is required. Consult an adviser.

†Additional physics courses are usually necessary to satisfy the admission requirements of graduate schools for advanced work in physics or in certain other physical sciences.

‡Only one of the introductory sequences 291.2 or 261.2 is applicable toward the required 40 credits. Courses 1100:224, 3650:130, 133, 137, 138, 141 and 160 are not applicable toward the required 40 credits of physics courses without special permission. **Courses 1100:224, 3650:130, 133, 137, 138, 141 and 160 are not applicable toward the required 24 credits of physics courses without special permission.
The preceding requirements specify the minimum curriculum for the B.S. and B.A. with a major in physics. The student expecting to specialize in a particular professional area should consider utilizing part of all elective courses toward one of the important program areas of specialization listed above. These programs are intended to be illustrative only; considerable flexibility is possible, depending upon the needs and interests of the individual student.

The physics student may consider it important in the bachelor's degree programs to prepare in greater depth in other science areas (besides physics and mathematics) than may usually be possible within the traditional four-year departmental degree curricula. This student may therefore prefer to work toward the Bachelor of Science in Natural Science degree. For further information, refer to Buchtel College of Arts and Sciences, "Natural Sciences Division Map," in this section or contact the Department of Physics.

Cooperative Industrial Employment Plan

For the academically qualified undergraduate student majoring in physics, an optional cooperative plan is available which provides a scheduled sequence of professionally oriented industrial employment (totalling a full calendar year) alternating with periods of on-campus classroom instruction. This cooperative plan requires a five-year period for the completion of the bachelor's degree program in physics, with the spring term of the third year plus the fall and summer terms of the fourth year typically spent off campus with a participating industrial employer. Arrangements are made on an individual basis and must be initiated by the student during the second year of undergraduate study. For further information, contact the Department.

3700: Political Science

Bachelor of Arts

- The General Studies and the second year of a foreign language.
- At least 30 credits in the department including:
  - 3700.100 Government and Politics in the United States
  - 3700.200 Comparative Politics
  - 3700.201 Introduction to Political Research
  - 3700.303 Introduction to Political Thought
  - 3700.310 International Politics and Institutions
  - 3700.461 The Supreme Court and Constitutional Law
  - 3700.463 The Supreme Court and Civil Liberties
  - Electives

Bachelor of Science in Political Science/Criminal Justice

- Completion of all requirements for the associate degree in criminal justice technology established by the Community and Technical College.
- Completion of General Studies requirements.
- Completion of 47 credits of 300/400-level courses.
- At least six credits of course work which will introduce the student to a foreign culture. Such courses shall be selected by the student with the approval of the advisor in the Department of Political Science. Courses may be chosen from any of the following departments: modern languages, history, political science, anthropology and geography.
- At least 30 departmental credits including:
  - 3700.100 Government and Politics in the United States
  - 3700.210 State and Local Government and Politics
  - 3700.310 International Politics and Institutions
  - 3700.461 The Supreme Court and Constitutional Law
  - 3700.462 The Supreme Court and Civil Liberties
  - 3700.480 Policy Problems
  - 3700.990 Internship in Government and Politics

Bachelor of Science in Political Science/Public Policy Management

- The General Studies and the second year of a foreign language.
- Political Science:
  - 3700.100 Government and Politics in the United States
  - 3700.200 Comparative Politics
  - 3700.290 Public Administration: Concepts and Practice
  - 3700.380 Urban Politics and Policies
  - 3700.461 The Supreme Court and Constitutional Law
  - 3700.462 The Supreme Court and Civil Liberties
  - 3700.480 Policy Problems
  - 3700.990 Internship in Government and Politics

*See department head for possible substitutions.

Special Curricular Tracks in Political Science

The department offers three special tracks for the student interested in pre-law, the international service or national, state or local government service. In addition to the requirements for the major, each of these tracks includes electives appropriate for preparation for careers in law, government service or international service. Information about these curricular tracks may be obtained from the head of the department.

3750: Psychology

Bachelor of Arts

Pregraduate School

- This option is intended for students who intend to pursue graduate studies in psychology or related fields.
- The general studies and the second year of foreign language.
- At least 40 credits in psychology including:
  - 3750.100 Introduction to Psychology
  - 3750.190 Professional and Career Issues in Psychology
  - 3750.110 Quantitative Methods in Psychology
  - 3750.220 Introduction to Experimental Psychology
  - 3750.330 Biopsychology
  - 3750.335 Dynamics of Personality
  - 3750.340 Social Psychology
  - 3750.345 Cognitive Processes
  - Electives

Electives
### Human Services and Human Resources

- This option is intended for students who intend to train for psychology technician positions in human services (counseling or developmental psychology) or human resources (personnel).
- The General Studies and the second year of a foreign language or a similar level of proficiency in American Sign Language.
- At least 40 credits in the department including:
  - 3850:100 Introduction to Psychology
  - 3850:102 Professional and Career Issues in Psychology
  - 3850:110 Quantitative Methods in Psychology
  - 3850:220 Introduction to Experimental Psychology
  - 3850:230 Developmental Psychology
  - 3850:240 Industrial Organizational Psychology
  - 3850:325 Dynamics of Personality
  - 3850:340 Social Psychology
  - 3850:404 Psychological Tests and Measurements
  - 3850:495 Field Experience in Psychology
  - Sociology Specialty Courses**

**Electives**

35

### 3850: Sociology

(3850: Sociology; 3870: Anthropology)

### Bachelor of Arts

**Sociology**

- The General Studies and the second year of a foreign language.
- A minimum of 30 credits in sociology including:
  - 3850:100 Introduction to Sociology
  - 3850:301 Methods of Social Research I and II
  - 3850:403 History of Sociological Thought
  - 3850:404 Contemporary Sociological Theories
  - Sociology Electives (3870:150 Cultural Anthropology can be counted as part of these credits)

**Electives**

The student should consult with a departmental adviser about using electives to enhance the specialty area, e.g., academic sociology, deviance and corrections, family, agency and life cycle, urban planning and social research.

**Sociology/Anthropology**

- The General Studies and the second year of a foreign language.
- Minimum of 35 credits in the department to include:
  - 3850:100 Introduction to Sociology
  - 3850:302 Methods of Social Research II
  - 3850:403 History of Sociological Thought
  - 3870:150 Cultural Anthropology
  - 3870:151 Evolution of Man and Culture
  - 3870:356 Archaeology of the Americas
  - 3870:451 Language and Culture
  - 3870:452 History and Theory in Anthropology
  - A minimum of nine additional credits to be selected from the following courses:
    - 3870:270 Cultures of the World
    - 3870:355 Indians of North America
    - 3870:377 Anthropological Research
    - 3870:455 Culture and Personality
    - 3870:456 Culture and Medicine
    - 3870:463 Social Anthropology
    - 3870:472 Special Topics: Anthropology

**Electives**

### Sociology/Law Enforcement

- The General Studies and the second year of foreign language.
- A minimum of 33 credits in the department including:
  - 3850:100 Introduction to Sociology
  - 3850:301 Methods of Social Research I, II
  - 3850:320 Social Inequality
  - 3850:330 Criminology
  - 3850:403 History of Sociological Thought
  - 3850:404 Contemporary Sociological Theories
  - 3850:405 Juvenile Delinquency
  - 3850:433 Sociology of Deviant Behavior
  - Sociology of Law

**Electives**

*Approved by adviser*

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Students who enter the Sociology/Law Enforcement program from the University College, or by transfer, must complete course work in the Criminal Justice Technology program. This may be done in one of two ways: (1) complete the program requirements for an A.S. in criminal justice; or, (2) complete 18 credits of criminal justice technology course work, plus 2250:260 Administration and Supervision in the Public Service. The appropriate course work will be determined by the student's sociologylaw enforcement adviser in consultation with the coordinator of the Criminal Justice Technology program.

**Sociology/Corrections**

- The General Studies and the second year of a foreign language.
- A minimum of 33 credits in sociology including:
  - 3850:100 Introduction to Sociology
  - 3850:301 Methods of Social Research I, II
  - 3850:330 Criminology
  - 3850:403 History of Sociological Thought
  - 3850:404 Contemporary Sociological Theories
  - 3850:412 Socialization: Child to Adult
  - 3850:429 Probation and Parole
  - 3850:430 Juvenile Delinquency
  - 3850:431 Corrections
  - 3850:495 Research Internship

**Electives**

Students who enter the Sociology/Corrections program from the University College, or by transfer, must complete course work in the Criminal Justice Technology program. This may be done in one of two ways: (1) complete the program requirements for an A.S. in criminal justice; or, (2) complete 18 credits of criminal justice technology course work, plus 2250:260 Administration and Supervision in the Public Service. The appropriate course work will be determined by the student's sociologycorrections adviser in consultation with the coordinator of the Criminal Justice Technology program.

### Division Majors

**Humanities**

The humanities division consists of the departments of classics, English, modern languages and philosophy. The disciplines of history and the creative and dramatic arts (art, music, theatre arts) are included. The divisional major must include the following:

- The General Studies and the second year of a foreign language.
- A minimum of 54 credits, at least 24 of which must be in courses at the 300/400 level. The 54 credits must include 18 credits in each of any three of the following six fields: classics, English, history, modern languages, philosophy and the creative and dramatic arts.
- The first two years of any language in either classics or modern languages will not be included in the 18-credit requirement for those disciplines. By field, the 18-credit requirement must include:
  - **Classics:**
    - 3200:361 The Literature of Greece
    - 3200:362 The Literature of Rome
    - 3200:189 Classical Mythology
  - **English:**
    - 3300/400 level, including at least two courses at the 400 level (minimum)
    - History: 3300/400 level (minimum)
  - **Modern Languages:**
    - Composition and Conversation
    - Literature
    - Any combination of linguistics and culture-civilization
  - **Philosophy:**
    - 3600:101 Introduction to Philosophy
    - 3600:102 Introduction to Ethics
    - 3600:170 Introduction to Logic
  - **Creative and Dramatic Arts:**
    - Non-performance courses in arts (7100), music (7500) and theatre arts (7800)

Courses for the humanities division major must be selected with the approval of the division adviser. For further information, please contact the Office of the Dean, Buchtel College of Arts and Sciences.

**Natural Sciences**

The divisional major provides for a broad background in science with concentration in selected areas. It is an appropriate major for those preparing for admission to professional programs in medicine, dentistry or veterinary science or for those desiring a Liberal Arts degree with a general emphasis in science. Additional course work is often necessary for those planning graduate studies.
The available geography, history, political science, sociology, and psychology courses for the General Studies must include:

- The General Studies.
- 47 credits at the 300-400 level.
- A minimum of 64 credits in the division and/or engineering, at least 27 of which must be in divisional courses at the 300/400 level.
- At least 27 credits from one of the departments of the natural sciences division.
- At least 16 credits with at least two credits at the 300/400 level from another of the following disciplines: biology, chemistry, engineering, geology, mathematics or computer science or statistics, physics, or polymer science.
- At least 16 credits from a third of these disciplines; or alternatively, at least eight credits in each of two other of these disciplines.
- A foreign language is strongly recommended.

The courses for the natural sciences division major must be selected from those courses approved by the department offering the course. In general, only courses available toward the major are acceptable. For further information, please contact the Office of the Dean, Buchtel College of Arts and Sciences.

### Social Sciences

The social sciences division consists of the departments of economics, geography, history, political science, psychology, sociology, and urban studies (graduate program only). The divisional major must include the following:

- The General Studies and the second year of a foreign language.
- A minimum of 54 credits, at least 24 of which must be in courses at the 300/400 level. The 54 credits must include a minimum of 15 credits in each of any of the following six fields: economics, geography, history, political science, psychology, and sociology-anthropology.

By field, the 15-credit requirement must include:

- **Economics:** Any except 3250:100 Introduction to Economics* (must include 3250:201 Principles of Macroeconomics and 3250:202 Principles of Microeconomics) 15
- **Geography:** 15
- **History:** Minimum of seven credits at the 300/400 level 15
- **Political Science:** At least seven credits at the 300/400 level 15
    - 3700.100 Government and Politics in the United States or 3700:201 Introduction to Political Research 15
- Each student shall take at least one course in two of the four areas (American government and politics, comparative politics, international politics, and political theory) shown below:

  - **American Government and Politics:**
    - 3700:210 State and Local Government and Politics 3
    - 3700:340 American Political Parties and Interest Groups 3
    - 3700:341 The American Congress 3
    - 3700:342 Minority Group Politics 3
    - 3700:350 The American Presidency 3
    - 3700:360 The Judicial Process 3
    - 3700:370 Public Administration: Concepts and Practices 4
    - 3700:380 Urban Politics and Policies 4
    - 3700:381 State Politics 3
    - 3700:402 Politics and the Media 3
    - 3700:440 Public Opinion and Political Behavior 4
    - 3700:441 The Policy Process 4
    - 3700:461 The Supreme Court and Constitutional Law 3
    - 3700:462 The Supreme Court and Civil Liberties 3
    - 3700:490 Policy Problems 3

  - **Comparative Politics:**
    - 3700:200 Comparative Politics 4
    - 3700:320 Britain and the Commonwealth 3
    - 3700:321 Western European Politics 3
    - 3700:322 Soviet and East European Politics 3
    - 3700:323 Politics of China and Japan 3
    - 3700:326 Politics of Developing Nations 3
    - 3700:327 African Politics 3
    - 3700:420 Issues and Approaches in Comparative Politics 3
    - 3700:425 Latin American Politics 3

  - **International Politics:**
    - 3700:220 American Foreign Policy 3
    - 3700:310 International Politics and Institutions 3
    - 3700:415 Comparative Foreign Policy 3

  - **Political Theory:**
    - 3700:302 American Political Ideas 3
    - 3700:303 Introduction to Political Thought 3
    - 3700:304 Modern Political Thought 3

  - **Psychology:** 15
  - **Sociology-Anthropology:** 15

*Course will not apply toward 54 credits in the major.

Courses for the social sciences division major must be selected with the approval of the divisional adviser. For further information, please contact the Office of the Dean, Buchtel College of Arts and Sciences.

### Bachelor of Science/Doctor of Medicine Degree (B.S./M.D. Program)*

#### Introduction

The Northeastern Ohio Universities College of Medicine (NEOUCOM) is a consortium composed of The University of Akron, Kent State University, Youngstown State University, and the College of Medicine offering a six-year B.S./M.D. program in which students obtain a baccalaureate degree in two years, summers included, and are then directly promoted to NEOUCOM's medical school for a final four years, obtaining a Doctor of Medicine degree.

The University of Akron admits a restricted number of carefully selected students into its B.S./M.D. program. These students usually pursue a natural science divisional major in the Buchtel College of Arts and Sciences, although other majors may be elected. Upon successful completion of the baccalaureate degree requirements, and with favorable faculty recommendations, satisfactory grade-point average and MCAT scores, students are promoted to NEOUCOM's Rocklawn campus as medical students. A few students may need to complete their baccalaureate degree program on The University of Akron campus during the summers of the third through fifth years.

#### Requirements

- **The General Studies**

  - **Courses to meet the natural sciences divisional major requirements:**
    - 3100:112 Principles of Biology 8
    - 3100:211 General Genetics 3
    - 3100:365 Histology I 3
    - 3100:466 Developmental Anatomy 8
    - 3150:123 Principles of Chemistry I, II 7
    - 3150:134 Qualitative Analysis 2
    - 3150:263 Organic Chemistry Lecture I, II 6
    - 3150:265 Organic Chemistry Laboratory I 2
    - 3150:401 Biochemistry Lecture I, II 6
    - 3450:212 Calculus for Life Sciences I, II 6
    - 3470:251, 252 Statistics modules 3
    - 3650:281 Physics for Life Sciences I, II 8
    - 3650:2679 Computations (optional but recommended) 2

  - Plus sufficient elective credits to reach distribution requirements of the natural sciences major

Some work may be transferred later from NEOUCOM with prior permission of the divisional major advisor and the Dean of Buchtel College of Arts and Sciences.

- **Additional courses:**
  - 1880:201 Medical Seminar and Practicum I 3
  - 2780:200 Special Topics 1
  - 3100:1961 Health Care Delivery Systems 2
  - 3100:2901 Health Care Delivery Systems 2
  - 3750:100 Introduction to Psychology 3

- **Humanities distribution requirement:**
  - 16 credits of approved humanities as approved by the Humanities in Medical Education Committee.

Additional credits as required to make a minimum of 128 credits.

*Deadline for application to program is December 15.

*Some students elect, with prior permission of their adviser and the Dean of the University College, alternative courses in lieu of the Western Cultural Traditions and Eastern Civilizations General Studies requirements to make a minimum of 12 credits.
OBJECTIVES

The purpose of the College of Engineering is to further the objectives of the University by providing a quality program of engineering education with the following aims:

- To offer sound basic instruction in engineering
- To develop the ability to apply engineering principles to economic and technological progress of society.
- To promote in the student a high sense of ethics and professional responsibility.
- To foster an appreciation of the need to further the role of the engineering profession in society.

The College offers programs leading to the Bachelor of Science, Master of Science and Doctor of Philosophy degrees.

At the undergraduate level the College has a four-year noncooperative program and a five-year cooperative educational program. The majority of the students elect the cooperative program.

The emphasis in both undergraduate programs is on the preparation of students for professional practice, and University policy assures that each student obtains a substantial exposure to the humanities.

A graduate is prepared for employment in the engineering profession or graduate studies in engineering upon receipt of the baccalaureate degree.

COLLEGE REQUIREMENTS

Cooperative Plan

The optional cooperative plan provides for a coordinated sequence of alternate periods of classroom instruction and industrial employment during the cooperative phase of the five-year course.

The cooperative plan simultaneously provides for the development of fundamental principles in the classroom and for their application in industrial practice. The student has the opportunity to find the type of work and industrial organization in which the student can best apply individual ability. The student gains an appreciation of the problems of labor and management by first-hand experience.

The student develops mature judgment by coping with the everyday problems of the industrial world. The employer of a cooperative student has the ability to train and select a student whose abilities and aptitudes can be adapted to the needs of technical staff requirements.

While a student is at work, all rules and regulations prescribed by the employer must be obeyed. In addition, the student is subject to all current labor laws and conditions. The student is considered a full-time student by the University while in industrial assignments.

The University does not guarantee employment, but makes every effort to place a student to the best financial advantage that is consistent with the acquisition of sound preprofessional experience.

Requirements for Admission

In addition to the general requirements for admission to the University, a student should present the following secondary school credits:

- Algebra 1 ½ units
- Plane Geometry 1 unit or Chemistry or Physics 1 unit
- Solid Geometry or Trigonometry ½ unit

Additional credits in mathematics and physical science are strongly recommended.

Students majoring in engineering are eligible to transfer to the College of Engineering after satisfactory completion of 30 credits of work including Calculus II and the approval of the dean.

Undergraduate students may not enroll in any 300/400-level course offered by the college unless the student has been admitted into the College of Engineering; or the student has the permission of the head of the department offering the course; or the course has been exempted from this rule.

Degrees

The College offers curricula leading to the degree of Bachelor of Science in chemical, civil, electrical and mechanical engineering, Bachelor of Science in Engineering, and Bachelor of Construction Technology.

Requirements for Graduation

- Compliance with University requirements, Section 3, of this Bulletin.
- Completion of the requirements in the appropriate list of courses and a minimum of 136 credits of course work.
- Recommendation of the student's department.
- Any junior or senior engineering student with a grade-point average of 2.50 overall and 2.75 or better in engineering may substitute not more than two approved upper-division courses in mathematics, science or engineering for an equal number of certain required engineering courses.

PROGRAMS OF INSTRUCTION

4200: Chemical Engineering

The goal of chemical engineering education is the development of the student's intellectual capacity and ability to apply the principles of transport phenomena, thermodynamic equilibria and chemical reaction kinetics to the creative resolution of technological problems.

The chemical engineer, like all other engineers, is trained in mechanics, materials and their properties, economics, systems and their controls. The chemical engineer differs from all other engineers because the chemical engineer is responsible for materials separations and the conversion of matter — separations such as air into components of oxygen, nitrogen, argon and conversions such as natural gas into plastics and coal into liquid fuel.

The chemical engineer finds careers mainly in the chemical process industries, usually becoming involved with inorganic and organic chemicals, rubber and plastics, detergents, petroleum products, metals, pharmaceuticals, dyestuffs and food products.

The chemical engineer will usually be employed in one or more of the following activities: research and development, plant design and construction, process control, plant operations, sales and management. In addition to the processing industries, the chemical engineer is increasingly in demand in such areas of current interest as water and air pollution, biological engineering and energy engineering.

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.
4200: Civil Engineering

The civil engineer is dedicated to planning, designing and building to make our environment more desirable. Civil engineers help renovate urban areas, develop new housing systems, plan community facilities, build new water storage systems; design new systems for waste disposal, expand airport and harbor facilities; build and maintain local streets and inter-city highways; design all types of buildings and bridges; build dams, reservoirs and flood control systems; build tunnels; and design foundations.

The civil engineering curriculum at the University allows specialization in environmental engineering, foundation engineering, hydraulic engineering, structural engineering and transportation engineering.

The civil engineering graduate works for consultants, manufacturers, construction companies, utilities and for government bodies of all levels. Many civil engineers own their own businesses.

- Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.
- General Studies — 28 credits.

4300: Mechanical Engineering

The mechanical engineer designs and analyzes physical systems. A high level of professional competence in this field can only be achieved through an extensive study of mathematics, mechanics, fluid flow and the thermal sciences. Among the many subtopics included in these areas of emphasis are: analysis, vibrations, compressible and incompressible fluid flow, thermodynamics, energy conversion, environmental control, heat transfer and application of control. The typical mechanical engineering design problems may involve any one or possibly all of these areas in the design of a complex system.

The mechanical engineer is employed in a variety of industries in different capacities. Specific positions include management, design, analysis, safety, production and plant engineering. The types of companies include automotive, petroleum, energy generation, aerospace, tire, consulting, publishing, insurance and manufacturers in general.

The curriculum is designed to emphasize fundamental which will place the student wishing to continue education in graduate school, law school or medical school will find specialized programs of preparation are available within the framework of the Department of Electrical Engineering.

A student wishing to continue education in graduate school, law school or medical school will find specialized programs of preparation are available within the framework of the Department of Electrical Engineering.

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology

- General Studies — 28 credits.
- Natural science:
  3150:132 Principles of Chemistry I, II
  3450:221.2 Analytic Geometry-Calculus I, II, III
  3450:235 Differential Equations
  3450:201 Mathematics Elective
  3650:291.2 Elementary Classical Physics I, II
  3650:301 Elementary Modern Physics
- Engineering core:
  4400:320 Tools for Engineering
  4400:325 Matter Science
  4400:201 Statics
  4300:202 Introduction to Mechanics of Solids
  4300:101 Control Systems I
  4600:336 Energy Conversion I
  4600:385 Energy Conversion Lab
- Electives:
  Technical Electives
  Free Electives

4600: Mechanical Engineering

The many branches of electrical engineering include: production and distribution of electrical energy, research, development, manufacture and operation of electrical and electronic products, and systems for instrumentation, automation, tracking and telemetry.

The growth of electronic research and manufacturing has been accelerated by the space age. There is hardly a segment of the economy which has not been influenced by electronics. The high speed digital computer has found its way into virtually all aspects of modern life. A student wishing to specialize in computer engineering will find appropriate electives available.

The widespread use of electrical means for measurement, control and computation has resulted in the need for electrical engineers in all types of industries. Varied employment opportunities are available.

4200: Chemical Reaction Engineering
4200:351 Fluid and Thermal Operations
4200:352 Transport Laboratory
4200:355 Micro-Transfer Operations
4200:435 Process Analysis and Control
4200:441 Process Economics and Design
4200:442 Plant Design
4200:454 Operations Laboratory

**Electives:**
- Advanced Chemistry or Polymer Science
- Chemical Engineering Design
- Free Electives, adviser approved

**4300: Civil Engineering**

- Natural science:
  3150:132 Principles of Chemistry I, II
  3450:221.2 Analytic Geometry-Calculus I, II, III
  3450:235 Differential Equations
  3450:201 Mathematics Elective
  3650:291.2 Elementary Classical Physics I, II
  3650:301 Elementary Modern Physics

- Engineering core:
  4400:320 Tools for Engineering
  4400:325 Matter Science
  4400:101 Statics
  4300:202 Introduction to Mechanics of Solids
  4300:101 Control Systems I
  4600:336 Energy Conversion I
  4600:385 Energy Conversion Lab

- Electives:
  Technical Electives
  Free Electives

**4600: Mechanical Engineering**

- Natural science:
  3150:132 Principles of Chemistry I, II
  3450:221.2 Analytic Geometry-Calculus I, II, III
  3450:235 Differential Equations
  3450:201 Mathematics Elective
  3650:291.2 Elementary Classical Physics I, II

- Engineering core:
  4400:320 Tools for Engineering
  4400:325 Matter Science
  4400:101 Statics
  4300:202 Introduction to Mechanics of Solids
  4300:101 Control Systems I
  4600:336 Energy Conversion I
  4600:385 Energy Conversion Lab

- Electives:
  Technical Electives
  Free Electives
4980: Construction Technology

The curriculum in construction technology is designed to produce a graduate with a strong fundamental knowledge of technology, combined with management ability and a familiarity with business, economics and personnel management. The program is designed to provide graduates for employment at all levels of the construction industry and allied support industries.

The program is a "two-plus-three" arrangement with the Community and Technical College and includes one full year of on-the-job experience. All students must meet the requirements of both the associate and baccalaureate programs.

Transferees from other programs where the course content compares favorably may be admitted to the program. Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

- General Studies — 14 credits:
  1100:111 English Composition
  1100:320 Western Cultural Traditions
  1100:321 Western Cultural Traditions
  1100:322 Eastern Civilizations

- Required Science and Mathematics — seven credits:
  2030:334 Mathematics for Technical Applications
  3370:101 Introduction to Physical Geology

- Required Technical Courses — 28 credits:
  4980:351 Construction Quality Control
  4980:352 Field Management
  4980:354 Foundation Construction Methods
  4980:355 Computer Applications in Construction
  4980:356 Safety in Construction
  4980:357 Construction Administration
  4980:358 Advanced Estimating
  4980:361 Construction Formwork
  4980:453 Legal Aspects of Construction
  4980:462 Mechanical Service Systems
  4980:463 Electrical Service Systems

- Required Business Courses — 14 credits:
  6200:201 Accounting I
  6200:202 Accounting II
  6400:371 Business Finance
  6500:301 Management Principles and Concepts

- Technical Electives — five credits:
  3370:210 Geomorphology
  4100:206 FORTRAN
  4300:313 Soil Mechanics
  4300:314 Geotechnical Engineering
  4300:361 Transportation Engineering
  4300:414 Design of Earth Structures
  4300:418 Soil and Rock Exploration
  4300:450 Urban Planning
  4300:474 Underground Construction
  4980:465 Heavy Construction Methods
  4980:466 Hydraulics
  4980:467 Special Projects

Bachelor of Science in Engineering

This degree program was established to introduce flexibility into the College of Engineering. Within the 66 credits of the option portion of the program, a student can pursue a focused curriculum in areas such as business administration, industrial management, environmental engineering or pre-medicine. The program of study may be very narrow as in the case of a student wishing to specialize in structural design, foundations and soil mechanics. For another student interested in patent law, the program may be broad, touching on chemical, mechanical and electrical engineering subjects. The individual's program is designed to meet each student's announced goals.

Entrance to this program is restricted. A student requests admission by letter to the dean of the College of Engineering, outlining in some detail the particular objective and how the B.S.E. program may enable the student to prepare for career goals. The mathematics, physics and chemistry requirements are identical to those of the ABET approved programs of the college.

General Studies and Science Core
Program Options — Engineering
Program Options
Free Electives, adviser approval
College of Education

William E. Klingele, Ed.D., Dean
Larry G. Bradley, Ph.D., Acting Associate Dean
Charles M. Dye, Ph.D., Assistant Dean
Pearlmarie W. Goddard, Ed.D., Assistant to the Dean

OBJECTIVES

The purpose of the College of Education is to further the objectives of the University by providing quality programs for the student of education and by helping the student attain the following:

- Special experiences, knowledge and skills particularly useful for teaching in urban and inner-city educational institutions, in keeping with the urban mission of the University.
- A knowledge of a major field and related fields of inquiry and the ability to use this knowledge in explaining the realities of life today.
- A knowledge of instructional materials and new technology and skill in recognizing and utilizing instructional tools most suitable for specific purposes.
- A knowledge of the social issues relevant to education and living in a pluralistic society and the competence to translate implications of changes in society into instructional action as teacher-citizens as well as teacher-scholars.
- An understanding of the learner and the learning processes and the ability to translate these into appropriate teaching behaviors in acting and reacting with students.
- Skill in the acquisition of inquiry techniques appropriate to generalizing knowledge and choices, and practice in using them to inquire into educational problems in rational, defensible ways.
- Human relations skills, including an appreciation of the values and feelings essential for working with young people and with adults, and an ability to maintain relationships in a wide variety of professional and social roles in an educational or community setting.

To accomplish these objectives, this college offers programs for the preparation of pre-K, elementary and secondary teachers, special education and health and physical education teachers, counselors, school administrators and other educational personnel. The Bachelor of Arts in Education, Bachelor of Science in Education, Bachelor of Science in Technical Education, Master of Arts in Education, Master of Science in Education, Master of Science in Technical Education and Ph.D. and Ed.D. degrees are offered.

Programs include a balanced offering of a foundation in general education, intensive study in the teaching and/or administration content area, and those professional courses and other learning experiences which attempt to combine theory and practice.

All undergraduate and graduate educational programs that lead to recommendation for Ohio certification have been revised to meet state standards effective July 1, 1987. New programs and courses are presented in this bulletin and apply to students admitted to The University of Akron July 1, 1987, or after. Students with questions about requirements may contact their advisors or the Office of Academic Services, Zook Hall, The University of Akron, Akron, OH 44325, phone (216) 375-7891.

COLLEGE REQUIREMENTS

Selective Admission and Retention

The college has selective admission and retention procedures that apply to students who wish to major in an educational certification program at The University of Akron. No one specific requirement will be a cause for non-admission; based on all relevant data, the decision for admission will be made by the respective departments.

Ohio requires all colleges and universities preparing teachers and educational personnel to assess students formally upon admission to a program in the areas of oral and written communication, mathematics, academic aptitude and achievement, interpersonal relations and motivation. The University of Akron College of Education admission procedures are designed to establish admission criteria, provide for assessments and allow for skills enhancement, reassessment and reappraisal where appropriate, and to support the admission of under-represented groups in education.

To be admitted to the College of Education, the student must be able to meet the following criteria:

- Completion of at least 30 semester credit hours of course work with a minimum overall grade point average of 2.25 for all course work taken subsequent to July 1, 1988, including transfer credit, and with a minimum overall grade point average of 2.00 for course work prior to July 1, 1988, including transfer credit. (A weighted average grade point will be used for students who earn credits both before and after July 1, 1988. This criterion will rise to 2.50 for coursework subsequent to July 1, 1990, with weighted average criteria applying in the same way.)
- Completion of the Pre-Professional Skills Test (a test of written communications, reading and mathematics)** This test is given by and information about it is available from the University Counseling and Testing Center, Simmons Hall, Room 161, phone (216) 375-7084.
- Completion of the 16 Personality Factor Questionnaire, a questionnaire designed to assess certain personality variables which is also administered by the University Counseling and Testing Center**
- Completion of the Speech, Hearing and Oral Communications Test
- Completion of College of Education application.
- Demonstration of three qualities of character and personality deemed essential for a professional person in education.
- Demonstrated evidence of the ability to attain a 2.50 grade-point average in a choice of major fields.

Retention of students in each program will be evaluative and will allow opportunities for upgrading skills and achievement in areas where such needs may exist. Satisfactory completion of program requirements will be reviewed annually by the student and adviser. Areas of strength and weakness are to be evaluated. Each department will determine methods of intervention in areas of weakness and/or decisions regarding retention with counsel of the Teacher Education Review Committee. A professional portfolio will be developed over the course of the student's program. Each student will take a comprehensive examination in his/her area of teaching prior to approval for student teaching. The Teacher Education Review Committee (made up of professional education faculty, content area faculty in the student's area of teaching and field educators) will review student progress for approval to student teach and again for approval to take the Ohio Board of Education examination for certification.

All criteria and procedures regarding selective admission and retention are available in the Office of Academic Services, Zook Hall, The University of Akron, Akron, OH 44325, phone (216) 375-7681.

Bachelor's Degrees

A student prepares to teach any one of the following areas or fields: pre-kindergarten, elementary, the conventional academic fields found in middle, junior and senior high schools; the special fields of art, drama, dance, business, home economics, music, physical education, education of exceptional pupils and the secondary technical education. A minimum of 12 credits with a grade-point average of 2.25 must be completed to qualify for the bachelor's degree.

The specific subjects required for degrees in certain fields are set forth in subsequent pages. In all cases, the requirements include courses in the General Studies, content areas and professional education.

The Bachelor of Arts in Education degree is granted to those whose major is in one of the academic fields. The Bachelor of Science in Education is granted to those whose major is in the other special fields or in elementary education.

The Bachelor of Science in Technical Education is awarded to those who complete the requirements of that program.

Clinical and Field-Based Experiences

Each teacher education student is required to participate satisfactorily in clinical and field-based experiences for a minimum of 600 hours prior to recommendation for certification for teaching in Ohio. These clinical and field-based experiences are designed to provide each teacher education student with the opportunity to apply theory and skills related to his or her area of certification in at least one-half of the clinical and field-based clock hours. The field-based experiences are planned in culturally, racially and socio-economically diverse settings. Clinical experiences are those planned activities in which teacher education students apply the principles of the field of teaching to individual cases or problems.

Clinical and field-based hours are listed under the College of Education in "Courses of Instruction," Section 9 of this Bulletin.

**Results are to be used for advising; currently no cut-off (testing) scores or results have been established.
Student Teaching

Student teaching is done in the public schools under the direction of a cooperating teacher and a representative of the College of Education faculty. Each student must have his/her education adviser’s recommendation and approval of the Teacher Education Review Committee prior to the student teaching experience.

To qualify for student teaching, students must have a 2.50 average in methods courses (as defined by departments), foundations courses and in their teaching field(s). Satisfactory completion of at least 300 hours of field and clinical experience is also required before student teaching.*

Certification

Every teacher in Ohio public schools is required to have a certificate covering the fields in which teaching is being done. This certificate is issued by the Ohio State Department of Education upon recommendation of the dean of the college. The student must fill out an application form obtained from the certification officer in the Office of Academic Services. This form should be completed about one month before the student plans to finish all requirements for teaching.

The student can only be recommended for certification from the institution granting the degree. A student who expects to receive degrees from other institutions but who wishes to qualify for certification at The University of Akron will be expected to meet all the certification requirements of the University. Students in progress toward certification prior to July 1, 1987, will have until July 1, 1991, to complete requirements under the standards in effect at the time they signed contracts. Special efforts to accommodate students during the time of transition between prior and current state standards will be made. All inquiries should be directed to the Office of Academic Services, Zook Hall, The University of Akron, Akron, OH 44325, phone (216) 375-7681.

Students Enrolled In Other Colleges at The University of Akron

All students, regardless of the degree-granting college in which they are enrolled, must fulfill requirements for admission to a teacher education program within the College of Education and must comply with procedures on selective admission and retention. Students who receive degrees from other colleges in the University may, therefore, qualify for Ohio teacher certification. Each will be recommended for certification after completing respective major and minor requirements and the pre-professional and professional courses in the appropriate department.

Cooperative Education

The requirements for participation in the Co-op Program are as follows. The student must:

- Be admitted to the College of Education, which requires completion of 30 credit hours with at least a 2.00 overall grade-point average.*
- Complete course 5100:150, Introduction to Professional Education, with at least a "C" grade, if a student is in a teacher certification program.
- Sign an agreement card which states that participation in Cooperative Education will not meet College of Education or State of Ohio requirements for clinical field experience or student teaching.
- Agree to abide by all rules and regulations of Cooperative Education.
- Apply for admission to Cooperative Education through the completion of a Cooperative Education workshop.

PROGRAMS OF INSTRUCTION

5200: Elementary Education

Elementary

The elementary program is for those preparing to teach in grades one through eight inclusive. The requirements for a major in elementary education are as follows:

- General Studies — 40 credits.**
  1100:105 Introduction to Public Speaking
  or
  1100:106 Effective Oral Communication
  1100:111 English Composition
  1100:112 English Composition

- One of the following:
  3400:201 United States History
  3400:202 United States History
  3700:100 Government and Politics in the United States

- One of the following:
  3250:100 Introduction to Economics
  3250:201 Principles of Macroeconomics
  3250:244 Introduction to Economic Analysis
  3850:100 Introduction to Sociology
  3870:150 Cultural Anthropology

- Math Requirement (Options available)
  1100:221 Natural Science: Biology

- One of the following:
  1100:222 Natural Science: Chemistry
  1100:223 Natural Science: Geology
  1100:224 Natural Science: Physics
  (Departmental science options available)

- 1100:320 Western Cultural Traditions
- 1100:321 Western Cultural Traditions
- 1100:334 Eastern Civilizations
- 1100:33x Eastern Civilizations
- 1100— Physical Education

- Pre-Professional Education:
  3350:100 Introduction to Geography

- Professional Education:
  5100:150 Introduction to Professional Education
  5100:250 Human Development and Learning
  5100:310 Educational Media and Technology
  5100:325 Educational Measurement and Evaluation
  5100:450 Problems in Education
  5200:141 Handicrafts
  5200:225 Elementary Field Experience I
  5200:286 Children’s Literature
  5200:321 Art for the Grades
  5200:325 Elementary Field Experience II
  5200:333 Science for Elementary Grades
  5200:335 Teaching Language Arts
  5200:336 Teaching Elementary School Math I
  5200:337 Teaching of Reading
  5200:338 Teaching of Social Studies
  5200:339 Principles of Diagnostic Teaching of Reading
  5200:350 Multicultural Education
  5200:356 Teaching Elementary School Math II
  5200:365 Music for Elementary Teachers
  or
  5550:334 Games and Rhythms
  5200:425 Elementary Field Experience III
  5200:495 Student Teaching
  5200:496 Student Teaching
  5570:101 Personal Health

- Area of Concentration — 20 credits

Areas of concentration have been approved in the following disciplines. Some general studies courses fulfill requirements in selected concentrations. Therefore, a total of 15-16 additional hours is needed to complete those concentrations:

Biology
Communication
Economics
English and Literature
Foreign Language
Geography
History
Humanities/Visual Arts
Mathematics

*Music majors, before assignment for student teaching, are required to pass the General Musicianship Examination described in the music section of the College of Fine and Applied Arts. To avoid possible delay in graduation, it is necessary for the student to take the examination six months prior to the anticipated assignment for student teaching.

**The required grade point will be 2.25, effective July, 1987, and 2.50, effective July 1, 1990.

**Six credits of science are included in the General Studies. Three of these six credits must be in biological sciences to meet certification requirements.
Students who do not have Certification for Teaching Foreign Language level, plus Students may become adequate proficiency in TESOL Validation

This program introduces students to the key issues in teaching A person desiring certification to teach modern foreign methods, and in

Students seeking this

The student in the kindergarten program may receive validation for kindergarten by taking the following courses:

- Required:
  - 5200:330 Early Elementary Education I
  - 5200:381 Early Elementary Education II
  - 5200:340 Early Elementary Education I-Laboratory
  - 5200:341 Early Elementary Education II-Laboratory
  - 7400:265 Child Development

Pre-Kindergarten Validation

The student in the elementary program may also receive validation in pre-kindergarten by taking the following courses:

- 5200:265 Teaching in the Nursery Center
- 5200:270 Nursery Center Laboratory
- 5300:496 Student Teaching
- 7400:265 Child Development
- 7400:270 Theory and Guidance of Play
- 7400:280 Creative Activities for Pre-Kindergarten Children
- 7400:483 Organization and Supervision of Child Care Centers

Certification for Teaching Foreign Language in the Elementary School

A person desiring certification to teach modern foreign language on the elementary level must meet the required requirements for certification on the secondary level, plus these Ohio requirements:

- Child psychology of human growth and development.
- Purpose and practice of elementary education or equivalent.
- Methods of teaching the modern foreign language.

TESOL Validation

(4 Teaching English to Speakers of Other Languages)

This program introduces students to the key issues in teaching English to non-native speakers through coursework in linguistics, second language theory and methods, and in related disciplines.

Students may become validated in TESOL at either the undergraduate or graduate levels in conjunction with certification in elementary education or secondary education.

Students seeking this validation must have studied a foreign language at some time during their academic career.

Students who do not have English as a native language must demonstrate adequate proficiency in English with a valid TOEFL score of 580 or above and a score of 240 or above on the TSE (Test of Spoken English).

Required coursework:

- 5300:270 Introduction to Linguistics
- 3
- 5300:469 Introduction to Bilingual Linguistics
- 3
- 5300:473 Seminar in Teaching ESL Theory and Method
- 3
- 5300:488 Seminar in English, Sociolinguistics
- 3
- 5300:489 Multicultural Education in the United States
- 3
- 5300:498 Seminar in English, Grammatical Structures of Modern English
- 3
- 5630:487 Techniques for Teaching English as a Second Language in the Bilingual Classroom
- 4
- 5630:488 Teaching Reading and Language Arts to Bilingual Students
- 4
- Field Experience in Learning English as a Second Language
- 2

Certification of Non-Professional Degree Holders for Elementary School

To qualify for a provisional Elementary Certificate, the holder of a baccalaureate degree in fields other than education should complete the course work equivalent to that required for a major in elementary education.

- Pre-professional education and General Studies:
  - A student may be required to take courses from the pre-professional education and General Studies sections if previous transcripts reveal an insufficient background in those areas or in courses listed under elementary education.
  - Professional education:
    - Basic
      - 5100:150 Introduction to Professional Education

5100:260 Human Development and Learning
5100:310 Educational Media and Technology
5100:350 Educational Measurement and Evaluation
5100:450 Problems in Education
5200:451 Elementary Education
5200:141 Handicrafts
5200:225 Field Experience I
5200:256 Children's Literature
5200:325 Field Experience II
5200:321 Art for the Grades
5200:333 Science for Elementary Grades
5200:335 Teaching Language Arts
5200:306 Teaching Elementary School Math I
5200:337 Teaching of Reading
5200:338 Teaching of Social Studies
5200:339 Principles of Diagnostic Teaching of Reading
5200:351 Multicultural Education
5200:356 Teaching Elementary School Math II
5200:365 Comprehensive Music appreciation for the Elementary Classroom Teacher
5200:334 Games and Rhythms
5200:425 Field Experience III
5200:465 Student Teaching
5200:496 Student Teaching
5200:101 Personal Health
5200:330 Early Elementary Education I
5200:331 Early Elementary Education II
5200:340 Early Elementary Education I-Laboratory
5200:341 Early Elementary Education II-Laboratory

Pre-Kindergarten Certification

Birth to Kindergarten

- General Studies — 40 credits
- Professional Education
  - 5100:250 Human Development and Learning
  - 5100:310 Educational Media and Technology
  - 5200:200 Student Participation
  - 5200:300 Student Participation
  - 5200:340 Introduction to Early Childhood Education
  - 5200:350 Multicultural Education
  - 5200:495 Student Teaching
  - 5200:496 Student Teaching
  - 7400:265 Child Development
  - 7400:360 Parent-Child Relations
  - 7400:401 Family Life Styles: Economically Dependent Home
  - 7400:460 Organization and Supervision of Child Care Centers
- Curriculum
  - 2200:245 Infant/Child Day Care
  - 2200:352 Observation and Recording Child Behavior
  - 5200:286 Children's Literature
  - 5200:315 Issues and Trends in Early Childhood Education
  - 5200:350 Teaching in the Nursery Center
  - 5200:370 Nursery Center Lab
  - 5500:235 Concepts of Motor Development and Learning
  - 5600:450 Special Education Programming: Early Childhood
  - 7400:132 Early Childhood Nutrition
  - 7400:270 Theory and Guidance of Play
  - 7400:280 Creative Activities for Pre-Kindergarten Children

Area of Concentration — 20 credits

Peace Studies
- Economics
- Family Economics
- Child in the Culture
- Fine Arts
- Language and Literature
- Sociology
- History
- Linguistic Development of Children

Women's Studies
- Anthropology
- Psychology
- Foreign Languages
- Biology
- Geography
- Child in the Family
- Family in Transition
- Mathematical/Statistics
- Computer Science

*Students majoring in Elementary Education take 5200:486 for 6 credit hours.
Students majoring in Home Economics and Family Ecology take 5200:486 for 8 credit hours.
**If a time period of four years has elapsed since taking this course, or its equivalent, a basic mathematics or mathematics education course must be completed.
A student must have a minimum of a 2.5 grade-point average in the declared teaching field to be eligible for placement for student teaching.

The general requirements for a major in secondary education are as follows:

- **General Studies** — 39 credits
- **Professional courses (courses to be taken in an approved sequence):**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:150</td>
<td>Introduction to Professional Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:230</td>
<td>Human Development and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:310</td>
<td>Educational Media and Technology</td>
<td>3</td>
</tr>
<tr>
<td>5100:350</td>
<td>Educational Measurement and Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>5100:450</td>
<td>Problems in Education</td>
<td>2</td>
</tr>
<tr>
<td>5300:210</td>
<td>Principles of Teaching in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>5300:275</td>
<td>Exploratory Experience</td>
<td>1</td>
</tr>
<tr>
<td>5300:311</td>
<td>Instructional Techniques Secondary Education</td>
<td>1</td>
</tr>
<tr>
<td>5300:325</td>
<td>Content Reading in Secondary School</td>
<td>1</td>
</tr>
<tr>
<td>5300:375</td>
<td>Exploratory Experience</td>
<td>1</td>
</tr>
<tr>
<td>5300:445</td>
<td>Microcomputer Literacy for Secondary Teachers</td>
<td>2</td>
</tr>
<tr>
<td>6000:485</td>
<td>Classroom Dynamics</td>
<td>2</td>
</tr>
<tr>
<td>5300:495</td>
<td>Student Teaching</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Courses in teaching field(s) and electives as determined by the department.</td>
<td></td>
</tr>
</tbody>
</table>

### Teaching Fields

Each student preparing for secondary school teaching must have at least two defined teaching fields. However, if a student chooses one of the comprehensive or special teaching fields, as listed below, preparation in a second field will not be required.

#### Minimum Number of Credits Required for Approval in Various Teaching Fields

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6205:65</td>
<td>Business Education (with shorthand)</td>
<td></td>
</tr>
<tr>
<td>6205:66</td>
<td>Business Education (without shorthand)</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Communications</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Family Life Education</td>
<td></td>
</tr>
<tr>
<td>60:45:05</td>
<td>Marketing Education</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Consumer Homemaking and Multi-Area Vocational</td>
<td></td>
</tr>
<tr>
<td>85:47</td>
<td>Science—Physical Science</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Social Studies</td>
<td></td>
</tr>
<tr>
<td>62:70</td>
<td>Vocational Business Education</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Vocational Consumer Home Economics*</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Vocational Consumer Home Economics w Multi-Area</td>
<td></td>
</tr>
<tr>
<td>69:71</td>
<td>Job Training*</td>
<td></td>
</tr>
</tbody>
</table>

#### Special Fields K-12

- **Dance**
- **Foreign Language**
- **Health — as determined by Department of Health and Physical Education**
- **Library/Media**
- **Music — as determined by Department of Music**
- **Physical Education (men and women) — as determined by Department of Health and Physical Education**
- **Speech and Hearing Therapy — as determined by Department of Communicative Disorders**
- **Special Education — as determined by Department of Counseling and Special Education**
- **Visual Arts**

**Specific Subjects by Field**

Students admitted to the University after July 1987 will be required to follow a new certification program for each subject field and meet all new state requirements.

**Biology**

- 51:55

**Bookkeeping Basic Business**

- 30:33

**Chemistry**

- 55:57

**Computer Science**

- 39

**Drama/Theatre**

- 30

**Earth Science**

- 51:54

**Economics**

- 30

**English**

- 38

**Foreign Languages**

- 45

**General Science**

- 44:47

**Geography**

- 30

**Health Education (7-12)**

- 48

**History**

- 32

**Home Economics**

- 45

**Library/Media**

- 33:34

**Mathematics**

- 33:34

**Physica**

- 55:58

**Political Science**

- 31

**Psychology/Sociology**

- 36:37

**Sales Communication**

- 31

**Speech Communicaitons**

- 30

**Stenography and Typewriting/Keyboarding**

- 33

**Visual Art**

- 26

*Options are also available in Job Training for the fields of Food Service, Fabrics, Child Care, and Health and Community.

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*Certification for Teaching Music in the Elementary School*

Any student who completes a regular four-year program qualifying him or her for a Four-Year Provisional Elementary Certificate* may have that certificate validated for teaching music in the elementary school by completing the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7500:497</td>
<td>Independent Study (Music Student Teaching)</td>
<td>2</td>
</tr>
<tr>
<td>7500:107</td>
<td>Class Voice</td>
<td>2</td>
</tr>
<tr>
<td>7520:124</td>
<td>Applied Voice</td>
<td>2</td>
</tr>
<tr>
<td>7500:121</td>
<td>Music Theory I and II</td>
<td>4</td>
</tr>
<tr>
<td>7500:154,5</td>
<td>Music Literature I and II</td>
<td>6</td>
</tr>
<tr>
<td>7500:261</td>
<td>Keyboard Harmony I</td>
<td>2</td>
</tr>
<tr>
<td>7500:340</td>
<td>General Music</td>
<td>3</td>
</tr>
<tr>
<td>7500:341</td>
<td>Wind-Percussion Instrument Techniques</td>
<td>3</td>
</tr>
<tr>
<td>7500:356</td>
<td>Music Teaching Handicapped</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>7500:110</td>
<td>Music Organization</td>
<td>2</td>
</tr>
<tr>
<td>7500:497</td>
<td>Independent Study (Music Student Teaching)</td>
<td>2</td>
</tr>
<tr>
<td>7500:107</td>
<td>Class Voice</td>
<td>2</td>
</tr>
</tbody>
</table>

---

*Dual Certification Program Elementary and Secondary*

This curriculum prepares teachers for both elementary and secondary schools. A student completing this curriculum will receive the Four-Year Provisional Certificate to teach in the secondary school and a certificate which will qualify the holder to teach in grades one through eight in the elementary school. A student in this program must meet the requirements for Elementary Education, and complete 5300:310, Principles of Secondary Education, and 5300:311, Instructional Techniques in Secondary Schools, and must meet the requirements in the field or fields of teaching at the secondary level in which certification is requested. For advisement in this area, contact the head of the department.*

A combination elementary and special education program is offered; see 5610: Special Education.

Reminder: All students pursuing teacher education programs at The University of Akron are subject to the selective admission and retention requirements. Criteria and procedures are available in the Office of Academic Services, Zook Hall, The University of Akron, Akron, OH 44325, phone (216) 375-7681.

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*5630: Bilingual Multicultural Education*

This program provides education majors with the knowledge, skills and attitudes necessary to teach bilingual students. The program incorporates course work 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, and languages, reading, mathematics, social studies, and science. Students may become validated in bilingual multicultural education at either the undergraduate or graduate level in conjunction with certification in elementary education, secondary education, special education or physical education. Students must demonstrate proficiency in English and a language other than English in order to meet the validation requirements of the Ohio State Department of Education.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5300:489</td>
<td>Seminar in English: Introduction to Bilingual Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>5630:482</td>
<td>Characteristics of Culturally Different Youth</td>
<td>3</td>
</tr>
<tr>
<td>5630:484</td>
<td>Principles of Bilingual Multicultural Education</td>
<td>3</td>
</tr>
<tr>
<td>5630:485</td>
<td>Teaching Reading and Language Arts to Bilingual Students</td>
<td>4</td>
</tr>
<tr>
<td>5630:486</td>
<td>Teaching Mathematics, Social Studies and Science</td>
<td>4</td>
</tr>
<tr>
<td>5630:487</td>
<td>Techniques for Teaching English as a Second Language in the Bilingual Classroom</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Field experience of bilingual classroom settings</td>
<td>3</td>
</tr>
</tbody>
</table>

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*5300: Secondary Education*

The secondary program is for the student preparing to teach in middle, junior and senior high schools. A list of the specific requirements for the various teaching fields will be provided for the student by the college advisor or by the head of the Department of Secondary Education. For information regarding employment in non-school settings which capitalize on a teacher's skills, see the department head.

A student must have completed at least eight semester credits in the teaching fields with a 2.5 grade-point average before transferring to the upper college and must have at least a "C" grade in English composition or its equivalent.

---

*Home Economics and Family Ecology majors.*

**The elementary education major is responsible for completing 300 field and clinical hours in addition to student teaching. It will be the responsibility of the department to assign these credits to the appropriate courses.**
5400: Technical Education

The undergraduate program in technical education is designed to prepare instructors and other personnel for post-secondary educational institutions, industry and public and private agencies engaged in the education and training of technicians. The program is divided into the following major classifications: business, technology, engineering, technology, natural science technology, and public service technology. The baccalaureate program is intended to produce instructors primarily for teaching subjects within a technical specialty. Graduates of this program would be awarded the degree of Bachelor of Science in Technical Education.

A student may elect other career areas when the courses are available and the adviser approves.

The technical education program includes work in four areas: General Studies, Training and Certification, and occupational experience. Specific course requirements may be secured from the Department of Secondary Education or from the adviser in technical education.

Requirements for Graduation

In addition to the general requirements of the College of Education, a student in technical education must obtain at least a 2.00 average in all major departmental professional courses (5400), all professional education courses and a 2.50 average in all technical courses directly related to the student's teaching field.

Reminder: All students pursuing teacher education programs at The University of Akron are subject to the selective admission and retention requirements. Criteria and procedures are available in the Office of Academic Services, Zook Hall, The University of Akron, Akron, OH 44325, phone (216) 375-7861.

5550: Physical Education

5550: Physical Education*; 5560: Outdoor Education**; and 5570: Health Education.

Undergraduate programs in the Department of Physical Education and Health Education lead to state certification in health and physical education (7-12 and K-12). There is also a school nurse certification program, as well as one in dance. State validation is also available in adapted physical education.

Certification programs are offered in athletic training for sports medicine, outdoor education, and athletic coaching. In addition to public school employment, graduates may be prepared for employment in various recreation professions, business and industry fitness centers, and numerous allied health and exercise professions.

Physical Education

Provisional Special Certification (K-12)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>5550:101</td>
<td>Fundamentals of Archery/Bowling</td>
</tr>
<tr>
<td>5550:102</td>
<td>Fundamentals of Badminton/Volleyball</td>
</tr>
<tr>
<td>5550:103</td>
<td>Fundamentals of Soccer/Field Hockey</td>
</tr>
<tr>
<td>5550:104</td>
<td>Fundamentals of Track and Field</td>
</tr>
<tr>
<td>5550:105</td>
<td>Recreational Activities</td>
</tr>
<tr>
<td>5550:106</td>
<td>Recreational Activities for the Handicapped</td>
</tr>
<tr>
<td>5550:115</td>
<td>Fundamentals of Wrestling/Rugby</td>
</tr>
<tr>
<td>5550:120</td>
<td>Fundamentals of Basketball</td>
</tr>
</tbody>
</table>

• Required Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>5550:130</td>
<td>Physical Education Activities for Elementary School</td>
</tr>
<tr>
<td>5550:140</td>
<td>Physical Education Activities I</td>
</tr>
<tr>
<td>5550:141</td>
<td>Physical Education Activities II</td>
</tr>
<tr>
<td>5550:193</td>
<td>Methods of Teaching Physical Education</td>
</tr>
<tr>
<td>5550:201</td>
<td>Kinesiology</td>
</tr>
<tr>
<td>5550:202</td>
<td>Physiology of Exercise</td>
</tr>
<tr>
<td>5550:211</td>
<td>First Aid</td>
</tr>
<tr>
<td>5550:245</td>
<td>Instructional Techniques in Elementary Physical Education</td>
</tr>
<tr>
<td>5550:246</td>
<td>Instructional Techniques in Secondary Physical Education</td>
</tr>
<tr>
<td>5550:250</td>
<td>Fundamentals of Health Education</td>
</tr>
<tr>
<td>5550:340</td>
<td>Care and Prevention of Athletic Injuries</td>
</tr>
<tr>
<td>5550:345</td>
<td>Adapted Physical Education</td>
</tr>
<tr>
<td>5550:350</td>
<td>Organization and Administration of Health and Physical Education</td>
</tr>
<tr>
<td>5550:454</td>
<td>Resident Cui-dor Education</td>
</tr>
</tbody>
</table>

• Choose at least two of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>5550:310</td>
<td>Theory and Techniques of Soccer</td>
</tr>
<tr>
<td>5550:311</td>
<td>Theory and Techniques of Track and Field</td>
</tr>
<tr>
<td>5550:312</td>
<td>Theory and Techniques of Basketball</td>
</tr>
<tr>
<td>5550:313</td>
<td>Theory and Techniques of Baseball/Softball</td>
</tr>
<tr>
<td>5550:334</td>
<td>Theory and Techniques of Swimming</td>
</tr>
</tbody>
</table>

Secondary School (7-12) Certification (minimum 34 credits)

Courses required for secondary certification include all of the requirements for Provisional Special (K-12) Certification (listed above) except: 5550:130, 245, 310-326, 335, 345, 454.

5570: Health Education

Provisional Special Certification (K-12)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100:120</td>
<td>Principles of Microbiology</td>
</tr>
<tr>
<td>3100:208 or 209</td>
<td>Human Anatomy and Physiology</td>
</tr>
<tr>
<td>3100:207 or 208</td>
<td>Human Anatomy and Physiology</td>
</tr>
<tr>
<td>3100:120</td>
<td>Introduction to Physical Education</td>
</tr>
<tr>
<td>5550:301</td>
<td>Physiology of Exercise</td>
</tr>
<tr>
<td>5550:211</td>
<td>First Aid</td>
</tr>
<tr>
<td>5570:101</td>
<td>Personal Health</td>
</tr>
<tr>
<td>5570:200</td>
<td>Current Topics in Health Education</td>
</tr>
<tr>
<td>5570:201</td>
<td>Consumer Health, Weight Control and Exercise</td>
</tr>
<tr>
<td>5570:202</td>
<td>Stress, Life Style and Your Health</td>
</tr>
<tr>
<td>5570:320</td>
<td>Community Hygiene</td>
</tr>
<tr>
<td>5570:321</td>
<td>Organization, and Administration of Health and Physical Education</td>
</tr>
<tr>
<td>5570:322</td>
<td>Methods and Materials of Elementary School Health Education</td>
</tr>
<tr>
<td>5570:323</td>
<td>Methods and Materials of Secondary School Health Education</td>
</tr>
<tr>
<td>5570:350</td>
<td>Field Experience in Health Education</td>
</tr>
<tr>
<td>5570:400</td>
<td>Environmental Aspects of Health Education</td>
</tr>
<tr>
<td>5570:460</td>
<td>Practicum in Health Education</td>
</tr>
<tr>
<td>5570:497</td>
<td>Independent Study in Health Education</td>
</tr>
</tbody>
</table>

**Electives (at least 3 credits with consent of adviser) 5

Total minimum credits 51

Secondary Health Education (7-12) (46 credits)

Courses required for certification in secondary school health education include all of the requirements for Provisional Special (K-12) Certification in Health Education (listed above) except: 5570:130, 335, 345, 454.

School Nurse Certification

The provisional school nurse's certificate will be issued to the holder of a bachelor's degree from an approved college or university, provided the pattern of preparation leading to the degree conforms to the following requirements:

Coursework well distributed over the following areas:

• Community health and family counseling

• Mental and emotional health

• The school in relation to society

• The learner and the learning process

• The school health program

— School health services and environment

— Principles, organization, and administration of school health services

• A supervised school nurse experience in an approved school setting to approximate the school day for a period not less than one full semester

5570:320 Community Hygiene

7400:201 Relational Patterns in Marriage and Family

5570:101 Personal Health

5570:202 Stress, Life Style and Your Health

5100:150 Introduction to Professional Education

5100:250 Human Development and Learning

5570:321 Organization and Administration of School Health and School Health Services

5550:495 Student Teaching

**The applicant for any school nurse certificate shall be a holder of a current license to practice as a Registered Nurse in the State of Ohio.

Certification in Dance (K-12)

General Studies

Professional Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3750:100</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>3900:150</td>
<td>Introduction to Professional Education</td>
</tr>
<tr>
<td>5100:250</td>
<td>Human Development of Learning</td>
</tr>
<tr>
<td>5100:310</td>
<td>Educational Media and Technology</td>
</tr>
<tr>
<td>5100:350</td>
<td>Educational Measurement and Evaluation</td>
</tr>
<tr>
<td>5100:450</td>
<td>Problems in Education</td>
</tr>
</tbody>
</table>
To be eligible to take the National Athletic Trainer's Association certification test,
Specific Learning Disabled

- General Education:
  1100:105 Introduction to Public Speaking 3
  1100:106 Effective Oral Communication 3
  1100:111 English Composition 3
  1100:117 English Composition 3
  1100:119 Institutions in the United States 3
  1100:116 Institutions in the United States 3
  1100:250 Western Cultural Traditions 4
  1100:251 Western Cultural Traditions 4
  1100:33x Eastern Civilizations 2
  1100:33x Eastern Civilizations 2
  100:xxx Physical Education 1
  3100:206 Anatomy and Physiology 4
  3100:207 Anatomy and Physiology 4
  3450:xxx Math (for options see adviser)

- Professional Education:
  5100:150 Introduction to Professional Education 3
  5100:250 Human Development and Learning 3
  5100:310 Educational Media and Technology 3
  5100:350 Educational Measurement and Evaluation 2
  5100:450 Problems in Education 2
  5300:210 Principles of Teaching in the Secondary School 3
  5610:452 Student Participation, Specific Learning Disorders 1
  5610:461 Student Teaching: Specific Learning Disorders 14

- Curriculum Content:
  5200:321 Art for the Grades 2
  5200:365 Comprehensive Musicianship for Elementary Classroom Teachers 3
  5200:336 Teaching of Language Arts 4
  5200:337 Teaching of Reading 3
  5550:211 First Aid 2
  5550:345 Adapted Physical Education 3
  5610:459 Communication and Consultation with Parents and Professionals 3
  5610:461 Technology and Materials in Special Education 3
  5610:463 Assessment in Special Education 3
  7700:430 Aspects of Normal Language Development 3

- Specialization:
  5610:440 Developmental Characteristics of Exceptional Individuals 3
  5610:450 Special Education Programming: Early Childhood 3
  5610:451 Special Education Programming: Elementary Level 3
  5610:452 Special Education Programming: Secondary/Vocational 3
  5610:457 Special Education Programming: Orthopedically Handicapped 3
  5610:458 Interdisciplinary Programming in Special Education 3
  5610:465 Neurobehavioral Affects of Physical Disabilities 3

Severe Behavior Handicapped

- General Education:
  1100:105 Introduction to Public Speaking 3
  1100:106 Effective Oral Communication 3
  1100:111 English Composition 4
  1100:117 English Composition 4
  1100:119 Institutions in the United States 3
  1100:116 Institutions in the United States 3
  1100:230 Western Cultural Traditions 4
  1100:231 Western Cultural Traditions 4
  1100:33x Eastern Civilizations 2
  1100:33x Eastern Civilizations 2
  1100:xxx Physical Education 1
  3100:206 Anatomy and Physiology 4
  3100:207 Anatomy and Physiology 4
  3450:xxx Math (for options see adviser) 3

- Professional Education:
  5100:150 Introduction to Professional Education 3
  5100:250 Human Development and Learning 3
  5100:310 Educational Media and Technology 3
  5100:350 Educational Measurement and Evaluation 2
  5100:450 Problems in Education 2
  5300:210 Principles of Teaching in the Secondary School 3
  5610:464 Special Education Programming: Elementary Level 3
  5610:465 Special Education Programming: Secondary/Vocational 3
  5610:467 Special Education Programming: Severe Behavior Handicapped 3

- Curriculum Content:
  5200:321 Art for the Grades 2
  5200:365 Comprehensive Musicianship for Elementary Classroom Teachers 3
  5200:336 Teaching of Language Arts 4
  5200:337 Teaching of Reading 3
  5550:211 First Aid 2
  5550:345 Adapted Physical Education 3
  5610:459 Communication and Consultation with Parents and Professionals 3
  5610:461 Technology and Materials in Special Education 3
  5610:463 Assessment in Special Education 3
  7700:430 Aspects of Normal Language Development 3

Orthopedically Handicapped

- General Education:
  1100:105 Introduction to Public Speaking 3
  1100:106 Effective Oral Communication 3
  1100:111 English Composition 4
  1100:117 English Composition 4
  1100:119 Institutions in the United States 3
  1100:116 Institutions in the United States 3
  1100:230 Western Cultural Traditions 4
  1100:231 Western Cultural Traditions 4
  1100:33x Eastern Civilizations 2
  1100:33x Eastern Civilizations 2
  1100:xxx Physical Education 1
  3100:206 Anatomy and Physiology 4
  3100:207 Anatomy and Physiology 4
  3450:xxx Math (for options see adviser) 3

- Professional Education:
  5100:150 Introduction to Professional Education 3
  5100:250 Human Development and Learning 3
  5100:310 Educational Media and Technology 3
  5100:350 Educational Measurement and Evaluation 2
  5100:450 Problems in Education 2
  5300:210 Principles of Teaching in the Secondary School 3
  5610:464 Special Education Programming: Elementary Level 3
  5610:465 Special Education Programming: Secondary/Vocational 3
  5610:467 Special Education Programming: Severe Behavior Handicapped 3

- Curriculum Content:
  5200:321 Art for the Grades 2
  5200:365 Comprehensive Musicianship for Elementary Classroom Teachers 3
  5200:336 Teaching of Language Arts 4
  5200:337 Teaching of Reading 3
  5550:211 First Aid 2
  5550:345 Adapted Physical Education 3
  5610:459 Communication and Consultation with Parents and Professionals 3
  5610:461 Technology and Materials in Special Education 3
  5610:463 Assessment in Special Education 3
  7700:430 Aspects of Normal Language Development 3

Multihandicapped

- General Education:
  1100:105 Introduction to Public Speaking 3
  1100:106 Effective Oral Communication 3
  1100:111 English Composition 4
  1100:117 English Composition 4
  1100:119 Institutions in the United States 3
  1100:116 Institutions in the United States 3
  1100:230 Western Cultural Traditions 4
  1100:231 Western Cultural Traditions 4
  1100:33x Eastern Civilizations 2
  1100:33x Eastern Civilizations 2
  1100:xxx Physical Education 1
  3100:206 Anatomy and Physiology 4
  3100:207 Anatomy and Physiology 4
  3450:xxx Math (for options see adviser) 3

*Select two of these with consultation from adviser.
• Professional Education:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:150</td>
<td>Introduction to Professional Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:250</td>
<td>Human Development and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:310</td>
<td>Educational Media and Technology</td>
<td>3</td>
</tr>
<tr>
<td>5100:350</td>
<td>Educational Measurement and Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>5100:450</td>
<td>Problems in Education</td>
<td>2</td>
</tr>
<tr>
<td>5300:210</td>
<td>Principles of Teaching in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>5610:205</td>
<td>Student Participation: Multihandicapped</td>
<td>1</td>
</tr>
<tr>
<td>5610:403</td>
<td>Senior Seminar: Special Education</td>
<td>2</td>
</tr>
<tr>
<td>5610:484</td>
<td>Student Teaching: Multihandicapped</td>
<td>14</td>
</tr>
</tbody>
</table>

• Curriculum Content:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5200:321</td>
<td>Art for the Grades</td>
<td>2</td>
</tr>
<tr>
<td>5200:365</td>
<td>Comprehensive Musicianship for the Elementary Classroom Teacher</td>
<td>3</td>
</tr>
<tr>
<td>5200:537</td>
<td>Teaching of Reading</td>
<td>3</td>
</tr>
<tr>
<td>5550:211</td>
<td>First Aid</td>
<td>2</td>
</tr>
<tr>
<td>5550:345</td>
<td>Adapted Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>5610:459</td>
<td>Communication and Consultation with Parents and Professionals</td>
<td>3</td>
</tr>
<tr>
<td>5610:461</td>
<td>Technology and Materials in Special Education</td>
<td>3</td>
</tr>
<tr>
<td>5610:463</td>
<td>Assessment in Special Education</td>
<td>3</td>
</tr>
<tr>
<td>5610:467</td>
<td>Classroom Behavior Management</td>
<td>3</td>
</tr>
<tr>
<td>5610:470</td>
<td>Clinical Practicum in Special Education</td>
<td>3</td>
</tr>
<tr>
<td>7700:211</td>
<td>Language of Signs I</td>
<td>3</td>
</tr>
<tr>
<td>7700:430</td>
<td>Aspects of Normal Language Development</td>
<td>3</td>
</tr>
<tr>
<td>7700:483</td>
<td>Communicative Disorders in the Developmentally Disabled</td>
<td>4</td>
</tr>
</tbody>
</table>

• Specialization:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5610:440</td>
<td>Developmental Characteristics of Exceptional Individuals</td>
<td>3</td>
</tr>
<tr>
<td>5610:444</td>
<td>Developmental Characteristics of the Mentally Retarded</td>
<td>4</td>
</tr>
<tr>
<td>5610:450</td>
<td>Special Education Programming: Early Childhood</td>
<td>3</td>
</tr>
<tr>
<td>5610:452</td>
<td>Special Education Programming: Secondary/Vocational</td>
<td>3</td>
</tr>
<tr>
<td>5610:454</td>
<td>Special Education Programming: Multihandicapped</td>
<td>3</td>
</tr>
<tr>
<td>5610:458</td>
<td>Interdisciplinary Programming in Special Education</td>
<td>3</td>
</tr>
<tr>
<td>5610:465</td>
<td>Neuromotor Aspects of Physical Disabilities</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

All students pursuing teacher education programs at The University of Akron are subject to the selective admission and retention requirements. Criteria and procedures are available in the Office of Academic Services, Zuck Hall, The University of Akron, Akron, OH 44325, phone (216) 375-7681.

Combination Special Education-Elementary Education Program

The addition of 50-68 special education credits, including student teaching, to the standard elementary education degree program will provide the student with certification in the areas of teaching the developmentally handicapped, specifically learning disabled, orthopedically handicapped, severe behavior handicapped or multihandicapped. Selection of this option will require an extended program or post-baccalaureate study.

Special Education as a Secondary Teaching Field

The addition of 57-71 special education credits, including student teaching, to the professional education courses required of secondary teachers may comprise a second teaching field in developmentally handicapped, specifically learning disabled, orthopedically handicapped, severe behavior handicapped or multihandicapped.

Specific details for the above programs with elementary or secondary can be obtained from the Department of Counseling and Special Education.

Speech and Hearing Therapy

Certification in the area of speech and hearing therapy is available to students only as part of a master’s degree. Specific program details can be obtained from the Department of Counseling and Special Education and/or the Department of Communicative Disorders. The following are the professional education certification requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3750:100</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>3750:110</td>
<td>Quantitative Methods in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5100:150</td>
<td>Introduction to Professional Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:250</td>
<td>Human Development and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:450</td>
<td>Problems in Education</td>
<td>2</td>
</tr>
<tr>
<td>5610:440</td>
<td>Developmental Characteristics of Exceptional Individuals</td>
<td>3</td>
</tr>
<tr>
<td>5610:443</td>
<td>Developmental Characteristics of Learning</td>
<td>3</td>
</tr>
<tr>
<td>7700:461</td>
<td>Organization and Administration of Public School</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Speech and Hearing Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Teaching: Speech</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Student Teaching Seminar: Special Education</td>
<td>1</td>
</tr>
</tbody>
</table>
COLLEGE OF BUSINESS ADMINISTRATION

Russell J. Petersen, Ph.D., Dean
Kenneth E. Mast, D.B.A., Associate Dean
E. Lee Wilson, M.B.A./C.M.A., Assistant to the Dean

OBJECTIVES

The College of Business Administration is a professional college of the University that is dedicated to teaching, business research and public service. The college, a member of the American Assembly of Collegiate Schools of Business, the national accrediting agency for colleges of business administration, offers undergraduate and graduate degree programs during the day and evening.

The purpose of the College of Business Administration is to further the objectives of The University of Akron by providing a quality program of collegiate education in business to prepare the student for a professional career in commerce, industry and government. This is to be secured with the following aims:

- To instill in the student competence in the basic functional areas of business enterprise.
- To develop in the student an analytical ability and balanced judgment in the solution of business problems.
- To promote in the student an understanding of human behavior and the impact of social, political and economic forces in the decision-making process.
- To cultivate in the student a facility for the use of management tools of accounting, quantitative techniques and communications.
- To encourage in the student the development of a business code of ethics.
- To foster in the student a desire to continue the pursuit of knowledge and the achievement of excellence in the area of administration.

Additional objectives of the college are: to act as a service division by offering courses in another college; to serve the business community of the state and region by sponsoring conferences, short courses and management development programs; to foster and encourage research in business; to offer graduate instruction and opportunities for research to the student at the master's level; to prepare the student for entering law school; and to prepare the student for advanced research and study in business and economics.

At The University of Akron there has been a long and eventful history of education relating to the field of commerce and industry. Beginning in 1919 courses were offered in the Department of Commerce. Eventually the department became the nucleus of the College of Business Administration, which was established in 1953.

Since its inception, the college curriculum has been designed with equal emphasis on broad basic principles as well as immediate practices. Classroom knowledge is consistently made more significant by field trips and inspection tours to witness business operations.

Similarly, the college maintains a sound balance between education in the arts, humanities and sciences and professional business courses. Half of the courses of study at the undergraduate level are in the areas of liberal arts and sciences; the remaining courses are divided between general business subjects and the student's indicated area of specialization.

COLLEGE REQUIREMENTS

Requirements for Admission

The college will accept the student who has completed sufficient course work to indicate possession of the necessary ability and desire to earn a business administration degree. The number of credits to have been completed will vary from student to student, but will be at least 45 credits with a 2.30 overall grade-point average at the time of acceptance. The following coursework must be included in the 45-hour requirement or equivalent.

- 3450:145 and 3450:215
- a behavioral science course
- 3250:201 or 3250:292
- 6200:201

Enrollment in upper-college business courses is limited to a student who has done the following:

- Applied for transfer to the college.
- Successfully completed at least 60 credits.
- Earned at least a 2.30 overall grade-point average required for acceptance and at least a 2.00 grade-point average in business administration and economics courses.

Transfer of Courses and Advanced Standing

For courses taken outside of the University College or the College of Business Administration to be accepted as part of an approved program of study in lieu of college and departmental requirements, the courses to be transferred must be of an equivalent level. The College of Business Administration will consider the following in granting credit: the content, complexity and grading standards of courses taken elsewhere and the suitability of courses taken elsewhere for the program of study chosen here. A grade of at least "C" must have been earned in pre-business accounting and economics course work for transfer consideration. Subject matter reserved for junior- and senior-level courses in this college will not be transferable through courses taken in any two-year institution. All work transferred may be subject to examination to validate credits.

Degrees and Co-Majors

The College of Business Administration, organized on a departmental basis, offers programs of study in accounting, finance, management, marketing and advertising. A program of study leading to a co-major in international business is also offered. Six baccalaureate degrees are offered: the Bachelor of Science in Accounting, the Bachelor of Science in Business Administration (not current), the Bachelor of Science in Industrial Management, the Bachelor of Science in Business Administration/Financing, the Bachelor of Science in Business Administration/Marketing, and the Bachelor of Science in Business Administration/Advertising. The co-major in international business is available with each degree program.

Requirements for Graduation

To receive a baccalaureate degree from the College of Business Administration, a student must meet the following requirements:

- Complete a minimum of 128 semester credits with a minimum 2.00 grade-point average. Not more than one credit of physical education may be included.
- Obtain at least a 2.00 grade-point average in all courses in the major as well as in all courses in business administration and economics.
- Receive admission to the College of Business Administration and earn at least 15 credits within the college after admission is granted.
- Obtain the recommendation of the department head.
- Complete other University requirements listed in Section 3 of this Bulletin.
- General Studies — 36 credits.
- Complete the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3250:201</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>3250:202</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>6200:201:2</td>
<td>Accounting</td>
<td>8</td>
</tr>
<tr>
<td>3450:145</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>3450:215</td>
<td>Concepts of Calculus</td>
<td>4</td>
</tr>
<tr>
<td>6000:355</td>
<td>Accounting Information Processing</td>
<td>3</td>
</tr>
<tr>
<td>6000:323</td>
<td>Computer Applications for Business</td>
<td>3</td>
</tr>
<tr>
<td>6400:320</td>
<td>Legal Environment of Business</td>
<td>4</td>
</tr>
<tr>
<td>6400:321:2</td>
<td>Business Law I, II</td>
<td>6</td>
</tr>
<tr>
<td>6400:371</td>
<td>Business Finance</td>
<td>3</td>
</tr>
<tr>
<td>6500:301:3</td>
<td>Management, Principles and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>6500:321:2</td>
<td>Quantitative Business Analysis I and II</td>
<td>6</td>
</tr>
<tr>
<td>6500:490</td>
<td>Business Policy</td>
<td>4</td>
</tr>
<tr>
<td>6600:300</td>
<td>Marketing Principles</td>
<td>3</td>
</tr>
<tr>
<td>6800:305</td>
<td>International Business</td>
<td>3</td>
</tr>
</tbody>
</table>

*The business administration requirements from this group are the General Studies courses in public speaking, foreign languages, English, institutions, physical education, natural sciences, and mathematics.

**Accounting majors must take 6200:355. Other majors take 6500:323. Accounting majors may take 6200:321:2 or 6400:320. Other majors may take 6400:320.
Minor Areas of Study
For an explanation of minor areas of study in the College of Business Administration, see Section 5 of this Bulletin.

Cooperative Education Program
A student may voluntarily participate in the University-wide Cooperative Education Program.

The requirements are as follows:
• Attain college admissions status.
• Complete 3250:210.2 and 6200:201.2 with at least a 2.00 grade-point average.
• Apply for participation in the program through the University's director of Cooperative Education.

Three employment experiences are required, with no more than one work period in a summer. The work experience must relate to the business administration area.

Programs of Instruction

6200: Accounting
The functions of accounting are essential to the decision-making process in commerce, industry and government. Because of the important role it plays in economic affairs, accounting has attained the professional status of law and medicine.

The three major fields of employment for accountants are public, private and governmental accounting. Regardless of the areas of concentration, standards, ethics and the mastery of accounting concepts and procedures are essential. An accounting graduate who chooses public accounting may become a senior manager, principal or partner in public accounting firms. A student who chooses an accounting career in private industry may hold the position of accountant, cost accountant, senior accountant, budget director, internal auditor, treasurer or controller. Federal, state and local governments provide a wide variety of job opportunities at the professional level for well-educated accountants. There are exceptional opportunities for professional advancement regardless of the type of institution a graduate may choose.

The accounting curriculum is designed to prepare the student for professional service, including setting for the uniform certified public accounting examination and other professional accounting examinations and to prepare the student to undertake advanced study. To receive the Bachelor of Science in Accounting degree, a student must complete the college requirements and the following school requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:301 Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>6200:317 Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>6200:318 Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>6200:430 Advanced Accounting</td>
<td>4</td>
</tr>
<tr>
<td>6200:430 Taxation I</td>
<td>4</td>
</tr>
<tr>
<td>6200:440 Auditing</td>
<td>4</td>
</tr>
<tr>
<td>6200:454 Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>6200:460 Advanced Managerial Accounting</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition to the required accounting courses listed above, a student may count not more than three additional accounting (6200) credits toward the 128 credits required for the degree Bachelor of Science in Accounting.

Communication skills are vital, so a major is urged to take 3300:275, Specialized Writing in Business and to participate in the Student Toastmasters organization. Because of the increasing demand for accountants with a knowledge of computer usage, additional courses in mathematics and computer science are strongly recommended. A major preparing for an industrial accounting career should take electives in management.

6400: Finance
Courses in the Department of Finance are designed to develop a student's ability to gather, organize, analyze and utilize financial data. This requires that the student be familiar with the institutional setting in which firms operate, and, within this framework, they must understand the present state of financial theory, its uses and limitations. When a student majors in finance, the goal is not a specific entry job but rather a state of readiness to provide flexible response to new areas of opportunities in the financial area.

Career opportunities exist in three major fields. The financial management of non-financial institutions area offers employment in profit as well as nonprofit firms where the emphasis is on the uses and sources of financial funds. The area of management of financial institutions offers opportunities to those who choose careers in commercial banking and other credit-granting institutions. Those interested in investments management find opportunities with brokerage firms and specialized departments in many financial as well as non-financial organizations. In most cases it is not possible to select direct entry at a level one desires; on-the-job training is required in allied fields. It is for this reason our suggested preparation is broad in scope.

The finance major must complete four required major courses with an average grade of C over the four courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6400:338 Financial Intermediaries</td>
<td>3</td>
</tr>
<tr>
<td>6400:343 Investments</td>
<td>3</td>
</tr>
<tr>
<td>6400:479 Advanced Business Finance</td>
<td>3</td>
</tr>
<tr>
<td>6400:373 Financial Statement Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

The finance major must also select at least four elective courses (two must be 6400 courses) totaling at least 12 credits from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6400:400 Real Estate Principles A Value Approach</td>
<td>3</td>
</tr>
<tr>
<td>6400:401 Real Estate Investment</td>
<td>3</td>
</tr>
<tr>
<td>6400:402 Income Property Appraisal</td>
<td>3</td>
</tr>
<tr>
<td>6400:403 Real Estate Finance</td>
<td>3</td>
</tr>
<tr>
<td>6400:410 Risk Management, Insurance</td>
<td>3</td>
</tr>
<tr>
<td>6400:351 Financial Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>6400:417 Life and Health Insurance</td>
<td>3</td>
</tr>
<tr>
<td>6400:419 Property and Liability Insurance</td>
<td>3</td>
</tr>
<tr>
<td>6400:432 Personal Financial Planning</td>
<td>3</td>
</tr>
<tr>
<td>6400:436 Commercial Bank Management</td>
<td>3</td>
</tr>
<tr>
<td>6400:447 Security Analysis</td>
<td>3</td>
</tr>
<tr>
<td>6400:475 Commercial and Consumer Credit Management</td>
<td>3</td>
</tr>
<tr>
<td>6400:481 International Business Finance</td>
<td>3</td>
</tr>
<tr>
<td>6400:487 Honors Project</td>
<td>3</td>
</tr>
<tr>
<td>6200:301 Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>6200:318 Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>6200:460 Controversial Problems</td>
<td>3</td>
</tr>
<tr>
<td>6200:340 Taxation I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits for a finance major — eight courses with 24 to 27 credit hours minimum depending on how many four credit courses taken.

6500: Management
The University of Akron was one of the first institutions of higher learning to establish an industrial management curriculum. Important factors in the decision to establish such a program were the location of the University in a major industrial area and the recognition of an emerging educational need.

The emphasis on education for management is the result of several factors. First, managers are becoming increasingly aware that a professional approach to management requires understanding of quantitative methods, the behavioral sciences and the use of computers. Second, the management task is becoming much more complex in terms of the number of activities, volume of work and the broader impact of managerial decisions. Third, the practice of management in any setting requires a measure of specific preparation and qualification.

Events of the past several years have brought about a rapid and sweeping change in the business and industry of our society. The major in industrial management reflects the complex directional problems of firms involved in manufacturing and/or service. The curriculum is designed to provide the student with a solid foundation in management. It also allows the student to emphasize one area of study by pursuing one of the management options.

The graduate with an industrial management degree finds many employment opportunities with firms in staff, supervisory and other management positions. The graduate possesses, in addition, the required basic understating for effect­ively managing facilities, equipment and personnel in a variety of activities such as transportation, warehousing, research or institutional management. Also, the graduate has the fundamental preparation to undertake advanced study leading to a master's degree.

To receive the Bachelor of Science in Industrial Management with a major in management, a student must complete the college requirements, the common departmental requirements, and an option. The common departmental requirements are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:331 Production and Systems Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:332 Production and Operational Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:341 Personnel Management</td>
<td>3</td>
</tr>
</tbody>
</table>

And one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:471 Management Problems I</td>
<td>3</td>
</tr>
<tr>
<td>6500:472 Management Problems-Production</td>
<td>3</td>
</tr>
<tr>
<td>6500:473 Management Problems-Personnel</td>
<td>3</td>
</tr>
</tbody>
</table>

The student, then, must select one of the options listed below.

*If 6200:317 is selected, the student must complete 318 as a finance major elective. See accounting major for prerequisite for 6200:317 and 318.
The University of Akron

Production Option

6500.433 Business Operational Planning 3
6500.434 Production Planning and Control 3
6500.435 Quality Control 3

Personnel Option

6500.342 Labor Relations 3
6500.442 Compensation Management 3
6500.443 Advanced Personnel Management 3

Quality Management Option

6500.435 Quality Control 3
6500.436 Advanced Quality Control Applications 3
6500.438 Product Quality Engineering Techniques 3

Information Systems Management Option

6500.324 Data Management for Information Systems 3
6500.325 Analysis and Design of Information Systems 2
6500.425 Decision Support Systems 3

Materials Management Option

(Join Program with the Marketing Department)
6600.320 Physical Distribution 3
6600.332 Purchasing 3
6600.434 Production Planning and Control 3
6500.435 Quality Control 3

Industrial Accounting Emphasis

The industrial accounting emphasis, jointly administered by the School of Accounting and the Department of Management, is designed to benefit the student who may wish to pursue a career in the field of accounting but does not wish to become a CPA. The industrial accounting emphasis is a production option with added emphasis in accounting. The courses selected are those which will furnish the student with a background in the operational management of production activities as well as in the accounting and budgeting procedures utilized in the control of these activities. The curriculum leads to the Bachelor of Science in Industrial Management degree.

The student selecting the industrial accounting emphasis must successfully complete the core requirements and the following courses:

6200.301 Cost Accounting 3
6200.355 Accounting Information Processing 3
6500.323 Introduction to Computer Applications for Business 3
6200.480 Advanced Managerial Accounting 3
6200.331 Production and Systems Management 3
6500.332 Production and Operational Management 3
6500.341 Personnel Management 3
6500.433 Business Operational Planning 3
6500.434 Production Planning and Control 3
6500.435 Quality Control 3

Recommended electives:
6200.317 Intermediate Accounting I 4
6200.318 Intermediate Accounting II 4

6600: Marketing

Two distinct degree programs are housed in the Department of Marketing — the Bachelor of Science in Business Administration / Marketing and the Bachelor of Science in Business Administration / Advertising.

Marketing

The chief marketing executive in the firm is responsible for sustaining customer acceptance of the firm's products and services; for finding new opportunities for the firm through the development of new and improved products and services; for effective advertising and other communications programs; for efficient physical distribution of the firm's products and services so that they are accessible to present and prospective users; and for pricing of the firm's offerings. The marketing executive is also responsible for organizing the various functions involved in the marketing effort. The executive attempts to allocate the resources of the firm for maximum impact in the markets where the executive feels are most profitable in order to provide the firm with a high and continuing flow of money income.

The marketing curriculum is designed to provide the student with the basic understanding and insight required for the successful performance and management of the marketing activities of either profit-making or non-profit organizations. It is also organized to provide the student who has an interest in a specific area of marketing study with alternative approaches to marketing knowledge by means of six specific marketing tracks and one general marketing studies option. The marketing tracks are:

1. Industrial and Organizational Sales
2. Retail Management
3. Marketing Communications
4. Physical Distribution
5. Business Market Management
6. Marketing Research

The general marketing studies option allows the student to tailor the curriculum to individual needs, to engage in an exploratory study which will provide the basis for future study, to facilitate access to a wider range of entry-level employment opportunities or to enable the student to relate the curriculum to the needs of a small or family business.

To receive a Bachelor of Science in Business Administration / Marketing the student must successfully complete 21 credits in one of the five marketing tracks or the general marketing option as follows:

Industrial and Organizational Sales

Required:
6600.360 Business Marketing Management 3
6600.370 Purchasing 3
6600.380 Sales Management 3
6600.460 Marketing Research 3

Electives:
6600.390 Physical Distribution 3
6600.395 Applications in Retail Merchandising 3
6600.400 Strategic Retail Management 3

Retail Management Track

Required:
6600.310 Buyer Behavior 3
6600.340 Principles of Retailing 3
6600.390 Management of Marketing Channels 3
6600.395 Applications in Retail Merchandising 3
6600.400 Strategic Retail Management 3

Electives: (select two)
6600.350 Advertising and Marketing Communications 3
6600.375 Professional Selling 3
6600.425 Advertising Research and Evaluation 3
6600.460 Marketing Research 3

International Marketing Track

Required:
6600.385 International Marketing 3
6600.460 Marketing Research 3
6600.405 Multinational Corporations 3

Electives:
3250.450 Comparative Economic Systems 3
3250.461 Principles of International Economics 3
6600.310 Buyer Behavior 3
6600.465 Forecasting and Quantitative Methods in Marketing 3

Not more than one course to be selected from this group:
6600.320 Physical Distribution 3
6600.390 Management of Marketing Channels 3
6600.440 Product Planning 3

A moderate fluency in a foreign language is strongly recommended.

Marketing Communications Track

Required:
6600.310 Buyer Behavior 3
6600.330 Advertising and Marketing Communications 3
6600.350 Professional Campaigns 3
6600.460 Marketing Research 3

Electives: (select three)
6600.340 Principles of Publicity 3
6600.375 Professional Selling 3
6600.380 Sales Management 3
6600.425 Advertising Research and Evaluation 3
6600.440 Product Planning 3

Physical Distribution Track

Required:
6600.320 Physical Distribution 3
6600.390 Management of Marketing Channels 3
6600.420 Logistics Systems Analysis 3
6600.460 Marketing Research 3

Electives: (select three)
6600.360 Physical Distribution 3
6600.370 Purchasing 3
6600.385 International Marketing 3
6600.440 Product Planning 3
6600.465 Forecasting and Quantitative Methods in Marketing 3

General Marketing Studies Option

Any 18 credits from the 6600 listings including one departmental requirement of 6600.460 Marketing Research will complete the general marketing studies option.

To further guide the student, the department has available a brochure detailing the program, career opportunities and electives from other colleges and departments recommended for and tailored to each of the tracks.
Advertising majors can obtain advertising positions with manufacturers, retailers, advertising agencies, advertising specialty houses such as a market research firm or with an advertising vehicle such as a radio station, newspaper or magazine. Some of the more common advertising positions include media buyer, media planner, media supervisor, accounts manager, art director, copywriter and creative director. Advanced career paths in the advertising field would involve management of the above mentioned advertising positions.

This degree shall consist of a minimum of 37 semester credit hours of General Studies courses, 29 semester credit hours of Pre-Business courses, (7 credit hours from General Studies are double counted in Pre-Business), 29 semester credit hours in the College of Business Administration Core, 18 semester credit hours of the Advertising Major Core, 12 semester credit hours from the Advertising Major Electives, plus free electives needed to complete the minimum 128 semester credit hours necessary for graduation from the University.

Advertising majors must satisfy the University social science requirements and the College of Business Administration Behavioral Science requirements as follows:

- Core (18 hours)
  - 3870.150 Cultural Anthropology 3
  - 3850.100 Introduction to Sociology 3
  - 6600.310 Buyer Behavior 3

- Electives
  - 3250.201 Principles of Macroeconomics 3
  - 3870.150 Cultural Anthropology 3
  - 3850.100 Introduction to Sociology and
  - 6600.310 Buyer Behavior

In addition to the 18 semester credit hours in the advertising major core, the student must take an additional 12 credit hours to be selected by the student from a list of prescribed major electives.

The grouping of electives suggests that the student may pursue some specific area of interest. However, courses in the form of specific tracks are not required.

### Graphics

- 7100.286 Commercial Design Theory 3
- 7100.288 Letterform and Typography 3
- 7100.387 Advertising Layout Design 3
- 7100.388 Advertising Production Design 3

### Writing

- 3300.279 Script Writing 3
- 3350.380 Professional Writing 3
- 7600.303 Publicity Writing 3
- 7600.387 Radio and TV Writing 3

### Media

- 7600.282 Radio Production 3
- 7600.283 Television Production 3
- 7600.309 Publications Production 3
- 7600.364 Mass Media Communications Research 3

### Advertising Management

- 6600.346 Retail Management 3
- 6600.360 Retail Marketing Management 3
- 6600.376 Professional Selling 3
- 6600.440 Product Planning 3
- 7600.403 Communication in Public Relations 3
- 7600.486 Broadcast Sales and Management 3

### General

- 7600.102 Survey of Mass Communications 3
- 7600.439 Independent Study, Communications 1-3
- 6800.499 Independent Study: Marketing 1-3
- 3300.389 Popular Culture 3

### 6800: International Business

Opportunities in international business are very good, especially after entering an organization through a functional discipline and positioning oneself for promotion to within. The global competitiveness of American enterprises is greatly hindered by the lack of executives capable of mastering international business complexities.

The desirability of an international business major has been pronounced both from businesses and students alike. However, current market conditions suggest that a double or co-major in international business should be completed concurrently with a traditional major in a functional area (accounting, finance, management, marketing).

Thus, in addition to the international business co-major requirements, the student electing to pursue the international business program must also have a) 39 credit hours of general studies (by satisfying social science requirements via options), b) 28* credit hours of pre-business studies and c) 26 credit hours of BCA core studies, and d) 16-20 hours of one functional discipline or major. A CBA student must complete a minimum of 126 credit hours. The international business co-major will exceed the minimum 128 credits by as little as one credit, and by as many as 22 credits (assumes satisfaction of the language requirement via completion of 101, 102, 201, 202 or 203 and bypass credits).

The international business co-major will have two basic components: (1) coursework related to an area specialization (3 credits), and (2) coursework related to an area specialization (3 credits), and language requirement (14 credits), for a total of 35 credit hours. With respect to the first component, the student pursuing a co-major in international business must take:

- 3250.461 Principles of International Economics 3
- 6800.405 Multinational Corporations 3
- 6800.421 International Business Practices 3
- 6800.460 International Business Research 3

Six credit hours from the following electives:

- 6400.323 International Business Law 3
- 6400.481 International Business Finance 3
- 6500.457 International Management 3
- 6800.386 International Marketing 3

With respect to the second component, the student must take three credit hours from an area specialization and 14 credit hours as a language requirement. The language requirement must be consistent with the area specialization (example: if the area specialization is Latin America, the language requirement should be Spanish or Portuguese). If the student is already fluent in a foreign language appropriate for an area specialization, that ability will be shown by demonstrating equivalent competence through a test approved by the Department of Modern Languages.

There are three area specializations: Asia, Europe and Latin America.

For area specialization in Asia, the required course is 3350.360, (3 credits). For area specialization in Europe, the required course is 3350.356, (3 credits). For area specialization in Latin America, the required course is 3350.353, (3 credits).

For students with no demonstrated language proficiency in French or German, students must complete as a minimum either Beginning and Intermediate French (3250.101, 2 and 201.2, 14 credits) or Beginning and Intermediate German (3350.101, 2 and 201.2, 14 credits).

For area specialization in Latin America, the required course is 3350.353, (3 credits). For students with no demonstrated appropriate Latin American language skills, students must complete as a minimum Beginning and Intermediate Spanish (3580.101, 2 and 201.2, 14 credits).

A 2.0 or better grade point average is required in all coursework designated as satisfying the language requirement, including any transfer coursework.

For a student pursuing the International Business co-major, the student must satisfy all requirements for admission to the CBA as well as all requirements for graduation including at least a 2.0 grade point average in the requirements for the international business co-major.

*9 credits of General Studies requirements are double counted; therefore 19 net additional credits are required.

Students who satisfy the language requirement by successfully completing the 201 (or higher numbered) course of an appropriate language may reduce the actual number of credits taken by 11. Those credits would be accounted for through bypass credits received from successfully completing 202 (or higher numbered course). Students who satisfy the foreign language requirement by a test approved by the Department of Modern Languages may reduce the total number of credits needed by 14. In some instances, a course selected to fulfill credits for the co-major may be reduced by a corresponding number of credits if the student satisfies all course requirements for the functional major and the International Business co-major in less than 128 credits; the difference in credits must be satisfied with free elective credits.
College of Fine and Applied Arts

Wallace T. Williams, Ph.D., Dean
Donald E. Hall, Ph.D., Associate Dean
Linda Moore, Ph.D., Associate Dean

OBJECTIVES
The purpose of the College of Fine and Applied Arts is to further the objectives of the University by providing a quality program of undergraduate and graduate education with artistic, technological, clinical performance, research and studio experience in the fine and humane arts, as well as:

- To maintain curricula for the preparation of a student majoring in these areas.
- To prepare a student for graduate study and career opportunities on a professional competence level.
- To provide instruction designed to meet specific curricular needs of all the colleges of the University.
- To serve the elective interests of the student seeking diversity, enrichment in academic programs.
- To encourage the development of technical knowledge and professional skills which underlie the communicative functions of human expression.
- To nurture and expand, through this congregation of the arts, not only a knowledge of man’s creative and cultural heritage but also a perceptual and aesthetic awareness of direct sensory experience through creation and performance.

The college recommends each student for the appropriate bachelor’s or master’s degree in accordance with the student’s specialization.

COLLEGE REQUIREMENTS

Requirements for Admission
To be admitted to the College of Fine and Applied Arts, the student must have completed at least 30 credits of work with a grade-point average of 2.00 or above and have the approval of the dean. A student transferring to the Department of Art from another institution must submit a portfolio of work for approval before admission. A student transferring from another college or institution into the music program must submit to a placement examination. The longer and more professionally oriented programs should be started during the first or second year when the student is still under the guidance of the Office of Academic Advising. The shorter majors need not be declared before the student is ready for transfer to the college. At the time of admission to the college, the student is assigned an adviser by the department head.

Requirements for Baccalaureate Degrees

- Compliance with University requirements, Section 3 of this Bulletin.
- Completion of a major program of instruction (see below).
- Electives consisting of courses offered for credit in the University’s four-year degree programs, provided that the prerequisites as set forth in this Bulletin are met, and further provided that not more than two credits of physical education activities, eight credits of applied music or four credits of music organizations are included. (Credit limitations on applied music and music organizations do not apply to the Bachelor of Music degree.) While credits from another institution or college may be accepted, application toward graduation will depend upon the nature of the student’s program of study.
- The recommendation of the head of the student’s major department.
- Demonstrated ability to use English. One other language may be required depending upon the degree program.

Degrees
The following baccalaureate degrees are granted in the College of Fine and Applied Arts:

- Bachelor of Arts
- Bachelor of Arts in Business and Organizational Communication
- Bachelor of Arts in Communication and Rhetoric
- Bachelor of Arts in Communication and Science
- Bachelor of Arts in Health Science
- Bachelor of Arts in Social Work
- Bachelor of Music
- Bachelor of Science in Exercise Science
- Bachelor of Science in Health Science
- Bachelor of Science in Physical Therapy
- Bachelor of Science in Social Work
- Bachelor of Science in Music Education
- Bachelor of Science in Exercise Science
- Bachelor of Science in Health Science
- Bachelor of Science in Physical Therapy
- Bachelor of Science in Social Work
- Bachelor of Science in Music Education

Graduation Requirements
A student must earn a major in a department of the college. A major consists of 24 to 62 credits in addition to the required General Studies and, in the case of the Bachelor of Arts degree, foreign language courses. Part or all of these credits may be taken in specifically required courses depending upon the major.

The exact requirements for each major will be found on the following pages in the section headed "Program of Instruction."

Minor Areas of Study
For an explanation of minor areas of study in the College of Fine and Applied Arts, see Section 5 of this Bulletin.

PROGRAMS OF INSTRUCTION

7100: Art

Bachelor of Arts
- General Studies and completion of a second year of a foreign language — 53 credits.
- Completion of studio art or history of art option.
- Electives — 23-25 credits.
- Studio Art Option
  - General studies and completion of a second year of a foreign language or the following courses in American Sign Language — 53 credits.
  - 2210:104 Sign Language, Gesture, and Mime — 3 credits.
  - 7700:100 Manual Communication I — 5 credits.
  - 7700:120 Introduction to Audiology/Aural Rehabilitation — 3 credits.
  - 7700:277 Language of Signs I — 9 credits.
  - Studio art coursework including one course in each of six different areas of emphasis: e.g., printmaking, sculpture — 41 credits.
  - Survey of History of Art I and II (7100:100) plus one additional advanced-level art history course — 11 credits.

History of Art Option
- History of art including one history of art seminar, one special problems in history of art course and one special topics in history of art course 7100:100, 1 Survey of History of Art (eight credits) included — 38 credits.
- Studio art course work to include at least four different areas of emphasis: e.g., painting, photography (7100:275 recommended) — 12 credits.

Bachelor of Fine Arts
- General Studies — 39 credits.
- Foundations Curriculum in Art
  - 7100:10A Survey of History of Art II — 4 credits.
  - 7100:121 Three-Dimensional Design — 3 credits.
  - 7100:131 Introduction to Drawing — 3 credits.
  - 7100:144 Two-Dimensional Design — 3 credits.
  - 7100:276 Commercial Design Theory (for graphic design major) — 3 credits.
  - 7100:273 Life Drawing — 3 credits.
- Electives — 6-9 credits.
- Two advanced-level art history courses (one in graphic design, three credits).
- Senior exhibition: Student must secure a faculty adviser in the major during the first week of the semester the student plans a senior show. The exhibition must be approved by the adviser prior to presentation.
- Portfolio review as specified for student’s area of emphasis.
- Studio art courses must include one area of major emphasis as described below, plus studio electives to equal no less than 66 credits.

Bachelor of Music
- General Studies — 39 credits.
- Major Area Requirements
  - 12 credits.
  - Two advanced-level art history courses (one in graphic design, three credits).
- Senior exhibition: Student must secure a faculty adviser in the major during the first week of the semester the student plans a senior show. The exhibition must be approved by the adviser prior to presentation.
- Portfolio review as specified for student’s area of emphasis.
- Studio art courses must include one area of major emphasis as described below, plus studio electives to equal no less than 66 credits.

Bachelor of Science in Exercise Science
- General Studies — 39 credits.
- Major Area Requirements
  - 12 credits.
  - Two advanced-level art history courses (one in graphic design, three credits).
- Senior exhibition: Student must secure a faculty adviser in the major during the first week of the semester the student plans a senior show. The exhibition must be approved by the adviser prior to presentation.
- Portfolio review as specified for student’s area of emphasis.
- Studio art courses must include one area of major emphasis as described below, plus studio electives to equal no less than 66 credits.

Bachelor of Science in Health Science
- General Studies — 39 credits.
- Major Area Requirements
  - 12 credits.
  - Two advanced-level art history courses (one in graphic design, three credits).
- Senior exhibition: Student must secure a faculty adviser in the major during the first week of the semester the student plans a senior show. The exhibition must be approved by the adviser prior to presentation.
- Portfolio review as specified for student’s area of emphasis.
- Studio art courses must include one area of major emphasis as described below, plus studio electives to equal no less than 66 credits.

Bachelor of Science in Physical Therapy
- General Studies — 39 credits.
- Major Area Requirements
  - 12 credits.
  - Two advanced-level art history courses (one in graphic design, three credits).
- Senior exhibition: Student must secure a faculty adviser in the major during the first week of the semester the student plans a senior show. The exhibition must be approved by the adviser prior to presentation.
- Portfolio review as specified for student’s area of emphasis.
- Studio art courses must include one area of major emphasis as described below, plus studio electives to equal no less than 66 credits.

Bachelor of Science in Social Work
- General Studies — 39 credits.
- Major Area Requirements
  - 12 credits.
  - Two advanced-level art history courses (one in graphic design, three credits).
- Senior exhibition: Student must secure a faculty adviser in the major during the first week of the semester the student plans a senior show. The exhibition must be approved by the adviser prior to presentation.
- Portfolio review as specified for student’s area of emphasis.
- Studio art courses must include one area of major emphasis as described below, plus studio electives to equal no less than 66 credits.
Ceramics
7100.222 Introduction to Sculpture 3
7100.231 Drawing I 3
7100.254 Ceramics I 3
7100.354 Ceramics II 3
7100.454 Advanced Ceramics (to be repeated) 15

Crafts
A maximum of 36 credits in the craft areas of ceramics, fibers, metalsmithing and enameling to include at least nine credits in three of these areas.
7100.221 Design Applications 3

Drawing
7100.231 Introduction to Drawing 3
7100.232 Drawing II 3
7100.491 Architectural Presentations I or II 3
7100.283 Drawing Techniques 3
7100.231 Drawing III 3
7100.333 Advanced Life Drawing (to be repeated)* 6
7100.431 Drawing IV (to be repeated)* 6
7100. — Printmaking 3

Graphic Design
7100.022 Introduction to Commercial Photography 3
7100.131 Introduction to Drawing 3
7100.132 Instrument Drawing 3
7100.184 Introduction to Graphic Design 3
7100.291 Drawing II 3
7100.275 Introduction to Photography 3
7100.283 Drawing Techniques 3
7100.288 Letterform and Typography 3
7100.386 Packaging Design 3
7100.387 Advertising Layout Design 3
7100.388 Advertising Production and Design 3
7100.480 Advanced Graphic Design (may be repeated to 12 credits) 12
7100.482 Corporate Identity and Graphic Systems 3
7100.484 Illustration 3
7100.485 Advanced Illustration (may be repeated to nine credits) 3
7100.488 Publication Design 3

Metalworking
3900.227 Introduction to Sculpture 3
3900.222 Metalworking II 3
3900.266 Introduction to Metalworking 3
3900.268 Color in Metals 3
3900.283 Drawing Techniques 3
3900.366 Metalworking III 3
3900.466 Advanced Metalworking (to be repeated) 12

Painting
7100.131 Introduction to Drawing 3
7100.144 Two Dimensional Design 3
7100.231 Drawing II 3
7100.245 Introduction to Polymer Acrylic Painting 3
7100.246 Introduction to Watercolor Painting 3
7100.247 Painting I (to be repeated in different media) 3
7100.449 Advanced Painting (to be repeated) 6

Photography
2240.122 Introduction to Commercial Photography 3
2240.137 Light 3
7100. — Printmaking 3
7100.231 Drawing II 3
7100.275 Introduction to Photography 3
7100.306 Art since 1945 3
7100.375 Photography II 3
7100.475 Advanced Photography (to be repeated) 12

Printmaking
7100.131 Introduction to Drawing 3
7100.144 Two Dimensional Design 3
7100.213 Introduction to Lithography 3
7100.214 Introduction to Screen Printing 3
7100.215 Introduction to Linocut 3
7100.216 Introduction to Intaglio Printing 3
7100.231 Drawing II 3
Two of the following:
7100.275 Introduction to Photography 3
7100.375 Photography II 3
7100.317 Printmaking II (may be repeated) 3
7100.418 Advanced Printmaking (may be repeated) 3
One of the following:
7100.245 Introduction to Acrylic Painting 3
7100.246 Introduction to Watercolor Painting 3
7100.247 Introduction to Oil Painting 3

Sculpture
7100.221 Design Applications 3
7100.222 Introduction to Sculpture 3
7100.231 Drawing I 3
7100.254 Introduction to Ceramics 3
7100.266 Introduction to Metallurgy 3

Art Education
A student wishing state teachers certification has several degree options: further information can be obtained from the department and in the College of Education.

7400: Home Economics and Family Ecology*
The mission of the School of Home Economics and Family Ecology is to prepare professionals to take leadership positions as generalists and specialists in the areas of home economics. These include dietetics, family and child development, child life, foods and nutrition, clothing, textiles and interiors and vocational home economics education. Graduates are employed in public and private sectors in retailing, health and human services, dietetics, nutrition education and counseling, and interior design, child care in hospital and community settings, food product development and food service administration.
- General Studies — 39 credits.
- Home Economics and Family Ecology Core:

7400.147 Orientation to Professional Studies in Home Economics & Family Ecology
7400.447 Senior Seminar: Critical Issues in Professional Development

One course to be chosen from each of the following divisions across the area of specialization:
- Clothing, Textiles and Interiors:

7400.121 Textiles 3
7400.159 Family Clothing 3
7400.419 Clothing Communication 3

- Family and Child Development:

7400.201 Family Patterns in Marriage and Family 3
7400.256 Child Development 3

- Foods and Nutrition:

7400.133 Nutrition Fundamentals 3
7400.141 Family Management 3

- Bachelor of Arts in Family and Child Development:

This degree offers the following emphasis: family development, child development, pre-kindergarten teaching certification and child-life specialist. Students interested in pre-kindergarten teaching certification should consult an advisor from the School of Home Economics and Family Ecology during first semester of freshman year. In addition to departmental requirements listed under 7400, Home Economics and Family Ecology, a student must complete one of the following options:

Family Development

7350.100 Introduction to Psychology 3
7350.130 Developmental Psychology 3
7400.250 Fatherhood: The Parent Role 2
7400.301 Consumer Education 3
7400.360 Parent Child Relations 3
7400.390 Family Relationships in Middle and Later Years 3
7400.401 Family Life Patterns in Economically Depressed Home 2
7400.404 Adolescence in the Family Context 3
7400.422 Family Resource Management 3
7400.440 Family Crisis 3
7400.442 Human Sexuality 3
7400.445 Public Policy and The American Family 3
7400.496 Parenting Skills 3
7400.497 Internship: in Family Economics 3
7750.276 Introduction to Social Welfare 4

*The second year of a foreign language is an optional requirement for the School of Home Economics and Family Ecology. Please consult the adviser in the proper degree area for options available.
**The University College's requirement for general studies for the Bachelor of Science in Dietetics and the Bachelor of Arts in Foods and Nutrition is 42 credits. The additional three credits come from the use of 3150.12930 General Chemistry (three credits) to meet the natural science requirement, and from the use of 350.100 Introduction to Sociology (four credits) and 3250.100 Introduction to Economics (three credits) to meet the Social Studies requirement. The above mentioned courses meet American Dietetic Association requirements.
Prescribed for B.S. in dietetics and B.A. in foods and nutrition.
Child-Lite Specialist

- Infant/Toddler Day-Care Programs
- Observing and Recording Child Behavior
- Introduction to Early Childhood
- Issues and Trends in Early Childhood
- Teaching in the Nursery Center
- Nursery Center Laboratory
- Education Technician Field Experience
- Internship in Home Economics
- Early Childhood Nutrition
- Fatherhood: The Parent Role
- Theory and Guidance of Play
- Creative Activities for Pre-Kindergarten Children
- Children's Interests
- Parent-Child Relations
- Family-Life Patterns in Economically Depressed Home
- Assumptions in the Family Context
- Organization and Supervision of Child-Care Centers
- Electives selected in consultation with adviser

Additional Requirements for Pre-K Certificate:

- Human Development and Learning
- Educational Media and Technology
- Student Participation
- Children's Literature
- Multi-Cultural Education: Concepts, Program and Practices
- Student Teaching
- Concepts of Motor Development and Learning
- Special Education Programming: Early Childhood
- Public Policy and the American Family

Child Life Specialist

- Introduction to Psychology
- Medical Terminology
- Psychological Disorders of Children
- Teaching in Nursery School
- Nursery Center Laboratory
- Counseling Problems Related to Life Threatening Illness and Death
- Developmental Characteristics of Exceptional Individuals
- Theory and Guidance of Play
- Creative Activities for Pre-Kindergarten Children
- Adolescence in the Family Context
- The Child in the Hospital
- Practicum: Establishing and Supervising a Child-Life Program Centers
- Internship: Guided Experience in a Child-Life Program Centers
- Internship in Consultation with adviser

Bachelor of Arts in Food Science

In addition to school requirements listed under 7400: Home Economics and Family Ecology, the student must complete the following courses:

- Core
  
  (A minimum grade of C (2.00) required)

- Supporting Discipline Requirements:

- System Management I
- Food Systems Management II
- Computer and Software Fundamentals
- Microprocessors of Microelectronics
- Introduction to Psychology
- Management Principles and Concepts
- Marketing Principles
- Consumer Education
- Science of Nutrition
- Meal Service
- Demonstration Techniques
- Internship in Home Economics and Family Ecology

- Food Science Electives:

- The Food Industry: Analysis and Field Study
- Cultural Dimensions of Food
- Analysis of Food
- Developments in Food Science

- Language or Language Option Requirements:

- General Electives:

Bachelor of Arts in Clothing, Textiles and Interiors

- Core

- Textiles
- Clothing Construction
- Introduction to Interior Design and Home Furnishings
- Clothing Communication
- Historic Costume
- The Fashion Industry
- History of Textiles and Furnishings
- Interior Textiles and Product Analysis

- Electives (Student select five of the following courses, one of which must be from starred (*) courses)

- Family Housing
- Contemporary Needle Arts*
- Professional Image Analysis
- Textile Conservation
- Principles and Practices in Interior Design
- Fair Pattern Design
- Fashion Analysis
- Machine Stitchery*
- Seminars
- Workshops
- Internships, Fashion Retailing or Interior Design

- Business Option

- Consumer Education
- Marketing Principles
- Elements of Distribution
- Accounting I
- Basic Accounting I
- Advertising and Marketing Communications
- Principles of Advertising
- Retail Management
- Retail Fundamentals

- Theatre costume option:

- Two Dimensional Design
- Introduction to Drawing
- Introduction to the Theatre
- Stage Costume Construction
- Stage Costume History and Design
- Stage Costume Design
- Styles in Stage Costume Design
- Electives

Bachelor of Arts (2-1) with C & T College Marketing and Sales Technology

General Information

The Fashion Option student will complete 64 hours in the Community and Technical College and 65-66 hours in the College of Fine and Applied Arts. The Retailing Option student will complete 66 hours in the Community and Technical College and 71 hours in the College of Fine and Applied Arts.

In the first two years the student will be advised by faculty in the Community and Technical College. In the last two years, the student will be advised by the Clothing and Textiles faculty in the Department of Home Economics and Family Ecology, College of Fine and Applied Arts.

Requirements

- The student must receive an Associate Degree in Marketing and Sales Technology, Fashion or Retailing Options, meeting requirements as established by the Community and Technical College.

- For the hours of technical elective open in the associate degree programs, the following are suggested as options to enhance the progression from the associate to the bachelor's program with minimal additional hours.

Fashion Option

- (3 hours of technical electives)

- (9 hours of technical electives)

Retailing Option

- Textiles
- Clothing Construction
- Clothing Communication

- The following courses required for the associate degree programs will be accepted as language alternative for only those students completing both the Associate Degree in Marketing and Sales Technology, Fashion or Retailing Options, and the Bachelor of Arts in Clothing and Textiles, Business Option.
The student must complete all general studies requirements.
The student must complete all home economics and family ecology requirements.

Bachelor of Arts in Clothing, Textiles, and Interiors, Business Option (2-2) with C & T Marketing and Sales Technology, Fashion Option

C&T Requirements

1100 Introduction to Public Speaking 3
1100 Physical Education 1
2020.121 English 4
2040.240 Human Relations 3
2420.247 Survey of Basic Economics 3
2420.101 Elements of Distribution **3
2420.170 Business Mathematics 3
2421.211 Basic Accounting I **3
2420.280 Essentials of Law 3
2520.103 Principles of Advertising 3
2520.106 Visual Promotion 4
2520.202 Retailing Fundamentals **4
2520.210 Consumer Service Fundamentals 2
2520.211 Mathematics of Retail Distribution **3
2520.217 Principles of Salesmanship **4
2540.119 Business English 3
7000.121 Textiles 3
7000.123 Clothing Construction 3
7000.219 Clothing Communication 3

College of Fine and Applied Arts Requirements

• Completion of all requirements for the Associate Degree in Marketing and Sales Technology, Fashion Option, as established by the Community and Technical College, with technical electives taken from a suggested list of courses in the Department of Home Economics and Family Ecology, College of Fine and Applied Arts.
• Completion of remaining General Studies requirements.
• Completion of language alternative: 14 hours of specified course work, completed as a part of the requirements for the Associate Degree, will be accepted as language alternatives for the bachelor's degree (See requirements for Marketing and Sales Technology, Fashion Option).
• Completion of remaining credits in the Department of Home Economics and Family Ecology curriculum.

College of Fine and Applied Arts

College of Fine and Applied Arts

Bachelor of Science in Dietetics

Both the Coordinated Undergraduate Program (CUP) and the Traditional Program lead to a Bachelor of Science degree. The Coordinated Undergraduate Program integrates clinical experiences within the junior and senior years, allowing active membership in the American Dietetic Association and eligibility to take the registration examination following graduation from the four-year program. The traditional program requires an approved pre-professional practice following graduation to become eligible for active membership in the American Dietetic Association and to take the registration examination.

Basic American Dietetic Association Requirements for Coordinated Undergraduate and Traditional Dietetics Programs

Bachelor of Arts in Clothing, Textiles, and Interiors, Business Option (2-2) with C & T Marketing and Sales Technology, Retailing Option

C&T College Requirements

1100 Introduction to Public Speaking 3
1100 Physical Education 1
2020.121 English 4
2040.240 Human Relations **3
2040.247 Survey of Basic Economics 3
2420.101 Elements of Distribution **3
2420.170 Business Mathematics 3
2420.202 Personnel Practices 3
2420.211 Basic Accounting I **3

*Proposed to be accepted as language alternative for the bachelor's degree only for students receiving both the Associate Degree in Marketing and Sales Technology, Fashion Option and the Bachelor of Arts in Clothing, Textiles and Interiors, Business Option.
**Currently accepted as language alternative for the Bachelor of Arts in Clothing, Textiles and Interiors, Business Option.
***Currently accepted as meeting supporting discipline requirements for the Bachelor of Arts in Clothing, Textiles and Interiors, Business Option.
**Completion of one of these courses is encouraged to fulfill the 3 hours of technical elective for the associate degree. The total credit hours for this section, therefore, reflects the completion of three credit hours.
Additional coordinated undergraduate program requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3400:209</td>
<td>Nutrition in Medical Science II</td>
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Bachelor of Science in Dietetics (2+2) with C & T (Restaurant Management)

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tr>
<td>1100.101</td>
<td>Physical Education</td>
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<td>1100.102</td>
<td>Eastern Civilization</td>
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<tr>
<td>1100.103</td>
<td>Introduction to Public Speaking</td>
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<td>1100.104</td>
<td>Effective Oral Communication</td>
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<td>1100.105</td>
<td>English Composition</td>
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<td>1100.200</td>
<td>Western Cultural Traditions</td>
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<td>2020.101</td>
<td>French</td>
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<td>2020.222</td>
<td>Technical Report Writing</td>
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<td>2040.247</td>
<td>Survey of Basic Economics</td>
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<td>2050.203</td>
<td>Safety and Sanitation</td>
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<td>2280.121</td>
<td>Fundamentals of Food Preparation I</td>
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<td>2280.122</td>
<td>Fundamentals of Food Preparation II</td>
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<td>2280.123</td>
<td>Meat Technology</td>
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<td>2280.135</td>
<td>Menu Planning and Purchasing</td>
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<td>2280.232</td>
<td>Dining Room Service and Tailing</td>
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<td>2280.233</td>
<td>Restaurant Operation and Management</td>
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<td>2280.234</td>
<td>Food and Beverage Control</td>
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<td>2280.235</td>
<td>Internship</td>
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<td>2280.240</td>
<td>Systems Management and Personnel</td>
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<td>2280.243</td>
<td>Food Equipment and Plant Operations</td>
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<td>2420.173</td>
<td>Business Mathematics</td>
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<td>2420.211</td>
<td>Basic Accounting I</td>
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<td>2420.212</td>
<td>Basic Accounting II</td>
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<td>2540.267</td>
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<td>2550.103</td>
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<td>3100.130</td>
<td>Principles of Microbiology</td>
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<td>3200.206</td>
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<td>3210.207</td>
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<td>3210.299</td>
<td>General Chemistry I</td>
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<td>3210.300</td>
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<td>3210.203</td>
<td>Nutrition Biochemistry</td>
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<td>3340.204</td>
<td>College Algebra</td>
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<td>3470.251</td>
<td>Descriptive Statistics and Probability</td>
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<td>Distributions</td>
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<td>3570.103</td>
<td>Introduction to Psychology</td>
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<td>3650.100</td>
<td>Introduction to Sociology</td>
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<td>3650.351</td>
<td>Consumer Homemaking Methods</td>
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<td>6550.301</td>
<td>Management: Principles and Concepts</td>
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<td>6000.480</td>
<td>Introduction to Health Care Management</td>
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<td>7400.133</td>
<td>Clothing Communication, textiles or housing</td>
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<td>7400.134</td>
<td>Nutrition Fundamentals</td>
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<td>Consumer Education</td>
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<td>7400.316</td>
<td>Science of Nutrition</td>
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<td>7400.329</td>
<td>Nutrition in Medical Science I</td>
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<td>7400.362</td>
<td>Home Management Theory</td>
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<td>7400.413</td>
<td>Food Systems Management II</td>
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<td>7400.420</td>
<td>Experimental Foods</td>
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<td>7400.421</td>
<td>Special Problems: Basic Food Theory</td>
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<td>7400.422</td>
<td>Special Problems: Food Systems Management</td>
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<td>7400.424</td>
<td>Nutrition in Life Cycle</td>
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<td>7400.438</td>
<td>Nutrition in Medical Science</td>
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<td>7400.447</td>
<td>Critical Issues in Home Economics</td>
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</tbody>
</table>

Home Economics Education

Home economics education majors receive training and preparation to teach in grades 7 through 12. Options are available in vocational consumer homemaking, vocational job training and non-vocational home economics. Vocational job training specialization classes are available in food service, family services, child care service, health and community service and multi-area. Home economics education education majors may elect to graduate from the College of Education or the College of Fine and Applied Arts.

Senior Honors Program

Senior honors project in home economics and family ecology is one to three credits per semester and may be repeated for a total of six credits. Prerequisite: Senior standing in the Honors Program and approval of honors project by faculty preceptor.

Bachelor of Arts

- General Studies and the second year of a foreign language — 53 credits.
- Core curriculum in music:
  - 7500:151 Theory I
  - 7500:152 Theory II
  - 7500:154 Music Literature I
  - 7500:155 Music Literature II
  - 7500:161 Aural/Oral Music Reading Skills
  - 7500:251 Theory III
  - 7500:252 Theory IV
  - 7500:261 Keyboard Harmony I
  - 7500:262 Keyboard Harmony II
  - 7500:351 Music History I
  - 7500:352 Music History II
- Performance courses:
  - 7500:357 Study Recital (four semesters)
  - 7500:452 Applied Music
- Electives — 33 credits.

The Bachelor of Arts program is intended as a cultural course or as a preparation for graduate study but not as professional preparation for a performance or teaching career.

Bachelor of Music

Accompanying for Keyboard Majors

- General Studies — 39 credits.
- Core curriculum in music:
  - 7500:151 Music Theory I
  - 7500:152 Music Theory II
  - 7500:251 Music Theory III
  - 7500:252 Music Theory IV
  - 7500:154 Music Literature I
  - 7500:155 Music Literature II
  - 7500:161 Aural/Oral Music Reading Skills
  - 7500:261 Keyboard Harmony I
  - 7500:262 Keyboard Harmony II
  - 7500:271 Piano Pedagogy and Literature I
  - 7500:351 Music History I
  - 7500:352 Music History II
- Other music courses:
  - 7500:325 Research in Music
  - 7500:361 Conducting
  - 7500:365 Song Literature
  - 7500:371 Analytical Techniques
  - 7500:451 Introduction to Musicology
  - 7500:452 Composition
  - 7500:454 Independent Study (Chamber Music)
- Electives
  - Applied music and performance courses:
    - 7510:114 Keyboard Ensemble
    - 7520:— Applied Piano
      - 7520:— Applied Voice
  - Senior recital (to include works as soloist, accompanist and in chamber ensembles).

History and Literature

- General Studies — 39 credits.
- Core curriculum in music (see B.A.) — 30 credits.
- Performance courses:
  - 7500:157 Student Recital (eight semesters)
  - 7510:— Music Organization (four semesters)
- Additional music courses:
  - 7500:325 Research in Music
  - 7500:361 Conducting
  - 7500:371 Analytical Techniques
  - 7500:451 Introduction to Musicology
  - 7500:452 Composition
  - 7500:454 Independent Study (Chamber Music)
Performance

- General Studies — 39 credits.
- Core curriculum in music (see B.A.) — 30 credits.
- Additional performance courses:
  - 7500:157 Student Recital (eight semesters) 0
  - 7510:—— Music Organization (eight semesters) 8
  - 7520:—— Applied Music — primary instrument* 32
- Additional music courses:
  - 14 credits additional music courses as follows:
    - 7500:371* Analytical Techniques 2
    - 7500:471** Counterpoint 2
* Required of all performance majors

Theory-Composition

- General Studies — 39 credits.
- Core curriculum in music (see B.A.).
- Additional performance courses:
  - 7500:157 Student Recital (eight semesters) 0
  - 7510:—— Music Organization (eight semesters) 8
  - 7520:—— Applied Music — primary instrument†† 32
- Additional music courses:
  - 7500:325 Research in Music 2
  - 7500:362 Conducting 2
  - 7500:371 Analytical Techniques 2
  - 7500:372 Techniques for Analysis: 20th Century Music 2
  - 7500:451 Introduction to Musicology 2
  - 7500:452 Composition 2
  - 7500:454 Orchestration 2
  - 7500:455 Advanced Conducting: Instrumental 2
  - 7500:456 Advanced Conducting: Choral 2
  - 7520:108 Opera Workshop 2
  - Six credits to be selected in consultation with the student's adviser and with the approval of the applied music instructor.
- Electives — six credits.
- Senior recital (full recital required).**

Jazz Studies†

- General Studies — 39 credits.
- Core curriculum in music (see B.A.).
- Additional music courses:
  - 7500:361 Conducting 2
  - 7500:371 Analytical Techniques 2
  - 7500:454 Orchestration 2
- Additional jazz courses:
  - 7500:2101 Jazz Improvisation I 2
  - 7500:211 Jazz Improvisation II 2
  - 7500:307 Techniques of Stage Band Performance and Direction 2
  - 7500:308 Jazz History and Literature 2
  - 7500:309 Jazz Keyboard Techniques 2
  - 7500:310 Jazz Improvisation III 2
  - 7500:311 Jazz Improvisation IV 2
  - 7500:407 Jazz Arranging and Scoring 2
  - 7500:497 Independent Study (Primarily in Jazz Studies) 2

†Passage to the 300 level in the primary applied area is required prior to graduation.
**For those with piano as their major performing instrument 7500:271 is taken in place of 7500:455.
††A junior recital is recommended but not required.

Performance courses:

- 7500:157 Student Recital (eight semesters) 0
- 7510:—— Music Organization (eight semesters) 8
- 7520:—— Applied Music — primary instrument†† 16
  - Saxophone major must pass flute and clarinet proficiency (promotion to 300 level) 32
- Electives — eight credits.
- Senior recital.

Music Education

- General Studies — 39 credits.
- Core curriculum in music (see B.A.)
- Performance courses:
  - 7500:157 Student Recital (eight semesters) 0
  - 7510:—— Music Organization (eight semesters) 8
  - 7520:—— Applied Music — primary instrument†† 16
- Additional music courses:
  - 7500:254 String Instruments I 2
  - 7500:340 General Music 3
  - 7500:342 Wind/Percussion Techniques 2
  - 7500:456 Conducting 2
  - 7500:492 Senior Seminar 1
- Additional music courses by major:
  - Vocal and Keyboard:
    - 7500:340 General Music (second semester) 3
  - 7500:362 Choral Arranging 2
  - 7500:456 Advanced Conducting: Choral 2
  - Approved Electives 4
  - Instrumental (non-keyboard):
    - 7500:342 Wind/Percussion Techniques (second semester) 3
  - 7500:454 Orchestration 2
  - 7500:455 Advanced Conducting: Instrumental 2
  - Approved Electives 4
  - String major:
    - 7500:355 String Instruments II 2
  - 7500:454 Orchestration 2
  - 7500:455 Advanced Conducting: Instrumental 2
  - Approved Electives 5
- Professional education and psychology including student teaching — 25 credits.
  - One-half recital during 12 months prior to graduation but not during the semester of student teaching.
  - Minimum vocal, keyboard and conducting proficiency must be attained before assignment to student teaching.

For details of the above music requirements and minimum standards of achievement, please see the Music Handbook available from the School of Music, Guzzetta Hall.

7600: Communication

Requirements for transferring into the Department of Communication Completion of 7600:201, 7600:103, 1100:103 or 201:205 or 1100:105 or 1100:106 with grade of C or better in each course required to transfer into the department as a major or to enroll in 300-400 level courses in the Department of Communication.

Bachelor of Arts

- General Studies and Second Year of a Language 53
- Core (Grade of C or better required for all core courses.)
  - 7600:102 Survey of Mass Communication 3
  - 7600:115 Survey of Communication Theory 3
  - 7600:200 Careers in Communication 3
  - 7600:394 Communication Research 3
- Concentration in business and organizational communication, communication/rhetoric or mass media communication as described in tracks plus departmental electives. 36
- University electives 29

Bachelor of Arts in Business and Organizational Communication

Bachelor of Arts in Communication/Rhetoric

Bachelor of Arts in Mass Media—Communication

- General Studies and "tag" degree course work 53
- Core 10

††Passage to the 300 level in the primary applied area is required prior to graduation.
Exit requirement
To graduate with a degree from the Department of Communication, a student must attain an overall minimum 2.30 GPA for all courses taken in the Department of Communication.

Broadcasting
- Core curriculum
- Required courses
- Departmental Electives
- Departmental Total

Business and Organizational Communication
- Core curriculum
- Required courses
- Departmental Electives
- Departmental Total

Communication and Rhetoric
- Core curriculum
- Required courses
- Departmental Electives
- Departmental Total

Corporate Video
- Core curriculum
- Required courses
- Departmental Electives
- Departmental Total

Mass Media—Communication
- Core curriculum
- Additional production course
- Communication electives

Bachelor of Arts (2+2) with C&T College (Computer Programming Technology)
- Communication Major
  - Communication core
  - Area of specialization: Business and Organizational Communication
  - Communication electives
  - Tag in Computer Programming
  - Total
  - General Studies
  - Other Required Courses for the Associate Degree
  - University Electives
  - Total Credits for Bachelor's Degree

*May select a maximum of 15 credits from each section.
**May select two of three courses.
**Program Requirements:**
- Completion of the General Studies and the second year of a foreign language for the B.A., or the non-foreign language option for the tag degree (B.A. in Communicative Disorders) — 54 credits.
- Electives — 22 credits.
- Core Curriculum in Communicative Disorders:
  - 7700:110 Introduction to Disorders of Communication 3
  - 7700:111 Introduction to Phonology 3
  - 7700:120 Bases and Structure of Languages 3
  - 7700:140 Introduction to Hearing Science 3
  - 7700:210 Auditory Phonology 3
  - 7700:211 Introduction to Speech Science 2
  - 7700:219 Speech and Language Development 3
  - 7700:240 Aural Rehabilitation 3
  - 7700:241 Principles of Audiology 3
  - 7700:250 Observation and Clinical Methods 2
  - 7700:270 Language of Communicative Disorders I 4
  - 7700:321 Communicative Disorders II 4
  - 7700:330 Language Disorders 4
  - 7700:340 Audologic Evaluation 2
  - 7700:450 Assessment of Communicative Disorders 3

*Clinical Option*
Add the following Clinical Practicums to the above requirements. Each practicum is taken two times; however, only four practicum credits may be applied towards the B.A.

- 7700:350 Clinical Practicum: Articulation/Phonology 1
- 7700:351 Clinical Practicum: Language 1
- 7700:352 Clinical Practicum: Aural Rehabilitation 1
- 7700:451 Clinical Practicum: Diagnostic Audiology 1

*Non-Clinical Option*
To the University electives and core curriculum, add the following for a total of at least 4 credits:

- 7700:480 Seminar in Communicative Disorders 2
- 7700:481 Special Projects: Communicative Disorders 2

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**Program Description**
The social work curriculum is an accredited undergraduate program preparing students for entry-level professional practice in health, mental health, mental retardation, family service, public welfare, corrections, juvenile justice, child welfare, aging and in alcohol and drug abuse, community action and development, and human relations.

Programs can be designed for the student wishing to prepare specifically for practice in the above-mentioned areas. Students will also be prepared for entry into graduate schools of social work for completion of the Master of Social Work degree.

The Bachelor of Arts degree with a major in social work requires completion of two years of a foreign language (Spanish is recommended). The Bachelor of Arts in Social Work degree does not require a language. It requires some additional course work in social work and the social sciences.

Curricula have been developed so that students completing the two-year associate degree program in Community Services Technology (C & T) and Social Services Technology (WGTC) with social services emphasis programs can complete either the B.A. or B.A.S.W. four-year curriculum in social work with two additional years of course work. Similarly, curricula have been developed so that students completing the two-year associate degree program in criminal justice technology can complete either the B.A. or B.A.S.W. four-year curriculum in social work in the two additional years’ course work.

Certificate programs can be designed in Afro-American Studies, Life-Span Development: Adulthood and Aging, Gender Identity and Roles.

**Bachelor of Arts**
- Completion of the General Studies and the second year of a foreign language — 55 credits*

**Social Work courses:**
- 7750:270 Poverty in the United States 3
- 7750:276 Introduction to Social Welfare 4
- 7750:401.2,3 Social Work Practice I, II, III 9
- 7750:410 Minority Issues in Social Work Practice 4
- 7750:421 Field Experience Seminar (two semesters, one credit each) 2
- 7750:427 Human Behavior and Social Environment for Social Workers I 3
- 7750:430 Human Behavior and Social Environment for Social Workers II 3
- 7750:440 Social Work Research I 3
- 7750:441 Social Work Research II 3
- 7750:465 Field Experience: Social Agency 8
- 7750:--- Electives in Social Work 6

*Electives should be selected in consultation with an adviser — 25 credits.

**Bachelor of Arts (2+2) with C&T [Community Services Technology (Social Service Emphasis)]**
- General studies:
  - 1100:321,2 Western Cultural Traditions 8
  - 1100:232,3 Natural Science Biology 3
  - 1100:33E Eastern Civilizations 4
  - 1100:34E Mathematics 4
  - 1100:36 Natural Science 3

*Foreign language:
- Complete second year. 14

**Social work**
- 7750:401.2,3 Social Work Practice I, II, III 9
- 7750:410 Minority Issues in Social Work Practice 4
- 7750:427 Human Behavior and Social Environment for Social Workers I 3
- 7750:430 Human Behavior and Social Environment for Social Workers II 3
- 7750:440 Social Work Research I 3
- 7750:441 Social Work Research II 3

**Field experience**
- 7750:421 Field Experience Seminar (two semesters, required concurrent with 7750:495) 2
- 7750:495 Field Experience in a Social Agency (two required) 8
- 7750:--- Social Work Electives 6

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1. 7350:111,2 3470:251,2 are prerequisites for 7750:440 Social Work Research I

*The student must complete 3850:100 Introduction to Sociology as part of the social sciences requirement and 1100:121 Natural Science. Biology or some other human biology course as part of the natural sciences requirement and 3470:122 Algebraic Functions and Graphing, 3470:251 Descriptive Statistics and Probability and 3470:252 Distributions as the mathematics requirement.*
Bachelor of Arts (2+2) with C&T (Criminal Justice Technology)

- General studies:
  1100:112 English Composition 4
  1100:303 Western Civilizations 3
  1100:33E Eastern Civilizations 4
  1100:221 Natural Science. Biology 3

- Foreign Language:
  Complete second year 14

- Social Work:
  7750:401,2 Social Work Practice I, II 9
  7750:421 Field Experience Seminar 2
  7750:427 Human Behavior and Social Environment for Social Workers I 3
  7750:440 Social Work Research I 3
  7750:441 Social Work Research II 3
  7750:495 Field Experience in Social Agency 8
  7750:4— Social Work Electives 6

Bachelor of Arts (2+2) with Wayne College [Social Services Technology (Social Service Emphasis)]

- General studies:
  1100:3001 Western Cultural Traditions 6
  1100:33— Eastern Civilizations 4

- Foreign language: Complete second year 14

- Social work:
  7750:401,2 Social Work Practice I, II 9
  7750:410 Minority Issues in Social Work Practice 3
  7750:421 Field Experience Seminar 2
  7750:427 Human Behavior and Social Environment for Social Workers I 3
  7750:440 Social Work Research I 3
  7750:441 Social Work Research II 3
  7750:495 Field Experience in Social Agency 8
  7750:4— Social Work Electives 6

Bachelor of Arts/Social Work

- General Studies — 40 credits.

- Social work courses:
  7750:270 Poverty in the United States 3
  7750:276 Introduction to Social Welfare 4
  7750:401,2 Social Work Practice I, II 9
  7750:410 Minority Issues in Social Work Practice 3
  7750:425 Social Work Ethics 3
  7750:470 Law for Social Workers 3
  7750:427 Human Behavior and Social Environment for Social Workers I 3
  7750:440 Social Work Research I 3
  7750:441 Social Work Research II 3

- Electives:
  7750:421 Field Experience Seminar (two semesters required concurrent with 7750:495) 2
  7750:495 Field Experience in Social Agency (two required) 8
  7750:4— Social Work Electives 6
  7750:4— Social Science Electives 6

- Other electives — 29 credits.

Bachelor of Arts/Social Work (2+2) with C&T [Community Services Technology (Social Service Emphasis)]

- General Studies:
  1100:221 Natural Science. Biology 3
  1100:3001 Western Cultural Traditions 6
  1100:33— Eastern Civilizations 4
  1100:221 Natural Science. Biology 3

- Social work:
  7750:401,2 Social Work Practice I 9
  7750:410 Minority Issues in Social Work Practice 3
  7750:421 Field Experience Seminar 2

13450:11,2, 13450:21,2 are prerequisites for 7750:440 Social Work Research I.
Consult Theatre Program undergraduate coordinator and handbook.
Consult academic adviser.
Bachelor of Arts in Theatre Arts††

(1) Theatre Arts

The concentration is designed to prepare the student for competency in all areas of theatre — acting/directing, theatre history/criticism and design/technical theatre — in order that the student can acquire the skills to teach theatre, to undertake graduate work in theatre or to undertake professional work in commercial or regional theatre. Consult an adviser.

- General Studies — 39 credits
- Tag Area of Study — 14 credits
- Theatre — 49 credits

Required General Theatre Courses:
7800.100 Experiencing Theatre 3
7800.367 History of Theatre II 4
7800.368 History of Theatre III 4

Required Production/Performance Courses — 8 credits.
(Minimum of 4 required in production)

Electives — 30 credits

Other Electives — 26 credits

Minimum Semester Hours Required — 128

(2) Acting

- General Studies — 39 credits
- Acting:
  7800.172 Acting I 3
  7800.373 Acting II 3
  7800.474 Acting IV 3
- Voice:
  7800.151 Voice for the Stage 3
  7800.3501 Advanced Voice for the Stage I, II 6
  7520 Applied Voice Musical 8
- Dance:
  7800.323 Jazz Technique I 2
  7800.328 Period Movement/Dance 2
  7800.390 Introduction to Contemporary Dance I, II 4
  7800.1245 Introduction to Ballet I 4
- Theatre:
  7800.100 Experiencing Theatre 3
  7800.262 Stage Makeup 3
  7800.265 Basic Stagecraft I 3
  7800.271 Directing I 3
  7800.367 History of Theatre I: Greek to Renaissance 4
  7800.368 History of Theatre II: Restoration to Present 4
  7800.4456 Movement for Actors I, II 6
  7800.10 Production/Performance Laboratory 8
- Electives (with approval of adviser) — 14 credits

(3) Design/Technology

- General Studies — 39 credits
- Theatre:
  7800.100 Experiencing Theatre 3
  7800.271 Directing I 3
  7800.172 Acting I 3
  7800.367 History of Theatre I: Greek to Renaissance 4
  7800.368 History of Theatre II: Restoration to Present 4

  7810 Production/Performance Laboratory 8
- Basic preparation:
  7810 Production/Performance Laboratory 3
  7800.262 Stage Makeup 3
  7800.265 Basic Stagecraft I, II 6
  7800.362 Advanced Stagecraft 3

  7810 Production/Performance Laboratory 3
- Studio courses:
  7800.106 Introduction to Stage Design 3
  7800.263 Scene Painting 3
  7800.334 Stage Costume Construction 3
  7800.335 Introduction to Stage Costume History/Design 3
  7800.336 History/Construction of Period Furnishing for the Stage 3
  7800.164 Stage Lighting 3
- Design/Technology:
  7800.365 Stage Design 3
  7800.430 Stage Costume Design 3
  7800.436 Styles of Scene Design 3

†The student must complete 3600.120 Introduction to Sociology as part of the social sciences requirement and 1100.221 Natural Science: Biology or some other human biology courses as part of the natural sciences requirement and 3400.112.169 Functions and Graphing, 3470.251 Descriptive Statistics and Probability and 3470.252 Distributions as the mathematics requirement.

‡See School of Music regarding audition for placement.

7900:465 Stage Lighting Design 3
7900:469 Problems in Lighting Design 3

- Production practice courses:
  7900.470 Practicum in Production Design/Technology 1-3
- Electives (with approval of adviser) — 13-15 credits.

(4) Musical Theatre

- General Studies — 39 credits

- Theatre:
  7900.100 Experiencing Theatre 3
  7900.151 Voice for the Stage 3
  7900.172 Acting I 3
  7900.262 Stage Makeup 3
  7900.365 Basic Stagecraft I 3
  7900.367 History of Theatre I: Greek to Renaissance 4
  7900.368 History of Theatre II: Restoration to Present 4
  7900.374 Acting II, III 6
  7900.421 Musical Theatre Production 3
  7900.475 Acting for the Musical Theatre 3
  7910 Production/Performance Laboratory 8

- Dance†:
  7900.119 Introduction to Contemporary Dance I 2
  7900.229 Contemporary Technique I 3
  7900.124 Introduction to Ballet 2
  7900.224 Fundamentals of Ballet Technique 3
  7900.303 Jazz Dance Technique I 2
  7900.324 Tap Technique I 2
  7900.377 Jazz Dance Technique II 2
  7900.378 Tap Technique II 2
  7900.122 Ballet Technique I 5
  7900.222 Ballet Technique II 5
  7900.329 Contemporary Technique II 3

*Music:*
  7500.101 Introduction to Musical Theory 2
  7500.161 Oral/Oral Music Reading Skills* 4
  7900.108 Opera Voice I, II or
  7900.124 Opera Voice 4
  7510 Choral Organizations 4

- Electives (with approval of adviser) — 6-8 credits.

7900: Dance

Bachelor of Fine Arts

The dance major is designed for the student who wishes to pursue professional training in dance through the Bachelor of Fine Arts degree. Technical, performing and teaching skills are developed in the degree program. Admission to the program is by audition only.

Every student must pass a sophomore jury in ballet technique at the completion of two years of study to be admitted to upper division standing in the dance area. All students are required to study ballet technique every semester they are enrolled and to complete two semesters of Ballet Technique IV for graduation.

- General Studies program — 39 credits
- Required dance courses:
  7900.115 Dance as an Art Form 2
  7900.140 Dance Analysis I, II 4
  7900.122, 222 Ballet Technique I, II 20

  7900.219 Contemporary Technique I 6
  7900.316, 317 Choreography I, II 4
  7900.320 Dance Notation 2
  7900.330, 332 Ballet Technique III, IV 20
  7900.329 Contemporary Dance Technique II 6
  7900.416 Choreography III 2
  7900.417 Choreography IV 2
  7900.431 Dance History, Prehistory to 1661 2
  7900.432 Dance History, 1661 through Diaghilev Era 2
  7900.426, 427 Techniques of Teaching Dance I, II 4

- Electives (with approval of adviser) — 8 credits
- All candidates for the B.F.A. will be required to earn at least five credits of 7910 Dance Organizations.

†See Department of Dance or School of Music for placement.
*See Department of Dance or School of Music for permission.
**Two-semester course.
Bachelor of Arts

The dance major is designed for the student who wishes to pursue a more academic degree in dance.

Admission to the degree is by audition only.

- General Studies program and foreign language — 53 credits.
- Required dance courses:

  7920 115  Dance as an Art Form  2
  7920 116, 7  Dance Analysis I, II  4
  7920 122, 222  Ballet Technique I, II  20
  7920 229  Contemporary Technique I  3
  7920 316, 7  Choreography I, II  4
  7920 320  Dance Notation  2
  7920 431  Dance History: Prehistory to 1661  2
  7920 433  Dance History: 20th Century  2
  7920 432  Dance History: 1661 through Diaghilev Era  2
  7920 426, 7  Techniques of Teaching Dance I, II  4

- Choose a minimum of one from each category as dance electives for a minimum of nine credits

**Category A**

  7920 229  Contemporary Technique I (second semester)  3

  7920 329  Contemporary Technique II (may be taken twice)  3

**Category B**

  7900 323  Jazz Dance Technique I  2
  7900 377  Jazz Dance Technique II  2

**Category C**

  7900 324  Tap Technique I  2
  7900 376  Tap Technique II  2

- All candidates for the B.A. will be required to earn at least four credits of 7910: Dance Organizations.

  7910 101  Classical Ballet Ensemble  1
  7910 102  Character Ballet Ensemble  1
  7910 103  Contemporary Dance Ensemble  1
  7910 104  Jazz Dance Ensemble  1
  7910 105  Musical Comedy Ensemble  1
  7910 106  Opera Dance Ensemble  1
  7910 107  Experimental Dance Ensemble  1
  7910 108  Choreographer's Workshop  1
  7910 109  Ethnic Dance Ensemble  1
  7910 110  Period Dance Ensemble  1
  7910 111  Touring Ensemble  1
  7910 112  Total Dance Curriculum  58
  7910 113  General Electives  17
College of Nursing

Elizabeth J. Martin, Ph.D., Dean
Phyllis A. Fitzgerald, R.N., Ph.D., Assistant Dean,
Undergraduate Program
V. Ruth Gray, R.N., Ed.D., Interim Assistant Dean, Graduate Program

PHILOSOPHY

The College of Nursing, an integral part of The University of Akron, accepts the responsibility for promoting the general mission of the University, which is the 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 foci of professional nursing are individuals, families, and communities.

The individual is seen as a complex whole whose existence involves patterns, dynamic change, transformation and interdependence. The individual interrelates within the environment in biological, psychological, social, spiritual, cultural and other dimensions. The individual is unique and universal. The individual is a thinking, feeling, interacting, evolving, creating, valuing being.

Families are individuals dynamically connected with each other over time. 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, nondisease, and quality of life. People have the right to participate in decisions affecting and effecting personal health.

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

Nursing is an art and a science. The discipline of nursing is concerned with individual, family and community and their responses to health within the context of the environment. Professional nursing includes the appraisal and the enhancement of 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 exercise 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 interrelations with the environment. Knowledge acquisition, development of 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 experiences 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 a nurse generalist in a variety of settings. Faculty and students continually seek to refine the commitment to, and understand the relationship between theory and practice. Students are encouraged to become self-directed, collaborative, interdependent and independent. These variables are the foundation for lifelong learning and professional development.

Nursing education at the master’s level builds upon baccalaureate nursing preparation and is a foundation for doctoral study. Graduate education provides advanced learning to prepare specialists, educators, and administrators in the practice of Family Health 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.

REQUIREMENTS

Admission

Four classifications of students will be considered for admission to the college:

- the basic student (entering freshman),
- the registered nurse,
- the postbaccalaureate student, and
- the transfer student from other colleges and universities.

A transfer student may receive credit for quality work earned in approved colleges. Enrollment of a transfer student is contingent upon availability of University facilities and an assessment of the sufficiency of prior academic work. Transfer course grades shall be taken into account in placing students in rank order for admission purposes.

A registered nurse (RN) who receives preparation in hospital or associate degree programs is evaluated individually. An RN student is expected to meet the same course requirements as the basic student and those of The University of Akron. In addition, anatomy and physiology and microbiology must have been completed within the past 10 years at the time of admission to the College of Nursing.

This 10-year limit applies to all students.

A student who wishes to be considered for admission must meet the following requirements:

- Complete all University College requirements and College of Nursing prerequisites by the end of spring semester or the end of first summer session sophomore year.
- Have a 2.50 grade-point average or higher.
- All grades of transfer work will be combined with those earned at The University of Akron for the computation of a GPA for admission ranking purposes to the College of Nursing.

All applicants will be considered at once and will be selected each spring. All student applicants will be ranked in order from the highest grade point average (GPA) to 2.50. Having a GPA of 2.50 will not guarantee admission to the college. A student will be notified of provisional admission to the College of Nursing prior to final scheduling requirements and will be given final approval at the end of spring semester.

Of students selected, one half will begin in the summer with the other half beginning in the fall. The program consists of four academic years and one semester. Students admitted to the college in the summer will complete the program (five semesters) for graduation in May, and those entering fall semester will complete the program (five semesters) for graduation in December. An active alternate list of students will be selected to take the place of students who choose not to continue.

Applications for the college are only effective for the current academic year.

Acceptance of the student into the college is the responsibility of the dean in consultation with the dean of the University College and the Admissions Committee of the College of Nursing. Admission to the program in nursing does not guarantee the student’s placement in the nursing courses at the time the student may wish to pursue them. The college reserves the right to approve admission to those individuals whose abilities, attitudes and character promise satisfactory achievement to the college objectives.

Continuation in the Baccalaureate Program

A student must achieve a grade-point average of 2.30 or higher on a 4.00 scale in the nursing major. A student receiving a “DM” or “F” in any nursing course will be required to repeat the course. The student may repeat the course only once. Students may not progress into the next course with an incomplete grade in a major nursing course (e.g. 8200:200, 8200:300, etc.)

Students should refer to their Student Manual for other policies and procedures. The manual will be distributed to students during 8200:200. Students should also refer to each course syllabus distributed at the beginning of each semester for course expectations/requirements.

The following policies must be adhered to by all students once they are admitted to the baccalaureate program:

- Obtain a three-year liability insurance policy prior to July 15 and maintain the policy throughout the program.
- If a licensed nurse, provide a copy of valid Ohio nurses license.
- Complete necessary immunization requirements prior to July 15.
- Complete CPR (cardiopulmonary resuscitation) certification prior to or concurrent with 8200:300 (if registered nurse 8200:305).
- Maintain a current CPR certification throughout the program. Dates must be current through the next academic year.

Evidence of completion of these requirements will be submitted to the records coordinator prior to July 15, otherwise course registration will be closed.
Requirements for Graduation

- Complete all University requirements as listed in Section 3 of this Bulletin.
- Complete a minimum of 133 semester credits for the degree and earn a minimum of 2.30 grade-point average in the nursing major and a 2.00 grade-point average for all collegiate work attempted at The University of Akron.
- Complete all courses required in the Program of Study for Nursing Students.
- Complete the last 32 credits in the baccalaureate program at The University of Akron.
- Complete all requirements which were in effect at the time of transfer to the College of Nursing.

Students may use courses numbered 100 and up as electives. Students planning to fulfill their elective requirements prior to admission to the college may contact the college for assistance in selecting appropriate electives.

The student shall satisfy the course criteria for safe nursing practice before being permitted to participate in clinical learning experiences. The student will be informed of these criteria for safe practice by the instructor.

It is mandatory that the student provide transportation to meet requirements of the nursing courses.

Registered Nurse

(limited to licensed registered nurses)

Freshman Year

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<tr>
<th>Semester</th>
<th>Credits</th>
<th>Course Title</th>
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<tr>
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<td>English Composition</td>
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<tr>
<td>1100:115</td>
<td>3</td>
<td>Institutions in the United States*</td>
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<tr>
<td>3150:129</td>
<td>4</td>
<td>Introduction to General, Organic and Biochemistry I</td>
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<td>3450:100</td>
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<td>Preparatory Math</td>
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Sophomore Year

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<td>3100:130</td>
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<td>Principles of Microbiology</td>
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<td>3600:101</td>
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<td>3600:120</td>
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<td>3600:125</td>
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<td>Theory and Evidence or</td>
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<td>3600:170</td>
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<td>1830:201</td>
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<td>Man and His Environment or</td>
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<td>3350:110</td>
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<td>Physical and Environmental Geography</td>
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<td>3100:207</td>
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<td>Developmental Psychology</td>
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<td>3850:470</td>
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<td>The Family or</td>
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Summer Session

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Junior Year

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</tr>
<tr>
<td>8200:300</td>
<td>10</td>
<td>Nursing Health</td>
</tr>
<tr>
<td>1100:321</td>
<td>4</td>
<td>Western Cultural Traditions</td>
</tr>
<tr>
<td>8200:320</td>
<td>12</td>
<td>Nursing: Diminished Health I</td>
</tr>
</tbody>
</table>

Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100:---</td>
<td>12</td>
<td>Eastern Civilizations or</td>
</tr>
<tr>
<td>8200:400</td>
<td>12</td>
<td>Nursing: Diminished Health II or</td>
</tr>
<tr>
<td>1100:---</td>
<td>10</td>
<td>Eastern Civilizations or</td>
</tr>
<tr>
<td>8200:420</td>
<td>10</td>
<td>Nursing Synthesis or</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:420</td>
<td>10</td>
<td>Nursing Synthesis**</td>
</tr>
</tbody>
</table>

*The six-credit requirement in the social sciences area usually designated by 1100:1156 Institutions in the United States can be met through several options as listed in the University College requirements. A nursing student who elects to use 3850:100 Introduction to Sociology as one part of the social sciences requirement for University College MUST complete an additional three- or four-credit sociology requirement to meet the prerequisites for the College of Nursing. This must be completed prior to application to the college.

**Bypass credit will be granted for the following courses upon successful completion of 8200:420 Nursing: Synthesis:

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Nursing: Diminished Health I</td>
</tr>
<tr>
<td>12</td>
<td>Nursing: Diminished Health II</td>
</tr>
</tbody>
</table>
The agencies cooperating in providing the laboratory experiences in the courses in nursing are:

Akron City Hospital
Akron General Medical Center
Akron Health Department
Akron Public Schools, Lincoln
Akron Senior Resource Center
Aultman Hospital
Barberton Citizens Hospital
Barberton Schools
Brecksville Veterans Administration
Canton Schools

Center for Nursing
Children's Hospital Medical Center
Cuyahoga Falls General Hospital
Fallsview Psychiatric Hospital
Henry Center for Child Care and Learning
Planned Parenthood
Red Cross
Rockynol Retirement Center
St. Thomas Medical Center
Edwin Shaw Hospital
Margaret B. Shipley Child Health Care
Stow-Glen Retirement Village
Summit County Health Department
Visiting Nurse Service

All health agencies are accredited by the appropriate group.
Northeastern Ohio Universities College of Medicine

HISTORY AND PURPOSE OF THE COLLEGE OF MEDICINE

The Northeastern Ohio Universities College of Medicine was created by an act of the 110th General Assembly of Ohio and was officially established as a new public institution of higher learning on November 23, 1973. The college is governed by a board of trustees appointed by the boards of trustees of The University of Akron, Kent State University and Youngstown State University. All three universities are accredited by the North Central Association of Colleges and Secondary Schools. The college is presently classified as a "Medical College of Development" by the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association. The college was established to provide new opportunities in medical education by preparing well-qualified physicians who are oriented to the practice of medicine at the community level, especially primary care and family medicine.

ADMISSION

High school seniors and recent high school graduates, having demonstrated appropriate academic competence and motivation toward a career in medicine, will be considered for admission into year one of the program. These students, who have not attended college, should write to the Office of Admissions, The University of Akron, Akron, OH 44325 for application forms. Complete application indicating interest in the Phase I, BS/MD Program and return prior to December 31.

Other applicants with a conventional college background, including premedical requirements and at least three years of college-level work, will be considered by the college for admission to Phase II (year three of the program). These students should contact the College of Medicine, Rootstown, OH 44272, for application to Phase II, or year three of the six-year program. Applicants to Phase II should have taken the new MCAT test by May.

PROGRAM

The curriculum requires that the student be enrolled for 11 months in each of six academic years. The first two years (Phase I) are spent on one of the university campuses. The course work during this period focuses chiefly on studies in the humanities and basic premedical sciences but will also include orientation to clinical medicine. Progress through Phase I will be based on academic performance and development of personal maturity appropriate to assumption of professional responsibility. The Phase I Academic Review and Promotion Committee, including University and college faculty, will assess these factors and will recommend the Phase I student for promotion and formal admission to Phase II, or the third year of the program.

The third year of study is devoted primarily to the basic medical sciences, e.g., anatomy, physiology, microbiology, etc., and will be conducted at the campus in Rootstown.

In years four, five and six, the student will develop competence in the clinical aspects of medicine through instruction provided principally at one or more of the associated community hospitals. The student will return to the University campus for part of one term in each of these last three years to complete the requirements for the Bachelor of Science degree at that university by enrolling in courses in the humanities and social sciences.

Successful completion of the six-year program leads to the award of the Bachelor of Science degree by one of the universities and the Doctor of Medicine degree by the College of Medicine.

*COST

Normal undergraduate fees will be assessed for years one and two. Fees for years three through six are set by the College of Medicine Board of Trustees and are commensurate with those at publicly supported medical schools elsewhere in this state.

LOCATION

The campus is located on S.R. 44 in Rootstown just south of the I-76 intersection, across from the Rootstown High School.

B.S./M.D. HONORS TRACK

Students accepted into the NEOUCOM B.S./M.D. program are also eligible to enroll in the University Honors Program. This opportunity will encourage capable students to broaden their intellectual horizons, to strive for academic excellence, and to develop respect and appreciation for superior intellectual achievement.

The requirements for the B.S./M.D. program have been adapted to meet the intent and spirit of the Honors Program while preserving the special nature of this premedical curriculum. The B.S./M.D. Program leads to the Bachelor of Science with a divisional major in the natural sciences. All undergraduate requirements for this program are listed below.

The B.S./M.D. Liaison Officer will serve as the Honors Preceptor for the B.S./M.D. students. Other faculty will become involved as each student plans the honors project. Requirements for retention in the Honors Program remain the same.

Group Requirements:

Group I: 15 hours

- Required: Seminar:

  1060:100 Introduction to Public Speaking
  or
  1060:105 Effective Oral Communication

- Remaining 12 credits from among the following:

  Classics (3200)
  Greek (3210)
  Latin (3220)
  English (3300)
  History (3400)
  Philosophy (3450)
  Western Cultural Traditions (1100.320-321)
  Eastern Civilizations (1100.330-335)

Group II: 13 hours

- Required:

  1100:105 Introduction to Public Speaking
  or
  1100:106 Effective Oral Communication

- Remaining credits from among the following:

  Modern Languages (3520-3580 - 300 level or above)
  Art (720)
  Music (730)
  Applied Music (752)
  Theatre Arts and Dance (780)

Total: 13

Group III: 9 hours

- Required:

  3750:100 Introduction to Psychology

- Remaining six credits from among the following:

  Economics (3250)
  Geography (3350)
  Political Science (3700)
  Psychology (3750)
  Sociology (3850)
  Anthropology (3870)

Group IV: 68 hours (includes requirement for Natural Sciences Divisional major)

- Recommended:

  Mathematics
  3450:217 Calculus for Life Sciences
  3450:212 Calculus for Life Sciences
  3470:261 Introduction to Statistics
  3470:253 Hypothesis Testing
  3470:265 Regression

See BS/MD program Section 4 of this Bulletin for a description of the requirements for the Bachelor of Science part of this program.
Biology
3100:111 Principles of Biology 4
3100:112 Principles of Biology 4
3100:211 Genetics 3
3100:466 Developmental Anatomy 4
3100:467 Developmental Anatomy 4
3100:365 Histology 3
(plus 5 additional biology credits as electives — may be transferred from NEOUCOM)

Chemistry
3150:132 Principles of Chemistry I 4
3150:133 Principles of Chemistry II 3
3150:134 Qualitative Analysis 2
3150:263 Organic Chemistry I 3
3150:264 Organic Chemistry II 3
3152:263 Organic Chemistry Lab 2
3152:401 Biochemistry I 3
3152:402 Biochemistry II 3

Physics
3650:261 Physics for Life Sciences 4
3650:262 Physics for Life Sciences 4

Specific B.S./M.D. Program Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2780:290</td>
<td>CPR</td>
<td>2</td>
</tr>
<tr>
<td>3100:190</td>
<td>Health Care Delivery Systems</td>
<td>1</td>
</tr>
<tr>
<td>3100:191</td>
<td>Health Care Delivery Systems</td>
<td>1</td>
</tr>
<tr>
<td>3100:290</td>
<td>Health Care Delivery Systems</td>
<td>1</td>
</tr>
<tr>
<td>3100:291</td>
<td>Health Care Delivery Systems</td>
<td>1</td>
</tr>
<tr>
<td>1860:201</td>
<td>Medical Seminar and Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Honors Requirements:

Colloquia:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1870:250</td>
<td>Honors Colloquium — Humanities</td>
<td>2</td>
</tr>
<tr>
<td>1870:360</td>
<td>Honors Colloquium — Social Sciences</td>
<td>2</td>
</tr>
</tbody>
</table>

Honors Project:

A major research paper will be required. A University of Akron faculty member shall direct the paper. The work must be completed prior to the completion of the undergraduate degree. In any of the following options, each student would be expected to file the formal paper with the department of choice and the Honors Council in compliance with the procedures established by the Honors Council:

- A student may complete a research laboratory project in biology during the first summer of medical school. A formal paper, directed by a University of Akron faculty member, will be submitted as partial completion of the honors requirements.
- A student may complete a major paper as part of the Human Values in Medicine curriculum at NEOUCOM and transfer up to three hours of credit back to The University of Akron. A University of Akron faculty member should act as codirector of the project.
- A student may register for three hours of regular honors project hours in any department currently offering such credit. The student would be expected to complete a major research paper which in some way relates medicine to the discipline of the department.
- B.S./M.D. Honor students will be encouraged to enroll in honors sections whenever possible but honors work in the divisional major will not be required. In the exceptional case, a nonhonors section of English Composition may be approved.
- Credits earned in excess of the minimum required for any Group I-III may be applied toward the free electives requirement.
- Students who withdraw from the B.S./M.D. program who are otherwise eligible to continue in the Honors Program may remain in the Honors Program under current requirements.
- Students who withdraw or are no longer eligible to remain in the Honors Program may continue in the B.S./M.D. program provided they meet current B.S./M.D. requirements. Their General Studies requirement will be met by satisfying B.S./M.D. Honors Groups I through III.

•
University Honors Program

INTRODUCTION
The University of Akron's Honors Program is designed to recognize and to support the highly motivated and achievement-oriented student in any major program. To help the participant discover potential capabilities and sense of direction this unique learning experience emphasizes a close student-faculty relationship.

ADMISSION
The requirements for admission to the University Honors Program are as follows:

- A high school grade-point average of 3.50 or better
- Scores on the Scholastic Aptitude Test (SAT) or American College Test (ACT) which place the applicant in the 90th percentile or higher of freshman college norms in the field of interest.
- An interview with a member of the University Honors Council.
- Enrollment in a baccalaureate degree program.

For information on the annual deadline for applications call (216) 375-7423 or the Office of Admissions (216) 375-7100.

PROGRAM

General Studies
An honors student is not required to complete the General Studies except for physical education. Instead, each student completes an individualized distribution requirement which includes a balanced amount of diversified course work in the humanities, the social sciences and the natural sciences. The major objective of this requirement is to expose the student to a broad spectrum of knowledge which is both reasonable and appropriate to the student’s major field. The student and preceptor plan the components of this requirement which is subject to the approval of the Honors Council.

Colloquia
Beginning at the sophomore level, an honors student attends one colloquium per year: one in the humanities; another in the social sciences; the third in the natural sciences. These one-semester, two-credit lecture and discussion sessions are interdisciplinary in scope. They provide an opportunity for all honors students to meet and explore the breadth and the interrelations of academic studies. The intent of these colloquia is to provide significant insights, especially in areas which lie outside the student’s major field and may have been excluded from the previous sphere of intellectual curiosity.

Major Requirements
An honors student completes all requirements for a departmental or divisional major. If honors work exists in the major department, at least one of the contributing honors courses must be completed.

A faculty preceptor serves as a special advisor for the student in each department. The preceptor assists in the development of the student’s major program; the selection of courses which are appropriate for the distribution requirement and in all other aspects of academic and professional planning.

Senior Honors Project
The honors student is expected to complete a senior honors thesis, an original or creative work which reflects the student's area of interest in the major field. This senior project may well become the basis for a future master's thesis in graduate school. Study abroad or field experience may be recognized as part of the project. The citation “University Scholar” will appear on the diplomas and the transcripts of the students who complete the University Honors Program. At commencement exercises, they will be properly recognized as University Scholars.

OTHER FEATURES

Scholarships
An honors student who maintains a minimum 3.40 cumulative grade-point average is eligible for substantial honors scholarships which are renewable annually.

Acceleration
To meet degree requirements, an honors student may use credits awarded for satisfactory achievement on Advanced Placement high school tests (AP), the College Level Examination Program (CLEP) and/or other approved placement procedures — including bypassed credits — to a maximum of 20 credits. Credits may also be earned through “credit by examination” when approved by the department in which the examination is to be administered.

Open Classroom
An honors student may attend undergraduate classes or lectures for which the student is not formally enrolled. Free access is available.

Access to Graduate Courses
With the permission of the student’s preceptor and the instructor, an honors student may be enrolled in graduate courses for either undergraduate or graduate credit. This provision applies especially to graduate courses which may be of immediate benefit to the completion of the senior honors project and/or the specific requirements for a given research paper.

Credit/Noncredit Option
Upon completion of one-half of all degree requirements, an honors student may enroll in one course per semester on a credit/noncredit basis. All elective credits thus earned are not considered in calculating grade-point average, but count as credits completed toward graduation requirements.

University Honors Council
Seven faculty members representing degree-granting colleges and two honors students serve on the University Honors Council which regularly reviews existing policies and introduces such additional and/or innovative options as may be desirable in response to manifest needs.
**Distinguished Student Program for Associate Degree Students**

**PURPOSE**

The purpose of the Distinguished Student Program shall be to encourage and assist exceptionally talented students who are enrolled in associate degree programs to achieve excellence in their academic work. The program is also intended to expose these students to the total offerings of this University. Every attempt will be made to make available to students the broad expanse of knowledge available on this campus.

**ADMISSION**

Students shall be admitted to the program based on their academic achievement and potential for scholarship. These persons shall be identified at the time of admission to The University of Akron. The requirement for admission to the program shall include: (1) high school grade point average of 3.50 or higher on a 4.00 scale; (2) scores on the Scholastic Aptitude Test (SAT) or American College Test (ACT) which places the student in the 90th percentile or higher of freshman college norms; (3) rank in the top 10 percent or higher of the high school class; (4) recommendations from high school principal, teachers or counselors; and, (5) approval of the council. In exceptional circumstances, where an applicant is able to demonstrate extraordinary academic promise, the high school grade point average, class rank, and the SAT or ACT requirement may be waived by the Distinguished Student Council. Students desiring to enter the program after they have been enrolled at The University of Akron may make application to the council.

**PROGRAM**

A distinguished student's program of study shall consist of, for the most part, courses within the major. The Distinguished Student Colloquium (taken the first semester of the second year) and the Honors Colloquium (taken the second semester of the second year) shall provide an opportunity for all distinguished students to meet and explore the breadth and interrelationships of the various academic disciplines. These one-semester two-credit colloquia shall be suitably scheduled over the span of the academic year. The coordinator, with the assistance of the Distinguished Student Council, shall determine the sequence in which these colloquia shall be offered and also approve the course content of the Distinguished Student Colloquia. Distinguished students may be permitted to attend classes or lectures within the Community and Technical College for which they are not formally enrolled. The designation Distinguished Student will appear on the academic record of all students who have met all graduation requirements. At commencement exercises, the students will be properly recognized as such.

**Graduation Requirements**

The distinguished student shall earn the minimum total credits required for a particular degree and for a program major. Progress toward completing the degree requirements may be accelerated by credit by examination, bypassed credit and credit awarded for satisfactory achievement on high school advanced placement examinations in accordance with University policies.

**Colloquia**

Beginning at the sophomore level, all distinguished students attend one colloquium per semester. The first will be in the fall semester and be restricted to distinguished students. The second will be in the spring semester and will be offered through the University Honors Program if possible. These one-semester two-credit lecture and discussion sessions are interdisciplinary in scope. They provide an opportunity for students to meet and explore the breadth and the interrelationships of academic studies. A major objective of the colloquia is to provide significant insights, especially in areas which lie outside the student's major field and may have been excluded from a previous sphere of intellectual curiosity.

**ADVISEMENT**

Immediately upon admission to the program, the student shall be assigned a program adviser. The adviser shall assist in the selection of courses which are appropriate for the distribution requirement and the formulation of an integrated major program.

The coordinator consults with the adviser in all matters relating to the student's academic performance and the completion of requirements for graduation as a distinguished student. The college advising staff shall be available for assistance in all matters pertaining to the program.

A distinguished student who does not immediately choose a major shall be assigned to the Community and Technical College advising staff. The distinguished student shall be admitted to the college immediately upon being admitted to the program.

**RETENTION**

A distinguished student must maintain a minimum grade-point average which would qualify the student for graduation With Distinction. The Distinguished Student Council shall review each distinguished student's record at the end of each semester.

Students who achieve a 3.25 to a 3.39 accumulative grade-point average their first semester of attendance shall be placed on probation. If they raise their accumulative grade-point average to the required 3.40 by the end of their second semester of attendance, they will be permitted to continue in the Distinguished Student Program. Any student whose accumulative grade-point average falls below a 3.25 overall shall be withdrawn from the program. Students may be readmitted to the program at a later date if they raise their accumulative grade-point average to at least 3.40.

A student who transfers to a baccalaureate program will no longer be eligible for the Distinguished Student Program but may apply to the University Honors Program for admission.

**OTHER FEATURES**

**Scholarships**

Distinguished students who meet the requirements for retention in the program are eligible for scholarships renewable each semester.

**Library Privileges**

All distinguished students receive a special borrower's card which entitles them to:

- Unlimited renewal of regularly circulating library materials, if no one has requested their return. All materials must be presented to the library for renewal.
- Privilege of using closed carrels.
- Privilege of borrowing materials on interlibrary loan.

The special borrower's card is renewable annually. Library handbooks are issued to all entering distinguished students.

**Open Classrooms**

Distinguished students may attend undergraduate classes or lectures for which they are not formally enrolled. Access to all courses and academic programs will be for a limited time with the approval of their adviser and in accordance with University policy.
Minor areas of study
Minor Areas of Study

REQUIREMENTS

The University of Akron has approved minor fields of study that may be placed on a student’s record when all requirements have been completed. The following rules apply to all minors:

- The student must complete at least 18 credits.
- At least six of the 18 credits must be at the 300/400 level except where the department does not offer 300/400-level courses.
- A minimum grade-point average of 2.00 in each minor is required.
- A minor may be designated at any time during the student’s career up to and including the time the degree is processed.
- A minor will be placed on the student’s record only at the time the student receives a baccalaureate degree and only on application.
- Courses for a minor may not be taken credit/noncredit. All credits must be earned (bypassed credit may not be used).

ADVISEMENT

Although not required to do so, students are advised to contact faculty in the department(s) in which they wish to earn minors early in their undergraduate programs.

SPECIFIC PROGRAM REQUIREMENTS*

Anthropology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3870:150</td>
<td>Cultural Anthropology</td>
<td>4</td>
</tr>
<tr>
<td>3870:151</td>
<td>Physical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>3870:356</td>
<td>New World Prehistory</td>
<td>3</td>
</tr>
<tr>
<td>3870:461</td>
<td>Language and Culture</td>
<td>3</td>
</tr>
</tbody>
</table>

- A minimum of six additional credits of anthropology courses.
- Nineteen total credits are required.

Art

Art History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7100:100</td>
<td>Survey of History of Art I</td>
<td>4</td>
</tr>
<tr>
<td>7100:101</td>
<td>Survey of History of Art II</td>
<td>4</td>
</tr>
<tr>
<td>7100:300</td>
<td>Art since 1945</td>
<td>3</td>
</tr>
<tr>
<td>7100:302</td>
<td>Art in Europe during the 17th and 18th Centuries</td>
<td>3</td>
</tr>
<tr>
<td>7100:323</td>
<td>Renaissance Art in Italy</td>
<td>3</td>
</tr>
<tr>
<td>7100:354</td>
<td>Art in Europe During the 19th Century</td>
<td>3</td>
</tr>
<tr>
<td>7100:400</td>
<td>Art in the U.S. before War II</td>
<td>3</td>
</tr>
<tr>
<td>7100:401</td>
<td>Special Topics in History of Art</td>
<td>3</td>
</tr>
<tr>
<td>7100:495</td>
<td>History of Art Symposium</td>
<td>3</td>
</tr>
<tr>
<td>7100:496</td>
<td>Special Problems in History of Art</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Art

- Core need not be completed.
- Prerequisites must be honored.
- Student may complete any department courses except 7100:191.

Ceramics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>7100:254</td>
<td>Introduction to Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>7100:354</td>
<td>Ceramics II</td>
<td>3</td>
</tr>
<tr>
<td>7100:454</td>
<td>Advanced Ceramics**</td>
<td>3</td>
</tr>
</tbody>
</table>

*All programs are listed in alphabetical order.
**May be repeated for a total of 15 credits.

Computer Imaging

- Requirements: Five courses in Computer Art and one of the following:
  7100:100 History of Art 4
  7100:101 Understanding Art 3
  7100:401 History of Graphic Design and portfolio review prior to the third computer art course 13

Crafts

- Prerequisites must be honored.
- Students must complete courses in two of these three areas: ceramics, metalsmithing, and weaving:
  7100:254 Introduction to Ceramics 3
  7100:265 Introduction to Metalsmithing 3
  7100:268 Color in Metals 3
  7100:293 Introduction to Fiber Arts 3
  7100:354 Ceramics I 3
  7100:368 Metalsmithing II 3
  7100:369 Color in Metals II 3
  7100:392 Weaving II 3
  7100:454 Advanced Ceramics** 3
  7100:466 Advanced Metalsmithing 3

Drawing

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7100:131</td>
<td>Introduction to Drawing</td>
<td>3</td>
</tr>
<tr>
<td>7100:231</td>
<td>Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>7100:242</td>
<td>Instrument Drawing</td>
<td>3</td>
</tr>
<tr>
<td>7100:233</td>
<td>Life Drawing</td>
<td>3</td>
</tr>
<tr>
<td>7100:283</td>
<td>Drawing Techniques</td>
<td>3</td>
</tr>
<tr>
<td>7100:331</td>
<td>Drawing III</td>
<td>3</td>
</tr>
<tr>
<td>7100:333</td>
<td>Advanced Life Drawing</td>
<td>3</td>
</tr>
<tr>
<td>7100:431</td>
<td>Drawing IV</td>
<td>3</td>
</tr>
<tr>
<td>7100:484</td>
<td>Illustration</td>
<td>3</td>
</tr>
<tr>
<td>7100:485</td>
<td>Advanced Illustration</td>
<td>3</td>
</tr>
<tr>
<td>7100:486</td>
<td>Packaging Design</td>
<td>3</td>
</tr>
<tr>
<td>7100:488</td>
<td>Publication Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Graphic Design

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7100:184</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>7100:263</td>
<td>Drawing Techniques</td>
<td>3</td>
</tr>
<tr>
<td>7100:268</td>
<td>Commercial Design Theory</td>
<td>3</td>
</tr>
<tr>
<td>7100:284</td>
<td>Letterform and Typography</td>
<td>3</td>
</tr>
<tr>
<td>7100:381</td>
<td>Graphic Video</td>
<td>3</td>
</tr>
<tr>
<td>7100:387</td>
<td>Advertising Layout Design</td>
<td>3</td>
</tr>
<tr>
<td>7100:388</td>
<td>Advertising Production Design</td>
<td>3</td>
</tr>
<tr>
<td>7100:389</td>
<td>Corporate Identity</td>
<td>3</td>
</tr>
<tr>
<td>7100:486</td>
<td>Advanced Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>7100:487</td>
<td>Illustration</td>
<td>3</td>
</tr>
<tr>
<td>7100:488</td>
<td>Advanced Illustration</td>
<td>3</td>
</tr>
<tr>
<td>7100:489</td>
<td>Packaging Design</td>
<td>3</td>
</tr>
<tr>
<td>7100:491</td>
<td>Publication Design</td>
<td>3</td>
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Illustration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>7100:284</td>
<td>Drawing Techniques</td>
<td>3</td>
</tr>
<tr>
<td>7100:285</td>
<td>Advanced Life Drawing</td>
<td>3</td>
</tr>
<tr>
<td>7100:480</td>
<td>Advanced Graphic Design/ Illustration Portfolio</td>
<td>3</td>
</tr>
<tr>
<td>7100:483</td>
<td>Illustration</td>
<td>3</td>
</tr>
<tr>
<td>7100:485</td>
<td>Advanced Illustration</td>
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Interior Design

<table>
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<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>7100:491</td>
<td>Architectural Presentations I</td>
<td>3</td>
</tr>
<tr>
<td>7100:492</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>7100:331</td>
<td>Applied Home Furnishings</td>
<td>3</td>
</tr>
<tr>
<td>7100:333</td>
<td>Interior Design I</td>
<td>3</td>
</tr>
<tr>
<td>7100:334</td>
<td>Interior Design II</td>
<td>3</td>
</tr>
<tr>
<td>7100:355</td>
<td>Fundamentals of Buying Home Furnishings</td>
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</table>

Metalsmithing

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7100:281</td>
<td>Introduction to Metalsmithing</td>
<td>3</td>
</tr>
<tr>
<td>7100:288</td>
<td>Color in Metals</td>
<td>3</td>
</tr>
<tr>
<td>7100:358</td>
<td>Metalsmithing II</td>
<td>3</td>
</tr>
<tr>
<td>7100:368</td>
<td>Color in Metals II</td>
<td>3</td>
</tr>
<tr>
<td>7100:466</td>
<td>Advanced Metalsmithing</td>
<td>3</td>
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</tbody>
</table>

Painting

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7100:245</td>
<td>Introduction to Polymer Acrylic Painting</td>
<td>3</td>
</tr>
<tr>
<td>7100:246</td>
<td>Introduction to Water Color Painting</td>
<td>3</td>
</tr>
<tr>
<td>7100:348</td>
<td>Painting II</td>
<td>3</td>
</tr>
<tr>
<td>7100:410</td>
<td>Advanced Painting**</td>
<td>3</td>
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</tbody>
</table>

Photography

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2240:122</td>
<td>Introduction to Commercial Photography</td>
<td>3</td>
</tr>
<tr>
<td>7100:275</td>
<td>Introduction to Photography</td>
<td>3</td>
</tr>
</tbody>
</table>

* Must be taken in a medium taken previously at the introductory level. May be repeated for a total of nine credits but limited to a maximum of three credits in any of the three media.
** Must be taken in a medium taken previously in Painting II. May be repeated for a total of nine credits.
It is strongly recommended that a minor in classical studies take at least three credits of 3400:364, 5.6, 7 Survey in Ancient History.

It is strongly recommended that a minor in classical studies fulfill the language requirement by taking 3220:121, 2, 223, 4 or 3210:121, 2, 223, 4.

Communicative Disorders

Core required courses:

- 700:110 Introduction to Disorders of Communication
- 700:120 Introduction to Audiology/Aural Rehabilitation
- 700:130 Biopsychosocial Analysis
- 700:211 Introduction to Speech Science

Select at least four hours from the following:

- 700:486 Speech-Language Hearing Disorders in the Public Schools
- 700:483 Seminar in Communicative Disorders
- 700:481 Special Projects: Communicative Disorders

Community Services Technology

- 2040:240 Human Relations
- 2060:200 Introduction to Community Services
- 2060:200 Introduction to Gerontological Services
- 2060:200 Alcohol Use and Abuse
- 2060:240 Drug Use and Abuse
- 2560:276 Techniques of Community Work

Computer Programming Technology

- 2440:20 Computer and Software Fundamentals
- 2440:121 Introduction to Programming Logic
- 2440:131 Introduction to Programming
- 2440:131 Structures COBOL
- 2440:234 Advanced COBOL Programming
- 2440:241 Systems Analysis and Design
- 2440:239 RPG II
- 2440:240 Electives

Criminal Justice Technology

Core courses:

- 2220:100 Introduction to Criminal Justice
- 2220:110 Criminal Law for Police
- 2220:204 Criminal Evidence and Court Procedures

Additional courses for general criminal justice minor:

- 2220:240 Vice Crime and Substance Abuse
- 2220:250 Criminal Case Management
- 2220:260 Administration and Supervision: Public Service

Additional courses for correctional areas of concentration:

- 3850:100 Introduction to Sociology
- 3850:130 Criminology
- 3850:431 Corrections
- 3850:432 Probation and Parole

Additional courses for security area of concentration:

- 2220:101 Introduction to Security
- 2220:201 Fire Prevention Practices
- 2220:202 Special Topics in Security

Dance

- 7900:115 Dance as an Art Form
- 7900:119* Introduction to Contemporary Dance I
- 7900:120* Introduction to Contemporary Dance II
- 7900:124* Introduction to Ballet I
- 7900:213* Introduction to Contemporary Dance III
- 7900:214* Fundamental Ballet Technique
- 7900:316 Choreography
- 7900:320 Dance Composition
- 7900:426 Technologies of Teaching Dance

*Must see dance department head for level placement.
### Economics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>3250.201.2</td>
<td>Principles of Economics</td>
<td>6</td>
</tr>
<tr>
<td>3250.244</td>
<td>Introduction to Economics Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3250.400</td>
<td>Intermediate Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>3250.410</td>
<td>Intermediate Microeconomics</td>
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</tr>
<tr>
<td>3350.100</td>
<td>Electives in Economics</td>
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</table>

### Labor Economics

<table>
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<tr>
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<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3250.201.2</td>
<td>Principles of Economics</td>
<td>6</td>
</tr>
<tr>
<td>3250.244</td>
<td>Introduction to Economics Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3250.410</td>
<td>Intermediate Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>3350.300</td>
<td>Electives in Economics</td>
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### English

**English Literature**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>3300.390</td>
<td>Professional Writing</td>
<td>6</td>
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</table>

### American Literature

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>3300.390</td>
<td>Professional Writing</td>
<td>6</td>
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</tbody>
</table>

### Creative Writing

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300.277</td>
<td>Introduction to Poetry Writing</td>
<td>3</td>
</tr>
<tr>
<td>3300.278</td>
<td>Introduction to Fiction Writing</td>
<td>3</td>
</tr>
<tr>
<td>3300.279</td>
<td>Introduction to Script Writing</td>
<td>3</td>
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</table>

### Geology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>3350.210</td>
<td>Physical and Environmental Geology</td>
<td>3</td>
</tr>
<tr>
<td>3350.230</td>
<td>Economic Geography</td>
<td>3</td>
</tr>
<tr>
<td>3350.230</td>
<td>Rural and Urban Settlement</td>
<td>3</td>
</tr>
<tr>
<td>3350.341</td>
<td>Maps and Map Reading</td>
<td>3</td>
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</tbody>
</table>

### History

- Twelve of the 18 credits must be at the upper-division level (300-400). A combination of courses in United States and non-United States history is required.
- A student may work primarily in United States history, European, Medieval, Latin-American and the like, provided in both cases there is some combination of distribution between United States and non-United States history.

### Home Economics and Family Ecology

#### Apparel Design and Construction

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400.131</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>7400.123</td>
<td>Clothing Construction</td>
<td>3</td>
</tr>
<tr>
<td>7400.305</td>
<td>Advanced Construction &amp; Tailoring</td>
<td>3</td>
</tr>
<tr>
<td>7400.211</td>
<td>Contemporary Needle Arts</td>
<td>3</td>
</tr>
<tr>
<td>7400.449</td>
<td>Flat Pattern Design</td>
<td>3</td>
</tr>
<tr>
<td>7400.488</td>
<td>Elective in Clothing and Textiles Area</td>
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</table>

#### Fashion

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>7400.121</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>7400.317</td>
<td>Historic Costume</td>
<td>3</td>
</tr>
<tr>
<td>7400.331</td>
<td>History of Textiles and Furnishings</td>
<td>3</td>
</tr>
<tr>
<td>7400.333</td>
<td>The Fashion Industry</td>
<td>3</td>
</tr>
<tr>
<td>7400.419</td>
<td>Clothing Communication</td>
<td>3</td>
</tr>
<tr>
<td>7400.488</td>
<td>Elective in Clothing and Textiles Area</td>
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</table>

#### Interior Design

See Act. Department Listing.

#### Clinical Nutrition

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>7400.133</td>
<td>Nutrition Fundamentals</td>
<td>3</td>
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<tr>
<td>7400.316</td>
<td>Science of Nutrition</td>
<td>4</td>
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<tr>
<td>7400.424</td>
<td>Nutrition in the Life Cycle</td>
<td>3</td>
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<tr>
<td>7400.428</td>
<td>Nutrition in Medical Sciences</td>
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#### Community Nutrition

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400.133</td>
<td>Nutrition Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>7400.316</td>
<td>Science of Nutrition</td>
<td>4</td>
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<tr>
<td>7400.380</td>
<td>Introduction to Community Nutrition</td>
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<tr>
<td>7400.424</td>
<td>Nutrition in the Life Cycle</td>
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<tr>
<td>7400.428</td>
<td>Community Nutrition II</td>
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<tr>
<td>7400.485</td>
<td>Practicum in Dietetics</td>
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#### Consumer Services Minor

(Prerequisites must be honored.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>7400.301</td>
<td>Consumer Education</td>
<td>3</td>
</tr>
<tr>
<td>7400.302</td>
<td>Consumers of Services</td>
<td>3</td>
</tr>
<tr>
<td>7400.303</td>
<td>Children as Consumers</td>
<td>3</td>
</tr>
<tr>
<td>7400.406</td>
<td>Family Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>7400.422</td>
<td>Family Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>7400.455</td>
<td>Public Policy and the American Family</td>
<td>3</td>
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</tbody>
</table>

*Prerequisites required.*
Food Systems Administration

2280.236 Food and Beverage Control 3
6500.341 Personnel Management* 3
2280.433 Nutrition Fundamentals 3
2280.435 Food Theory and Applications I 3
2280.436 Food Systems Management I 5
2280.437 Food Systems Management II, Clinical 2
2280.438 Food Systems Management 3

Food Science

7400.245 Fundamentals of Food Science and Nutrition 3
7400.246 Food Theory and Application II 3
7400.403 Advanced Food Preparation 3
7400.420 Experimental Foods 3

The remaining six credits may be selected from the following:

- 7400.411 Food Industry Analysis and Field Study 3
- 7400.412 Cultural Dimensions of Food 3
- 7400.413 Marketing and Food Management (may be selected from the following courses).
- 7400.414 Fundamentals of Food Science 3
- 7400.415 Development in Food Science 3
- 7400.416 Seminar (Food Science related) 3

Family Development

(Prerequisites must be honored)

7400.201 Relational Patterns in Marriage and Family 3
7400.265 Child Development 3

The remaining 12 credits may be selected from the following:

- 7400.251 Fatherhood: The Parental Role 2
- 7400.252 Parent Child Relationships* 2
- 7400.253 Home Management Theory 3
- 7400.254 Family Relationships in Middle and Later Years 2
- 7400.255 Family Life Patterns in Economically Deprived Homes 2
- 7400.256 Adolescence in the Family Context* 3
- 7400.257 Family Crisis 3
- 7400.258 Human Sexuality* 3
- 7400.259 Public Policy and the American Family 3
- 7400.260 Seminar Family Communication 3
- 7400.261 Parenting Skills* 3

Child Development

(Prerequisites must be honored)

7400.201 Relational Patterns in Marriage and Family 3
7400.265 Child Development 3

The remaining 12 credits may be selected from the following:

- 7400.122 Early Childhood Nutrition 2
- 7400.123 Fatherhood: The Parental Role 2
- 7400.124 Play and Creative Expression Activities* 4
- 7400.125 Administration of Child Care Centers* 3
- 7400.126 Parent Child Relationships* 2
- 7400.127 Family Life Patterns in Economically Deprived Homes 2
- 7400.128 Adolescents in the Family Context* 3
- 7400.129 Organization and Supervision of Child Care Centers 3
- 7400.130 Parenting Skills* 3

Hospitality Management

2280.121 Fundamentals of Food Preparation I 4
2280.122 Fundamentals of Food Preparation II 4
2280.135 Menu Planning and Purchasing 3
2280.233 Dining Room Service and Training 2
2280.234 Restaurant Operations and Food Management 4
2280.236 Food and Beverage Cost Control 3

Culinary Arts

2280.121 Fundamentals of Food Preparation I 4
2280.122 Fundamentals of Food Preparation II 4
2280.123 Meat Technology 2
2280.162 Wine and Beverage Service 2
2280.232 Dining Room Service and Training 2
2280.261 Baking and Classical Desserts 3
2280.262 Classical Cuisine 3
2280.263 International Foods 2

Hotel/Motel Management

2280.150 Front Office Procedures 3
2280.152 Maintenance and Engineering Management 3
2280.153 Principles of Fire Protection and Life Safety 3
2280.240 System Management and Personnel 3
2280.256 Hospitality Law 3
2280.258 Hotel/Motel Sales Promotion 3
2280.259 Hotel/Motel Housing Management 3

Interpreting for the Deaf

2210.100 Introduction to Interpreting for the Deaf 4
2210.104 Sign Language, Gesture and Mime 3

*Prerequisites required.

Library

- Courses are offered in alternate years.
- Students are encouraged to take typing before taking library courses.

Marketing and Sales Technology

2520.106 Principles of Retailing 3
2520.107 Visual Promotion 4
2520.202 Organizing and Operating Library/Media Centers 3
2520.303 Materials Selection 2
2200.204 Reference Procedure 3
2200.205 Information Retrieval Systems in Library Technology 3
2200.297 Independent Study 1

Mathematical Sciences

- Total credits required for minors in mathematical sciences — 24.

Mathematics/Applied Mathematics

3450.221 I, II, III Analytical Geometry-Calculus I, II, III 12
3450.233 Differential Equations 3
3450.312 Linear Algebra 3
- Approved 300/400-level mathematical sciences electives (at least three credits in 3450 courses).

Statistics

3450.221 I, II Analytic Geometry-Calculus I, II 8
3450.312 Linear Algebra 3
3450.461 Applied Statistics 4
3450.463 Experimental Design I 4
- Approved 400-level statistics electives. 6

Computer Science

3450.221 I, II Analytic Geometry-Calculus I, II 8
3450.215 Introduction to Programming III 3
3450.235 Data Structures 3
3450.312 Assembly Language Programming 3
- Approved 300/400-level computer science electives. 6

Military Studies

Aerospace Studies

1500.113 First Year Aerospace Studies 15
1500.114 First Year Aerospace Studies 15
1500.253 Second Year Aerospace Studies* 15
1500.254 Second Year Aerospace Studies* 15
1500.303 Third Year Aerospace Studies 3
1500.304 Third Year Aerospace Studies 3
1500.453 Fourth Year Aerospace Studies 3
1500.454 Fourth Year Aerospace Studies 3

Military Science

1600.100 Introduction to Military Science I* 2
1600.101 Introduction to Military Science II* 2
1600.200 Basic Military Leadership 2
1600.201 Basic Military Leadership 2
1600.300 Advanced Leadership I 3

*These courses can be taken as "either/or" for core curriculum. Place credit can be given between the two programs.
Modern Languages

French, German, Spanish, Russian or Italian
- A minimum of 18 credits is required.
- The student must have at least 12 credits beyond the second year excluding courses which are not counted for credit toward a major.

Music

Jazz Studies
- 750:210 Jazz Improvisation I 2
- 750:211 Jazz Improvisation II 2
- 750:212 Music Industry Survey 2
- 750:307 Technique of Small Band Performance and Direction 2
- 750:308 Jazz History and Literature 3
- 750:497 Elective in Jazz* 2
- 751:115 Jazz Ensemble 4
- 7520 Applied Jazz Study 8

Music
- 750:151 Theory I 3
- 750:152 Theory II 3
- 750:301 Music Appreciation: Music before 1800 2
- 750:302 Music Appreciation: Nineteenth and Twentieth Centuries 2
- 7520 Applied Music 8
- 7510 Ensemble 4
- 7510 Music Effective (Selected from any 7500 course at 300 or 400 level) 2

Office Administration
- Core:
  - 2540:151, or 253 Beginning, Intermediate, or Advanced Keyboarding 6
  - 2540:125 Electronic Business Calculations 2
- Additional courses for general secretarial area:
  - 2540:171, 276 or 276 Shorthand/Transcription 8
  - 2540:141 Information Management 3
  - 2540:121 Introduction to Office Procedures 3
- Additional courses for word processing area:
  - 2540:241 Information Management 3
  - 2540:280 Word Processing Concepts 2
  - 2540:281 Machine Transcription 2
  - 2540:286 Keyboarding of Word Processing Equipment 3
- Additional courses for information management area:
  - 2540:211 Accounting I 3
  - 2540:212 Introduction to Office Procedures 3
  - 2540:241 Information Management 3
  - 2540:281 Machine Transcription 2

Philosophy

Requirements
- A total of 18 semester credits in philosophy including: (a) at least three semester credits at the introductory level (introduction to philosophy, logic or ethics); and (b) at least six semester credits at the 300/400 level.
- Students may select a minor related to their major area of study.

Minors
- Major Area
  - Philosophy Minor
- Arts
  - philosophy of art
- Humanities
  - philosophy of science
- Natural sciences
  - philosophy of mathematics
- Computer sciences/mathematics
  - philosophy of science
- Law
  - philosophy of law
- Business
  - philosophy of management
- Teaching
  - philosophy of education
- Theology
  - philosophy of religion
- Political science
  - political philosophy
- Communication/journalism
  - philosophy of communication
- Social work
  - social philosophy

*Elective to be determined in consultation with the director of Jazz Studies.
†This eight-credit requirement must be satisfied in four separate semesters. In order to complete the Minor in Music, the student must successfully try the "200" level.

Health professions  biomedicine philosophy
Technical writing  philosophy of language
Engineering  philosophy of technology
- Other minors in philosophy may be designed with the approval of the Department of Philosophy.
- Students should consult with the Department of Philosophy for courses appropriate to their minors.

Examples
- Examples of courses available for students majoring in arts, humanities and natural sciences follow:
  - Arts (philosophy of art)
    - 3600:120, 223 Ethics
  - 3600:211, 312,13 History of Philosophy
  - 3600:481/581 Philosophy of Language
  - 3600:232 Philosophy of Religion
  - 3600:424/524 Existentialism
  - 3600:426/526 Phenomenology
  - Humanities (philosophy)
    - 3600:120, 223 Ethics
  - 3600:170, 374 Logic

Mathematics
- Additional courses for word processing area:
  - 2400:280 Word Processing Concepts 2
  - 2400:286 Keyboarding of Word Processing Equipment 3
- Additional courses for information management area:
  - 2540:211 Accounting I 3
  - 2540:212 Introduction to Office Procedures 3
  - 2540:241 Information Management 3
  - 2540:281 Machine Transcription 2

Physics
- Requirements for a minor in physics include: 3600:291.2 Elementary Classical Physics II — eight credits; and, physics electives at the 300/400 level — 10 credits.

Political Science
- Each student shall complete at least nine of the required credits in 300/400 level coursework in political science.
- A student may select a minor concentration from one of the five following course sequences.

American Politics
- 3700:100 Government and Politics in the United States 4
- Fourteen credits from the following:
  - 3700:210 State and Local Government and Politics 3
  - 3700:306 American Political Ideas 3
  - 3700:341 American Political Parties and Interest Groups 3
  - 3700:342 Minority Group Politics 3
  - 3700:351 The American Presidency 3
  - 3700:360 The Judicial Process 3
  - 3700:370 Public Administration Concepts and Practices 4
  - 3700:380 Urban Politics and Policies 4
  - 3700:381 State Politics 3
  - 3700:382 Intergovernmental Relations 3
  - 3700:402 Politics and the Media 3
  - 3700:440 Public Opinion and Political Behavior 4

Comparative Politics
- 3700:200 Comparative Politics 4
- Fourteen credits from the following:
  - 3700:304 Modern Political Thought 3
  - 3700:320 Britain and the Commonwealth 3
  - 3700:321 Western European Politics 3
  - 3700:322 Soviet and East European Politics 3
  - 3700:323 Politics of China and Japan 3
  - 3700:325 Comparative Public Policy 3
Sociology

- Nineteen total credits are required.
- Required for all students: 3850:100 Introduction to Sociology 4
- A minimum of 15 additional credits of sociology courses at the 300/400 level are required. Students may wish to select courses which relate to a particular interest area (e.g., family, health and illness, sex roles, urban life, gerontology). These areas are outlined in materials available in the Department of Sociology. Students with such interest should see an adviser in the Department of Sociology for assistance in course selection for the minor program.

Theatre Arts

(Requires a minimum of 24 credits.)
7800:100 Experiencing Theatre 3
7800:102 Introduction to Technical Theatre 3

Thirteen additional credits are required: three credits from each of the following areas, four credits of theatre electives, plus two credits of practical theatre experience.

Design/Technology
7800:106 Introduction to Stage Design 3
7800:285 Basic Stagecraft I 3
7800:464 Stage Lighting 3

Acting/Directing
7800:171 Acting I 3
7800:271 Directing I 3

Musical Theatre
7800:421 Music Theatre Production 3
7800:475 Acting for the Musical Theatre 3

History/Dramatic Literature
7800:370 The American Theatre 3
7800:467 Contemporary Theatre Styles 3

Theatre Production/Performance
7810 Production/Performance 1

Theatre Electives
4

Transportation

- Core:
  2560:110 Principles of Transportation 3
  2560:118 Transportation Rate Systems 3
  2560:221 Traffic and Distribution Management 3
  2560:224 Transportation Regulation 3
- Six credits from the following:
  2560:115 Motor Transportation 3
  2560:116 Air Transportation 2
  2560:117 Water Transportation 2
  2560:222 Microcomputer Applications in Transportation 3
  2560:227 Transportation of Hazard Materials and Waste 2

Airline/Travel Industry Option

Students wishing to obtain a minor in this option must complete the following courses with a 2.0 grade point average.

- Core:
  2560:110 Principles of Transportation 3
  2560:116 Air Transportation 2
  2560:223 Introduction to Travel 2
  2560:230 Tour Planning and Packaging 2

In addition to the above core, a minimum of seven hours must be completed from the following:

  2560:118 Transportation Rate Systems 2
  2560:140 Keyboarding for Non-Secretaries 2
  2560:221 Traffic and Distribution Management 3
  2560:231 Computerized Reservations I 2
  2560:232 Computerized Reservations II 2

Minor Areas of Study

113
Interdisciplinary and certificate programs
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 1800 __.

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

AFRO-AMERICAN STUDIES

N. Holmes, Director

Requirements

To satisfy the requirements for the certificate, a student must complete at least 11 semester credits and four courses with a minimum 2.00 GPA from the list of acceptable courses or other courses identified by the director. The requirements are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1810:401</td>
<td>3</td>
</tr>
<tr>
<td>3400:220</td>
<td>3</td>
</tr>
</tbody>
</table>

Acceptable Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Text</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100:335</td>
<td>Eastern Civilizations — Africa</td>
<td>2</td>
</tr>
<tr>
<td>1810:401</td>
<td>General Seminar in Afro-American Studies</td>
<td>3</td>
</tr>
<tr>
<td>2040:225</td>
<td>The Black American</td>
<td>2</td>
</tr>
<tr>
<td>3250:486</td>
<td>Ghana Economic Development</td>
<td>3</td>
</tr>
<tr>
<td>3300:350</td>
<td>Black American Literature</td>
<td>3</td>
</tr>
<tr>
<td>3300:389</td>
<td>United States Dilemmas: Black and White</td>
<td>3</td>
</tr>
<tr>
<td>3300:393</td>
<td>Africa South of the Sahara</td>
<td>3</td>
</tr>
<tr>
<td>3400:220</td>
<td>Black People of the United States</td>
<td>3</td>
</tr>
<tr>
<td>3400:413</td>
<td>Black Social and Intellectual History</td>
<td>3</td>
</tr>
<tr>
<td>3700:327</td>
<td>African Politics</td>
<td>3</td>
</tr>
<tr>
<td>3800:421</td>
<td>Racial and Cultural Intergroup Relations</td>
<td>3</td>
</tr>
<tr>
<td>7700:270</td>
<td>Poverty in the United States</td>
<td>3</td>
</tr>
<tr>
<td>7700:276</td>
<td>Introduction to Social Welfare</td>
<td>4</td>
</tr>
<tr>
<td>7750:410</td>
<td>Minority Issues in Social Work</td>
<td>3</td>
</tr>
</tbody>
</table>

Research Paper

The research paper will be written under the direction of a faculty member most suitable to the area of concern of the student’s research interest; be one semester in duration; and be approved by that faculty member. The director of Afro-American Studies, in consultation with the faculty member, will approve the topic for the research paper.

A student undertaking the Afro-American Studies Certificate Program must have prior consultation with the director of Afro-American Studies.

AGING SERVICES

John Mumper, Coordinator

This program is intended for individuals who wish to enhance their knowledge of the aging process, study issues pertinent to the elderly, and develop skills useful in working with senior citizens. This program is not limited to community services majors.

This certificate is generally designed for individuals in one of the following categories:

- The person with no degree but who is contemplating working with senior citizens.
- The person with a degree who has not had specialized training in the field of gerontology, but who would like to work in this field.
- The person employed in this field who would like to upgrade his/her knowledge and skills.
- Persons interested in enhancing the quality of their post-retirement years or those of family and friends.

Persons interested in this program should consult with the Coordinator of Community Services Technology or an academic adviser in the Community and Technical College.

Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020:121</td>
<td>English</td>
</tr>
<tr>
<td>2260:222</td>
<td>Technical Report Writing</td>
</tr>
<tr>
<td>2260:150</td>
<td>Introduction to Gerontological Services</td>
</tr>
<tr>
<td>2260:251</td>
<td>Community Services for Senior Citizens</td>
</tr>
<tr>
<td>2260:276</td>
<td>Technique of Community Work</td>
</tr>
<tr>
<td>2260:279</td>
<td>Technical Experience: Community and Social Services</td>
</tr>
</tbody>
</table>

ALCOHOL SERVICES AIDE

This program is intended for individuals who wish to enhance their knowledge of alcohol use and abuse and the treatment of alcoholism. The program is not limited to community services majors. This certificate is generally designed for individuals in one of the following categories:

- The person with no degree but who is contemplating working in the field of alcoholism treatment.
- The person with a degree who has not had specialized training, but who would like to be employed in the field of alcoholism treatment.
- The person employed in this field who would like to upgrade his/her knowledge and skills.

Persons interested in this program should consult with the Coordinator of Community Services Technology or an academic adviser in the Community and Technical College.

Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020:121</td>
<td>English</td>
</tr>
<tr>
<td>2260:222</td>
<td>Technical Report Writing</td>
</tr>
<tr>
<td>2260:260</td>
<td>Alcohol Use and Abuse</td>
</tr>
<tr>
<td>2260:261</td>
<td>Alcohol Treatment</td>
</tr>
<tr>
<td>2260:262</td>
<td>Basic Helping Skills in Alcohol Problems</td>
</tr>
<tr>
<td>2260:263</td>
<td>Group Principles in Alcoholism</td>
</tr>
<tr>
<td>2260:276</td>
<td>Techniques of Community Work</td>
</tr>
<tr>
<td>2260:279</td>
<td>Technical Experience: Community and Social Services</td>
</tr>
</tbody>
</table>

APPLIED POLITICS

The Certificate Program in Applied Politics offers concentrated coursework in the history, organization and management of campaigns intended to influence the outcome of political decisions. This includes as a major focus, but is not limited to, efforts to capture elective public office in partisan contests. This program is available to any student who has a deep interest in practical politics. The set of courses comprising the certificate program is also incorporated as
a track within the Bachelor of Arts and Bachelor of Science in Public Policy Management Program. Interested students are able to create degree programs with an emphasis on campaign management.

**Requirements**

Persons are eligible for admission to the Certificate Program in Applied Politics if they have been admitted to study as special, non-degree or full-time students in any department of the University. Students who are pursuing a graduate degree in other departments at the University may be admitted to the master's level certificate program upon the recommendation of the head of the department in which they are enrolled. Students shall seek admission to this program by filing an application with the political science department. The student will schedule courses with the assistance of an adviser in the department.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3700:340</td>
<td>American Political Parties and Interest Groups (UG)</td>
<td>3</td>
</tr>
<tr>
<td>3700:630</td>
<td>Seminar in National Government (G)</td>
<td>3</td>
</tr>
<tr>
<td>3700:470/570</td>
<td>Campaign Management</td>
<td>3</td>
</tr>
<tr>
<td>3700:471/571</td>
<td>Campaign Finance</td>
<td>3</td>
</tr>
<tr>
<td>3700:472/572</td>
<td>Party and Interest Group Organization and Management</td>
<td>3</td>
</tr>
<tr>
<td>3700:402/502</td>
<td>Politics and the Media</td>
<td>3</td>
</tr>
<tr>
<td>3700:440/540</td>
<td>Public Opinion and Political Behavior</td>
<td>4</td>
</tr>
<tr>
<td>3700:395/695</td>
<td>Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must maintain at least a 3.0 average in their coursework for the certificate.

**Certificate**

Political science majors at both the undergraduate and graduate level will, upon completion of the program, be awarded a B.A., B.S. or M.A. in Political Science with a Certificate in Applied Politics. Majors in other disciplines will have the certificate noted on their permanent records.

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**CARTOGRAPHIC SPECIALIZATION**

Dr. A. Noble, Department Head

**Requirements**

This program of professional and scientific education is intended to enhance cartographic training in data handling, analysis and graphic communication of simple and complex geographic data and information. The program is not limited to geography majors and is designed to introduce automated and traditional cartographic skills to the student in a wide spectrum of disciplines offered through the laboratory for cartographic and spatial analysis housed in the Department of Geography. These training opportunities provide for specialized study in the rapidly changing and significant area of cartography as a method of graphic communication. The program is flexible to meet the varied backgrounds and interests of the individual student.

In addition to cartographic courses in the Department of Geography, many useful courses are found in other departments. The program is designed to permit the student to combine interesting and useful elements of art, science and technology.

Cartography has a very long and rich history and, while it is eminently practical, has a strong component of theory. For this reason, a student may elect to take cartographic courses simply because they are focused on an interesting and exciting liberal arts subject. Other students choose cartography courses with the thought of increasing their potential of finding a position subsequent to graduation. There is a well-documented need for persons trained in cartographic awareness and skill in business, industry and government, as well as the academic community.

**Core**

Complete five of the following basic courses:

1. Maps and Map Reading
2. Cartography
3. Thematic Cartography
4. Map Compilation and Reproduction
5. Introduction to Remote Sensing
6. Automatic Computer Mapping
7. Advanced Remote Sensing

**Electives**

Each student must complete at least seven credits distributed between professional, technical and research offerings in departments other than the Department of Geography. These courses will be selected in consultation with the program's director. Similar courses completed at other universities, up to five years prior to admission of candidacy, may be approved by the director.

The electives help develop a diverse cartographic skill and perspective which is significant and useful for persons working with data systems management, urban planning and environmental impact studies. To be truly effective and comprehensive in a career, the student must know a variety of professional and technical approaches to cope with social, economic, political, geographical, physical design and governmental problems. Selecting courses that duplicate or continue topical interests already well established in a particular student's background will be discouraged.

**Internship**

Internship in an agency, firm or office engaged in related graphic and cartographic work; or an internship in the University's Laboratory for Cartographic and Spatial Analysis.

**Final Examination and Defense of Cartographic Works**

After the completion of coursework each student undergoes an oral examination covering samples of the student's cartography, conducted by two members of the department and one from the elective area. Questions cover the specific projects and topics covered in the coursework completed specifically for the program. One week before the scheduled examination, the student submits samples of cartographic work.

The works must be acceptable by the examination committee and reduced photographic copies will be kept for permanent record in the laboratory's file. After passing the oral examination and the acceptance of the samples of cartography, the student is considered to have completed the program.

A minimum grade of "C" is required in all elective courses taken as part of the certificate program. In the five core courses, an average grade of "B" is required.

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**CHILD CARE WORKER**

Harriet K. Herskowitz, Coordinator

**Requirements**

The establishment of this certificate program provides basic vocational training for child-care practitioners. The course of study is a means of meeting the short range goals of students interested in acquiring skills for immediate job placement.

- **2040:246** Human Relations
- **2200:265** Infant/Toddler Day-Care Programs
- **2200:250** Observing and Recording Children’s Behavior
- **5200:310** Introduction to Early Childhood Education
- **5300:315** Issues and Trends in Early Childhood Education
- **5300:360** Teaching in the Nursery Center
- **5300:370** Nursery Center Laboratory
- **7400:265** Child Development
- **7400:270** Theory and Guidance of Play
- **7400:280** Creative Activities for Pre Kindergarten Children

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**COMPOSITION**

Dr. Martin McKoski, Director

**Requirements**

To be eligible for the certificate in composition, a person must be admitted to the University as a graduate student (with either regular graduate status or special non-degree 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.

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*The awarding of this certificate is 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.*
Required Courses:

3300:576 Seminar: Theory and Teaching of Basic Composition 3
3300:673 Theories of Composition 3
3300:676 Seminar: Research Methodologies in Composition 3

Optional Courses

3300:530 History of the English Language 3
3300:571 U.S. Diacritics, Black and White 3
3300:589 Grammatical Structures of Modern English 3
3300:575 Theory of Rhetoric 3
3300:589 Sociology 3
3300:670 Modern Linguistics 3
3300:689 Seminar: Sociolinguistics 3

COMPUTER PHYSICS CERTIFICATE

Dr. E. Von Meerwall, Director

Requirements
To qualify for the certificate program, a student must be in good academic standing in the major department and must submit a written request for admission to the director of the program. This course of study adds a component of both mathematics and computer science to a major in one of the four credits of mathematics in the Department of Mathematics.

Physics

3650:291 Elementary Classical Physics I, II 8
3650:292 Laboratory Data Analysis 3
3650:350 Computational Physics 3
3650:468 Digital Data Acquisition 3

Mathematics

3450:221 Analytic Geometry-Calculus I, II 8

Computer Science

3460:209 Computer Programming I 3
3460:210 Computer Programming II 3

The certificate program has been structured to be accessible to most students working toward an undergraduate degree in a traditional area of science. The courses, beyond Elementary Classical Physics, emphasize computer applications, including interfacing and data acquisition, data analysis, and use of computers to solve physical problems.

COMPUTER SCIENCE

Dr. William C. Beyer, Department Head

Requirements

Entrance
To qualify for the Computer Science Certificate Program, a student must be in good academic standing in the major department, must have completed four credits of mathematics in the Department of Mathematical Sciences and must submit to the department head a written request for admission to the program. The request will outline the student's reasons and goals for enrolling in the program. The area of concentration adds a further dimension of both mathematics and computer science to the student's major in one of the traditional academic disciplines. A minimum grade-point average of 2.00 in the certificate is required.

Courses

3450:215 Concepts of Calculus I 4
3450:216 Concepts of Calculus II 4
3450:221 Analytic Geometry-Calculus I 4
3450:222 Analytic Geometry-Calculus II 4
3460:209 Computer Programming I 3
3460:210 Computer Programming II 3
2460:306 Assembly Language Programming 3
3460:316 Introduction to Data Structures 3
Approved 300/400-Level Computer Science Electives 6

COMPUTER SOFTWARE FOR BUSINESS

Joyce Mirman, Coordinator

Requirements

The Computer Software for Business certificate provides the opportunity for those with little or no prior computer experience to become proficient in the use of popular microcomputer software and understand the fundamental concepts of software development.

2440:120 Computer and Software Fundamentals 2
2440:121 Introduction to Programming Logic 2
2440:125 Lotus 1-2-3 2
2440:133 Structured COBOL Programming 2
2440:150 BASIC Programming for Business 3
2440:151 PC DOS Fundamentals 1
2440:245 Introduction to dBase III + IV 3
2440:267 dBase IV: An Introduction 3

CRIMINAL JUSTICE TECHNOLOGY

Kenneth L. McCormick, Coordinator

Requirements

The program is designed to provide background, proficiency and updating in the criminal justice area. In the immediate geographic area there are approximately 2,200 police officers and support personnel in police departments. While many of these police officers have completed a degree, many more would benefit by this type of approach. The designed program would provide a measure of recognition for those students enrolled and completing the program. The program would be monitored and has been included in many localities as an incentive for promotion, pay increases and lateral movement within the police agency.

2220:100 Introduction to Criminal Justice 3
2220:102 Criminal Law and Process 3
2220:104 Evidence and Criminal Legal Process 3
2220:240 Dynamics of Vice Crime and Substance Abuse 3
2220:250 Criminal Case Management 6
3850:100 Introduction to Sociology 4

*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.
CRIMINAL JUSTICE/SECURITY EMPHASIS

Kenneth L. McCormick, Coordinator

Requirements*

The program is designed to provide students with an integrated approach to the field of criminal justice and security. The program is designed for students who have already completed coursework in Law, Accounting or Family Studies. Applicants planning to pursue this certificate must apply to the Center for Family Studies and the Graduate School for admission as a non-degree student.

All applicants to the program should have previously earned a law degree or a master’s degree (at minimum in the behavioral sciences, such as psychology, social work, counseling and marriage and family therapy, or child and family development). Applicants planning to pursue the certificate must apply to the Center for Family Studies and the Graduate School for admission as a non-degree student. 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890.601</td>
<td>Divorce Mediation</td>
<td>3</td>
</tr>
<tr>
<td>1890.602</td>
<td>Divorce Mediation Practicum</td>
<td>2</td>
</tr>
</tbody>
</table>

Select at least one from each area:

Law

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>9200.638</td>
<td>Family Law</td>
<td>3</td>
</tr>
<tr>
<td>7400.651</td>
<td>Family Consumer Law</td>
<td>3</td>
</tr>
</tbody>
</table>

Accounting

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200.601</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>9200.621</td>
<td>Accounting for Lawyers</td>
<td>3</td>
</tr>
</tbody>
</table>

Family

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5660.655</td>
<td>Marriage and Family Therapy Theory and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>5660.667</td>
<td>Marital Therapy</td>
<td>3</td>
</tr>
<tr>
<td>7400.607</td>
<td>Family Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

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

Environmental HEALTH

Richard E. Amos, Coordinator

Students majoring in any department may earn the certificate in environmental health by completing a program agreed on in advance by the coordinator and the major adviser, to include a minimum of 21 credits in approved core and elective courses. Students must also complete a course in statistics approved by the Environmental Health Committee. The certificate program is designed to supplement the student’s major and therefore the certificate will be awarded only upon completion of the bachelor's degree.

Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890.300</td>
<td>Introduction to Environmental Health</td>
<td>3</td>
</tr>
<tr>
<td>1890.410</td>
<td>Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>1890.437</td>
<td>Individual Studies or Internship in Environmental Health or Approved Equivalent</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Electives

Students will complete courses in at least two departments in the natural sciences and two in the social sciences, not to include the major department, from the following list or others approved by the Environmental Health Committee.

Environmental Health

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890.450</td>
<td>Seminar in Environmental Health</td>
<td>1</td>
</tr>
<tr>
<td>1890.480</td>
<td>Special Topics in Environmental Health</td>
<td>3</td>
</tr>
</tbody>
</table>

NATURAL SCIENCES

Biology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100.130</td>
<td>Principles of Microbiology (non majors)</td>
<td>3</td>
</tr>
<tr>
<td>3100.331</td>
<td>Microbiology (majors)</td>
<td>4</td>
</tr>
<tr>
<td>3100.363</td>
<td>Laboratory Techniques and Instrumentation in Biology</td>
<td>2</td>
</tr>
<tr>
<td>3100.426</td>
<td>Applied Aquatic Ecology</td>
<td>3</td>
</tr>
<tr>
<td>3100.450</td>
<td>Animal Pests and Vectors</td>
<td>3</td>
</tr>
<tr>
<td>3100.480</td>
<td>Radiation Biology</td>
<td>3</td>
</tr>
</tbody>
</table>

Chemistry

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3150.498</td>
<td>Special Topics: Environmental Chemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

Geography

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3350.495</td>
<td>Soil and Water Field Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Geology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3370.200</td>
<td>Environmental Geology</td>
<td>3</td>
</tr>
<tr>
<td>3370.470</td>
<td>Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>3370.474</td>
<td>Groundwater Hydrology</td>
<td>3</td>
</tr>
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</table>

Civil Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>4300.423</td>
<td>Water Pollution Principles</td>
<td>4</td>
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</table>

Home Economics and Family Ecology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>7400.133</td>
<td>Fundamentals of Nutrition</td>
<td>3</td>
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</table>

SOCIAL SCIENCES

Philosophy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>3600.120</td>
<td>Introduction to Ethics</td>
<td>3</td>
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</table>

Political Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>3700.441</td>
<td>Policy Processes</td>
<td>3</td>
</tr>
<tr>
<td>3700.442</td>
<td>Methods of Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3700.450</td>
<td>Policy Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

Psychology

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>3750.340</td>
<td>Social Psychology</td>
<td>4</td>
</tr>
</tbody>
</table>
The student with the director of the Center for Social Work

**ENVIRONMENTAL STUDIES**

Dr. Jim Jackson, Director

**Requirements**

To qualify for the certificate program, a student must be in good academic standing with the major department and request admission to the program. The request will outline the student’s reasons and goals for enrolling in the program. The student will take a minimum of six courses from a list approved by the committee on environmental studies. Two of these courses will be:

- 1830:201 Man and the Environment
- 1830:401 Seminar on Environmental Studies

The student will be required to select courses from areas other than the major since the purpose of the program is to broaden the student’s background.

The student’s plan of study for this certificate will be developed in consultation with the director of the Center for Environmental Studies.

**Courses**

- 1830:201 Man and the Environment
- 1830:401 Seminar on Environmental Studies
- 1830:402 Workshop in Environmental Studies
- 1830:602 Evaluation of Environmental Data
- 1830:681 Graduate Seminar in Environmental Studies
- 3100:125 Ecology and Biological Resources
- 3100:423 Conservation of Biological Resources
- 3100:424 Limnology
- 3100:425 Applied Aquatics Ecology
- 3260:365 Economics: Natural Resources and Environment
- 3290:314 Climatology
- 3350:335 Recreational Resource Planning
- 3350:436 Urban Land Use Analysis
- 3350:447 Introduction to Remote Sensing
- 3350:486 Soil and Water Field Studies
- 3370:203 Environmental Geology
- 3370:474 Ground Water Hydrology
- 3370:478 Urban Geology
- 3400:144 American Environmental History
- 3850:321 Population
- 3850:425 Sociology of Human Life
- 4000:201 Energy and Environment
- 4000:202 Air Pollution
- 4200:463 Pollution Control
- 4300:411 Environmental Engineering
- 4300:425 Environmental Engineering Laboratory
- 5600:491 Workshop: Arithmetic or in Physical Science

Although fire continues to be a growing problem in the United States with more than 2,300,000 fires annually causing 6,000 fatalities and 30,000 injuries, many municipalities are financially unable to provide a full-time fire department and instead must depend upon the dedicated volunteer firefighter. As this trend continues, the need for the well-educated volunteer will be even more critical as these citizens assume responsible officer positions.

The Fire Protection Technology certificate will assist the student in acquiring the skills and knowledge to function effectively as a volunteer/paid-on-call firefighter or officer in addition to receiving a certificate of completion and accomplishment.

- 2230:100 Introduction to Fire Protection
- 2230:102 Fire Safety in Building Design and Construction
- 2230:104 Fire Investigation Methods
- 2230:202 Fire Suppression Methods
- 2230:204 Fire Hazard Recognition
- 2230:205 Fire Detection and Suppression Systems
- 2230:250 Hazardous Materials

**FIRE PROTECTION TECHNOLOGY**

David H. Hoover, Coordinator

**Requirements**

*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.*

**GERONTOLOGY**

Dr. Hervey Sterns, Director
Dr. Isadore Newman, Associate Director
Dr. Donald Stuhl, Assistant Director for Research

**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 helps to meet the critical shortage of trained individuals in the field of gerontology.

The undergraduate and graduate curriculum 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 (Personal Option) with a Certificate in Gerontology.

**Admission**

To participate in the program, a student should:

- Be formally admitted to The University of Akron as an undergraduate postbaccalaureate or graduate student.
- Make written application to the program countersigned 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**

**Undergraduate**

Minimum: 20 credits.

**Core**

- 1580:450 Interdisciplinary Seminar in Gerontology
- 1850:495 Practicum Internship (with in Institute or in individual departments)
- 3100:192 Biology of Aging
- 3750:475 Psychology of Adulthood and Aging
- 3980:343 The Sociology of Aging

**Electives** (must be outside of student’s major degree department)
Interdisciplinary and Certificate Programs of Study

Higher Education

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 the Graduate School for admission as a special non-degree student.

Program

Courses and internships in higher education are directed toward the study of administrative and academic operations of colleges and universities. Specific program options include administration, student services, curriculum and instruction. Each of the options requires an internship. In the case of the curriculum and instruction option, a higher education teaching internship developed in conjunction with the student's major academic adviser and the center staff may be anticipated. Internships may be completed at the University or at one of several cooperating institutions.

Required:
- Seminar, History and Philosophy of Higher Education
- Introductory Administrative Colloquium in Higher Education
- Advanced Administrative Colloquium in Higher Education
- Internship and Internship Seminar

Elective Courses
- Advanced Social Work
- Advanced Social Work Practice
- Advanced Social Work Theory

Program Planning, Curriculum and Instruction in Higher Education (I)

5700:704 Administrative Organization in Higher Education (A) 2
5900:715 Seminar in Higher Education: Administration in Higher Education (B) 3

Program Planning, Curriculum and Instruction in Higher Education (II)

5700:769 Counseling and Personnel Services in Higher Education (A) 3
5900:775 Seminar in Higher Education: Student Services (B) 3

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

5700:770 Higher Education Curriculum and Program Planning (A) 3
5900:787 Instructional Strategies and Techniques for the College Instructor (B) 3
5900:789 Principles of Curriculum Development (B) 3

Home-based Intervention Therapy

Helen K. Clemighshaw, Coordinator

Program

18 graduate credits must be successfully completed in the following areas as outlined below.

Core Courses

- Students must successfully complete 1620:603, 604 and the 9 credits of eligibility courses prior to taking 1820:605.
- 1620:603 Home-based Intervention Theory 3
- 1620:604 Home-based Intervention Techniques and Practice 3
- 1820:605 Home-based Intervention Internship 3

Eligibility Courses

Students must have completed at least 9 credits of coursework in the following areas as follows: systems theory, developmental theory, therapeutic theory.

Theoretical Frameworks

- Systems Theory
  - 3160:620 General Systems Theory 3
  - 3160:643 Theories and Philosophy of Counseling 3
  - 3160:655 Marriage and Family Therapy: Theory and Techniques 3
  - 7400:607 Family Dynamics 3

- Developmental Theory
  - 3850:512 Socialization: Child to Adult 3
  - 7400:602 Family Life Span Perspective 2
  - 7400:605 Developmental Parent-Child Interactions 3
  - 7400:610 Child Development Theories 3

- Theoretical Therapy
  - 5600:651 Techniques in Counseling 3
  - 5600:667 Marital Therapy 3
  - 5600:668 Systems Theory in Family Therapy 3
  - 7750:553 Social Work with Families 3

Elective Courses

Students may select one course from three different disciplines as listed below to fulfill their elective requirement with approval from their adviser and director of the certificate program.

Specific Skill Areas

- Counseling
  - 5600:550 Counseling Problems Related to Life/Death 3

*The awarding of this certificate is 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.

**Select a minimum of three courses. A student is required to take two of the three electives outside his or her major or department. One credit workshop may be included as an elective with permission.
The awarding of this certificate is not contingent upon completion of a degree program.

**Restaurant Management Option**

2280.220 Safety and Sanitation 3
2280.121 Fundamentals of Food Preparation I 4
2280.122 Fundamentals of Food Preparation II 4
2280.123 Meat Technology 2
2280.135 Menu Planning and Purchase 3
2280.232 Dining Room Service and Training 2
2280.233 Restaurant Operations and Management 4
2280.236 Food and Beverage Cost Control 3
2280.237 Internship 1
2280.240 Systems Management and Personnel 3
2280.243 Food Equipment and Plant Operations 3

The awarding of this certificate is not contingent upon completion of a degree program.

**INTERIOR DESIGN**

Carolyn Albanese, Assistant Professor

**Requirements**

This certificate program represents a concentration of study in interior design emphasizing an interdisciplinary approach between the Department of Home Economics and Family Ecology and the Department of Art. The program is designed to add another dimension to the four-year baccalaureate degree in clothing and textiles and the four-year baccalaureate degree in graphic design. The certificate program is open to undergraduates in other disciplines as well as persons with baccalaureate degrees from the University or other accredited institutions. The certificate must be issued simultaneously with a baccalaureate degree or to those already holding a baccalaureate degree. The following requirements must be met:

1. 7100.121 Three Dimensional Design 3
2. 7100.244 Color Concepts 3
3. 7100.491 Architectural Presentations I 3
4. 7400.331 Applied Home Furnishings 5
5. 7400.433 Interior Design I 3
6. 7400.434 Interior Design II 3
7. 7400.435 Principles and Practices of Interior Design 3

**LATIN AMERICAN STUDIES**

Dr. Hugo Lijeron, Coordinator

**Requirements**

The student in the Latin American Studies Certificate Program will major in the respective disciplines (economics, geography, history, political science, sociology and Spanish).

In addition, the student will take 12 credits in the three separate disciplines chosen from the following list:

**Political Science**

3700.275 Latin American Politics 3

**History**

3400.415 Latin American National Origins 3
3400.420 Latin American 20th Century 3
3400.417 United States, Latin America and Impression 3
3400.418 Mexico 3

*Some prerequisites to these courses are core courses that are sequenced. The other courses that are prerequisites are presently part of the clothing and textiles and graphic design curricula. The student opting to take the certificate program who is from other disciplines is required to take the prerequisite to raise the level of competency to that of a major in clothing and textile and/or graphic design.*
The program employees paraprofessionals.

Sociology/Anthropology

The Certificate Program

The student is also required to study three years of Spanish or the equivalent.

LEGAL ASSISTING

Robert W. Higham, Coordinator

This certificate prepares students who have earned an academic degree or who have already had basic English reading and writing skills to gain the technical courses necessary to assist lawyers participating in the private practice of law, corporate law or agency practice.

Admission Requirements:

- Bachelor's degree;
- Associate degree;
- Three years experience in providing legal assistance in a law office (within the past five years). Students must get their experience verified and it must be approved by the program coordinator.

Graduation Requirements:

- 2.0 GPA in major;
- Minimum of 31 credits as in curriculum outline;
- No grade below a C in major;
- Required coursework includes:
  2290.101 Introduction to Legal Assistanting
  2290.104 Basic Legal Research and Writing
  2290.106 Business Associations
  2290.108 Real Estate Transactions
  2290.118 Probate Administration
  2290.200 Legal Assistanting Internship
- Students are required to take 15-16 hours from the following courses:
  2290.110 Torts
  2290.112 Family Law
  2290.204 Advanced Legal Research
  2290.210 Advanced Probate Administration
  2290.212 Creditor-Creditor Relations
  2290.214 Civil Procedures
  2290.220 Legal Assistanting Internship

Students interested in a Probate emphasis shall take 2290.204, 2290.210 and three other courses of their choice during the Spring Semester.

Students interested in a Civil Litigation emphasis shall take 2290.220, 2290.204, 2290.214 and two other courses of their choice during the Spring Semester.

LIBRARY STUDIES

Harnet S. Herskovitz, Coordinator

Requirements

The Certificate Program in Library Studies provides basic library skills for library paraprofessionals. It will help students meet their short-range goals in acquiring skills for immediate job placement. In addition to providing entry-level skills, the program would be responsive to the needs of small businesses who need employees with organizational skills.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2200:100</td>
<td>Introduction to Library Technology</td>
<td>3</td>
</tr>
<tr>
<td>2200:201</td>
<td>Cataloging, Classifying, and Processing Materials</td>
<td>3</td>
</tr>
<tr>
<td>2200:202</td>
<td>Organizing and Operating Library/Media Centers</td>
<td>3</td>
</tr>
<tr>
<td>2200:203</td>
<td>Materials Selection</td>
<td>2</td>
</tr>
<tr>
<td>2200:204</td>
<td>Information Retrieval Systems in Library Technology</td>
<td>3</td>
</tr>
<tr>
<td>2200:205</td>
<td>Reference Procedures</td>
<td>3</td>
</tr>
</tbody>
</table>

**LINGUISTIC STUDIES**

Dr. Arthur Palacas, Director

Requirements

Completion of six linguistically oriented courses as follows: the foundation course, two core courses and at least three elective courses. Three or more of the courses must be at the 300/400 level. (Subject to approval by the program director, other theoretically oriented linguistics courses may substitute for core courses.)

To obtain the certificate, the student must have at least two semesters of language. A student entering the program should discuss plans with the director.

Foundation**

<table>
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<tbody>
<tr>
<td>3300:371</td>
<td>Introduction to Linguistics</td>
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Core†

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<th>Title</th>
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<tbody>
<tr>
<td>3300:370</td>
<td>Intermediate Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>3600:481</td>
<td>Philosophy of Language</td>
<td>3</td>
</tr>
<tr>
<td>3600:461</td>
<td>Language and Culture</td>
<td>3</td>
</tr>
<tr>
<td>7700:200</td>
<td>Speech and Language Development</td>
<td>3</td>
</tr>
<tr>
<td>7700:430</td>
<td>Aspects of Normal Language Development</td>
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Electives

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<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>3300:389</td>
<td>Special Topics (any linguistically oriented course offered under this number, e.g., United States Dialects: Black and white)</td>
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</tr>
<tr>
<td>3300:400</td>
<td>Anglo Saxon</td>
<td>3</td>
</tr>
<tr>
<td>3300:470</td>
<td>History of the English Language</td>
<td>3</td>
</tr>
<tr>
<td>3460:460</td>
<td>Artificial Intelligence and Heuristics Programming</td>
<td>3</td>
</tr>
<tr>
<td>3460:470</td>
<td>Automatic, Computation and Formal Language</td>
<td>3</td>
</tr>
<tr>
<td>3580:405</td>
<td>Spanish Linguistics</td>
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</tr>
<tr>
<td>3600:170</td>
<td>Introduction to Logic</td>
<td>3</td>
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<tr>
<td>3600:374</td>
<td>Symbolic Logic</td>
<td>3</td>
</tr>
<tr>
<td>3600:418</td>
<td>Artistic Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>3600:471</td>
<td>Introduction to Metaphysics</td>
<td>3</td>
</tr>
<tr>
<td>7500:335</td>
<td>Teaching of Language Arts</td>
<td>5</td>
</tr>
<tr>
<td>6530:101</td>
<td>Multicultural Education in the United States</td>
<td>3</td>
</tr>
<tr>
<td>6700:310</td>
<td>Intercultural Communication</td>
<td>2</td>
</tr>
<tr>
<td>7600:351</td>
<td>Survey of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>7700:111</td>
<td>Introduction to Phonetics</td>
<td>2</td>
</tr>
<tr>
<td>7700:217</td>
<td>Language of Signs I</td>
<td>3</td>
</tr>
</tbody>
</table>

MANUAL COMMUNICATION

Dr. Thomas Black, Coordinator

Requirements

This certificate, designed for those who communicate with the deaf population, is open to undergraduate majors in any discipline as well as persons with a baccalaureate degree from the University or any other accredited institution. The following requirements must be met.

Core

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2200:104</td>
<td>Sign Language, Gesture and Mime</td>
<td>3</td>
</tr>
<tr>
<td>7700:100</td>
<td>Manual Communication I</td>
<td>5</td>
</tr>
<tr>
<td>7700:120</td>
<td>Introduction to Audiology/Aural Rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>7700:150</td>
<td>Manual Communication II</td>
<td>4</td>
</tr>
<tr>
<td>7700:200</td>
<td>Manual Communication III</td>
<td>4</td>
</tr>
<tr>
<td>7700:222</td>
<td>Introduction to the Deaf Culture and Its Origins</td>
<td>2</td>
</tr>
<tr>
<td>7700:271</td>
<td>Language of Signs I</td>
<td>3</td>
</tr>
</tbody>
</table>

*Required
†At least two required.
MID-CAREERS PROGRAM IN URBAN STUDIES

Dr. James Richardson, Department Head

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

Admission
A student must satisfy the requirements for entrance in graduate programs or have a bachelor's degree and the equivalent of five years' experience in a professional, administrative or leadership position, in which case the student will be admitted as a special 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 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>3980:600</td>
<td>Basic Analytical Research*</td>
<td>3</td>
</tr>
<tr>
<td>3980:600</td>
<td>Advanced Research and Statistical Methods*</td>
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Options

Urban Public Administration

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>3980:611</td>
<td>Urban Administration</td>
<td>4</td>
</tr>
<tr>
<td>3980:640</td>
<td>Fiscal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3980:681</td>
<td>Urban Policy Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>3980:670</td>
<td>Seminar in Urban Research Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
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</table>

Urban Planning

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3980:630</td>
<td>Planning Concepts and Methods</td>
<td>3</td>
</tr>
<tr>
<td>3980:681</td>
<td>Selected Topics: Urban Planning Design</td>
<td>3</td>
</tr>
<tr>
<td>3980:681</td>
<td>Selected Topics: Planning Theory and Innovation</td>
<td>3</td>
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</table>

Urban Service Systems

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3980:620</td>
<td>Social Services Planning</td>
<td>4</td>
</tr>
<tr>
<td>3980:621</td>
<td>Urban Society and Service Systems</td>
<td>3</td>
</tr>
<tr>
<td>3980:681</td>
<td>Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
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</tbody>
</table>

Urban Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>3980:600</td>
<td>Seminar in American Urban Development</td>
<td>3</td>
</tr>
<tr>
<td>3980:681</td>
<td>Urban Theory and Value</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
</table>


Word Processing

Requirements
The word processing option is designed to enable the student who has some beginning typing skills to prepare for an entry-level job in word processing. The program is a study of the applied use of word processing procedures and equipment in a simulated word processing office environment. The total work flow of office communications will be covered from input through output. Using automated typewriting equipment, the student will produce office documents from machine transcription, handwritten copy and typewritten copy. All courses taken may be applied toward an associate degree in secretarial science.

Courses

Core

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2420:120</td>
<td>Business English</td>
<td>3</td>
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<tr>
<td>2540:121</td>
<td>Introduction to Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>2540:125</td>
<td>Electronic Business Calculations</td>
<td>3</td>
</tr>
<tr>
<td>2540:130</td>
<td>Introduction to Information Management</td>
<td>3</td>
</tr>
<tr>
<td>2540:151</td>
<td>Intermediate Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>2540:263</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>2540:286</td>
<td>Keyboarding on Word Processing Equipment</td>
<td>3</td>
</tr>
</tbody>
</table>

Word Processing Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2540:119</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>2540:121</td>
<td>Business Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>2540:130</td>
<td>Introduction to Information Management</td>
<td>3</td>
</tr>
<tr>
<td>2540:131</td>
<td>Computerized Document Control</td>
<td>4</td>
</tr>
<tr>
<td>2540:135</td>
<td>Intermediate Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>2540:241</td>
<td>Automated Office Systems</td>
<td>4</td>
</tr>
<tr>
<td>2540:281</td>
<td>Machine Transcription</td>
<td>8</td>
</tr>
</tbody>
</table>
**PEACE STUDIES**

**Dr. Martha Leyden, Director**

**Requirements**

To satisfy the requirements for a certificate in peace studies, an undergraduate student at The University of Akron must complete at least 15 credits from the list of acceptable courses. These must be distributed so that the work will be included from three separate departments. The student will major in one of the traditional disciplines, but the area concentration is meant to add a further dimension of depth through concentrated work focusing on peace studies. Where specialized training is relevant to a particular student's interest, alternatives to those on the list of acceptable courses may be approved by the director. A paper or project is to be completed in conjunction with one of the 300/400-level courses chosen and in consultation with the instructor involved. The student undertaking the Peace Studies Certificate Program must have prior consultation with the director of the Center for Peace Studies.

The following two courses are required for everyone in the program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1860:300</td>
<td>Value Concepts on Peace and War</td>
</tr>
<tr>
<td>3400:340</td>
<td>Peace and War: The Historical Perspective</td>
</tr>
</tbody>
</table>

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1860:300</td>
<td>Special Topics in Peace Studies</td>
</tr>
<tr>
<td>1910:401</td>
<td>Modern Political Thought</td>
</tr>
<tr>
<td>1860:378</td>
<td>Human Rights Concepts</td>
</tr>
<tr>
<td>1910:403</td>
<td>Labor and Government</td>
</tr>
<tr>
<td>3250:450</td>
<td>Comparative Economic Systems</td>
</tr>
<tr>
<td>3250:460</td>
<td>Economic Development and Planning for Underdeveloped Countries</td>
</tr>
<tr>
<td>3250:461</td>
<td>Principles of International Economics</td>
</tr>
<tr>
<td>3300:461</td>
<td>Seminar in 20th Century Literature and History</td>
</tr>
<tr>
<td>3300:100</td>
<td>Introduction to Geography</td>
</tr>
<tr>
<td>3400:340</td>
<td>Peace and War: The Historical Perspective</td>
</tr>
<tr>
<td>3400:401</td>
<td>United States Diplomacy Since 1914</td>
</tr>
<tr>
<td>3400:402</td>
<td>United States Diplomacy Since 1914</td>
</tr>
<tr>
<td>3400:417</td>
<td>The United States, Latin America and Imperialism</td>
</tr>
<tr>
<td>3400:450</td>
<td>War and Western Civilization</td>
</tr>
<tr>
<td>3700:330</td>
<td>American Foreign Policy</td>
</tr>
<tr>
<td>3700:310</td>
<td>International Politics and Institutions</td>
</tr>
<tr>
<td>3700:415</td>
<td>Comparative Foreign Policy</td>
</tr>
<tr>
<td>3870:150</td>
<td>Cultural Anthropology</td>
</tr>
</tbody>
</table>

**Conflict Resolution/Management Certificate**

**Requirements**

The Certificate in Conflict Resolution/Management is on the undergraduate level. It is designed to provide knowledge about theories and skills in resolving conflicts that can lead to violence.

Students concentrate on a topical focus, either conflict management or resolution, and apply this knowledge to their major area of study.

**Admission Procedure**

Students must:

- Be formally admitted as an undergraduate or be a postbaccalaureate student.
- Be an undergraduate, receive concurrence from their major adviser to pursue this area of study.
- Make formal application to the program through form available at the Center for Peace Studies.
- Schedule an interview with program director of Center for Peace Studies.

The Certificate Program in Conflict Resolution/Management consists of a minimum of 21 semester credit hours, 11 of these are to be at the 300/400 level.

**Required Courses (6 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1860:230</td>
<td>Introduction to Conflict Management/Resolution</td>
</tr>
<tr>
<td>1860:430</td>
<td>Integrative Approaches to Conflict Management/Resolution</td>
</tr>
</tbody>
</table>

**Basic Background Courses (6 credits)**

Choose two courses from the following list in consultation with adviser. This requirement is designed to provide general ideas and tools.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1860:378</td>
<td>Introduction to Human Rights Concepts</td>
</tr>
<tr>
<td>3870:120</td>
<td>Introduction to Ethics</td>
</tr>
</tbody>
</table>

**Topical Courses (9 credits)**

Choose one of the following options for application of knowledge of conflict resolution/management.

**Business/Economics/Labor**

Choose one of the following options for application of knowledge of conflict resolution/management.

**Community/Social/Family**

Choose one of the following options for application of knowledge of conflict resolution/management.

**Education**

Choose one of the following options for application of knowledge of conflict resolution/management.

**History/Government/Politics**

Choose one of the following options for application of knowledge of conflict resolution/management.

---

*The awarding of this certificate is 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.*
PLANNING WITH AN EMPHASIS ON CITY OR REGIONAL RESOURCE STUDIES

Dr. Alan Noble, Department Head

Requirements

This program is intended to enhance understanding of the planning function and to increase the research and analytical abilities of the person preparing for work in, or who is currently engaged in city, urban, regional, environmental and resource planning. The program is open to the undergraduate as well as a person with a baccalaureate degree, employed in local agencies doing related work, e.g., urban renewal, community redevelopment, community action, environmental protection and private industry. The person with a degree can enroll as a postbaccalaureate or special student.

Program

- Employment or internship in a planning agency or in an office engaged in related work, or a sincere intention to pursue a professional career in some aspect of government work or planning after graduation.
- A statement by the applicant giving reasons for wishing to participate in the planning certificate program.

Courses

Core

Complete five of the following:

3250:244 Introduction to Economic Analysis 3
3250:220 Economic Geography 3
3250:433 Urban, Regional and Resource Planning 3
3300:436 World Metropolitan Areas 3
3400:426 The American City 3
3700:360 Metropolitan Politics 4
3850:425 Sociology of Urban Life 3
4300:450 Urban Planning 2

Electives

Each student's program (subject to the program director's approval) is to include six elective courses distributed between professional, technical and research offerings. Three courses will be from the professional listing and three from the technical-research listing. In consultation with the program director, elective courses will be selected from University offerings either in the city planning or regional resource planning emphasis areas. Similar courses completed at other universities, up to five years prior to admission to candidacy, may be approved by the director.

The intent of the elective requirements is to facilitate the development of a diverse perspective which is significant for a person who will be or is already engaged in planning for present and changing future urban, regional, environmental, resource, energy and societal needs. The truly comprehensive planner must have academic acquaintance with a variety of professional and technical approaches to cope with social, geographical, physical design, economical and governmental problems. Selecting courses that duplicate or continue interests already well established in a student's background will be discouraged.

Project

Upon completion of the core and elective course requirements, the student will take 3350:385 Planning Seminar (one credit). In this seminar the student will produce a final paper covering a city or regional resource planning topic chosen by the student and approved by the director of the program. Each project will be presented to the seminar class and critically analyzed.

A grade of "C" or better is required in all courses undertaken as part of the certificate program. In the five core courses an average grade of "B" is required.

PROFESSIONAL COMMUNICATION

Dr. Joseph F. Ceccio, Dr. James Fee, Codirectors

Requirements

The program will help meet our technological society's growing need for educated people who can develop sophisticated strategies for effective communication of business and technical information. People in the business community increasingly depend on communication to solve complex management, sales and information processing problems. The communication demands of business and industry are significant, and in many ways, different from those dealt with in traditional courses and majors. Undergraduates in various fields and those who already possess a baccalaureate degree will wish to study specifically to meet communication demands. A formal certificate will recognize their preparation for handling the communication needs of business and industry.

Program

3300:390 Professional Writing I 3
3300:391 Professional Writing II 3
7602:302 Publications Production 3
7800:345 Business and Professional Speaking 3

The two 3300 courses listed cannot count toward the 35 credits in English required of English majors.

PROGRAMMING SKILLS ENRICHMENT

Joyce Mirmian, Coordinator

The Programming Skills Enrichment Certificate is designed to update the skills and qualifications of the experienced programmer through a selection of courses reflecting recent advances in computer software and development tools.

The student should select 12 hours from the following courses:

2440:151 Current Topics in Data Management (Lotus) 3
2440:235 Current Programming Topics (UnivC) 2
2440:243 Information Center Pracicum 3
2440:262 JCL 1
2440:263 COBOL Efficiency 2
2440:265 Data Base Concepts 3
2440:267 4GL for Micros: dBase III+ 3

PUBLIC POLICY

Dr. Carl Lieberman, 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 special, non-degree students in the departments of economics, political science or sociology, or are pursuing a master's or doctoral degree in one of these three departments. Students who are pursuing a graduate degree in other departments at the University may be admitted upon the recommendation of the head 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
3250:530 Human Resource Policy 3
3250:606 Public Finance 3
3250:665 Seminar on Economic Planning 3

Political Science
3700:541 The Policy Process 3
3700:542 Methods of Policy Analysis 3
3700:668 Seminar in Public Policy: Agendas and Decisions 3
3700:670 Seminar in the Administrative Process 3

Sociology
3850:613 Sociology of Program Evaluation and Program Improvement 3
3850:679 Political Sociology 3

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

Each student shall complete a scholarly paper dealing with public policy under the direction of a graduate faculty member in the departments of economics, political science or sociology. The student shall enroll for three credits in one of the following courses: 3250:697/698 Reading in Advanced Economics, 3700:697 Independent Research and Readings or 3850:697 Readings in Contemporary Sociological Literature. The student’s paper shall be evaluated by an interdisciplinary committee consisting of graduate faculty from at least two of the previously mentioned departments.

All persons enrolled in the Graduate Certificate Program in Public Policy must successfully complete 3700:698 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 adviser, to substitute another course dealing with public policy in place of the Internship in Political Science.

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

The student must maintain at least a “B” (3.00) average in course work for the certificate.

Administration of the Program
The departments of economics, political science and sociology shall each annually select a representative for a coordinating committee from among those members of the graduate faculty who have special knowledge or expertise in the area of public policy. The committee shall 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.

Real Estate
James Nolte, Coordinator

Requirements
This certificate program in real estate requires a minimum of 18 credit hours. The program of studies has been designed to serve the practicing and prospective real estate broker. The awarding of certificate is not contingent upon completion of a degree program but requires the student to complete the course work with a minimum 2.00 grade-point average. A minimum of 12 credit hours must be earned in the University’s Real Estate Program.

Admission
All certificate applicants must apply to the University and meet its admission requirements. The person wishing to pursue a certificate must sign a contract with the Community and Technical College which shall indicate the required course of study and such work that may be transferred from real estate programs outside the University.

Program

Core
2430:105 Real Estate Principles 2
2430:185 Real Estate Law 2
2430:245 Real Estate Finance 2
2430:255 Valuation of Residential Property 2
2430:265 Real Estate Brokerage 2
2430:275 Real Estate Projects 2
2520:212 Principles of Sales 4

Electives — Minimum of one course
2430:115 Elements of Housing Design and Construction 2
2530:125 Elements of Land and Real Estate Development 2
2430:205 Introduction to Real Estate Management 3
2430:215 Essentials of Real Estate Economics 2
2430:225 Industrial Real Estate 2
2430:235 Commercial Real Estate 2

Small Business Management

Jack D. Huggins, Coordinator

This program is designed to address the expressed needs of small business students, many of whom are presently, or soon will be, small business owners and are interested in acquiring specific knowledge that will help them in their business immediately. This program would be valuable for many nonbusiness majors who could benefit by this exposure to business concepts. The emphasis is on serving the objectives of those students seeking autonomy in exercising their initiative and ambition, including both traditional and nontraditional students.

The awarding of this certificate is not contingent upon completion of a degree program.
2420:117 Small Business Development 3
2420:186 Small Business Management and Operations 3
2420:170 Business Mathematics 3
2420:211 Basic Accounting I 3
2420:227 Entrepreneurship Projects 4
2420:283 Essentials of Law 3
2440:120 Computer and Software Fundamentals 2
2540:119 Business English 3

Soviet Area Studies

Dr. Barbara Clements, Coordinator

Requirements
To obtain a certificate in Soviet Area Studies, the undergraduate will satisfy the requirements for a baccalaureate major in the field of study of his or her choice. In addition the student will complete two years of Russian language (14 credits) and will also complete 12 additional credits in courses dealing with the study of the U.S.S.R. These courses may be selected from the following list:

Economics
3250:450/550 Comparative Economic Systems 3

Geography
3350:358 U.S.S.R. 3

History
The program provides skills necessary to function as a surgeon's assistant and all the courses needed to sit for the certifying exam. It will enable students to meet short-range goals in acquiring skills for immediate job placement.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2770:121</td>
<td>Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>2770:123</td>
<td>Surgical Assisting Procedures I</td>
<td>4</td>
</tr>
<tr>
<td>2770:131</td>
<td>Clinical Application I</td>
<td>2</td>
</tr>
<tr>
<td>2770:151</td>
<td>Clinical Experience I</td>
<td>4</td>
</tr>
<tr>
<td>2770:222</td>
<td>Surgical Assisting Procedures II</td>
<td>4</td>
</tr>
<tr>
<td>2770:245</td>
<td>Surgical Anatomy II</td>
<td>4</td>
</tr>
<tr>
<td>2770:250</td>
<td>Medical Laboratory Procedure</td>
<td>2</td>
</tr>
<tr>
<td>2770:252</td>
<td>Clinical Experience IV</td>
<td>3</td>
</tr>
<tr>
<td>2770:253</td>
<td>Clinical Experience V</td>
<td>5</td>
</tr>
<tr>
<td>2770:255</td>
<td>Primary Care. Clinical Experience</td>
<td>2</td>
</tr>
</tbody>
</table>

The awarding of this certificate is 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.

Recommended for students intending to teach in Ohio public schools: two years of college-level foreign language learning experience or its equivalent, two credits of field experience in English as a Second Language (5200:395/396 or 5300:395) or its equivalent at the discretion of the director.

**Clinical Experience I and II will be accepted in place of Clinical Applications I and II for students who have completed the Surgeon’s Assistant Option. Surgical Anatomy II will be accepted in place of Surgical Assisting Procedures II for students who have completed the Surgeon’s Assistant Option.**

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

The program provides necessary to function as a surgical technologist and all the courses needed to sit for the certifying exam. It will enable students to meet short-range goals in acquiring skills for immediate job placement.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2740:120</td>
<td>Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>2770:100</td>
<td>Introduction to Surgical Assisting</td>
<td>4</td>
</tr>
<tr>
<td>2770:121</td>
<td>Surgical Assisting Procedures I</td>
<td>2</td>
</tr>
<tr>
<td>2770:131</td>
<td>Clinical Application I</td>
<td>2</td>
</tr>
<tr>
<td>2770:151</td>
<td>Clinical Experience I</td>
<td>4</td>
</tr>
<tr>
<td>2770:222</td>
<td>Surgical Assisting Procedures II</td>
<td>4</td>
</tr>
<tr>
<td>2770:245</td>
<td>Surgical Anatomy II</td>
<td>4</td>
</tr>
<tr>
<td>2770:250</td>
<td>Medical Laboratory Procedure</td>
<td>2</td>
</tr>
<tr>
<td>2770:252</td>
<td>Clinical Experience IV</td>
<td>3</td>
</tr>
<tr>
<td>2770:253</td>
<td>Clinical Experience V</td>
<td>5</td>
</tr>
<tr>
<td>2770:255</td>
<td>Primary Care. Clinical Experience</td>
<td>2</td>
</tr>
</tbody>
</table>

The awarding of this certificate is 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.

Recommended for students intending to teach in Ohio public schools: two years of college-level foreign language learning experience or its equivalent, two credits of field experience in English as a Second Language (5200:395/396 or 5300:395) or its equivalent at the discretion of the director.

**Clinical Experience I and II will be accepted in place of Clinical Applications I and II for students who have completed the Surgical Technologist Option. Surgical Anatomy II will be accepted in place of Surgical Assisting Procedures II for students who have completed the Surgical Technologist Option.**

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

**Arthur George, Coordinator**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2560:110</td>
<td>Principles of Transportation</td>
<td>3</td>
</tr>
<tr>
<td>2560:116</td>
<td>Transportation Rate System</td>
<td>3</td>
</tr>
<tr>
<td>2560:221</td>
<td>Traffic and Distribution Management</td>
<td>3</td>
</tr>
<tr>
<td>2560:222</td>
<td>Microcomputer Applications in Transportation</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition to the above core, a minimum of six semester credits must be completed from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2560:115</td>
<td>Motor Transportation</td>
<td>3</td>
</tr>
<tr>
<td>2560:116</td>
<td>Air Transportation</td>
<td>2</td>
</tr>
<tr>
<td>2560:117</td>
<td>Water Transportation</td>
<td>2</td>
</tr>
<tr>
<td>2560:224</td>
<td>Transportation Regulations</td>
<td>3</td>
</tr>
<tr>
<td>2560:227</td>
<td>Transportation of Hazardous Materials and Waste</td>
<td>2</td>
</tr>
</tbody>
</table>

### VOLUNTEER PROGRAM MANAGEMENT†

**John Mumper, Coordinator**

This program is intended for individuals who wish to enhance their knowledge of volunteer program management. As community and social service organizations continue to rely on knowledgeable, well-trained volunteers, the role of the manager of the volunteer programs continues to be highly valued. This program is not limited to Community Services majors.

This certificate is generally designed for individuals in one of the following categories:

- The person with no degree but who is contemplating working in a social/community service organization, especially with volunteers.
- The person with a degree who has not had specialized training, but who would like to be a director/coordinator of an organization's volunteer program.
- Those persons working in or with volunteer programs who would like to upgrade their knowledge and skills.

Persons interested in this program should consult with the Coordinator of Community Services Technology or an academic adviser in the Community and Technical College.

**Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2260:100</td>
<td>Introduction to Community Services</td>
<td>3</td>
</tr>
<tr>
<td>2020:121</td>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>2040:240</td>
<td>Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>2260:278</td>
<td>Techniques of Community Work</td>
<td>4</td>
</tr>
</tbody>
</table>

†May not be taken both as an elective and as a core course.

†The awarding of this certificate is 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.

### WOMEN’S STUDIES

**Dr. Carole Garrison, Director**

Faye Dambrot, Administrative Assistant

**Requirements**

This certificate program provides interdisciplinary study of women to enable women and men to examine such topics as sex roles, sex differences and concepts of masculinity and femininity; women’s social and cultural roles and their implications for men’s roles; gender-based distribution of power, work and resources; and the significance of feminine and masculine imagery.

**Admission**

To participate in the program, the student must:

- Be formally admitted to The University of Akron as an undergraduate seeking a baccalaureate degree or a postbaccalaureate student or as special admission for a free-standing certificate.
- Make written application to the program countersigned by the student’s major academic advisor.
- Receive written notification of admission from the Director of the Women's Studies Program.
- Consult with the Director of the Women’s Studies Program to formulate a program of study.

**Program Requirements**

**Total Credits Required: 19.**

**Core:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840:300</td>
<td>Introduction to Women’s Studies</td>
<td>3</td>
</tr>
<tr>
<td>1840:493</td>
<td>Individual Studies on Women</td>
<td>3</td>
</tr>
<tr>
<td>1840:499</td>
<td>Seminar on Women’s Studies</td>
<td>1</td>
</tr>
</tbody>
</table>

**Electives: 12 credits (two courses 300-400 level).**

(One course from each of the following three areas: social sciences, humanities, fine and applied arts.)

**Social Science**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3400:336</td>
<td>Women in Modern Europe</td>
<td>3</td>
</tr>
<tr>
<td>3400:338</td>
<td>Women in the United States</td>
<td>3</td>
</tr>
<tr>
<td>3400:341</td>
<td>Soviet and U.S. Women in 20th Century</td>
<td>3</td>
</tr>
<tr>
<td>3400:452</td>
<td>Seminar: 20th Century Women Writers</td>
<td>3</td>
</tr>
<tr>
<td>3400:467</td>
<td>American Family History</td>
<td>3</td>
</tr>
<tr>
<td>3500:450</td>
<td>Special Topics in Psychology: Psychology of Women</td>
<td>3</td>
</tr>
<tr>
<td>3505:344</td>
<td>Sociology of Sex Roles</td>
<td>3</td>
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**Humanities**

<table>
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<tbody>
<tr>
<td>3300:282</td>
<td>Drama Appreciation: Women in Modern Drama</td>
<td>3</td>
</tr>
<tr>
<td>3300:386</td>
<td>Women in Modern Novels</td>
<td>3</td>
</tr>
<tr>
<td>3300:389</td>
<td>Special Topics: Ethnic Women in Literature</td>
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</tr>
<tr>
<td>3300:460</td>
<td>Workshop: Readings of the Women’s Movement 1960-1984</td>
<td>2</td>
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<tr>
<td>3300:489/589</td>
<td>Seminar: American Women Poets</td>
<td>3</td>
</tr>
<tr>
<td>3500:422</td>
<td>Special Topics: Women as Protagonist and Creator in Contemporary Spanish Novels</td>
<td>3</td>
</tr>
<tr>
<td>3580:422</td>
<td>Special Topics: Women Authors in Latin America</td>
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**Fine and Applied Arts**

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<td>7400:219</td>
<td>Relational Patterns in Marriage and Family</td>
<td>3</td>
</tr>
<tr>
<td>7400:440</td>
<td>Family Violence</td>
<td>3</td>
</tr>
<tr>
<td>7400:442</td>
<td>Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>7600:450</td>
<td>Special Topics: Women and Minorities in Films</td>
<td>3</td>
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<tr>
<td>7600:450</td>
<td>Special Topics: Women Speakers/Social Change</td>
<td>3</td>
</tr>
<tr>
<td>7150:411</td>
<td>Women’s Issues in Social Work Practice</td>
<td>3</td>
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**Electives in Education, Institute for Life-Span Development, Community and Technical College, and Women’s Studies Workshops**

<table>
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<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>1840:490</td>
<td>Workshop: Women’s Studies Lecture Series</td>
<td>2</td>
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<tr>
<td>1840:491</td>
<td>Workshop: Polics of Women’s Health</td>
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<tr>
<td>1850:490</td>
<td>Workshop: Women in Mid-Life</td>
<td>2</td>
</tr>
<tr>
<td>2200:250</td>
<td>Special Topics: Women and Chemical Dependency</td>
<td>2</td>
</tr>
<tr>
<td>2200:290</td>
<td>Special Topics: Women in Politics</td>
<td>2</td>
</tr>
<tr>
<td>5100:460</td>
<td>Special Topics: Historical and Current Perspectives on the Education of Women</td>
<td>3</td>
</tr>
</tbody>
</table>
Graduate, professional and law academic programs
Graduate School

John S. Wodarski, Ph.D., Associate Vice President for Research and Graduate Studies
Patricia L. Carrell, Ph.D., Dean of the Graduate School
Charrmaine C. Streharsky, M.S.T.E., Director of Research Services and Sponsored Programs

OBJECTIVES

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

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

Nature of Graduate Education

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

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

History of the Graduate School

Graduate study began a few years after Buchtel College opened its doors, and the first earned master's degree was conferred in 1882. The College of Education awarded its first master's degree in 1924, the Colleges of Engineering and Business Administration in 1959, the College of Fine and Applied Arts in 1967 and the College of Nursing in 1979. The Department of Communicative Disorders (previously the Department of Speech), now housed in the College of Fine and Applied Arts, was formerly a part of the Buchtel College and conferred a master's degree in 1963. The first earned doctoral degrees were conferred in 1959. Professor Charles Bulger was appointed 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. Brinnmiller was appointed dean of Graduate Studies and Research in 1967, being succeeded in 1968 by Dr. Edwin L. Lively. Dr. Claibourne 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 is now acting dean of Graduate Studies and Research.

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 graduation requirements for advanced degrees.

Graduate Programs

A qualified student who has completed the baccalaureate program with sufficient 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 courses and apply the credits earned to the total required for the baccalaureate degree. To receive graduate credit for the courses, however, the student must first be admitted to the Graduate School.

The Graduate School offers programs of advanced study leading to the degree of Doctor of Philosophy in chemistry, history, polymer science, psychology, sociology, urban studies, education (elementary, secondary and guidance and counseling) and engineering. 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 with majors in the following areas: accounting, biology, business administration (accounting, finance, international business, management, marketing and taxation), chemical engineering, chemistry, civil engineering, communicative disorders, earth science, economics, education (educational foundations, elementary, secondary, multicultural education, physical education, elementary or secondary school principal, school supervisor, local superintendent, counseling, special education, visiting teacher, reading specialist and school psychology), electrical engineering, engineering, English, French, geography, history, home economics and family ecology, management, communication, mathematics, mechanical engineering, music, nursing, philosophy, physics, political science, polymer engineering, polymer science, psychology, sociology, Spanish, speech, statistics, technical education, theatre arts and urban studies. In addition, the College of Education 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 the student who does not wish to devote his entire attention to one field.

Graduate Faculty and the Graduate Council

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

- Quality and experience in upper-level and graduate-level teaching.
- Possession of terminal degree in field.
- Scholarly publication record.
- Activity in research.
- Activity in profession or discipline.

The purpose of the graduate faculty is to encourage and contribute to the advancement of knowledge through instruction and research of highest quality, and to foster a spirit of inquiry and a high value on the scholarship throughout the University.

The graduate faculty recommends a student who has been nominated by the student's college faculty for the appropriate master's or doctoral degree. Graduate Council is elected by the graduate faculty. Membership in the council presently includes two members from the College of Engineering, two members from the College of Business Administration, two members from the College of Education, four members from the Buchtel College of Arts and Sciences, two members from the College of Fine and Applied Arts, one member from the College of Nursing and one student member elected yearly by the Graduate Student Council. Members serve three-year terms and may not succeed themselves. The dean of Graduate Studies and Research serves as chairman of both the graduate faculty and the Graduate Council.

The functions of the council include examination of proposed graduate programs and course offerings, recommendation of policy for all phases of graduate education, recommendation of persons for membership in the graduate faculty and advising and counseling the dean in administrative matters.

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 three graduate departments, an executive board of officers, and a faculty advisor.

The objectives of GSG are to govern graduate student affairs, represent graduate student sentiment and promote interdepartmental social exchange and interaction between students. These objectives are met by appointing members to participate in various administrative committee meetings, such as University Council, Graduate Council and Board of Trustees meetings. GSG also sponsors numerous social events, such as faculty-student mixers and an annual dinner dance.

GSG maintains an office on the lower level of Gardiner Student Center (phone 375-6123). Anyone wishing more information or anyone who wants to air a complaint, problem or suggestion concerning graduate students may contact the office 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.*
REGULATIONS

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

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 filed in the Office of the Dean of Graduate Studies and Research at least six weeks before registration (except for applications to the nursing and school psychologist programs, which must be submitted at earlier dates). These two programs have restricted admission; the department heads should be consulted for further information.

Each application must be accompanied by an application fee of $25 (unless previously paid). This fee is not refundable under any circumstances. Payment should be made by check or money order to The University of Akron.

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

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 Graduate Studies and Research and staff.

Classification
A student is identified by the Graduate School as being in one of the following categories. Any change must be arranged through the Graduate School.

- **Full Admission** may be given to any applicant who desires to pursue a graduate degree and has a baccalaureate degree from an accredited college or university with an overall grade point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent); or holds an advanced degree from an accredited college or university in or appropriate to the intended field; or holds a baccalaureate or master's degree from a foreign college or university with first-class standing or 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. This admission status permits a student to take up to 15 semester credits of graduate coursework. Provisional admission is granted to students who do not have all requirements for full admission met. The student may be reconsidered for ** full admission to the Graduate School**.

- **Deferred Admission** may be granted if the applicant's record does not meet provisional admission standards. After completion of a postbaccalaureate program of study with an appropriate GPA, as prescribed by the department (usually two to five courses), the student may be reconsidered for **provisional admission to the Graduate School**. No graduate-level coursework can be taken by a student under the deferred admission status.

- **Non-Degree Admission** may be granted to a person who wishes to take 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 the workshop. A student admitted to special workshop status must apply through regular channels for any other category. A maximum of six workshop credits may be applied to degree work at a later date if the applicant is given full admission to the Graduate School.

- **Transient status** may be given to a person who is a regularly enrolled graduate student in good standing in a degree program at another accredited university and has written permission to enroll at The University of Akron. Such permission is valid only for the courses and semester specified, with a maximum of 10 semester credits allowable, and is subject to the approval of the instructor, department 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 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 given by the instructor of the course and the student's adviser.

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 space and use of facilities within limits of practical need of the undergraduate and graduate programs. Tuition and fees shall be collected if allowed under sponsoring contract to any courses the fellow may choose to take;
  - a Special is a person holding an earned doctorate who desires an additional graduate degree. A special may be admitted to any program upon submission of application forms, application fee (if new student) and an official transcript from the institution awarding the doctorate. This student will be treated as a regular student, subject to registration fees and program degree requirements;
  - a Guest is a person holding an earned doctorate who desires to attend courses and seminars relevant to individual work or interests without registering or receiving grades. A written application should be submitted to the dean of Graduate Studies and Research, 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 Graduate Studies and Research who will review such requests with the appropriate college dean and department head.

International Students
An international student is normally admitted only in the fall, and all credentials should be received by the Graduate School by April 1. Inasmuch as The University of Akron, as a state institution, has an obligation to the residents of Ohio, only the best-qualified international applicants can be admitted. An international student seeking admission should not plan to leave the home country until notice of admission has been received from the Graduate School.

Applicants whose native language is not English are required to demonstrate high-level competence in the use of the English language, including reading, writing, speaking and listening, prior to admission. This competence can best be demonstrated by achieving a score of at least 550 on the TOEFL (the Test of English as a Foreign Language). The TOEFL is administered by Educational Testing Service, Box 899, Princeton, NJ 08540, USA. Applicants should make arrangements to take the test as soon as possible. A test score will be considered valid for five years after the test date. If the TOEFL is not available, the applicant should contact the international student adviser at The University of Akron for other arrangements. Personal letters certifying English competence are not acceptable as substitutes for test scores.

The completion of an English placement test after admittance will also be required. Based on the results of this test, a student may be required to take an English language course for credit.

An international student, coming to The University of Akron in good standing after one full year of full-time work at an accredited American college or university, may have the English proficiency requirement waived upon written request.
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 highest 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.

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.

Course Load

A full load of coursework at the graduate level is normally 9-15 semester credits including audit.

Colloquium, Seminars and Workshops

Colloquium (credit/noncredit grading)

A course that normally involves guest, faculty or graduate students as speakers. The intent of the course is to introduce a broad range of topics using resource personnel. Normally, assignments are limited to class participation.

Seminar (letter grades)

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

Workshop (credit/noncredit grading)

A course that normally operates over a shorter period than a semester or a summer session. Workshops focus on a particular aspect and/or activity 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.

Registration

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

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.

Fees

All fees reflect changes in 1989-90 and are subject to change without notice.

Application Fee

This fee is not refundable under any circumstances

Tuition Fees

Resident student per credit

Nonresident student per credit

Auditor’s fee

Graduation Fees

Each degree (except law)

Other Fees

Thesis and binding

Microfilming (Ph.D. only)

Transcripts (if more than one transcript of a student’s academic record is ordered by a student at one time, the University of Akron

The University of Akron
Refunds

Registration does not automatically carry with it the right of a refund or reduction of indebtedness in cases of failure or inability to attend class or in cases of withdrawal. The student assumes the risk of all changes in business or personal affairs.

Fees Subject to Refund

- Instructional and nonresident surcharge.
- General fee
- Parking (only if permit is returned).
- Student teaching.
- Laboratory breakage and late service deposit.

Amount of Refund

Amount of refund is to be determined in accordance with the following regulations:

- In full
  - if the University cancels the course;
  - if the University does not permit the student to enroll or continue;
  - if the student dies before or during the term or is drafted into military service by the United States, or if the student enlisted in the National Guard or Reserves prior to the beginning of the term called to active duty, presents notice of induction or orders to active duty. A student who enlists voluntarily for active duty should see "in part" below.
- In part
  - less $5 per enrolled credit to a maximum of $50 if the student requests in writing to the dean or designated official withdrawal from all credit courses on or before the second day of the term.
  - if the student requests in writing to the dean or designated official withdrawal after the second day of the fall or spring semesters, the following refund percentages apply:
    - 3 through 12 calendar days*: 70%
    - 13 through 24 calendar days*: 50%
    - 25 through 33 calendar days*: 30%
    - Thereafter: 0%
  - if the student requests in writing to the dean or designated official withdrawal after the second day of any summer session the following refund percentages apply:
    - 3 through 7 calendar days*: 60%
    - 8 through 15 calendar days*: 40%
    - Thereafter: 0%
- Refunds for course sections which have not been scheduled consistent with either the standard 15-week fall/spring semester or the five-week summer term scheduling pattern will be handled on a pro rata basis according to the number of days of the section (class, institute or workshop) has been attended compared to the number of days said section has been scheduled to meet.
- Refunds will be determined as of the date of formal withdrawal unless proof is submitted that circumstances beyond control of the student prevented the filing of the formal withdrawal earlier, in which case the refund will be determined as of the last day of attendance. 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 dismissed or suspended for disciplinary reasons.

Commencement

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

Financial Assistance

The University awards a number of graduate assistantships to qualified students.

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<thead>
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<th>Description</th>
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<tbody>
<tr>
<td>$4</td>
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</tr>
<tr>
<td>$10</td>
<td>Late Registration Fee</td>
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Assistantships are normally awarded for up to two years of master's study and up to four years of doctoral degree study. These assistantships provide a stipend of $5,300 to $7,700 plus remission of tuition and fees and are available in all departments with graduate degree programs. A graduate assistant renders service to the University through teaching, research and other duties. For information and/or applications, contact the head of the department. Tuition scholarships are also available on a limited basis in some departments.

A number of fellowships sponsored by industry and government agencies are available in some departments. Stipends range up to $13,000. For information, contact the head of the department.

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

MASTER'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.

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 Graduate Studies and Research 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 Graduate Studies and Research.

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-number courses previously taken at the 400-number course level as an undergraduate without advance approval from the dean of Graduate Studies and Research.

Transfer

Up to one-third of the total graduate credits required may be transferred from an accredited college or university. All transfer credit must be at the "A" or "B" level in graduate courses. The credits must be relevant to the student's program and fall within the six-year time limit. A University of Akron student must receive prior approval for transfer courses taken elsewhere.

A student seeking to transfer credits must have full admission and be in good standing at The University of Akron and the school in which the credits were achieved. 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.

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.

**Adancement 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 Graduate Studies and Research or in the academic department.

**Graduation**

To be cleared for graduation, a candidate must have completed coursework with a minimum average of 3.00; have been advanced to candidacy; filled 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 two weeks prior to commencement. These copies must be signed by the adviser, faculty reader, department head and college dean prior to submission to the dean of Graduate Studies and Research. A manual entitled Preparing a Thesis or Dissertation is available in the Graduate School and all copies of the thesis must conform to these instructions.

**DOCTORAL DEGREE REQUIREMENTS**

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

**Admission**

Usually, a student is not officially considered as a doctoral student until completion of a master's program or the 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. No student holding a full-time job is considered as fulfilling the residence requirement. The summer sessions may count as one semester, provided that the candidate is enrolled for a minimum of 10 consecutive weeks of full-time study and for a minimum of six semester credits per five-week session. Programs vary in their requirements beyond the minimum, e.g., credits or courses to be completed, proper time to fulfill the residence requirement and acceptability of part-time 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 departmental faculty members approved to direct doctoral dissertations, the collegiate dean and the dean of Graduate Studies and Research.

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

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 Graduate Studies and Research.

**Transfer Credits**

Up to 50 percent of the total graduate credits above the baccalaureate required in a doctoral program may be transferred from an accredited college or university. All transfer credit must be at the "A" or "B" level in graduate courses. The course must be relevant to the student's program and fall within the 10-year limit if beyond the master's level. A student already admitted to the University must receive prior approval for transfer courses taken elsewhere.

A student admitted with a master's degree or equivalent will have work evaluated in relation to the student's program to determine transfer credit. Thirty semester credits are transferable from a master's degree.

A student seeking to transfer credits must have full admission and be in good standing at the University and the school in which the credits were achieved. Transfer credit will 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.

**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 a research technique (e.g., statistics and/or computers) may be substituted for one of the two foreign languages. Under the last option, each department should define competence and publicize.
- Plan B: Comprehensive knowledge of one approved foreign language, including reading without the aid of a dictionary and such additional requirements as the department may impose.
- Plan C: In certain doctoral programs (counseling and guidance, elementary education, engineering, psychology, secondary education, urban studies) 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.

**Adancement 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 Graduate Studies and Research.
Studies and Research or in the academic department.

Dissertation and Oral Defense

The ability to do independent research and demonstrate competence in scholarly exposition must be demonstrated by the preparation of a dissertation on some topic related to the major subject. It should represent a significant contribution to knowledge, be presented in a scholarly manner, 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 two weeks prior to commencement. These copies must be signed by the adviser, faculty reader, department head and college dean prior to submission to the dean of Graduate Studies and Research. 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; have 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.
DOCTOR OF PHILOSOPHY DEGREE

The following programs leading to the Doctor of Philosophy degrees are offered in the Buchtel College of Arts and Sciences: the Doctor of Philosophy in Chemistry, the Doctor of Philosophy in Counseling Psychology, the Doctor of Philosophy in History, and the Doctor of Philosophy in Psychology. The Doctor of Philosophy in Sociology is offered jointly with Kent State University and the Doctor of Philosophy in Urban Studies with Cleveland State University.

Doctor of Philosophy in Chemistry

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

- Complete a course of study designed in consultation with an adviser or advisory committee including:
  - Completion of at least 90 credits beyond the baccalaureate degree including 24 credits of appropriate coursework.
- Complete monthly cumulative exam requirement.
- Complete oral exam/research proposal 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 the student a choice of entry points through the Psychology Department of the Buchtel College of Arts and Sciences or through the Counseling and Special Education Department of the College of Education. Students in both departments are expected to attain a level of broad scientific competence in the core areas of psychology: the biological, social, cognitive-affective, and individual bases of human behavior. Practicum and internship experiences are also required of all students and range from skill building in basic psychological assessment and counseling, to actual work with clients, to a year-long, full-time internship in an applied service setting. Pertinent information regarding differences in emphasis orientation and coursework 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 program in counseling psychology has been constructed so as to lead to APA approval in coming years.

The Department of Psychology offers a five-year counseling psychology program leading to a doctoral degree and, in general, is geared to 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, psychodiagnostic, vocational development theory, intelligence testing, 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 Joint Program in Counseling Psychology will be handled through the department associated with the student’s chosen entry point. Departure from the above program may be made only with the approval of the counseling psychology program faculty.

Requirements

The current curriculum reflects the new joint program in counseling psychology. The courses taken in Counseling and Special Education will broaden the knowledge and skill bases of the students. Electives and other classes are to be planned along with the student’s adviser.

- Psychology core courses (610, 620, 630, 640) 16
- Counseling psychology core courses (853, 707, 710, 711, 712, 713, 714, 715) 30
- Practicum sequence (671, 672, 673, 795 (4+4), 796 (4+4)) 28
- Advanced Psychological Tests and Measures (750) 4
- Electives (minimum) 6
- A statistics sequence that may be substituted for the doctoral language requirement 16
- Thesis credits (minimum) 8
- Dissertation credits (minimum) 12

- The comprehensive written examination is prepared, administered and graded by the faculty of the department in which the student is enrolled. 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 track 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 Joint 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 that track.

Doctor of Philosophy in History

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

- Fulfill admission requirements of the School.
- Admission will not usually be considered unless the applicant has a master’s degree, or the equivalent, with a grade-point average of “B” from an accredited institution. Those holding master’s degrees from The University of Akron or other accredited institutions should not assume automatic permission to pursue doctoral studies. Prior to admission to the doctoral program, the applicant must present evidence of the likelihood of success in advanced study. A personal letter from the applicant and three letters of recommendation from former professors are required to support an application for admission to the doctoral program. Special admissions examinations may also be required.
- Prior to admission to doctoral study, the applicant must present evidence of a reading knowledge of one relevant foreign language, or knowledge of another research skill such as statistics or computer techniques. Those whose native tongue is not English must demonstrate proficiency in English.
- Those who apply for graduate assistantships are required to submit their applications, scores on the Graduate Record Examination, both the general aptitude test and the subject (history) test.
- After a student has completed at least 12 credits beyond the master’s degree at the University, the student must apply to the Department of History for qualified status provided that the student’s grade-point average in all graduate work is better than “B.” If any doubt exists about the student’s ability at this time, the department may require an examination.
- After advancement to qualified status, the student, in consultation with the director of doctoral studies in history, will reach a final decision upon the fields the student wishes to offer for the comprehensive examinations and any additional research skills needed. At this point assignment of a major professor who shall direct the student’s dissertation shall be made. The student’s doctoral committee, to be chaired by the major professor, will also be appointed.
- Complete studies selected by the student in consultation with an advisory committee, including:
  - completion of 60 credits beyond master’s degree requirements, including dissertation credit;
  - demonstration of competency in four fields of study selected from the following areas: ancient, medieval, modern Europe to 1815, modern Europe since 1789, England and the Empire, United States to 1865, United States since 1865, Latin America, Far East, history of science, (one of the four fields may be in the cognate area outside of history);
  - satisfactory performance in written and oral comprehensive examinations;
  - classroom teaching experience;
  - defense of the dissertation in an oral examination.
- A reading knowledge of two languages will be required, normally French and German. At the discretion of the student’s doctoral committee, another language or computer techniques and statistics may be substituted for either language as outlined in the Graduate School requirements. An instructor may require specific
language proficiencies before permitting a graduate student to enroll in any course for which credit is to be granted. An instructor may require additional languages before permitting a candidate to write a dissertation under the instructor's supervision.
- Complete all general requirements for the Doctor of Philosophy degree.
- Each Ph.D. candidate will have classroom teaching experience as a part of the program.

Doctor of Philosophy in Psychology

The Department of Psychology offers a doctoral degree in psychology with specialization in either industrial/organizational psychology, applied developmental psychology, industrial gerontological psychology.

A degree will be awarded to a student who, besides fulfilling the general requirements, has met the following specific requirements:
- Fulfill admission requirements of the Graduate School and department requirements as follows:
  - completion of master's degree including 30 graduate credits;
  - completion of master's core courses or equivalent;
  - attainment of a graduate grade-point average (GPA) of 3.25;
  - completion of Graduate Record Examination Aptitude and Advanced Psychology Test;
  - securing of three letters of recommendation;
  - Mastery of M.A. core courses with a minimum 3.50 GPA in 2750:610, 620, 630, 640 or successful performance on core mastery examination.
- Major field:
  - a minimum of 90 graduate credits including a 30-credit master's program. A student may be required to complete additional credits beyond the 90 minimum credit requirement;
  - completion of Ph.D. core courses in the student's specialty area: industrial/organizational, developmental, industrial gerontological psychology. Core courses are specified in the Department of Psychology Graduate Student Manual. The student is required to maintain at least a 3.00 GPA in core courses and overall courses;
  - completion of additional required and elective courses to be planned in consultation with the student's faculty advisor and subject to approval by the department's graduate student handbook;
- Written comprehensive examinations:
  - satisfactory performance on doctoral written and oral comprehensive examinations in the student's major area of industrial/organizational psychology, applied developmental psychology, industrial gerontological psychology (refer to the department's graduate student manual);
- Dissertation research:
  - completion of 3750:699 Dissertation Research: (minimum 12 credits)
  - satisfactory performance on final oral examination and defense of dissertation research;
- Other requirements:
  - refer to the department's graduate student manual for other requirements or guidelines;
  - complete and fulfill general doctoral degree requirements of Graduate School.

Doctoral language requirements or appropriate alternative research skills and techniques may be prescribed by the student's advisory committee, depending upon the career plans of the student and upon the academic and/or scientific requirements of the dissertation.

Doctor of Philosophy in Sociology

Akron-Kent Joint Ph.D. Program

The University of Akron and Kent State University departments of sociology offer a joint program leading to the Ph.D. degree. Faculty and students engaged in the joint doctoral program are for all intents and purposes involved in a single graduate program. Course work is offered at both campuses and faculty and students interchange freely.

Admission to the Program

A student may apply with a completed master's degree or equivalent or after at least one year of full-time coursework or equivalent (18 credits) in the sociology master of arts program at The University of Akron. The course work must include the master of arts core sequence. Scores from either the Miller Analogies Test (MAT) or the aptitude portion of the Graduate Record Examination (GRE) are required as part of the doctoral application. Admission is limited to students whose records clearly indicate both scholarly and research potential.

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

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 two of the following courses, such courses not to count toward meeting specialization requirements:
  - 3850:651 Social Psychology
  - 3850:655 Social Organization
  - 3850:657 Social Change
  - 3850:674 Urban Sociology
- 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 (semester) in course work.
- Pass the doctoral comprehensive examination. This examination is given in the specialty area and will include an evaluation of methods, theory, statistics and as relevant to the specialty area.
- Fulfill residency requirement of the Graduate School.
- Complete foreign language requirement by one or 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 with the master's degree)

In addition to meeting the general requirements of the Graduate School, a student admitted with the master's degree, the student must meet the following requirements:
- Completion of the M.A. core course work.
- 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) course work beyond the bachelor's degree.

Doctor of Philosophy in Urban Studies

The departments of urban studies of The University of Akron and Cleveland State University jointly offer a program leading to the Ph.D. degree. Students admitted to the program may take courses at either campus and all committees contain members from both universities.

The purpose of the program is to train senior-level persons in urban public management, planning, policy analysis, and evaluation research.

Admission

Admission to the Graduate School of The University of Akron requires a master's degree in an appropriate area and submission of GRE score. In some instances persons holding a master's degree may be asked to take additional specified master's-level courses before beginning Ph.D. courses.

Degree Requirements

The program has a required core of eight courses, including: two courses in advanced quantitative methods and program evaluation; five courses in policy analysis, planning, and management. Each student will also complete a specialization through a combination of tutorials (12 credits) and elective courses (12 credits). The tutorial rests upon a close working relationship between students and individual faculty members in particular areas where faculty members are actively engaged in research.

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. Students must pass written and oral comprehensive examinations on both the core and their specialization.

The capstone of the program is the dissertation where students must present...
the results of their research and successfully defend their dissertations in an oral examination.
A minimum of 63 credits beyond the master's degree is required.

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

Degree 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.

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. Summertime at a biological station is available.

Non-thesis Option

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

The requirements are the same as the research option except that no thesis and research is undertaken, but a total of 40 credits of approved course work (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 course work — 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 course work including a thesis equivalent to six credits of the 30 is required. If elected, a thesis must be written in an area of specialization in which the individual has taken at least two courses.

Non-thesis Option

A minimum of 30 credits of course work is required.

In addition to a specialization (a list of which is available from the department), at least 21 credits under each option must be at the 600 level in economics. The following courses are required:

- 3250:602 Macroeconomic Analysis I 3
- 3250:611 Microeconomic Theory I 3
- 3250:620 Applications of Mathematical Models to Economics* 3
- 3250:628 Statistics for Economists* 3

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

Labor and Industrial Relations Option**

- Core:
  - 3250:530 Human Resource Policy 3
  - 3250:610 Framework of Economic Analysis 3
  - 3250:626 Statistics for Economists 3
  - 3250:633 Theory of Wages and Employment 3
  - 3250:634 Collective Bargaining I 3
  - 3250:635 Labor Law I 3

- Industrial Relations Track (for an individual interested in a career in industrial relations)
  - 3250:638 Collective Bargaining II 3
  - 3250:637 Labor Law II 3

- Electives:
  - 3250:606 Public Finance 3
  - 3250:615 Industrial Organization 3
  - 3250:616 Antitrust Policy 3
  - 3250:617 Economics of Regulation 3
  - 3250:639 Public Employee Bargaining 3
  - 3750:610 Industrial Psychology 4
  - 3850:949 Sociology of Work 3

- A total of 30 credits is required for the degree.

Courses taken outside the department must be approved (in writing) by the student's adviser prior to enrollment.

English

Master of Arts

A minimum of 32 credits is required, of which 17 (exclusive of thesis) must be at the 600 level. Of these 17 credits, 12 must be in literature or literary theory.

- 3300:506 Chaucer 3
- 3300:570 History of the English Language 3
- 3300:670 Modern Linguistics 3
- 3300:615 Shakespearean Drama 3
- 3300:599 Bibliography and Literary Research 3
- 3300:699 Thesis 6

Before enrolling in the final semester, a student must demonstrate reading proficiency in a foreign language appropriate to English studies. However, the completion of one junior- or senior-level course in a foreign language will exempt the student from examination, provided that course was taken no more than five years before the student began graduate work.

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-year 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 and students should consult the Department of Secondary Education for requirements for state certification for teaching in the public schools.

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

**The student should have a B.A./B.S. degree from an accredited college or university and some background in labor and industrial relations. An interested student who has no background may take the following courses:

- 3250:201 Principles of Macroeconomics 3
- 3250:202 Principles of Microeconomics 3
- 3250:330 Labor Problems 3
- 6350:321:2 Quantitative Bus. Analysis 1, II 6

†Unless the student has passed a comparable course at the undergraduate level with a grade of "B" or better.
General Requirements:
• 32 total credits (26 hours of coursework; 6 hours of theses)
• 18 hours required in composition studies (including courses in composition, linguistics, and rhetoric)
• 8 hours in literature or literary theory (exclusive of individual reading)
• 15 of these hours must be at the 600 level

Required Courses:
3300:575 Theory and Teaching of Basic Composition 3
3300:570 Modern Linguistics 3
3300:673 Theories of Composition 3

Other Available Courses:
Composition and Rhetoric:
3300:575 Theory of Rhetoric 2
3300:674 Research Methodologies in Composition 3
3300:679 Scholarly Writing 2
3300:689 Seminar: Reading Theory 2-3

Linguistics:
3300:570 History of the English Language 3
3300:571 U.S. Dialects: Black and White 2
3300:589 Grammatical Structures of Modern English 3
3300:589 Sociolinguistics 3
3300:689 Contextual Linguistics 2-3

Literature and Literary Theory:
Any approved department offering at the 500 or 600 level.

Graduate Foreign Language Requirement:
The language requirement for the M.A. in English: Alternate Track in Composition is as follows:
Demonstration of reading proficiency in a foreign language appropriate to English. Completion of one junior- or senior-level course in a foreign language (with a grade of "B" or better) will exempt the student from examination provided the course was taken no more than five years before the student began his or her graduate work.

Geography
Master of Arts
Master of Science
• Complete a minimum of 30 credits of which 16 must be in geography courses. A minimum of 12 credits (exclusive of thesis) must be at the 600 level. The 30 credits must include the following:
  3350:581 Geographic Research Methods 3
  3350:583 Spatial Analysis 3
  2350:667 History of Geographic Thought 3
• Thesis (M.A. only) — two to six credits.
• Statistics (M.S. only) — eight credits.
• Successful completion of a comprehensive examination administered by the departmental committee.

The student who has undergraduate deficiencies in cartography, geographic research techniques and spatial analysis will be expected to remedy these by taking appropriate courses with the advice of the head of the department. Courses taken outside the department must be approved by the department prior to enrollment.

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. 
• Proficiency examination at the beginning of program to determine weaknesses in undergraduate preparation. The student who demonstrates a lack of basic knowledge will be required to take appropriate undergraduate courses. The student may not begin formal thesis work until he/she has successfully passed the proficiency examination and has corrected deficiencies from same. Formal thesis work includes thesis proposal and/or thesis research credits. Field Camp can be taken for graduate credit; however, it will not count toward the 30 credits nor the M.S. in the geology or geophysics options.
• Core requirements:
  3370:680 Seminar in Geology 2
  3370:699 Thesis Research 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 his/her career objectives.

Geology
Equivalents of the current course, 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.S. 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 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:
• Required courses:
  3370:620 Introduction to Physical Geology 4
  3370:210 Geomorphology 3
  3370:350 Structural Geology 4
  3450:201 Analytical Geometry Calculus I, II, III 12
  4300:201 Statics 3
  4300:202 Introduction to Mechanics of Solids 3
  4300:313 Soil Mechanics 3
  4300:314 Geotechnical Engineering 3
• Required courses:
  3370:631 Rocks and Minerals (or equivalent) 4
  4300:611 Fundamentals of Soil Behavior 2
  4300:614 Foundation Engineering I, II 6

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 adviser.

History
Master of Arts
• Admission to the program requires completion of at least 15 semester or 22 quarter credits in history as an undergraduate. Historical Methods or an equivalent should be part of the entering student's preparation. If it is not, this course must be taken at the earliest opportunity but will not be counted toward fulfillment of the graduate credit requirement. Those who apply for graduate assistantships are required to submit, with their applications scores on the Graduate Record Exam, both the general aptitude test and the subject (history) test.
• Satisfactory completion of a minimum of 30 credits of graduate study in history, of which six may be in individual reading courses.
• Three fields of study, one of which must be unrelated to the other two, and two of which must be chosen from among the following fields:

Geography
Master of Arts
Master of Science
• Complete a minimum of 30 credits of which 16 must be in geography courses. A minimum of 12 credits (exclusive of thesis) must be at the 600 level. The 30 credits must include the following:
  3350:581 Geographic Research Methods 3
  3350:583 Spatial Analysis 3
  2350:667 History of Geographic Thought 3
• Thesis (M.A. only) — two to six credits.
• Statistics (M.S. only) — eight credits.
• Successful completion of a comprehensive examination administered by the departmental committee.

The student who has undergraduate deficiencies in cartography, geographic research techniques and spatial analysis will be expected to remedy these by taking appropriate courses with the advice of the head of the department. Courses taken outside the department must be approved by the department prior to enrollment.

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. 
• Proficiency examination at the beginning of program to determine weaknesses in undergraduate preparation. The student who demonstrates a lack of basic knowledge will be required to take appropriate undergraduate courses. The student may not begin formal thesis work until he/she has successfully passed the proficiency examination and has corrected deficiencies from same. Formal thesis work includes thesis proposal and/or thesis research credits. Field Camp can be taken for graduate credit; however, it will not count toward the 30 credits nor the M.S. in the geology or geophysics options.
• Core requirements:
  3370:680 Seminar in Geology 2
  3370:699 Thesis Research 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 his/her career objectives.

Geology
Equivalents of the current course, 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.S. 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 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:
• Required courses:
  3370:620 Introduction to Physical Geology 4
  3370:210 Geomorphology 3
  3370:350 Structural Geology 4
  3450:201 Analytical Geometry Calculus I, II, III 12
  4300:201 Statics 3
  4300:202 Introduction to Mechanics of Solids 3
  4300:313 Soil Mechanics 3
  4300:314 Geotechnical Engineering 3
• Required courses:
  3370:631 Rocks and Minerals (or equivalent) 4
  4300:611 Fundamentals of Soil Behavior 2
  4300:614 Foundation Engineering I, II 6

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 adviser.

History
Master of Arts
• Admission to the program requires completion of at least 15 semester or 22 quarter credits in history as an undergraduate. Historical Methods or an equivalent should be part of the entering student’s preparation. If it is not, this course must be taken at the earliest opportunity but will not be counted toward fulfillment of the graduate credit requirement. Those who apply for graduate assistantships are required to submit, with their applications scores on the Graduate Record Exam, both the general aptitude test and the subject (history) test.
• Satisfactory completion of a minimum of 30 credits of graduate study in history, of which six may be in individual reading courses.
• Three fields of study, one of which must be unrelated to the other two, and two of which must be chosen from among the following fields:

Ancient America to 1655
Medieval United States Since 1655
European Renaissance to 1815 Latin America
Europe, 1815 to the Present Far East
England and the Empire History of Science

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

The student must pass an appropriate written examination in two of the three fields. The third field requirement will be met by at least seven credits of work at the graduate level. If the student does not pass an examination unconditionally, the examining faculty may re-examine the student orally or require the student to take another written examination after a lapse of three months. No written examination may be repeated more than once.
• A course in historiography (may be waived if such a course has been taken on the undergraduate level).
• An appropriate foreign language or other research skill shall be required by the student's master's committee if it is necessary to a student's program of study. A reading knowledge of a foreign language is desirable and may be necessary for admission to a doctoral program.
• At least 16 hours of 600-level work, exclusive of historiography and individual reading. May be fulfilled in one of the following ways.*

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

*Where disagreement occurs between readers in Option I, II or III, the director of Master’s Studies will choose a faculty member to arbitrate the disagreement.
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.

Special Summer Program
The department offers a special three-summer M.A. program. Designed primarily for public school teachers, this program makes it possible to schedule the requirement for an M.A. (Option I or Option II) over three summers and the two intervening years.

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 3
    - 3450:512 Abstract Algebra II 3
    - 3450:611 Topics in Algebra 3
  - And all of the following courses:
    - 3450:621 Real Analysis
    - 3450:622 Measure Theory
    - 3450:625 Analytic Function Theory
    - 3450:692 Mathematical Sciences Seminar 2

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 computer science (3460) and 2-4 credits in 3450:699 thesis research 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.

Non-thesis Option (33-42 credits)
In addition to the placement review and core requirements, 16 credits of 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 two courses selected from among 3450:510, 512 or 611 and in the courses 3450:621 and 625.

Master of Science — Statistics
- Entrance into the program will require the initial completion of the following prerequisites:
  - 3470:561 Applied Statistics, four credits; 3470:661 Advanced Behavioral Statistics, three credits; or equivalent.
  - 3450:601 Introduction to Analysis, four credits; or equivalent (may not be used to meet degree requirements for mathematical sciences majors).
  - 3470:620 Applications of Matrices to Statistics, three credits; OR equivalent. (May be taken concurrently with 3470:651 Probability and Statistics, four credits.)
- Core curriculum:
  - 3470:651 Probability and Statistics 4
  - 3470:652 Advanced Mathematical Statistics 3
  - 3470:653 Linear Models 3
  - 3470:663 Experimental Design 3
  - 3470:665 Regression and Correlation 3
  - 3450:692 Mathematics and Statistics Seminar 2

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 3470:699 Thesis Research must be completed.

Non-thesis 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 non-thesis option.
- With the consent of the department, up to six credits of approved graduate-level electives outside the department may be substituted in the thesis or non-thesis 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 (3450:521,2) and of his or her background in at least one junior-level or higher course in engineering or physics. If the student fails any part of this review, then that course will be added to the required courses for the student and the total number of credits required for the degree will reflect this.

- Core:
  - 3450:510 Advanced Linear Algebra 3
  - 3450:621 Real Analysis 3
  - 3450:625 Analytic Function Theory 3
  - 3450:627 Advanced Numerical Analysis I, II 6
  - 3450:633 Methods of Applied Mathematics I, II 6
  - 3450:692 Mathematical Sciences Seminar 2

Thesis Option (30-39 credits)
In addition to the placement review and core requirements, three to five 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.

Non-thesis Option (33-42 credits)
In addition to the placement review and core requirements, ten 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 (3450:521,2) and Mathematical Models (3450:536). 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.

- 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
- 3470:651 Probability and Statistics 4
- 3470:653 Advanced Probability and Stochastic Process 3
- 3450:692 Mathematical Sciences Seminar 2

Thesis Option (30-39 credits)
In addition to the placement review and core requirements, two to four credits of approved 500/600-level courses in mathematics (3450), statistics (3460) or computer science (3460) and two to four credits in 3450:699 Thesis Research 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.

Non-thesis Option (33-42 credits)
In addition to the placement review and core requirements, nine 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, 625, 627, 633 and 634.

Physics

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

- A cumulative grade-point average of 3.00 or better for all graduate-level credits applicable toward the degree
- Complete an approved program of courses which includes the following required courses:
  - 3650:551, 2 Advanced Laboratory I, II  4
  - 3650:615 Electromagnetic Theory I  3
  - 3650:625 Quantum Mechanics I  3
  - 3650:641 Topological Mechanics  3
  - 3650:661 Statistical Mechanics  3

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

- 3650:581, 2 Methods of Mathematical Physics I, II  6
- 3650:615 Electromagnetic Theory II  3
- 3650:626 Quantum Mechanics II  3

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

- 3650:500 History of Physics  3
- 3650:504 Energy and Environment  3
- 3650:568 Digital Data Acquisition  2
- 3650:590 Workshops (maximum credit)  6

A student must pass a comprehensive examination of a form suggested by the department. This exam consists of two parts, as follows:

Part I: The basic exam must be passed by all degree candidates. This is a written examination covering the fields of mechanics, electricity and magnetism, optics, thermodynamics and modern physics at the undergraduate level.

Part II: Completion of at least one of the following options:

Option A: An advanced written examination covering the fields of quantum physics, electricity and magnetism, atomic and nuclear physics, mechanics and experimental physics at the beginning-graduate level.

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

Option C: A master's thesis.

- Graduate research participation is strongly encouraged. Up to five credits may be earned in 3850:697 Graduate Research, upon the completion of a graduate research project. One additional credit may, upon approval by the department, be permitted in 3850:698 Master's Thesis Research for the completion of a master's thesis based on such research. A successful thesis may thus account for up to six of the total of 30 graduate credits required.

### Political Science

**Master of Arts**

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

- As a part of the above, complete a minimum of 15 graduate hours at the 600 level in political science, consisting of the following:
  - Five required core courses:
    - 3700:600 Scope and Theories of Political Science  3
    - 3700:601 Research Methods in Political Science  3
  - Three additional graduate seminars. Neither Independent Research, Thesis, nor Internship is considered a graduate seminar.
  - Pass a comprehensive examination covering one field to be determined in conjunction with a departmental adviser.
  - Complete either of the following:
    - A master's thesis, including six hours of thesis credit (3700:656) in preparation. These credits may be presented as part of the overall 30-credit requirement. Thesis topics and completed theses must be approved by a student's thesis committee.
    - A non-thesis option, which shall consist of two seminar papers approved by a department committee of three persons chosen by the department head.

### Psychology

**Master of Arts**

- Fulfill admission requirements of the Graduate School and the following departmental requirements:
  - equivalent of psychology undergraduate major including a general or introductory course, statistics course and experimental psychology course;
  - GPA of 3.00 in psychology courses;
  - Graduate Record Examination, Aptitude and Advanced Psychology Test;
  - two letters of recommendation.
- Course requirements:
  - completion of a minimum of 30 credits of graduate psychology courses, including the M.A. core courses or equivalents, specialty area required courses and electives as specified in the department's graduate student manual;
  - a student is required to maintain at least a 3.00 grade-point average in M.A. core courses as well as overall.

- Master of Arts examination (first year):
  - thesis option: Mastery of M.A. core courses with a minimum of 3.25 GPA in 3750:60, 61, 62, 63, 640 or successful performance on core mastery examination;
  - non-thesis option: written and oral comprehensive examinations in the specialty areas.

- Other requirements:
  - refer to the Department of Psychology Graduate Student Manual for additional guidelines.
  - complete and fulfill general master's degree requirements of the Graduate School.

**Thesis Option**

Completion of a minimum of 30 credits of graduate work including thesis in industrial/organizational, counseling or developmental psychology.

**Non-thesis Option**

Completion of a minimum of 30 credits of graduate work with no thesis required. Completion of coursework, practicum and examinations in either personnel, counseling or developmental psychology.

### Sociology

**Master of Arts**

- Complete three 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

**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
  - 3850:631 Social Psychology  3
  - 3850:645 Social Organization  3
  - 3850:705 Multivariate Techniques in Sociology  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 or thesis.

**Non-thesis Option I**

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
  - 3850:645 Social Organization  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.

**Non-thesis Option II**

This degree is intended for the student who needs rigorous training in the methodological and techniques of social research. Students pursuing this degree will select one of three options: general research techniques, survey research techniques or evaluation research techniques. Upon completion of this program, students will have a greater exposure to research strategies, techniques and issues than many Ph.D. students experience.

Completion of 32 semester credits of graduate-level coursework which must include the following:

- Complete the following required courses with at least a 3.00 average:
  - 3850:603 Sociological Research Methods  3
  - 3850:604 Social Research Design  3
  - 3850:617 Sociological Theory  3
There is no graduate degree in anthropology. However, there are many graduate courses available. A student interested in taking such courses for graduate credit may, or they may apply for special non-degree status through the Department of Inquiries should be directed to the graduate director in the Department of Sociology.

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 they may apply for special non-degree status through the Department of Sociology. The student should enroll in graduate courses only for specific professional preparation or enhancement and with the permission of the instructor. Inquiries should be directed to the graduate director in the Department of Sociology.

Spanish

Master of Arts

- Thirty-two semester credits of graduate work which may include a thesis amounting to four credits.
- Requirement: proficiency level in listening comprehension, speaking, reading and writing Spanish.
- Second language requirement: completion of 202 with a grade of at least "B" in another language, or a translation from another language. Choice of the second language will be left to the student in consultation with an advisor.
- Final comprehensive examinations: the candidate will be required to submit two graduate essays, each of which is subject to an oral exam.

Urban Studies

Master of Arts

Courses may be taken outside the Department of 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 and in consultation with a faculty adviser, plan a complete course of study.

- Core
  - 3980.600 Basic Analytical Research
  - 3980.601 Advanced Research and Statistical Methods
  - 3980.602 American Urban Development
  - 3980.690 Urban Studies Seminar

Basic Program

Complete 34 credits of coursework as follows:
- Core — 12 credits
- Selection of recommended courses — six credits
- Urban related courses — six credits
- 40 credits of electives

Options

Public Administration

Forty credits of coursework (plus internship where applicable) as follows:

- Core requirements:
  - 3980.600 Basic Analytical Research
  - 3980.601 Advanced Research and Statistical Methods
  - 3980.602 American Urban Development
  - 3980.690 Urban Studies Seminar

- Public Administration requirements:
  - 3980.610 Urban Policy
  - 3980.611 Urban Administration
  - 3980.640 Fiscal Analysis
  - 3980.642 Municipal Budgeting
  - 3980.643 Urban Policy Analysis
  - Electives selected in consultation with department head or public administration adviser

Urban Planning

Forty-five credits of coursework (plus internship where applicable) as follows:

- Core requirements:
  - 3980.600 Basic Analytical Research
  - 3980.601 Advanced Research and Statistical Methods
  - 3980.602 American Urban Development
  - 3980.690 Urban Studies Seminar

- Planning requirements:
  - 3950.536 Urban Land Use Analysis
  - 3980.630 Introduction to Planning Practice and Theory
  - 3980.631 Urban Facilities Planning
  - 3980.632 Land Use Controls
  - 3980.637 Field Methods in Urban and Regional Planning
  - 3980.638 Field Methods in Urban and Regional Planning Laboratory
  - 3980.670 Planning Research
  - Electives: Four elective courses totaling 12 credits or more should be selected in consultation with the faculty adviser.
    - Internship: Required for all students who do not have professional urban planning experience

Joint Programs

Joint Degree Programs in Law and Urban Planning and Law and Public Administration.

The University offers Joint J.D. and Urban Planning and J.D. and Public Administration programs. The titles are: J.D./M.A. Urban Planning and J.D./M.A. Public Administration.

To become accepted into the program, a student must meet the admission requirement of the School of Law, the Graduate School and the Department of Urban Studies.

J.D./M.A. Urban Planning Degree Requirements

Seventy-six credits in law and 33 credits in urban planning.

Under this program, a student must take 43 credits of required law courses, 32 credits of law electives and 33 credits of required urban planning courses plus urban studies internship of one to three credits. (Internship is required of any student without professional urban planning experience.)

J.D./M.A. Public Administration Degree Requirements

Seventy-six credits in law and 27 credits in public administration.

Under this program, a student must take 43 credits of required law courses, 32 credits of law electives and 27 credits of required public administration courses plus urban studies internship of one to three credits. (Internship is required of any student without professional administrative experience.)

These programs reduce the total existing credit hours of Law School and Urban Studies as follows:

J.D./M.A. Urban Planning

The law requirements are reduced by nine credit hours from 85 to 76 while urban planning requirements are reduced by 12 credit hours from 54 to 42.

J.D./M.A. Public Administration

The law requirements are reduced by nine credit hours from 85 to 76, while public administration requirements are reduced by 13 credit hours from 40 to 27.
College of Engineering

Nicholas D. Sylvester, Ph.D., Dean
Max S. Willis, Jr., Ph.D., Associate Dean, Graduate Studies and Research
S. Graham Kelly III, Ph.D., Assistant Dean

DOCTOR OF PHILOSOPHY IN ENGINEERING

Areas of study offered through the College of Engineering include biomedical, civil, chemical, electrical and mechanical engineering in addition to interdisciplinary programs in environmental engineering, materials science, mechanics, systems engineering and transport processes. Polymer Engineering is offered through the College of Polymer Science and Polymer Engineering. In addition to the general requirements of the Graduate School, for admission to the program, a student must hold a bachelor's degree in a curriculum 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 satisfaction of the dean of the College of Engineering and the department head. An applicant must have completed the equivalent of differential equations, elementary classical physics, principles of chemistry and demonstrate proficiency at the undergraduate level in courses related to the area of intended study. To obtain a Ph.D. in Engineering, students must also:

- 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 a 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.
- Students must meet one of the following requirements regarding coursework:
  1. If students have a master of science degree before entering the Ph.D. program, they may take a minimum of 24 credits of coursework at the 600- or 700-level beyond the M.S. requirement.
  2. Students must take a minimum of 48 credits of coursework at the 600- or 700-level, or
  3. Students must take a minimum of 60 credits of graduate coursework.
- Pass a candidacy examination which is taken after 90 percent of the coursework specified in the plan of study has been completed. Note: New Ph.D. procedures require candidacy exam in semester immediately after student completes 90 percent of coursework.
- Register for dissertation credits according to the schedule available from the dean of engineering.
- Pass an oral examination in defense of the dissertation.
- (For Biomedical Engineering program) GRE is required.

The student advisory committee shall specify the student's language requirements. The appropriate language is selected on the basis of the student's area of specialization and intended research. A foreign language is not required for all students.

A copy of the Ph.D. in Engineering Program Procedures is available from the dean of engineering.

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* A student without a B.S. in engineering but with a baccalaureate degree in a related field may be accepted for graduate study if the student will be required to make up the undergraduate deficiencies for which the student will not receive graduate credit.

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JOINT PROGRAM

Coordination for the M.D. and Ph.D. Between the Department of Biomedical Engineering, University of Akron and the Northeastern Ohio Universities College of Medicine.

I. Introduction and Purpose

The Department of Biomedical Engineering of The University of Akron and NEOMED agree to cooperate to provide a coordinated program for those desiring both the M.D. and Ph.D. degrees. It is recognized that such cooperation is to the benefit of both institutions.

This coordinated program does not change in any way the requirements for either the M.D. at NEOMED or the Ph.D. at The University of Akron. The program allows for the timing of requirements to be met in such a manner that a shorter total time would be required for completion of both degrees than if the degrees were completed separately and individually. This program will also help integrate the knowledge and skills acquired by the student in each of the programs.

II. Routes of Admission

1. Entry from undergraduate (or master's level) programs in engineering, biology, chemistry, or other pre-medical fields into both the M.D. and Ph.D. programs.
2. Entry from the B.S./M.D. program into the M.D. and Ph.D. programs.

All students will be required to complete the following minimum courses and to have taken the MCAT prior to admission into the coordinated M.D. and Ph.D. programs.

- M.D. Principles of Chemistry I and II
- M.D. Organic Chemistry I and II
- M.D. Principles of Biology I and II
- M.D., Ph.D. Classical Physics I and II
- Ph.D. Statics
- Ph.D. Dynamics
- Ph.D. Strength of Materials (or Material Science)
- Ph.D. Basic Electrical Engineering (or Circuits I & II)
- Ph.D. Calculus I,II,III and Differential Equations.

III. Structure of Degree 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 at NEOMED.

MASTER'S DEGREE

The degrees 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

Master of Science in Chemical Engineering

Thesis Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:600</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4205:610</td>
<td>Chemical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemical Engineering Electives**</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Approved Electives</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Approved Mathematics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

The thesis must be satisfactorily defended in an oral examination. The student must pass a comprehensive examination which is expected to attend and participate in the department seminars.

* The elective chemical engineering courses may not include more than three credits of 600-level courses.

** The elective chemical engineering courses may not include more than three credits of 600-level courses.
Nonthesis Option
4200:600 Transport Phenomena 3
4200:605 Classical Thermodynamics 3
4200:610 Chemical Engineering Electives 6
Approved Electives 18
Approved Mathematics 3

The student must pass a comprehensive examination and is expected to attend and participate in the department seminars.

Master of Science in Civil Engineering
Areas of study in the department include: structural mechanics, geotechnical, hydraulic, and environmental engineering.

Thesis Option
Civil Engineering Coursework 15
Approved Mathematics or Science 3
Approved Electives 6
Thesis 6

The thesis must be satisfactorily defended in an oral examination.

Nonthesis Option
Civil Engineering Coursework 15
Approved Mathematics or Science 3
Approved Electives 12
Special Problem 2

Master of Science in Electrical Engineering
Areas of study in the department include: computer engineering, control system engineering, power system engineering and related areas.

Thesis Option
Electrical Engineering Coursework 15
Approved Mathematics 3
Approved Electives 6
Thesis 6

The thesis must be defended in an oral examination.

Nonthesis Option
Electrical Engineering Coursework 15
Approved Mathematics 3
Approved Electives 12
A student must pass a graduate-level oral comprehensive examination which may be taken after 24 credits have been completed.

Master of Science in Mechanical Engineering
There are three main areas of graduate study in mechanical engineering: systems and controls, engineering mechanics and thermal-fluid sciences. Every student in the department will be encouraged to take at least one mechanical engineering course outside the main area of interest. It is the purpose of this course to develop some breadth in graduate education.

The basic requirements are as follows:

Thesis Option
Mechanical Engineering Course Work† 15
Approved Mathematics 3
Approved Electives 6
Thesis 6

The thesis must be defended in an oral examination.

Nonthesis Option
Mechanical Engineering Course Work† 15
Approved Mathematics 3
Approved Electives 12
Special Problems 2

Master of Science in Engineering
This program is intended for the student whose educational objectives cannot be met by the chemical, civil, electrical or mechanical departmental programs or those who wish to specialize in biomedical engineering.

Thesis Option
Engineering Coursework 12
Approved Mathematics or Science 3
Approved Electives 9
Thesis 6

The thesis must be defended in an oral examination.

Nonthesis Option
Engineering Coursework 10
Approved Mathematics or Science 3
Approved Electives 9
Special Problems 2

The overall program is administered by the dean. A student should declare to the dean the intention to study toward the Master of Science in Engineering degree before the completion of 10 graduate credits. Later admission to the program may be granted upon petition to the dean.

Upon admission, the dean will appoint an advisory committee consisting of at least two faculty members selected from the interdisciplinary divisions of the college. The committee members will be from at least two departments. The special problem section and final report must receive the approval of the advisory committee.

Biomedical Engineering Specialization
- Core:
  4800:601 Biomedical Instrumentation 4
  4800:611 Biometry 3
  4800:697 SIT: Physiology for Engineers and Lab 5
- Tracks: 9 credits from either Track I or II
  Track I:
  Biomedical Signals and Systems courses numbered 4800:620-639 and approved 4800:697 course†
  Track II:
  Biomechanics and Biomaterials courses numbered 4800:640-669 and approved 4800:697 courses
- Approved electives 6

Polymer Engineering Specialization
A description of this program is given under the College of Polymer Science and Polymer Engineering.

†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 course work. For a student specializing in systems and controls, electing the thesis option, six credits of non-mechanical engineering courses in the area of systems and controls may be substituted for six of the required 15 credits of mechanical engineering courses. Prior written approval from the student's adviser must be obtained. The limitations on 500-level course still apply in each category for a student in systems and controls.

*The required electrical engineering coursework of 18 credits may not include more than three credits of 500-level courses.
**The 36 credits requirement of the non-thesis option will be effective with the new incoming students.
***The elective chemical engineering courses may not include more than three credits of 500-level courses.
Admission to the Joint Program in Counseling Psychology will be handled through the department associated with the student’s chosen emphasis. Departures from the program may be made only with the approval of the counseling psychology program faculty. Students may be considered for admission to counseling psychology if they have a master’s degree in counseling, guidance and counseling, psychology, school psychology, or a related field.

- Psychology Core (3750:610, 620, 630, 640) is required of all students.
- Students register for dual listed courses (3750/5600) under their home department code.
- The comprehensive written examination is prepared, administered, and graded by the department faculty of the track in which the student is enrolled. 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 1,600 hours no more than two years. The internship site must be listed in the Association of Psychology Internship Centers (APIC) Directory.
- Language and residency requirements are to be completed in accordance with the guidelines of the Graduate School and the student’s home department.

### Joint Program requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>3750:612</td>
<td>Psychology Core I</td>
<td>4</td>
</tr>
<tr>
<td>3750:620</td>
<td>Psychology Core II</td>
<td>4</td>
</tr>
<tr>
<td>3750:630</td>
<td>Psychology Core III</td>
<td>4</td>
</tr>
<tr>
<td>3750:640</td>
<td>Psychology Core IV</td>
<td>4</td>
</tr>
<tr>
<td>3750/5600:653</td>
<td>Group Counseling</td>
<td>4</td>
</tr>
<tr>
<td>3750/5600:707</td>
<td>Supervision in Counseling Psychology</td>
<td>3</td>
</tr>
<tr>
<td>3750/5600:710</td>
<td>Theories of Counseling and Psychotherapy</td>
<td>4</td>
</tr>
<tr>
<td>3750/5600:711</td>
<td>Vocational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>3750/5600:712</td>
<td>Principles and Practice of Intelligence Testing</td>
<td>4</td>
</tr>
<tr>
<td>3750/5600:713</td>
<td>Advanced Seminar in Counseling Psychology</td>
<td>3</td>
</tr>
<tr>
<td>3750/5600:714</td>
<td>Objective Personality Evaluation</td>
<td>4</td>
</tr>
<tr>
<td>3750/5600:715</td>
<td>Research Design in Counseling</td>
<td>3</td>
</tr>
<tr>
<td>3750/5600:796</td>
<td>Counseling Psychology Practicum</td>
<td>8</td>
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<tr>
<td>5600:896</td>
<td>Dissertation (minimum)</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td><strong>NC</strong></td>
</tr>
</tbody>
</table>

**Counseling and Special Education Track requirements:**

- College of Education Foundations: 6
- Techniques of Research: 3
- Statistics in Education: 3
- Advanced Educational Statistics: 3
- Counseling, Theory and Philosophy: 3
- Group Testing in Counseling: 3
- Career Development and Counseling Across the Life Span: 3
- Techniques of Counseling: 3
- Practicum in Counseling I: 5
- Supervision in Counseling Psychology II: 3
- Research Design in Counseling II: 3

*Students must elect a minimum of six graduate credits in behavioral, humanistic, historical and/or social-philosophical studies from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>5100:640</td>
<td>Philosophies of Education</td>
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</tr>
<tr>
<td>5100:652</td>
<td>Comparative and International Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:664</td>
<td>Topical Seminar in the Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:620</td>
<td>Behavioral Bases of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:624</td>
<td>Seminar: Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5100:701</td>
<td>History of Education in American Society</td>
<td>3</td>
</tr>
<tr>
<td>5100:703</td>
<td>Seminar: History and Philosophy of Higher Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:705</td>
<td>Seminar: Social-Philosophical Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:721</td>
<td>Learning Processes</td>
<td>3</td>
</tr>
<tr>
<td>5107:23</td>
<td>Teacher Behavior and Instruction</td>
<td>3</td>
</tr>
</tbody>
</table>

**DOCTORIAL PROGRAMS IN COUNSELING**

**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 psychology or a related field. The program allows the student a choice of three specialty areas: (1) Counselor Education; (2) Clinical Mental Health Counseling; and (3) 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. Practica and internship experiences are required in each specialty. In addition, the cognate and elective options allow students flexibility in designing a program that is con-
sistent with their career goals. With the proper selection of courses, graduates of the program can meet the academic requirements for a Licensed Professional Clinical Counselor in Ohio. Graduates with a specialty in Marriage and Family Therapy with the proper selection of courses can meet the academic requirements for membership in the American Association for Marriage and Family Therapy.

The Ph.D. Program in Guidance and Counseling is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP), a specialized accrediting body recognized by the Council on Postsecondary Education (COEA).

Requirements

- Master's Degree* 31-34
- Foundations of Education 9
- Major: Guidance and Counseling
- Research and Statistics
  - 5100:741 Statistics in Education 3
  - 5100:743 Advanced Educational Statistics 3
  - 5600:715 Research Design in Counseling I 3
  - 5600:716 Research Design in Counseling II 3
  - Also required:
    - 5600:665 Internship** 3-6
    - 5600:702 Advanced Counseling Practicum 8
    - 5600:701 Supervision in Counseling Psychology I 3
    - 5600:705 Supervision in Counseling Psychology II 3
    - 5600:720 Topical Seminar 6
    - 5600: Specialty Courses in Counseling*** 12
- Electives
  - Electives to be selected with the approval of the student’s major adviser 10
- Dissertation
  - Normally, a minimum of 60 semester hours must be taken after the student is admitted into the doctoral program in guidance and counseling.

DOCTOR OF PHILOSOPHY IN SECONDARY EDUCATION

The Department of Secondary Education offers a program leading to the Ph.D. This program is designed to meet the needs and interests of persons in public, postsecondary, higher education and other institutions or agencies that might have educational programs.

A qualified student can, with consultation of an adviser design a “field of study” to meet higher career objectives within the expertise and resources of the department.

For further details contact the Departments of Secondary Education on program options and specific admission requirements.

DOCTOR OF EDUCATION DEGREE

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 directs studies toward a particular career goal. A student may be admitted after either the bachelor’s or the master’s degree.

- Minimum Requirements of the K-12 Program
  - Foundations (including dissertation) 31
  - School Administration (including doctoral residency seminar) 24
  - Curriculum and Supervision 12
  - Cognate 12
  - General Electives 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

Foundation Studies Education — Doctoral Program Requirements*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>5100:620</td>
<td>Behavioral Base of Education</td>
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<tr>
<td>5100:624</td>
<td>Seminar in Educational Psychology</td>
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<tr>
<td>5100:721</td>
<td>Learning Processes</td>
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<tr>
<td>5100:722</td>
<td>Teaching Behavior and Instruction</td>
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Humanistic Studies

<table>
<thead>
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<th>Course Title</th>
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<tr>
<td>5100:701</td>
<td>History of Education in American Society</td>
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</tr>
<tr>
<td>5100:703</td>
<td>Seminar in History and Philosophy of Higher Edu.</td>
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</table>

Social and Philosophical

<table>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>5100:600</td>
<td>Philosophies of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:602</td>
<td>Comparative and International Education</td>
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<tr>
<td>5100:604</td>
<td>Seminar in Cultural Foundations of Edu.</td>
<td>3</td>
</tr>
<tr>
<td>5100:605</td>
<td>Seminar in Social Philosophical Foundations</td>
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</table>

Research

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:640</td>
<td>Techniques of Research</td>
<td>3</td>
</tr>
<tr>
<td>5100:741</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:500</td>
<td>Dissertation</td>
<td>10</td>
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</table>

*Counseling psychology students contact adviser for requirements.

**A minimum of one academic year of full-time internship is required. An internship taken as part of a master's degree program may account for up to 50 percent of this requirement. If this is the case, the student is required to complete only three semester hours of 5600-665 after admission to the doctoral program.

***Selected with the approval of the student’s major adviser.
MASTER'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 Graduate School and must be qualified to hold a standard teaching certificate. Exception to this latter requirement will be made for the qualified student who does not wish to teach or perform duties in the public schools provided the student presents or acquires an appropriate background of study or experience. The student who expects to earn the master's degree in guidance and administration should also have had successful teaching experience. A physical examination may be required if and when indicated. Any student who exhibits a deficiency in English or other skills may be required to correct it before recommendation for an advanced degree. The student must receive a passing 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.

**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.

**Classroom Guidance for Teachers**

- Foundation Studies courses — nine credits
- Guidance courses — 21 credits.

**Community Counseling**

- Foundation Studies courses — nine credits. (See department handbook for options.)
- Required courses:
  5600.600 Seminar in Counseling
  5600.620 Typical Seminar: Substance Abuse and Sexuality
  5600.638 Community Counseling
  5600.643 Counseling Theory and Philosophy
  5600.645 Group Testing in Counseling
  5600.647 Career Development and Counseling Across the Life Span
  5600.651 Techniques of Counseling
  5600.653 Group Counseling
  5600.665 Seminar: Counseling Practice
  5600.671 Counseling Clinic
  5600.675 Practicum in Counseling I
  5600.685 Internship
- Electives (select a minimum of five credits only with help of adviser).

**Counseling in Elementary or Secondary Schools**

- Foundation Studies courses — nine credits. (See department handbook for options.)
- Required courses:
  5600.600 Seminar in Counseling
  5600.620 Typical Seminar: Substance Abuse and Sexuality
  5600.638 Community Counseling
  5600.645 Group Testing in Counseling
  5600.647 Career Development and Counseling Across the Life Span
  5600.651 Techniques of Counseling
  5600.653 Group Counseling
  5600.659 Organization and Administration of Guidance Services
  5600.663 Seminar in School Counseling
  5600.671 Counseling Clinic
  5600.675 Practicum in Counseling I
  5600.685 Internship
  5610.540 Developmental Characteristics of Exceptional Individuals

**Marriage and Family Therapy**

- Foundation Studies courses — nine credits. (See department handbook for options.)
- Required courses — 38 credits.
  5600.600 Seminar in Counseling
  5600.638 Community Counseling
  5600.645 Group Testing in Counseling
  5600.647 Career Development and Counseling Across the Life Span
  5600.651 Techniques of Counseling
  5600.653 Group Counseling
  5600.655 Marriage and Family Therapy: Theory and Techniques
  5600.665 Seminar: Counseling Practice
  5600.671 Marital Therapy
  5600.699 Systems Theory in Family Therapy
  5600.671 Counseling Clinic
  5600.675 Practicum in Counseling I
  5600.685 Internship
- Specialized studies (see department handbook for options).

**School Psychologist**

- College requirements:
  5600.640 Techniques of Research
  5600.645 Research Project
  5600.671 Master's Problem
  5600.699 Thesis Research
- Departmental requirements:
  5600.638 Counseling Theory and Philosophy
- Program requirements:
  3750.530 Psychological Disorders of Childhood
  3750.703 Survey of Projective Techniques
  3750.712 Principles and Practice of Individual Intelligence Testing

Program is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP), a specialized accrediting body recognized by the Council for Post-Secondary Accreditation (CPSA). Program also meets State of Ohio educational requirements for Licensed Professional Counselor.

*Must be taken with 661
§Must be taken with 685

**Students in some psychology programs may choose other options — see adviser.

§§Program admission is competitive based upon state internship allocations. Selection procedures and criteria are available upon request or calling the school psychology program director in the Department of Counseling and Special Education. For recommendation for certification as a school psychologist in Ohio, the master's student must additionally complete the program prescribed under "Certification."
Sixth-Year Program

- Complete the student's program and timeline for completion must be completed with the student's assigned adviser very early in his or her graduate studies. A signed contract specifying the student's program and timeline for completion must be completed with the student's assigned adviser by the time the student has earned six hours of graduate course work.

Additional hours are also necessary for teacher certification in special education. The adviser will assist in program planning.

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

**Foundations requirements:**
- 5100 604 Seminar in Cultural Foundations of Education
- 5100 624 Seminar in Educational Psychology
- 5100 741 Techniques of Research
- 5200 600 Seminar in Special Education
- 5200 602 Behavioral Assessment
- 5200 610 Educational Diagnosis for the School Psychologist

**Professional requirements:**
- 3750 700 Survey of Projective Techniques
- 3750 702 Psychological Disorders of Childhood
- 3750 712 Principles and Practices of Individual Intelligence Testing
- 5600 643 Counseling, Theory and Practice
- 5620 600 Seminar, Role and Function of School Psychology
- 5620 602 Behavioral Assessment
- 5620 610 Educational Diagnosis for the School Psychologist
- 5620 694 Research Project in Special Area
- 5620 698 Master's Problem
- 5620 699 Thesis Research

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

- 3750 500 Personality
- 5610 543 Developmental Characteristics of Learning
- 5620 683 Reading Diagnosis: School Psychology and Support Personnel
- 5610 540 Developmental Characteristics of Exceptional Individuals
- 3750 520 Abnormal Psychology
- 5620 601 Cognitive Function Models: Principles of Educational Planning
- 5620 603 Consultation: Strategies for School Psychology
- 5620 611 Practicum in School Psychology (this course is required once for a total of eight credits)

The nine-month, full-time internship and the associated seminars entail the following registration:
- 5620 630 Internship: School Psychology
- 5620 631 Internship: School Psychology
- 5620 640 Field Seminar: Issues and Assessment
- 5620 641 Field Seminar: Classroom Environment

The student who does not hold a valid Ohio teaching certificate must additionally complete the following course pattern:
- 5200 620 Elementary School Curriculum and Instruction
- 5200 695/696 Field Experience Master's
- 5700 631 Elementary School Administration
- 5700 601 Principles of Educational Administration

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

**Special Education**

The graduate program in special education is designed for those individuals holding an undergraduate degree in special education. Applicants who do not hold such a degree may be admitted to graduate study in special education as Special/Non-Degree admission until 12 graduate credits of "B" or better are completed.

No more than six hours of 500-level graduate course work or six hours of workshop credit at the graduate level may be included in the minimum master's degree program in special education.

The master's degree program in special education is a cross-categorical focus with emphases on master's teaching, curriculum design, research, program development and clinical practice. The minimum program is 39 semester hours. Additional hours are necessary for the completion of the Supervisor's Certificate. The required additional course work for this certificate is specified below.

It is important that an appointment be made with the student's assigned adviser very early in his or her graduate studies. A signed contract specifying the student's program and timeline for completion must be completed with the adviser by the time the student has earned nine hours of graduate course work.

Additional hours are also necessary for teacher certification in special education. The adviser will assist in program planning.

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**Educational Administration**

The Department of Educational Administration 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
    - 5700 603 Administration of Educational Personnel
    - 5700 606 Evaluation in Educational Organizations
    - 5700 607 School Law
    - 5700 608 School Finance and Economics
    - 5700 615 Computer Applications in Educational Administration
    - 5700 664 Field Experience 1: Elementary Administration
    - 5700 666 Field Experience 1: Secondary Administration
    - 5700 695 Field Experience 1: The Superintendent
    - 5700 706 Collective Bargaining and Employer Relations
    - 5700 707 The Superintendent

**Higher Education Administration (Specialized Option)**

- **Foundation studies** — nine credits ($1000.703 is required):
  - Required courses:
    - 5600 649 Counseling and Personnel Service in Higher Education
    - 5600 661 Principles of Educational Administration
    - 5700 704 Theory, Research and Practice in Educational Administration
    - 5700 705 Seminar: Law in Higher Education
    - 5700 706 Seminar: Finance in Higher Education
    - 5700 707 Introductory Administrative Colloquium in Higher Education
    - 5900 730 Curriculum and Program Planning in Higher Education
    - 5900 800 Advanced Colloquium in Higher Education
    - 5900 811 Internship in Higher Education
    - 5900 812 Internship Seminar
    - 5900 813 Elective

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*Required as part of Special Education master's

*May be waived if completed as undergraduate*
School Treasurer (Specialized Option)

- Foundation studies — nine credits
- Required courses:
  5700:602 School Business Administration 2
  5700:607 School Law 2
  5700:608 School Finance and Economics 3
  5700:609 Independent Study in School Fiscal Management 3
  5700:706 Collective Bargaining and Employee Relations 2
  5700:707 The Superintendent 3
  5700:785/796 Internship 2
  6200:601 Financial Accounting 3
  6200:649 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:
  5200:630 Elementary School Curriculum and Instruction 2
  5200:739 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:
- Administration of Educational Personnel 2
- School-Community Relations 3
- Evaluation in Educational Organizations 3
- School Finance and Economics 3
- Field Experience II: Elementary Administration 3
- 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
  5300:721 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 II: Secondary Administration 2

Post-Master's Degree Requirements for Ohio Certification as a Secondary School Principal:
- Administration of Educational Personnel 2
- Total for Certification: 46 credits

Administration Specialists

The Department of Educational Administration 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 15-credit post-master's block (17 credits for the School Community Relations Specialist). 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 (**).

Educational Administration: Business Management

- Foundation Studies — nine credits
- Required courses:
  5700:601 Principles of Educational Administration** 3
  5700:602 School Business Administration** 2
  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
  5700:686 Field Experience I: Secondary Administration** 2
  5700:695 Field Experience for Supervisors** 2
  5700:706 Collective Bargaining and Employee Relations** 2
  5700:707 The Superintendent** 3
  5700:865 Field Experience: The Superintendent** 2
  5700:897 Independent Study: Business Management** 3
  6200:601 Financial Accounting** 3
  6200:630 Management and Production Concepts** 3

Administrative Specialist: Educational Research

- Foundation Studies — nine credits
- Required courses:
  5100:642 Topical Seminar: Measurement and Evaluation* 3
  5100:761 Statistics in Education** 3
  5100:763 Advanced Educational Statistics** 3
  5100:851 Research Seminar** 3
  5100:897 Independent Study: Educational Research** 1
  5700:601 Principles of Educational Administration** 3
  5700:603 Administration of Educational Personnel** 3
  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
  5700:684 Field Experience I: Elementary Administration** 2
  6700:586 Field Experience I: Secondary Administration** 2
  5700:695 Field Experience for Supervisors** 2
  5700:706 Collective Bargaining and Employee Relations** 2
  5700:707 The Superintendent** 3

Administrative Specialist: Educational Staff Personnel Administration

- 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
  5700:684 Field Experience I: Elementary Administration** 2
  5700:686 Field Experience I: Secondary Administration** 2
  5700:695 Field Experience for Supervisors** 2
  5700:704 Theory Research, Practice in Educational Administration** 3
  5700:705 Decision Making in Educational Administration** 7
  5700:706 Collective Bargaining and Employee Relations** 2
  5700:707 The Superintendent** 2
  5700:895 Field Experience: The Superintendent** 2
  6700:654 Industrial Relations** 3
Administrative Specialist: Instructional Services

• Foundation Studies — nine credits

• Required courses:
  5700:630 Elementary School Curriculum and Instruction** 2
  5700:619 Secondary School Curriculum and Instruction** 2
  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
  5700:609 Principles of Curriculum Development** 3
  5700:610 Principles of Educational Supervision* 3
  5700:615 Computer Applications in Educational Administration 2
  5700:684 Field Experience: Elementary Administration 2
  or
  5700:685 Field Experience: Secondary Administration 2
  or
  5700:695 Field Experience for Supervisors* 2
  5700:699 Independent Study: Instructional Services** 2
  5700:616 Collective Bargaining and Employee Relations* 2
  5700:707 The Superintendent* 2
  5700:895 Field Experience: The Superintendent** 2

Administrative Specialist: Pupil Personnel Administration

• Foundation Studies — nine credits

• Required courses:
  5600:631 Elementary Counseling* 3
  or
  5600:633 Secondary Counseling* 3
  5600:645 Group Testing* 3
  5600:659 Organization and Administration of Guidance Services* 3
  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
  5700:613 Administration of Pupil Services* 2
  5700:615 Computer Applications in Educational Administration 2
  5700:684 Field Experience: Elementary Administration 2
  or
  5700:686 Field Experience: Secondary Administration 2
  or
  5700:695 Field Experience for Supervisors* 2
  5700:709 Collective Bargaining and Employee Relations* 2
  5700:707 The Superintendent* 3
  5700:895 Field Experience: The Superintendent** 2

Administrative Specialist: School and Community Relations

• Foundation Studies — nine credits

• Required courses:
  5700:601 Principles of Educational Administration* 3
  5700:603 Administration of Educational Personnel* 2
  5700:604 School-Community Relations** 3
  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
  5700:620 Secondary Administration** 3
  5700:631 Elementary Administration** 3
  5700:664 Field Experience: Elementary Administration 2
  or
  5700:684 Field Experience: Secondary Administration 2
  or
  5700:695 Field Experience for Supervisors* 2
  5700:706 Collective Bargaining and Employee Relations* 2
  5700:707 The Superintendent* 3
  5700:895 Field Experience: The Superintendent** 2
  7600:245 Theories of Mass Communication** 3
  7600:285 Contemporary Public Relations Theory** 3

Administrative Specialist: Special Education (Exceptional Children)

• Foundation Studies — nine credits

• Required courses:
  5810:540 Developmental Characteristics of Exceptional Individuals* 3
  5810:601 Seminar: Curriculum Planning** 3
  5810:602 Supervision of Instruction: Special Education** 3
  5810:605 Program Development and Delivery Systems** 3
  5810:697 Independent Study: Exceptional Children** 1
  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
  5700:684 Field Experience: Elementary Administration 2
  or
  5700:686 Field Experience: Secondary Administration 2
  or
  5700:695 Field Experience for Supervisors* 2

5700:706 Collectives Bargaining and Employee Relations* 2
5700:707 The Superintendent* 2
5700:895 Field Experience: The Superintendent** 2

Assistant Superintendent/Superintendent Programs

There is significant overlap in the requirements of these two programs. A person entering the assistant superintendent program must already have an administrator 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 3
  5700:606 Evaluation in Educational Organizations 3
  5700:607 School Law 2
  5700:608 School Finance and Economics 3
  5700:609 Principles of Curriculum Development 3
  5600:610 Principles of Educational Supervision 3
  5700:613 Administration of Pupil Services 2
  5700:615 Computer Applications in Educational Administration 2
  5700:707 The Superintendent 3

• Required courses — post-master's:
  5700:602 School Business Administration 2
  5700:603 Administration of Educational Personnel 2
  5700:604 School Community Relations 2
  5700:612 Administration of Educational Facilities 2
  5700:706 Collective Bargaining and Employee Relations 3
  7600:245 Two field experiences are required
  5700:695 Field Experience for Supervisors 2

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.

Supervisor

• Foundation Studies — nine credits

• Major field:
  5200:630 Elementary School Curriculum and Instruction§ 2
  5200:732 Supervision of Instruction in the Elementary School§ 2
  5300:619 Secondary School Curriculum and Instruction§§ 2
  5300:721 Supervision of Instruction in the Secondary School §§ 2
  5610:601 Seminar: Special Education Curriculum Planning§§§ 3
  5610:602 Supervision of Instruction: Special Education§§§ 3
  5700:609 Principles of Curriculum Development 3
  5700:610 Principles of Educational Supervision 3
  5700:695 Field Experience for Supervisors 2

• With the approval of the advisor, the student will select at least one of the following courses and others which may include up to six pertinent electives from course offerings outside the College of Education:
  5100:701 History of Education in American Society 3
  5100:741 Statistics in Education 2
  5700:698 Master's Problem 2
  5700:740 Theories of Supervision 3

Educational Foundations

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 — nine credits

• Departmental requirements ***

The student will earn a minimum of 15 credits excluding thesis or problem paper within the Department of Educational Foundations. These credits will be distributed between humanistic studies and behavioral studies with a minimum of nine credits from one of the areas and six credits from the other (college requirements may be included).

$Required only of an elementary student.
§Required only of a secondary student.
§§Required only of a special education student.

***After accumulating 20 credits, the student will take a written qualifying examination. The student and program committee will then determine the remainder of the program.
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 course work.

The program incorporates course work 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 language arts; reading; mathematics; social studies and science.

- Program requirements:
  3300.589 Seminar in English: Introduction to Bilingual Linguistics 3
  5630.582 Characteristics of Culturally Different Youth 3
  5630.584 Principles of Bilingual Multicultural Education 3
  5630.587 Techniques for Teaching English as a Second Language in the Bilingual Classroom 4
  Field experience in bilingual classroom settings 3

- Select one of the following:
  5630.585 Teaching Reading and Language Arts to Bilingual Students 4
  5630.586 Teaching Mathematics, Social Studies and Science to Bilingual Students 3

Multicultural Education

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
  5100.780 Seminar in Secondary Education* 4
  5630.645 Group Testing in Counseling 3
  5630.581 Multicultural Education in the United States 3
  5630.582 Characteristics of Culturally Different Youth 3
  5630.785 Seminar in Elementary Education* 4

- Electives in related special fields — 17 credits.

Elementary Education

Program

Those students seeking a master's degree in elementary education can follow a 30-semester credit program which includes a master's problem (two credits) or follow a new option, which calls for the completion of 36 credits with a field experience, but no master's problem. For additional information about the option, a student should contact the department head.

- Foundation Studies — nine credits.
  - Elementary education:
    5200.630 Elementary School Curriculum and Instruction 2
    5200.698 Master's Problem 2
    5200.783 Seminar in Elementary Education* 4

- Electives — 9-13 credits

Electives may be any combination of courses to meet the minimum of 30 credits which may include up to 12 credits in pertinent course offerings outside the College of Education.

This program is primarily for the student who expects to progress as a teacher in elementary schools.

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 advisement within the appropriate department for other requirements peculiar to the elementary and secondary programs.

- Required courses:
  5100.604 Cultural Foundations of Education 3
  5100.624 Psychology of Early Adolescence 3
  5200.780 Curriculum Development in Middle School 2
  5300.625 Reading Programs in Secondary School 3
  5300.780 Philosophy and Organization of Middle School 2
  5660.528 Career Education/Guidance in Middle School 2

Physical Education and Health Education

Athletic Training for Sports Medicine

- Foundation courses:
  5100.600 Philosophies of Education 3
  5100.604 Topic Seminar in the Cultural Foundations of Education 3
  5100.670 Behavior Bases of Education 3
  5100.684 Seminar: Educational Psychology 3
  5100.640 Techniques of Research 3

- Required Courses:
  3100.561 Physical Education 8
  3300.584 Pharmacology 3
  5550.541 Advanced Athletic Injury Management 4
  5550.552 Therapeutic Modalities and Equipment in Sports Medicine 3
  5550.605 Physiology of Muscular Activity and Exercise 3
  5550.695 Field Experience: Master's 2
  5550.696 Master's Problem 2
  5550.699 Thesis Research 4

- Electives (determined by advisor):
  3100.562 Advanced Cardiovascular Physiology 3
  5550.5— Workshops in Sports Medicine 1
  5550.605 Administration of Health, Physical Education, Health and Exercise 3
  5550.605 Measurement and Evaluation in Physical Education 3
  5550.680 Topics in Health and Physical Education 2
  5550.697 Independent Study 3

Outdoor Education

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

- Foundation Studies — nine credits

- Required courses:
  5560.550 Application of Outdoor Education to the School Curriculum 4
  5560.555 Methods, Materials and Resources for Teaching Outdoor Education 3
  5560.556 Outdoor Pursuits 4
  5560.605 Outdoor Education: Special Topics 2
  5560.606 Outdoor Education: Rural Influences 3
  5560.690 Practice in Outdoor Education 2
  5560.692 Field Experience 2
  5560.696 Master's Problem 2
  5560.699 Thesis Research 4

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

Physical Education

Graduate programs in physical education may be designed for students interested in general physical education and teacher preparation. Specialized graduate programs may be designed in cooperation with the student's adviser, and the approval of the dean of graduate studies. The program, totaling 32 credits, is designed to meet the needs of the student relative to graduate study and future employment.

- General Program — 32 credits.
  - Foundation Studies — nine credits.

- Required courses:
  5560.536 Adapted Physical Education for the Learning Disabled Child 2
  5560.601 Administration of Health, Physical Education, Recreation and Athletics 3
  5560.606 Curriculum Planning in Health and Physical Education 2
  5560.605 Physiological and Exercise 2
  5560.606 Measurement and Evaluation in Physical Education 3
  5560.608 Supervision of Physical Education 2
  5560.690 Motivational Aspects of Physical Activity 3
  5560.699 Field Experience - Master's 2
  5560.698 Master's Problem 2

*Two seminars are required.
The Curriculum Design and Implementation Option is designed for teachers of all age groups in physical education. It contains a balance of coursework associated with curriculum design models, implementation procedures and contemporary content.

**Educational Foundations (required)**

- Human Physiology (at least 2 credits if only option selected)
- Workshops in Sports Medicine (at least 3 of the following: 3)
- Field Experience: Master's (at least 2 credits if only option selected)
- Master's Thesis Research

**Required Major Courses:**

- Human Physiology
- Administration of Health, Physical Education, Recreation, and Athletics
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Field Experience: Master's (at least 2 credits if only option selected)
- Master's Thesis Research

**Electives** — at least two credits from the following list with consent of the adviser:

- Advanced Cardiovascular Physiology
- Introduction to Computer Based Education
- Statistics in Education
- Advanced Educational Statistics
- Workshops in Sports Medicine
- Field Experience: Master's
- Independent Study
- Special Topics in Health and Physical Education

**Option: Sport Management (34 credits)**

The Sport Management Option is designed for educators and other professionals who are interested in pursuing a career in any of the various forms of sport management. It includes coursework distributed over philosophical and investigative foundations, sport administration, business management and administration. In addition, there is a concentrated practical component.

**Educational Foundations (required)**

- Human Physiology
- Administration of Health, Physical Education, Recreation, and Athletics
- Physiology of Muscular Activity and Exercise
- Supervision of Physical Education
- Field Experience: Master's

**Additional hours to be selected from above courses to total at least 32 credits.**

Secondary Education

**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 advisement within the appropriate department for other requirements peculiar to the elementary and secondary programs.

**Required courses:**

- Cultural Foundations of Education
- Psychology of Early Adolescence
- Curriculum Development in Middle School
- Reading Programs in Secondary School
- Philosophy and Organization of Middle School
- Career Education/Guidance in Middle School

**Secondary Education**

This program is for middle and junior high school, high school and post-secondary school teachers. Preparation is for the master teacher, department head, supervisor and resource teacher (the physical education major should see an adviser for alternate course requirements). This program may also serve the holder of a baccalaureate degree who seeks a teaching certificate. The degree requires a minimum of 33 semester hours of graduate work.

- Foundation Studies — nine credits
- Secondary education course: 9 credits
- Ten credits from the following:
  - Seminar in Secondary Education: Improvement of Instruction (in the area of concentration)
  - Secondary Curriculum and Instruction
  - Reading Programs in Secondary Education

- Thesis Research — 4 credits

- The Sport Behavior Option is designed for teachers, coaches and other professionals who have responsibilities for the education of persons of all ages in the context of sport. It includes coursework which addresses theoretical concepts of sport behavior as well as the practical applications of these concepts.

**Educational Foundations (required)**

- Human Physiology
- Administration of Health, Physical Education, Athletics, and Recreation
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Field Experience: Master's

**Required Major Courses:**

- Administration of Health, Physical Education, Athletics, and Recreation
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Field Experience: Master's

**Electives** — at least two credits from the following list with consent of the adviser:

- Advanced Cardiovascular Physiology
- Introduction to Computer Based Education
- Statistics in Education
- Advanced Educational Statistics
- Workshops in Sports Medicine
- Field Experience: Master's
- Independent Study
- Special Topics in Health and Physical Education

**Option: Exercise Physiology/Adult Fitness (32 credits)**

This graduate program, requiring a minimum of 32 credit hours, 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.

**Educational Foundations (required)**

- Human Physiology
- Administration of Health, Physical Education, Recreation, and Athletics
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Motivational Aspects of Physical Activity
- Field Experience: Master's

**Required Major Courses:**

- Human Physiology
- Administration of Health, Physical Education, Recreation, and Athletics
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Motivational Aspects of Physical Activity
- Field Experience: Master's

**Electives** — at least two credits from the following list with consent of the adviser:

- Advanced Cardiovascular Physiology
- Introduction to Computer Based Education
- Statistics in Education
- Advanced Educational Statistics
- Workshops in Sports Medicine
- Field Experience: Master's
- Independent Study
- Special Topics in Health and Physical Education

**Option: Curriculum Design and Implementation (32 credits)**

The Curriculum Design and Implementation Option is designed for teachers of all age groups in physical education. It contains a balance of coursework associated with curriculum design models, implementation procedures and contemporary content.

**Educational Foundations (required)**

- Human Physiology
- Administration of Health, Physical Education, Recreation, and Athletics
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Motivational Aspects of Physical Activity
- Special Topics in Health and Physical Education

**Required Major Courses:**

- Human Physiology
- Administration of Health, Physical Education, Athletics, and Recreation
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Motivational Aspects of Physical Activity
- Special Topics in Health and Physical Education

- Electives — at least two credits from the following list with consent of the adviser:

- Advanced Cardiovascular Physiology
- Introduction to Computer Based Education
- Statistics in Education
- Advanced Educational Statistics
- Workshops in Sports Medicine
- Field Experience: Master's
- Independent Study
- Special Topics in Health and Physical Education

**Option: Sport Behavior (32 credits)**

The Sport Behavior Option is designed for teachers, coaches and other professionals who have responsibilities for the education of persons of all ages in the context of sport. It includes coursework which addresses theoretical concepts of sport behavior as well as the practical applications of these concepts.

**Educational Foundations (required)**

- Human Physiology
- Administration of Health, Physical Education, Athletics, and Recreation
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Motivational Aspects of Physical Activity
- Special Topics in Health and Physical Education

- Electives — at least two credits from the following list with consent of the adviser:

- Advanced Cardiovascular Physiology
- Introduction to Computer Based Education
- Statistics in Education
- Advanced Educational Statistics
- Workshops in Sports Medicine
- Field Experience: Master's
- Independent Study
- Special Topics in Health and Physical Education

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**Educational Foundations (required)**

- Human Physiology
- Administration of Health, Physical Education, Recreation, and Athletics
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Motivational Aspects of Physical Activity
- Field Experience: Master's

**Required Major Courses:**

- Human Physiology
- Administration of Health, Physical Education, Recreation, and Athletics
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Motivational Aspects of Physical Activity
- Field Experience: Master's

**Electives** — at least two credits from the following list with consent of the adviser:

- Advanced Cardiovascular Physiology
- Introduction to Computer Based Education
- Statistics in Education
- Advanced Educational Statistics
- Workshops in Sports Medicine
- Field Experience: Master's
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- Special Topics in Health and Physical Education

**Option: Sport Behavior (32 credits)**

The Sport Behavior Option is designed for teachers, coaches and other professionals who have responsibilities for the education of persons of all ages in the context of sport. It includes coursework which addresses theoretical concepts of sport behavior as well as the practical applications of these concepts.

**Educational Foundations (required)**

- Human Physiology
- Administration of Health, Physical Education, Athletics, and Recreation
- Physiology of Muscular Activity and Exercise
- Measurement and Evaluation in Physical Education
- Motivational Aspects of Physical Activity
- Special Topics in Health and Physical Education

- Electives — at least two credits from the following list with consent of the adviser:

- Advanced Cardiovascular Physiology
- Introduction to Computer Based Education
- Statistics in Education
- Advanced Educational Statistics
- Workshops in Sports Medicine
- Field Experience: Master's
- Independent Study
- Special Topics in Health and Physical Education
Field Experience 1-4
Master's Problem 2-4
Thesis Research 4-6
Seminar: Secondary Education 2
Topics: Senior High
Middle and Junior High School
Computer-Based Education
Individualized Instruction
Occupational Education for Youth and Adults 3

- Area of concentration (500 level or above) — 10 credits

Course selections are made by student and adviser in accord with the student's professional interests. Possible areas of concentration include:

- Subject Matter Specialist (mathematics, English)
- Middle school education
- Economic education
- Mini-computer applications
- Electives — two to four 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:
  - 5400:510 The Two-Year College
  - 5400:505 Occupational Education for Youth and Adults
  - 5400:521 Instructional Techniques in Technical Education
  - 5400:530 Course Construction in Technical Education
- Teaching internship:
  - Only two seminars for this option may be counted toward the degree.

The student entering the program without teaching experience is required to take a teaching internship at a cooperating two-year institution.

- 5400:680 Internship: Teaching Vocational Education
- or
- 5400:691 Internship: Teaching Technical Education
- or
- 5400:682 Internship: Post-Secondary Education

- 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
- 5600:635 Community Counseling 3
- 5600:647 Career Counseling Theory and Practice 3
- 5600:645 Group Testing in Counseling 3
- Select one of the following:
  - 5600:649 Counseling and Personnel Services in Higher Education 3
  - 5600:626 Career Education 2
  - 5600:616 Counseling Skills for Teachers 3

Curriculum and Supervision
- 5700:609 Principles of Curriculum Development 3
- 5700:610 Principles of Educational Supervision 3
- Elective in Curriculum or Supervision 2

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

Russell J. Petersen, Ph.D., Dean
Kenneth E. Mast, D.B.A., Associate Dean
E. Lee Wilson, M.B.A., Assistant to the Dean

MASTER'S DEGREE

The College of Business Administration (CBA) offers graduate programs which lead to the degrees of Master of Business Administration, Master of Science in Management 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 500 graduate students, the community and regional business organizations. To meet its urban objectives, the college offers graduate courses only between 5:20 p.m. and 10:30 p.m. The master's programs are designed to serve those who work full-time and wish to pursue a master's program on a part-time basis. However, many students enroll full-time to complete the master's program in a shorter period.

Admission

Policy

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

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

Even though an applicant is eligible for consideration, an offer of admission is not guaranteed. Since staff, facilities and resources are limited, a determination must be made as to the number of applicants who can be adequately served among those eligible. As a result, offers of admission may be limited to only the most qualified of the eligible applicants as determined by the CBA Graduate Admissions Committee. The committee will consider the following in making decisions: the difficulty of the applicant's undergraduate program; the length of time and activities since graduation; the percentile ranking on the GMAT; applicants are expected to score at least in the 55th percentile on the GMAT — approximately 450 — in order for an offer of admission to be extended.

In rare instances, the applicant who has taken the GMAT but does not meet requirements may be considered for admission. Also, those who have previously been denied admission may, upon presentation of new information, be reconsidered. In either case, the applicant must petition, in writing, the CBA Graduate Admissions Committee giving those reasons relevant to the situation which demonstrate the likelihood of success — the burden of proof is on the applicant.

Under the regulations of the Graduate School, eligible applicants who have been extended an offer of admission by the CBA Graduate Admissions Committee are recommended to the dean of the Graduate School for either "full" or "special" graduate status. Those admitted with the classification "special graduate status" who have not attained an overall 3.0 GPA upon the completion of 12 graduate credits will be dismissed from the program.

Procedure

GMAT scores should be sent to the director of Graduate Programs in Business, College of Business Administration, The University of Akron, Akron, OH 44325 (institution code 1829). Since the GMAT test is administered world-wide only four times per year, the applicant should register for it sufficiently in advance to the filing of the graduate application, so evaluation for admission will not be delayed. GMAT registration bulletins can be obtained from the Graduate Programs in Business Office or the Educational Testing Service, Box 966-R, Princeton, NJ 08540. Those who have taken the GMAT more than five years ago are normally required to retake it. All applications and accompanying documentation are evaluated simultaneously by the Graduate Admissions Committee (GAC). The GAC meets only four times, approximately four weeks after every GMAT date. The applicant will be informed in writing of the GAC's decision after approximately one week.

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.

Master of Business Administration

The Master of Business Administration program is designed to give the student a general knowledge of the functional areas of business and permit the concentration of study in one of five following areas: accounting, finance, management, marketing or international business. Two phases of course work are required: Phase I (foundation courses) and Phase II (core courses). The program consists of 54 graduate credits. Phase I courses may be waived for those who have had previous study in the areas. Phase I and II courses can be taken concurrently provided that all prerequisites have been met.

Phase I Foundation Courses

All are required unless Phase I courses have been waived at the time of admission.

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The following courses are required for those selecting accounting as their area of concentration:

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Phase II Core Courses — Accounting Concentration

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<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6400:674</td>
<td>3</td>
</tr>
</tbody>
</table>

Any three nonfoundation graduate credits at the 600 level offered by the college not in the area of accounting

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6600:620</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective

- Strategic Marketing Management

Concentration courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:630</td>
<td>3</td>
</tr>
<tr>
<td>6200:637</td>
<td>3</td>
</tr>
<tr>
<td>6200:640</td>
<td>3</td>
</tr>
<tr>
<td>6200:655</td>
<td>3</td>
</tr>
<tr>
<td>6200:670</td>
<td>3</td>
</tr>
</tbody>
</table>

*If waived, student must select 6400:650 Managing Costs and Prices from the MBA Core (Breadth) courses.

**If waived, student must select 6400:674 Financial Management and Policy from the MBA Core (Breadth) courses.

†† If waived, the student must select 6600:620 Strategic Marketing Management from the MBA Core (Breadth) courses.

Credit for Work Experience

Credit for work experience may be awarded for the following types of experience:

- Appropriate professional experience in the field of study.
- Experience in a company or firm where the student has been involved in the management of a project or function.
- Experience in a company or firm where the student has been involved in the development of a new product or service.
- Experience in a company or firm where the student has been involved in the development of new business strategies.
- Experience in a company or firm where the student has been involved in the implementation of new technology.

Credit for work experience may be awarded for up to 12 graduate credits. Credit awarded for work experience will not be counted toward the degree requirements unless the work experience is directly related to the student's area of concentration.

The following courses are required unless Phase I courses have been waived at the time of admission:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3250:600</td>
<td>3</td>
</tr>
<tr>
<td>6200:601</td>
<td>3</td>
</tr>
<tr>
<td>6400:602</td>
<td>3</td>
</tr>
<tr>
<td>6400:655</td>
<td>3</td>
</tr>
<tr>
<td>6500:600</td>
<td>3</td>
</tr>
<tr>
<td>6500:601</td>
<td>3</td>
</tr>
<tr>
<td>6500:602</td>
<td>3</td>
</tr>
<tr>
<td>6600:600</td>
<td>3</td>
</tr>
</tbody>
</table>

The following courses are required for those selecting accounting as their area of concentration:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:301</td>
<td>3</td>
</tr>
<tr>
<td>6200:317</td>
<td>3</td>
</tr>
<tr>
<td>6200:318</td>
<td>4</td>
</tr>
<tr>
<td>6200:420</td>
<td>3</td>
</tr>
<tr>
<td>6200:430</td>
<td>3</td>
</tr>
<tr>
<td>6200:440</td>
<td>3</td>
</tr>
<tr>
<td>6200:603</td>
<td>3</td>
</tr>
<tr>
<td>6200:610</td>
<td>3</td>
</tr>
</tbody>
</table>

Phase II Core Courses — Accounting Concentration

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6400:650</td>
<td>3</td>
</tr>
<tr>
<td>6500:652</td>
<td>3</td>
</tr>
<tr>
<td>6500:662</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6400:674</td>
<td>3</td>
</tr>
</tbody>
</table>

Any three nonfoundation graduate credits at the 600 level offered by the college not in the area of accounting

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6600:620</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective

- Strategic Marketing Management

Concentration courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:630</td>
<td>3</td>
</tr>
<tr>
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<tr>
<td>6200:640</td>
<td>3</td>
</tr>
<tr>
<td>6200:655</td>
<td>3</td>
</tr>
<tr>
<td>6200:670</td>
<td>3</td>
</tr>
</tbody>
</table>

*If waived, student must select 6400:650 Managing Costs and Prices from the MBA Core (Breadth) courses.

**If waived, student must select 6400:674 Financial Management and Policy from the MBA Core (Breadth) courses.

†† If waived, the student must select 6600:620 Strategic Marketing Management from the MBA Core (Breadth) courses.
**Phase II Core Courses — Finance Concentration**

- **Breadth courses:**
  6200:610 Accounting Management and Control (or alternate accounting elective approved by the director of Graduate Programs)**  3
  Choose one:
  6400:650 Administering Costs and Prices  3
  or
  6600:630 Strategic Marketing Management  3
  6500:652 Organizational Behavior  3
  6500:662 Quantitative Methods in Operations Management  3
  Elective Any three foundation graduate credits at the 600 level offered by the CBA not in the area of Finance  3

- **Concentration courses:**
  6400:574 Financial Management and Policy  3
  Electives (three courses from the following one of which must be 6400:633, 645, 676 or 678)  3
  6400:633 Management of Depository Institutions  3
  6400:645 Investment Analysis  3
  6400:649 Portfolio Management  3
  6400:676 Management of Financial Structure  3
  6400:678 Capital Budgeting  3
  6500:681 International Business Finance  3
  6400:690 Selected Topics in Finance (may be repeated for a total of six credits)  3
  6400:697 Independent Study (may be repeated for a total of six credits)  2
  6400:699 Seminar in Finance (must be repeated for a total of six credits)  3

- **Integrative course:**
  6500:695 Business Strategy and Policy: Domestic and International (restricted to students graduating within two semesters)  3

- **Free electives:**
  Any six credits of CBA electives (any six credits of foundation courses may be used to satisfy one, three-credit free elective requirement up to six credits of free electives. Electives outside the CBA must be approved by the director of Graduate Programs)  6

**Phase II Core Courses — Management Concentration**

- **Breadth courses:**
  6200:610 Accounting Management and Control (or alternate accounting elective approved by the director of Graduate Programs)**  3
  Choose two:
  6400:650 Administering Costs and Prices  3
  or
  6400:674 Financial Management and Policy  3
  6500:652 Organizational Behavior  3
  5600:620 Strategic Marketing Management  3
  Elective Any three foundation graduate credits at the 600 level offered by the CBA not in the area of management  3

- **Concentration courses:**
  6500:640 Management Information Systems  3
  5600:652 Organizational Behavior  3
  Electives Any six foundation graduate credits in management (no more than three credits at the 500 level)  6

- **Integrative course:**
  6500:695 Business Strategy and Policy: Domestic and International (restricted to students graduating within two semesters)  3

- **Free electives:**
  Any six credits of CBA electives (any six credits of foundation courses may be used to satisfy one, three-credit free elective requirement up to six credits of free electives. Electives outside the CBA must be approved by the director of Graduate Programs)  6

**Phase II Core Courses — Marketing Concentration**

- **Breadth courses:**
  6200:610 Accounting Management and Control (or alternate accounting elective approved by the director of Graduate Programs)**  3
  Choose one:
  6400:650 Administering Costs and Prices  3
  or
  6400:674 Financial Management and Policy  3
  6500:652 Organizational Behavior  3
  6500:662 Quantitative Methods in Operations Management  3
  Elective Any three foundation graduate credits at the 600 level offered by the CBA not in Marketing  3

- **Concentration courses:**
  6600:620 Strategic Marketing Management  3
  6600:640 Marketing Information Systems and Research  3
  Elective Any six foundation graduate credits in marketing (no more than three credits at the 500 level)  6

- **Integrative course:**
  6500:695 Business Strategy and Policy: Domestic and International (restricted to students graduating within two semesters)  3

- **Free electives:**
  Any six credits of CBA electives (any six credits of foundation courses may be used to satisfy one, three-credit free elective requirement up to six credits of free electives. Electives outside the CBA must be approved by the graduate director)  6

**Other International Business Courses**

In an effort to improve the student's understanding of international business topics, the following graduate courses are offered, in addition to the International Business Concentration degree requirements:

- 6200:680 International Accounting  3
- 6500:656 Management of International Operations  3
- 6600:690 Seminar in International Business  3

These courses are available through the departments of accounting, finance, management, and marketing. Combinations of the above courses may be selected to fulfill the requirements of an MBA degree with an international business concentration.

---

**Students with sufficient managerial accounting background must elect another accounting course to substitute for 6200:610 and such election must be approved by the director of Graduate Programs in the College of Business Administration.**

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*Requires reading and conversational proficiency in one language other than English.

**Students with sufficient managerial accounting background must elect another accounting course to substitute for 6200:610 and such election must be approved by the director of Graduate Programs in the College of Business Administration.**

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1Students with sufficient international business background must elect another international course to substitute for 6800:605, and such election must be approved by the director of Graduate Programs in Business.
Master of Science in Accounting

The Master of Science in Accounting program is designed to give the student additional exposure to the functional areas of business plus 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 Taxation

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

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

The Master of Taxation curriculum is structured in two phases of course work: Phase I; foundation courses; and Phase II; required courses. A minimum of 30 semester credits is required for the degree.

Phase I

- Graduate Foundation:
  - 3250:600 Foundation of Economic Analysis 3
  - 6200:601 Financial Accounting 3
  - 6200:603 Business Systems with Processing Applications 3
  - 6200:610 Accounting Control and Management 3
  - 6400:602 Managerial Finance 3
  - 6400:665 Government and Business 3
  - 6500:600 Management and Production Concepts 3
  - 6500:601 Quantitative Decision Making 3
  - 6500:606 Marketing Concepts 3
- Postbaccalaureate Foundation:
  - 6200:430 Taxation I 4
  - 6500:450 Business Policy 4

Phase II

- Required:
  - 6200:630 Tax Research and Policy 3
  - 6200:631 Corporate Taxation I 3
  - 6200:632 Taxation of Transactions in Property 3
  - 6200:633 Estate and Gift Taxation 3
- Electives:
  - Eighteen credits of which at least 12 must be in taxation (6200:641-54).
  - Taxation courses 12
  - Any CBA courses 6

Master of Science in Management

The Master of Science in Management program allows students to concentrate their advanced study in one of five areas: quality management, information systems management, health services management, human resource management, and materials management. Because of the complex nature of these specializations, they are not normally offered as options in traditional MBA programs. They are designed for individuals who know what they want to do or to help them apply what they already know more effectively. For example, engineers, science and math undergraduate majors may choose to concentrate in quality or materials management while computer science majors may prefer information systems management. Psychology majors would benefit from the human resource management concentration, and the health services option is a natural enhancement for anyone with special interest in the health field.

The Master of Science in Management program consists of two phases of courses. Phase I courses offer a basic foundation in business (24 credits). These courses may be waived if the student has completed prior study in each area. Phase II courses (36 credits) form the core of the M.S. program, including the concentration in a specific area of study.

Phase I

- Foundation:
  - 3250:600 Foundation of Economic Analysis 3
  - 6200:601 Financial Accounting 3
  - 6400:602 Managerial Finance 3
  - 6400:655 Government and Business 3
  - 6500:600 Management and Production Concepts 3

Phase II

- Business Courses:
  - 6200:610 Accounting Management and Control (or alternate accounting elective)** 3
  - 6400:674 Financial Management and Policy 3
  - 6500:663 Organizational Theory 3
- Core Courses:
  - 6500:640 Management Information Systems 3
  - 6500:652 Organizational Behavior 3
  - 6500:662 Quantitative Methods in Operations Management 3
  - 6500:676 Business Strategy and Policy, Domestic and International 3

Options:

Choose a concentration from following:

Quality Management

- Concentration Courses:
  - 6500:651 Productivity and Quality of Worklife Issues 3
  - 6500:663 Applied Industrial Statistics I 3
  - 6500:664 Applied Industrial Statistics II 3
  - 6500:673 Quality and Productivity Techniques 3
  - 6500:674 Advanced Quality and Productivity Techniques 3

Information Systems Management

(Cobol Proficiency is Required)

- Concentration Courses:
  - 6500:641 Advanced Management Information Systems 3
  - 6500:672 Manufacturing and Operations Analysis 3
- Concentration Electives (Choose two):
  - 6500:642 Systems Simulation 3
  - 6500:643 Expert Systems in Business 3
  - 6500:644 Managerial Decision Support Systems 3
  - 6500:676 Project Management 3

Health Services Administration

- Concentration Courses:
  - 6500:582 Hospital Operations Management 3
  - 6500:633 Health Services Systems Management 3
  - 6500:686 Health Services Research Project 3
  - 6500:687 Graduate Seminar in Health Services Policy and Administration 3
- Concentration Elective:
  - Three credits as approved by the director of graduate programs in business 3

Human Resource Management

- Concentration Courses:
  - 6500:651 Productivity and Quality of Worklife Issues 3
  - 6500:654 Industrial Relations 3
  - 6500:655 Compensation Administration and Employee Benefits 3
  - 6500:656 Strategic Human Resource Management 3
  - 6500:660 Employment Discrimination 3

Materials Management

- Concentration Courses:
  - 6500:672 Manufacturing and Operations Analysis 3
  - 6500:675 Materials Management 3
  - 6500:676 Management of Production and Operations 3
- Concentration Electives (Choose two):
  - 6500:641 Data Management 3
  - 6500:642 Systems Simulation 3
  - 6500:651 Productivity and Quality of Worklife Issues 3
  - 6500:673 Quality and Productivity Techniques 3
  - 6500:676 Project Management 3

**Students with sufficient managerial accounting background must elect another accounting course to substitute for 6200:610, and such election must be approved by the director of graduate programs in business.

*For each six credits of Phase I coursework completed, three credits of Phase II coursework may be waived from the courses designated with an asterisk as determined by the director of graduate programs in business. Maximum of six credits to be waived.
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). A baccalaureate degree is required.

Degree Requirements

A student is required to fulfill the requirements of the School of Law (77 credits) plus 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 (Phase I) courses (unless waived because of prior undergraduate credits earned) and 24 credits for M.Tax. or 30 credits for M.B.A., of advanced courses in the CBA plus six 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 Business Programs prior to completion. To earn both degrees, a total of 97 (J.D./M.Tax.) or 107 (J.D./M.B.A.) credits is required, depending on the master's program pursued. More credits may be required for the master's degree if Phase I courses are required.

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

Wallace T. Williams, Ph.D., Dean
Donald E. Hall, Ph.D., Associate Dean
Linda Moore, Ph.D., Associate Dean

MASTER'S DEGREE

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 an emphasis in either family development or child development. 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 3.0 for the last two years of undergraduate study.
- Take the Graduate Record Examination within the five-year period prior to seeking admission.
- Submit a letter of personal career goals.
- Offer two letters of recommendation if desired.

The graduate faculty of the School of Home Economics 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 two options, child development or family development, 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.
- Complete a thesis or an internship. 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 research may involve an 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:600 Evaluation of Home Economics Literature</td>
<td>3</td>
</tr>
<tr>
<td>7400:675 Conceptual Frameworks in Family Ecology</td>
<td>3</td>
</tr>
</tbody>
</table>

The above courses are required for all students.

- One graduate level research course to be selected with approval of the adviser.

Suggested courses include:

- 3850:664 Social Research Design
- 3890:600 Basic Analytical Research
- 5100:640 Techniques of Research

- Internship or Thesis (Select one):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:695 Internship - student must have 7400:395 Community Involvement or equivalent</td>
<td>5</td>
</tr>
<tr>
<td>7400:699 Thesis</td>
<td>5</td>
</tr>
</tbody>
</table>

Child Development Option

- Core courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:605 Developmental Parent-Child Interactions</td>
<td>3</td>
</tr>
<tr>
<td>7400:665 Development in Infancy and Early Childhood</td>
<td>3</td>
</tr>
</tbody>
</table>

- 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.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:501 Family-Life Patterns in the Economically Deprived Home</td>
<td>2</td>
</tr>
<tr>
<td>7400:504 Adolescence in the Family Context</td>
<td>3</td>
</tr>
<tr>
<td>7400:542 Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>7400:545 Public Policy and the American Family</td>
<td>3</td>
</tr>
<tr>
<td>7400:548 Before and After School Child Care</td>
<td>2</td>
</tr>
<tr>
<td>7400:550 Organization and Supervision of Child-Care Centers</td>
<td>3</td>
</tr>
<tr>
<td>7400:596 Parenting Skills</td>
<td>3</td>
</tr>
<tr>
<td>7400:610 Child Development Theories</td>
<td>3</td>
</tr>
<tr>
<td>7400:616 Infant and Child Nutrition</td>
<td>2</td>
</tr>
<tr>
<td>7400:660 Programming for Child Care Centers</td>
<td>2</td>
</tr>
<tr>
<td>7400:665 Development in Infancy and Early Childhood</td>
<td>3</td>
</tr>
</tbody>
</table>

- Cognate Electives:

Select 8 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.

- Internship or Thesis (Select one):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:695 Internship</td>
<td>5</td>
</tr>
<tr>
<td>7400:699 Thesis</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
</tr>
</tbody>
</table>

Child Life Option

- Foundation courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:600 Evaluation of Home Economics Literature</td>
<td>3</td>
</tr>
<tr>
<td>7400:675 Conceptual Frameworks in Family Ecology</td>
<td>3</td>
</tr>
<tr>
<td>7400:501 Family-Life Patterns in the Economically Deprived Home</td>
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</tr>
<tr>
<td>7400:504 Adolescence in the Family Context</td>
<td>3</td>
</tr>
<tr>
<td>7400:542 Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>7400:550 Organization and Supervision of Child-Care Centers</td>
<td>3</td>
</tr>
<tr>
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<tr>
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</tr>
<tr>
<td>7400:616 Infant and Child Nutrition</td>
<td>2</td>
</tr>
<tr>
<td>7400:660 Programming for Child Care Centers</td>
<td>2</td>
</tr>
<tr>
<td>7400:665 Development in Infancy and Early Childhood</td>
<td>3</td>
</tr>
<tr>
<td>Research course selected with approval of adviser</td>
<td>3</td>
</tr>
</tbody>
</table>

- 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 OR from a combination of the above.

- Internship or Thesis (Select one):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:695 Internship</td>
<td>5</td>
</tr>
<tr>
<td>7400:699 Thesis</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
</tr>
</tbody>
</table>

Clothing, Textiles and Interiors Option

- Foundation Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:600 Evaluation of Home Economics Literature</td>
<td>3</td>
</tr>
<tr>
<td>7400:675 Conceptual Frameworks in Family Ecology</td>
<td>3</td>
</tr>
<tr>
<td>Research course selected with approval of adviser</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
</tr>
</tbody>
</table>

- Option Electives:

Select 18 credits with approval of adviser from among the following: (If a course has been taken at the undergraduate level, other courses must be selected.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:531 History of Textiles and Furnishings</td>
<td>3</td>
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<tr>
<td>7400:532 Interior Textiles and Product Analysis</td>
<td>3</td>
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<tr>
<td>7400:536 Textile Conservation</td>
<td>3</td>
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<tr>
<td>7400:533 Residential Design</td>
<td>3</td>
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<tr>
<td>7400:534 Commercial Design</td>
<td>3</td>
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<tr>
<td>7400:525 Principles and Practices of Design</td>
<td>3</td>
</tr>
<tr>
<td>7400:529 Fashion Analysis</td>
<td>3</td>
</tr>
<tr>
<td>7400:523 Professional Image Analysis</td>
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</tr>
<tr>
<td>7400:831 Problems in Design (May be taken twice for a maximum of 6 credits)</td>
<td>1-3</td>
</tr>
<tr>
<td>7400:632 American Costume and Textile Heritage</td>
<td>3</td>
</tr>
<tr>
<td>7400:696 Individual Investigation in Home Economics and Family Ecology</td>
<td>1-5</td>
</tr>
</tbody>
</table>

- Cognate Electives:

Select 8 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):

Select 18 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.
Family Development Option

- Foundation Courses:
  - 7400:500 Evaluation of Home Economics Literature 3
  - 7400:575 Conceptual Frameworks in Family Ecology 3
  - Research course selected with approval of adviser 3

- Core Courses:
  - 7400:624 Family and Consumer Law 3
  - 7400:651 Family Dynamics 3

- 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.)
    - 7400:675 Core Courses: Economics and Family Ecology
    - 7400:640 Research course selected with approval of adviser
    - 7400:699 Total 38

Food Science Option

- Foundation Courses:
  - 7400:600 Evaluation of Home Economics Literature 3
  - 7400:675 Conceptual Frameworks in Family Ecology 3

- Core Courses:
  - 7400:576 Analysis of Food 3
  - 7400:526 Developments in Food Science 3
  - 7400:529 Experimental Foods (If taken at the undergraduate level, choose 3 additional credits from option electives) 3

- Option Electives:
  - Select 9-12 credit hours with approval of adviser from among the following:
    - 7400:550 Total 34

Nutrition/Dietetics Option

- Foundation Courses:
  - 7400:600 Evaluation of Home Economics Literature 3
  - 7400:675 Conceptual Frameworks in Family Ecology and Research course selected with approval of adviser 3

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

- Option Electives:
  - Select 9-12 credit hours with approval of adviser from among the following: (If a course has been taken at the undergraduate level, other courses must be selected.)
    - 7400:565 Pharmacology 3
    - 7400:567 Human Physiology 4
    - 7400:576 Nutrition in the Life Cycle 3
    - 7400:600 Management and Production Concepts 3
    - 7400:621 Nutrition in Diminished Health 3

Cognate Electives:

- Select 8-11 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 a combination of the above.
  - 7400:695 Internship 5
  - 7400:699 Thesis 5

Total 38

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 the coordinator of Graduate Studies and 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, auditions 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
  - 7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  - 7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  - 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  - 7500:619 Theory Pedagogy 2

- Major required courses — 21-23 credits:
  - 7500:631 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
  - 7500:699 Thesis Research/Recital Document 4
  - 7510:6-6 Ensemble (participation in two ensembles required) 2
  - 7520:642 Applied Composition 8

- Additional music courses — zero to two credits

Graduate-level (music) courses, workshops, applied lessons (other than in composition) and/or advanced problems to be selected by the student and 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.
  Appropriate courses in music, music education, advanced problems, workshops, applied music and electives as determined by student's advisory committee.
  Thesis
  4-6

- Non-thesis option — 34 credits.
  Appropriate courses in music, music education, advanced problems, workshops, applied music and electives as determined by student's advisory committee.
  34

Music History and Literature Option

- Music core courses — eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7501:6- Ensemble (participation required in two ensembles) 2
  7500:697 Advanced Problems in Music 4

- Major required courses — 20-22 credits:
  7500:551 Introduction to Musicology 2
  7500:553 Bibliography and Research 2
  7500:621 Historical Survey: Music of the Middle Ages and Renaissance 2
  7500:622 Historical Survey: Music of the Baroque 2
  7500:623 Historical Survey: Music of the Classic and Romantic Eras 2
  7500:624 Historical Survey: Music of the 20th Century 2
  7500:697 Advanced Problems in Music 4
  7500:699 Thesis Research/Thesis Document 4-6

- Additional music courses — two to four credits.

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

- Electives — two to four credits.
  To be selected by the student and adviser. Areas include graduate-level courses in other disciplines in which student obtains permission of instructor.

Degree Total: 34-36 credits.

Performance Option in Accompanying

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

- Major required courses — 21-24 credits:
  Select either 7500:562 or 7500:633
  7500:562 Repertoire and Pedagogy: Organ 3
  7500:633 Teaching and Literature: Piano and Harpsichord 2
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:695 Advanced Twq Literature 2
  7500:697 Advanced Problems in Music (selected topics in chamber music to be chosen by faculty members) 2
  7500:698 Graduate Recital (to be completed in a minimum of two performance media) 2
  7500:614 Keyboard Ensemble (participation in two ensembles required)** 2-4
  7500:6- Applied Music (piano, organ and/or 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.

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

Degree total: 34-36 credits.

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

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

Performance Option in Winds, String, and Percussion

- Music core courses: eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2

**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 Voice

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

- Major required courses — 20-22 credits:
  7500:562 Applied Voice 2
  7500:698 Graduate Recital 2
  7500:6- Ensemble (participation in two ensembles required)** 2-4
  7500:614 Applied Music (piano, organ and/or harpsichord) 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 adviser.

- 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 adviser.

Degree total: 34-36 credits.

Performance Option in Keyboard

- Music core courses: eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:621 Historical Survey: Music of the Middle Ages and Renaissance 2
  7500:622 Historical Survey: Music of the Baroque 2
  7500:623 Historical Survey: Music of the Classic and Romantic Eras 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
  Select either 7500:562 or 7500:633
  7500:562 Repertoire and Pedagogy: Organ 3
  7500:633 Teaching and Literature: Piano and Harpsichord 2
  7500:697 Advanced Problems in Music 2
  7500:698 Graduate Recital 2
  7500:6- Ensemble (participation in two ensembles required)** 2-4
  7500:6- Applied Music (piano, organ and/or harpsichord) 8

*It is recommended that each student's graduate committee recommend the appropriate elective credits.

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

Graduate-level (music) coursework, advanced problems, workshops, and applied electives, 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: 34-36 credits.

Theory Option

- Music core courses — six credits (to be selected):
  - 7500:555 Bibliography and Research
  - 7500:556 Advanced Conducting Instrumental
  - 7500:621 Historical Survey: Music of the Middle Ages and Renaissance
  - 7500:622 Historical Survey: Music of the Baroque
  - 7500:623 Historical Survey: Music of the Classic and Romantic Eras
  - 7500:624 Historical Survey: Music of the 20th Century

- Major required courses — 26-26 credits:
  - 7500:615 Musical Styles and Analysis I (Chant through Palestrina)
  - 7500:616 Musical Styles and Analysis II (Baroque through early Beethoven)
  - 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss)
  - 7500:620 Musical Styles and Analysis IV (20th Century)
  - 7500:619 Theory Pedagogy
  - 7500:697 Advanced Problems in Music
  - 7500:699 Thesis Research/Recital Document
  - 7510:6 Ideal (participation in two ensembles required)
  - 7520:642 Applied Composition

- Additional music courses — zero to two credits.

Graduate-level (music) workshops, applied music (other than composition), advanced electives, and/or courses to be selected by student and adviser.

- Electives — zero to two credits.
To be selected by student and adviser. Areas include graduate-level courses in other disciplines in which student obtains permission of instructor or 7520:642 Applied Composition.

Degree total: 34-36 credits.

Communication

The Department 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 32 credits, distributed as follows:
  Departmental core courses — 16 credits:
  - 7600:600 Introduction to Graduate Study in Mass Media-Communication
  - 7600:603 Research in Mass Media-Communication
  - 7600:624 Survey of Communication Theory
  - 7600:625 Theories of Mass Communication
  - 7600:670 Communication Criticism

  Graduate electives six credits:
  - Complete a qualifying exam over 24 credits of coursework.
  - Be advanced to candidacy.
  - Register for at least four credits for thesis/project/production (may only be done after successful completion of qualifying exam).
  - Present and defend a thesis/project/production.

The requirement is designed to be the culmination of the student's academic program and involves the conception, design, and execution of an academic problem in a manner which requires a high level of substantive, methodological, and writing skills. These skills may be demonstrated in any of three types of activity, depending on the student's background and orientation.

Theatre Arts

The following will qualify the student in the field of theatre.
- Complete the general requirements for admission to the Graduate School.
- Complete an undergraduate major in the area of proposed graduate work or equivalent work as approved by the coordinator of the graduate theatre program.
- Complete a minimum of 36 credits, including 7800:600 and 7800:659, from the following courses or approved courses in the cognate field.
- Complete an oral defense of the thesis or production.

Arts Management Option

- Complete a minimum of 36 credits.
- Required theatre courses:
  - 7600:600 Introduction to Graduate Study in Theatre Arts
  - 7600:605 Thesis Research/Production Document (required)
  - 7600:601 Thesis Research/Production Document (required)

- Electives in business: (may not exceed 15 credits)
  - 6200:601 Financial Accounting
  - 6400:602 Managerial Finance
  - 6500:600 Management Concepts, Practices and Theory
  - 6500:652 Organizational Behavior
  - 6600:600 Managerial Marketing
  - 6600:620 Strategic Marketing Management
  - 6600:640 Marketing Information Systems and Research
  - 6600:655 Marketing Management

- Electives in urban studies:
  - 3980:610 Urban Politics
  - 3980:611 Urban Administration
  - 3980:640 Fiscal Analysis
  - 3980:660 Topics (such areas as cultural policy and personal management)

- Related fields:
- Complete an oral defense of the thesis.

See the head of the Department of Theatre Arts regarding the M.A. in theatre.

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. 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 upon meeting requirements. Deadline for applications is March 1 of the preceding academic year.

Degree Requirements
- Successfully complete a course of study with a minimum of 34 credits, including thesis — or with a minimum of 38 credits and comprehensive examinations for the non-thesis option. The student anticipating dual ASHA certification in speech
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 pathology, and the speech pathology student must take 4 credits in audiology. It is recommended that the speech pathology major elect 7700:639 Advanced Clinical Testing as the first of the audiology courses.

The following limitations on work toward the degree may be exceeded only with the approval of two-thirds of the department'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 (5610:693 or 5610:692) 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.

Social Work

There is no graduate degree in social work. A student interested in course work may enroll if admitted to Graduate School through other programs or may apply for special non-degree status through the Department of Social Work. A student should enroll in graduate courses only for specific professional preparation and with the permission of the instructor. Courses presume a background in social welfare institutions, social work practice, social welfare policy and history. Inquiries should be directed to the head of the department.
College of Nursing

Elizabeth J. Martin, Ph.D., Dean
Phyllis Fitzgerald, R.N., Ph.D., Assistant Dean, Undergraduate Program
R. Ruth Gray, R.N., Ed.D., Interim Assistant Dean, Graduate Program

MASTER OF SCIENCE IN NURSING

Philosophy
The College of Nursing, an integral part of The University of Akron, accepts the responsibility for promoting 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 focus of professional nursing are individuals, families and communities.

The Individual is seen as a complex whole whose existence involves patterns, dynamic change, transformation and interdependence. The individual interrelates within the environment in biological, psychological, social, spiritual, cultural and other dimensions. The individual is unique and universal. The individual is a thinking, feeling, interacting, evolving, creating, valuing being.

Families are individuals dynamically connected with each other over time. 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, nondisease and quality of life. People have the right to participate in decisions affecting and effecting personal health.

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

Nursing is an art and a science. The discipline of nursing is concerned with individual, family and community and their responses to health within the context of the 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 exercise of social and cultural responsibilities, including accountability for professional actions and provision of quality nursing care.

Education is an individualized, life-long process. Learning is a continual process and includes the individual’s interrelations with the environment. Knowledge acquisition, development of 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 Family 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
1. Promote health of families through sensitivity to cultural and ethnic diversity.
2. Actualize the leadership role in administration, education and clinical nurse specialization.
3. Assume accountability and responsibility for nursing practice through the application of professional standards and ethical principles.
4. Critically examine theories and models from nursing and other disciplines for their contributions to specialized nursing practice and advanced role preparation.
5. Integrate family theory and related research with clinical nursing practice.
6. Apply theoretical and empirical knowledge from the sciences, humanities and nursing in the management of advanced nursing practice with defined populations.
7. Contribute to the development of family nursing knowledge by generating and systematically studying researchable questions from nursing practice.
8. Recognize and promote the capacity of families from diverse populations to make personal decisions regarding health.
9. Facilitate exploration of researchable questions in nursing practice environments through support of investigative activities, collaboration with other researchers and enhancement of access to clients and data.

Admission
• Baccalaureate degree in nursing from an NLN-accredited nursing program.*
• 3.00 GPA on a 4.0 scale.
• Three (3) letters of reference.
• 300-word essay
• Interview prior to admission to the program.
• Current state of Ohio license to practice nursing and evidence of malpractice insurance.

Admission Procedures
The student secures application for Graduate School from the Office of the Dean of Graduate School, The University of Akron. Criteria specific for admission to the Graduate Nursing Program may be secured from the assistant dean of the graduate program of the College of Nursing.

A graduate admissions committee of the College of Nursing will review all applications and make recommendations to the assistant dean regarding the applicant’s status. The assistant dean will send recommendation to the dean of the college, then 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 on a rotating basis to facilitate the admissions process.

Instructional Program
The Graduate Nursing Program includes 37 hours of study and provides advanced practice in education, administration or clinical nurse specialist roles. The curriculum is based on theory and research both in nursing and in related disciplines. It provides the foundation for doctoral study and for ongoing professional development.

Nursing Core
The core consists of 14 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. 8200:613, Nursing Inquiry; and 8200:699 Thesis Research provide for the operationalization of research in the program. Non-thesis options provide for advanced project/practice/study experiences.

Leadership Role
Options are provided for study in a leadership role of educator, administrator or clinical nurse specialist.

Electives
Students will choose a minimum of 3 credits of cognate electives. A student is required to take a minimum of 37 credits in the total program. Additional credits will provide the opportunity to individualize and strengthen the major. A 4-credit statistics course is a prerequisite to the Graduate Program.

The following courses are required of all students:

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

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 admission 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.
- Graduate Record Exam (GRE) taken within the last five (5) years.
- Three hundred (300) word essay describing professional goals.
- Interview with selected faculty members and submission of a portfolio.

Curriculum

The R.N.-M.S.N. program 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 60 hours of prerequisite undergraduate coursework prior to acceptance into the program. The R.N.-M.S.N. Program consists of 15 hours of upper-division baccalaureate coursework and a minimum of 37 hours of graduate coursework. Students will receive 39 hours of undergraduate by-pass credit after successful completion of all undergraduate course requirements. This is in accordance with the current policy for by-pass credit. Upon successful completion of all program requirements, the student will receive the M.S.N. In the event a student must relocate prior to completion of the program, arrangements will be made to allow the student to complete the program through correspondence. This is assuming that the majority of the coursework has been completed.

Summer:

- Session I
  - 3470:664 Statistics for the Health Sciences 4
  - 8200:489 Special Topics Research 2
- Session II
  - 8200:489 Special Topics Basic Assessment 3
  - 8200:489 Independent Study 1-4

Fall:

- 8200:420 Nursing Synthesis 10
- 8200:603 Theoretical Basis 3

Spring:

- 8200:619 Health Appraisal 3
- 8200:622 Family Health Nursing I 4
- 8200:626 Support Course 3

Fall:

- 8200:613 Nursing Inquiry 3
- 8200:623 Family Health II 4
- 8200:625 Leadership Seminar 3
- 8200:626 Support Course 3

Spring:

- Colloquium 1
- Practicum 3
- Elective 3
- Thesis 4
- Undergraduate Credit Hours 16-19
- By-pass credit for 8200:200, 300, 320, and 400: 39
- Graduate credit hours: 37

Credit

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>8200:603</td>
<td>Theoretical Basis for Family Health Nursing</td>
<td>3</td>
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<tr>
<td>8200:613</td>
<td>Nursing Inquiry</td>
<td>3</td>
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<td>8200:619</td>
<td>Family Health Appraisal</td>
<td>3</td>
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<td>8200:622</td>
<td>Family Health Nursing I</td>
<td>4</td>
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<tr>
<td>8200:689</td>
<td>Colloquium</td>
<td>1</td>
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Select one of the following three areas:

- Education:
  - 8200:623 Family Health Nursing II 4
  - 8200:625 Teaching Strategies in Nursing Education 3
  - 8200:665 Family Health Nursing Leadership Seminar: Education 3
  - 8200:666 Family Health Nursing Leadership Practicum: Education 3
  - Clinical Support Course
  - 8200:689 Thesis/Nonthesis 1-4

- Administration:
  - 8200:489 Special Topics 1
  - 8200:629 Financial Management for Nursing Administration 3
  - 8200:630 Human Resources in Nursing Settings 3
  - 8200:635 Organizational Behavior in Nursing Settings 3
  - 8200:687 Family Health Nursing Leadership Seminar: Administration 3
  - 8200:688 Family Health Nursing Leadership Practicum: Administration 3
  - Cognate Elective
  - 8200:699 Thesis/Nonthesis 1-4

- Clinical Specialization:
  - 8200:623 Family Health Nursing II 4
  - 8200:680 Family Health Nursing Leadership Seminar: Clinical Nurse Specialization 3
  - 8200:681 Family Health Nursing Leadership Practicum: Clinical Nurse Specialization 3
  - Clinical Support courses 6
  - 4800:697 Physiological Systems 5
  - 8200:699 Thesis/Nonthesis 1-4

- Clinical Support Courses:
  - 8200:624 Nursing of Families with Children 3
  - 8200:626 Nursing of Families with Adult Members 3
  - 8200:628 Nursing of Expanding Families 3
  - 8200:670 Nursing of Families with Adolescents 3
  - 8200:671 Nursing of Families with Older Members 3

- Additional Support Course:
  - 8200:675 Culture, Ethnicity, and Health Care 3
School of Law

Isaac C. Hunt, Jr., LL.B., Dean
Richard L. Ayres, J.D., Associate Dean
Robert C. Sullivan, M.Ed., Assistant Dean for Placement and Internal Functions
Constance L. Leistiko, J.D., Assistant Dean for External Programs

HISTORY

The School of Law was established September 1, 1959, as the successor to the Akron Law School. Founded in 1921 as an independent evening law school, the Akron Law School produced two generations of successful members of the bench and bar, as well as leaders in industry and commerce. Recognizing that legal education is best conducted in university-centered programs, and mindful of the need for the continuation of a sound program of legal education in the most densely populated quadrant of the state, the University of Akron accepted an offer of merger and formed the School of Law.

The School of Law, housed in the C. Blake McDowell Law Center on the University campus, has access to resources in state and federal courts, local law enforcement agencies and corporate headquarters. An integral part of a distinguished University founded in 1870, the School of Law benefits from the nine major divisions of the University, the Graduate School and the more than 21,000 students. Enrollment in the School of Law is approximately 600. Thus, the opportunity for active student participation in the classroom, consultation with faculty members and extracurricular participation is facilitated.

In addition to being a member of the Association of American Law Schools, the University of Akron School of Law is fully accredited by the American Bar Association, the State of New York Court of Appeals, the Council of the North Carolina State Bar and holds a charter membership in the League of Ohio Law Schools.

The School of Law offers a day program for the study of law with classes scheduled between the hours of 8:30 a.m. and 4:30 p.m., and an evening plan of the study of law for the working student with classes scheduled primarily between 6:30 p.m. and 9:30 p.m.

The schedule of courses for the day division is designed so that the degree of Juris Doctor may be earned in three academic years consisting of six semesters. Attendance at summer sessions is optional.

The schedule of courses for the evening division is designed so that the degree of Juris Doctor may be earned in four academic years consisting of eight semesters and three summer sessions.

Each student is recommended for the degree of Juris Doctor upon satisfactory completion of the requirements.

OBJECTIVES

The purpose of the School of Law is to further the goals of The University of Akron by providing a quality program of university education for law and to pursue the following aims:

• To prepare the student for a career in the profession of law by imparting information concerning legal institutions, basic principles of the substantive and procedural law and jurisprudential thought concerning the role of law in society.

• To help the student develop an active and critical attitude rather than a passive approach toward the rules of law and their social implications.

• To develop in the student a high sense of professional responsibility in terms of technical competency, appreciation of professional standards and the responsibility of the lawyer to achieve a more nearly perfect system of civil and criminal justice.

The primary purpose of the student enrolling in the School of Law is to obtain a fundamental knowledge of law and the role of law in society, interfaced with a grasp of the public responsibilities of the lawyer. This course of study will enable students to become attorneys- and counselors-at-law and leaders in governmental affairs. The ultimate aim of the school is the development of graduates who will serve society not only through the representation of their individual, corporate or governmental clients, but who will also serve as architects of society's future.

The student is trained to develop powers of legal analysis and synthesis, to develop the technical skills of legal advocacy and legal draftsmanship and to learn practical skills of research and management of litigation.

C. BLAKE McDOWELL
LAW CENTER

The C. Blake McDowell Law Center is a modern, attractive law school building on the University campus. The law center is designed to facilitate the study of law both academically and clinically by its proximity to state and federal courts, law enforcement agencies and corporate headquarters.

The law center is named in recognition of Mr. C. Blake McDowell, a practicing attorney and 1911 alumnus of the University. Through his great leadership and interest, McDowell worked unflaggingly toward the creation of a law school at the University which resulted in the merger of the Akron Law School with the University in 1959.

ADMISSIONS INFORMATION

Pre-legal Education

A student expecting to enter the School of Law must hold a baccalaureate degree granted by an accredited institution of higher learning. Requirements are flexible for undergraduate study preceding legal education. However, the student's college record and Law School Admission Test score must demonstrate that he is highly qualified for law study.

A student entering law school must have completed a course of study encompassing a broad cultural background also including intensive work in a selected field of study. The prelaw student must demonstrate the ability to communicate easily, to understand people and institutions; to gather and weigh facts; and to solve problems and think creatively. A mastery of the English language is essential and the entering student should be able to read with comprehension and be able to express himself clearly and concisely in both oral and written fashion.

Requirements

An applicant for admission desiring to become a candidate for the degree of Juris Doctor must be of good moral character. A baccalaureate degree from a regionally accredited college or university in a field of study deemed appropriate by the faculty of the School of Law, with an academic average substantially better than the minimum average required for such a degree, must have been earned prior to the time the applicant begins work in the law school.

The school, through an admissions committee, is seeking law students of demonstrated academic ability as evidenced in part by LSAT scores and the undergraduate grade point average (GPA). The school will be looking beyond the LSAT and GPA for special qualities in its applicants for 120 day-division openings and 80 evening-division openings.

The law school seeks law students with diverse backgrounds. In this regard, consideration is given to ethnic and economic factors, advanced degrees, significant work experience and extracurricular and community activities during and after the college years. The growth and maturity of the applicants and their commitment to law study are significant concerns.

Procedures

Applicants for both day and evening school should apply and complete applications as soon as possible after October 1 in the year preceding the start of fall classes. Review of completed files will begin in December and students will be admitted until the classes are filled. After that time, acceptable applicants will be placed on a waiting list. The school estimates day classes will be filled by April 1; evening classes by June 1. Because the school considers each application soon after it is completed, there is no way of knowing whether the classes will be closed before or after the above dates. The best policy is to complete one's application as early as possible. Admission from the waiting list will begin in late July, should vacancies occur.

In cases where specific questions on an application arise, a member of the admissions committee may personally contact the applicant.

Letters of recommendation are not required but are helpful. Points relevant to academic or personal background not addressed in the application material may be added to the applicant's file by means of a personal statement by the applicant.

Application Procedures

Submit to the School of Law:
A Law School Application Matching form obtained with LSAT/LSDAS material.

A personal statement. (Optional, but helpful.)

Letters of recommendation. (Optional, but helpful.)

Submit to Law School Admission Services, Newtown, PA:

- Application to take the Law School Admission Test (LSAT).
- Application for the Law School Data Assembly Service (LSDAS). The application for LSAT/LSDAS is available upon request from LSDAS, Box 2000, Newtown, PA 18940.

Applicants are urged to take the LSAT as early as possible, preferably in October or December for day applicants and October, December or February for evening applicants.

If accepted for admission a student must file with the School of Law: a final, official transcript, mailed directly from the institution awarding the baccalaureate degree and all other undergraduate and graduate school attended.

A Certificate of Completion of Degree Requirements is filed by the student with the school at the earliest time such transcript becomes available for degree candidacy of the applicant.

All credit. The auditor is required to do so. The fee for an auditor is $25 if never previously enrolled for credit courses at The University of Akron. Credit to be given for a course without credit. The auditor is required to do all the work prescribed for the regular student enrolled for credit except taking examinations. The fee for an auditor is the same as for a regular student.

Reapplication

Applicants who have previously applied for law school and have not attended must comply with all the above procedures. The LSAT does not need to be repeated if it is less than three years old but depending on the test results, you may want to retake the test. In addition to the application and the $25 nonrefundable fee, a current LSDAS report must be sent to the School of Law.

Advanced Standing

A law student who has completed part of the law course at a school on the approved list of the Section of Legal Education and Admissions to the Bar of the American Bar Association, and who is eligible for readmission to the former law school, may be admitted to advanced standing. A student desiring admission to advanced standing shall: (1) submit application forms; (2) obtain from the dean of the former law school a letter setting forth the fact that the student is eligible for further instruction, and consent to the transfer; (3) submit evidence of meeting the admission requirements (including LSAT/LSDAS) of The University of Akron School of Law; (4) present an official transcript of all work completed at the previous law school; (5) submit a personal statement as to the reason for the transfer; (6) submit a nonrefundable fee of $25 if never previously enrolled for credit courses at The University of Akron. Credit to be given for the prior law school work shall be determined by the dean of the School of Law.

A more detailed description of the program can be found in the Section of Legal Education and Admissions to the Bar, American Bar Association, and who has:

- Completed satisfactorily all required courses, seminars and electives to earn at least 87 credits.
- Completed a program involving extensive research and legal writing.
- Met the residency requirement of 96 weeks for the day division or 134 weeks for the evening division.

Guest Students

A law student who is currently enrolled at a school of law on the approved list of the Section of Legal Education and Admissions to the Bar, American Bar Association, may enroll for specified courses in the School of Law upon receipt of a completed Guest Application form (which requires written permission of the applicant's dean) and application fee (if applicable) subject to availability of space in specified classes.

Joint Degree Programs

To pursue the J.D./M.B.A. or the J.D./M.Tax. programs, the student must apply to both the School of Law and the Graduate School of the College of Business Administration. The applicant is also required to take both the LSAT and the GMAT. Individuals with baccalaureate degrees in any field of study are eligible to apply for a joint program.

A brochure describing the program in more detail and an application form are available from the School of Law or from the College of Business Administration. A more detailed description of the program can be found in the College of Business Administration, Graduate School Information. The student should contact each department independently for information concerning admission procedures.

ACADEMIC INFORMATION

Requirements

Requirements for the Degree Juris Doctor

The School of Law offers two programs leading to the degree Juris Doctor. The curriculum for a day student is designed so that the degree may be earned in three academic years consisting of six semesters. Attendance at the summer sessions is optional.

The curriculum for the evening student is designed so that the degree of Juris Doctor may be earned in four academic years consisting of eight semesters and three summer sessions. The summer sessions are an integral part of the evening program.

Except in certain exceptional cases, the student is not permitted to take evening class; likewise an evening student is not permitted to enroll in day class without the permission of the associate dean.

In addition, in exceptional cases the associate dean may authorize a student to take a reduced course load under either curriculum and stretch studies over the time prescribed for each program.

A new student is admitted at the beginning of the fall semester only.

Joint Degree Programs

The School of Law and the College of Business Administration offer a joint degree program in legal and administrative studies (J.D./M.B.A.) and a joint degree program in legal and taxation studies (J.D./M.Tax.). These combinations are of interest to a student preparing for a career in such areas as corporate practice, corporate law, tax accounting and government. The total amount of time required to complete a joint program is less than the time required to complete both programs independently since certain courses in one college will fulfill requirements in the other college.

Effective fall 1986 two additional joint degree programs became available: J.D./M. Urban Planning and J.D./M. Public Administration. The applicant must apply to and be accepted by the School of Law, the Graduate School and the Department of Urban Studies. The student should contact each department independently for information concerning admission procedures.

Degree Requirements

The degree of Juris Doctor is conferred upon a student of good moral character who has been recommended by the dean and faculty of the School of Law and who has:

- Completed satisfactorily all required courses, seminars and electives to earn at least 87 credits.
- Completed a program involving extensive research and legal writing.
- Met the residency requirement of 96 weeks for the day division or 134 weeks for the evening division.
Library

The primary tool of the attorney is the written word. Thus, books take on an added importance when one undertakes a study of the law. The incoming student will soon discover that an essential portion of time and energy will be expended within the law school library.

The library has a fine collection of more than 190,000 volumes in an attractive and pleasant reading room. The library has all the basic legal materials for conducting legal research in all 50 states and in federal practice. Extensive materials are available for research in many subject areas of the law. The library subscribes to the series of records and briefs of the Ohio Supreme Court and the United States Supreme Court. Audio tapes, video tapes and microforms are also available for use in many related areas of study.

The library is a federal government depository giving the student access to law-related publications of the federal government. The latest addition to the library is an online computer terminal for accessing legal data bases. This tool of the law office of the future is available now.

Five professional librarians (two with both a law degree and a master's degree in library science), six staff and a dozen assistants are available. To supplement the collection are the University libraries with more than one million volumes freely available to all students and a computer terminal linking the law library to 2,300 other libraries with more than seven million titles which may be borrowed.

Curriculum

The curriculum* includes foundational courses of common law origin, public law and those of a procedural nature, as well as perspective and planning courses. Law is studied by the case, problem, seminar and clinical methods. Clinical training is achieved through basic and advanced seminars which involve student participation in the work of the various legal aid, public defender, prosecutor's offices, as well as other agencies. The aim of this program of study, in addition to developing social awareness, is to train the student for technical competency, professional responsibility and for the practice of law in any common law jurisdiction.

The Law School faculty, to assist the student in planning a course selection that may be used to meet individual professional objectives while attending law school here, adopted a suggested track system. In addition, the primary purpose of the suggested tracks is to identify when courses will be offered in the future. Tracks have been developed for the following: required and bar courses, business, litigation and tax.

Day Program

First Year, Required*

Fall Semester

Civil Procedure I 3
Contracts I 3
Property I 3
Torts I 3
Legal Research 1
Basic Legal Communications 1
Intermediate Legal Communications 2

Spring Semester

Civil Procedure II 3
Contracts II 3
Criminal Law 3
Property II 3
Torts II 3

Evening Program

First Year, Required*

Fall Semester

Civil Procedure I 3
Contracts I 3
Torts I 3
Legal Research 1

Spring Semester

Civil Procedure II 3
Contracts II 3

Writing Program

The tools of the practicing lawyer are oral and writing skills. As an incoming law student, experience will be gained in using and improving these skills. All first-year students take a course in legal research and advocacy. During the year the student learns to use the specialized research materials of the law, gains experience using the latest computerized legal data bases, is supervised in a writing experience, and has a chance to present written and oral arguments before a mock court.

A second year student is enrolled in the appellate advocacy courses. There, a student reads a transcript, identifies and briefs the issues and presents oral argument. This exercise closely simulates a true appellate experience. In the final year, the student takes an intensive, advanced legal writing course which concentrates on drafting of statutes, pleadings and other legal documents.

Subsequent experiences in writing are met through seminar, paper assignments for courses, individual studies, moot court briefs, law review or clinical experience. Opportunities are provided to exercise verbal skills thus enabling the student to become a successful advocate.

The Akron Law Review

A board of student editors prepares and edits, with the advice of the dean and faculty, the Akron Law Review, a quarterly legal periodical devoted to legal research and commentary on the law. Membership on the board is limited to the student of superior academic achievement or of demonstrated writing skill who desires to engage in legal research, analysis, writing and editorship. Membership on the board of student editors is indicative not only of scholarship, but of valuable training in skills important to the profession of law.

Standards of Academic Work

Grades

The following system of grading is used in recording the quality of a student's academic work.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points Per Credit</th>
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<tbody>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A+</td>
<td>3.70</td>
</tr>
<tr>
<td>A-</td>
<td>3.30</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B+</td>
<td>2.70</td>
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<tr>
<td>B-</td>
<td>2.30</td>
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<tr>
<td>C+</td>
<td>2.00</td>
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<tr>
<td>C</td>
<td>1.70</td>
</tr>
<tr>
<td>C-</td>
<td>1.32</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D+</td>
<td>0.70</td>
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<td>F</td>
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<td>I</td>
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<tr>
<td>NCR</td>
<td>0.00</td>
</tr>
<tr>
<td>W</td>
<td>0.00</td>
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</tbody>
</table>

Academic averages are computed by dividing the grade points achieved by the credits attempted. When a course is failed and repeated, the credits and the grade points involved each time are included in the computation as if the repeated course were an independent course.

A grade-point ratio of less than 2.00 is unsatisfactory. After the first year, a law student whose scholarship is unsatisfactory will be either placed on probation, suspended for a definite period of time or dropped from the school at any time by the dean. Reinstatement is determined by the dean of the School of Law with advice of the Faculty Academic Committee. Written petition for reinstatement should be addressed to the dean.

If a student withdraws from a course with the permission of the associate dean, it will not count as work attempted.

Graduation with Honors

By University Council action of December 3, 1981, new criteria were established for graduation with honors. The new criteria are applicable to students entering the University (School of Law) January 1982 and thereafter. The criteria are: 

\*Not calculated in cumulative average.
Withdrawal from a Course

A student may withdraw from a course for any reason up to the midpoint of a semester or summer session with the signature of the associate dean. After the midpoint of a semester or a summer session, but prior to the last week of classes, a student must have the written approval of both instructor and associate dean. Should either refuse to sign the withdrawal form, the student may appeal to the dean of the School of Law, who shall make the final decision. For complete withdrawal from the law school, a student must have written permission from the associate dean.

An approved withdrawal will be indicated on the University of Akron official academic record by a "W." A student who leaves a course without going through the withdrawal procedure will be given an "F" in the course.

Honor System

Consistent with the aim of training professionally responsible lawyers, and in recognition of the importance of honor and integrity of the individual lawyer, the faculty has placed the responsibility of honorable conduct on the individual student and the administration of the honor system on a council of students composed of Student Bar Association officers and class representatives. The entering students will receive a copy of the Honor Code.

Faculty Research Assistants

The student showing scholarship is given the opportunity to work with faculty members who are conducting research. This expertise improves writing and research skills, gives the student the opportunity to be involved in research on the leading edge of legal knowledge and fosters learning in a non-classroom environment.

Enrollment in Courses in Other Graduate Colleges of the University

A student interested in taking courses in other graduate colleges of the University may do so upon written consent of the associate dean. The study of law is considered a full-time pursuit, so each request is considered on an individual basis and in no case may a student use more than six graduate credits earned outside of the law school for Juris Doctor degree requirements.

Clinical Training and Public Services

The University of Akron School of Law, in recognition of the need to prepare adequately the student for future roles as an attorney, has created an urban clinical program, as described below.

Appellate Review Office

The vast bulk of the student-oriented, public service activities offered by the School of Law emanate from the Appellate Review Office. It is staffed by attorneys and up to eight student staff members. The student becomes eligible to work in the office after completion of the first year and receives either a hourly wage or academic credit.

As the office name implies, most of the work done involves post-conviction representation. The office staff has perfected appeals in the State Courts of Appeal, the Supreme Court of Ohio, all of the Ohio Federal Courts and the United States Supreme Court.

One unique characteristic of the office is the substantial responsibility each student has for assigned cases. The student is responsible for doing the research, preparing drafts, compiling the final briefs and corresponding with the courts and other attorneys. The school has established this program with the goal of giving the conscientious student the opportunity to experience the practice of law in a supervised environment.

In addition to the Appellate Review Office, there are other associated activities where a student may experience the full gamut of legal problems.

Domestic Relations

Under supervision of a staff attorney, the law student with a legal intern certificate represents indigent persons with domestic relations problems (e.g., dissolutions, divorces, child custody and support). The student has primary responsibility for the gathering of information, drafting of pleadings and court representation of the client.

Landlord-Tenant

Many people are becoming enlightened about their rights as tenants, and the need for quick and effective legal representation in this field affords the student the opportunity to represent clients at the inception of the case. The student has primary responsibility for fact gathering, which may entail on-site investigation, counseling and strategy planning.

Inmate Assistant Project

This is a student-run program unique in the state of Ohio; participants travel to and conduct interviews with prison inmates attempting to resolve their criminal and civil law problems. The student is encouraged to participate in this program from the beginning of law school. Participation involves travel to either the reformatory for men or women, interviewing of inmates and follow-up on legal problems.

Clinical Seminar

The student interested in experiencing the operations of public agencies may seek to work in outside agencies or courts. The student is assigned to various agencies, such as the County and City Prosecutor's Offices, County Public Defender's Office and the County Legal Aid Office. At placement, the student is able to see the inner workings of these offices while gaining a rich variety of knowledge. In coordination with this clinic, a course is taught which emphasizes the learning of interviewing and client counseling techniques.

Moot Court Programs

To develop the dual skills of advocacy: oral prowess and brief writing, the student is encouraged to participate in the several moot court programs within and outside of the school. These programs enable the student to learn and polish the skills of legal writing and oral advocacy through the vehicle of "moot" or academic problems. The student is encouraged to participate in any of the following programs.

National Moot Court

During the first year of studies, the student is given bids to try out for the law school's National Moot Court Team, based on that person's performance in the legal writing and research courses. A student is selected to represent the school in the national and regional competitions during the second and third academic year on the basis of a presentation in an intramural competition.

Voluntary Moot Court

The student who does not participate in the National Moot Court Program, Voluntary Moot Court is available in the spring of each year. In this activity the student is given a "moot" problem, asked to prepare briefs and present oral argument against fellow students. The highlight comes in the final round when the competitors are evaluated by judges from the State Court of Appeals.

Jessup International Law Moot Court Competition

The student interested in exploring international law on an appellate level competes on a national scale in this competition. Problems are always relevant and timely.

Bar Admission

Each student entering the School of Law is encouraged to read the rules for bar admission for the state in which the student intends to practice law. Information is available from the various state supreme courts. In addition, the information is on file in the library.

For the student interested in practicing in the state of Ohio, the Supreme Court of Ohio requires that each student entering a law school who intends to practice law in Ohio file within 120 days from the beginning day of the fall term after initiating studies:

- An application for registration as a law student.
- Two official undergraduate transcripts bearing the degree and date awarded.
- A legible set of fingerprints on a prescribed form.
- A filing fee of $30.
As a condition for taking the bar examination, the applicant must:

- File an application not less than 90 days prior to the date of the bar examination.
- Present a certificate from the School of Law stating that the student has completed or will complete all courses required by the Rule.
- A filing fee of $125.

The appropriate Ohio forms may be obtained from the School of Law on request. It is the responsibility of the student to initiate a request for, execute properly and file timely, the requisite forms to the state in which the student intends to practice law.

Enrichment Programs

The school is firmly committed to the belief that the quality of legal education, both within the school and in the legal community as a whole, is enhanced by the free exchange of ideas on matters of contemporary importance.

Law Day Speaker Program

The law school has sought to bring in individuals who may have particular insight into issues facing the legal community.

The longest running program is the Law Day Speaker, in which the Student Bar Association and the Akron Bar Association, jointly bring to campus a speaker of national stature to present a public address on an issue of concern to those involved in the study and practice of law.

Annual International Law Symposium

Each year since 1972 the school and the International Law Society have sponsored a two-day International Law Symposium. Participants in the program are internationally known experts within the field. The proceedings are published each year in a subsequent edition of the Akron Law Review.

Special Seminars

In addition, the Student Bar Association has conducted special seminars programs throughout the year. These programs have included:

- American Civil Liberties Union’s involvement in Skokie, Illinois’ march by the American Nazi Party — its first amendment implications and other topics.
- Prisoners’ Rights Seminar.
- Evidence Seminar — hearsay rule, and the art of cross-examination.
- Proposed revisions of the Federal Criminal Code.

The Student Bar Association has also sponsored visits by distinguished lecturers on various political, social and legal aspects of our society.

The David L. Brennan Chair of Law

Continuation of enrichment programs has been ensured by the creation of the David L. Brennan Endowed Chair of Law. This chair is reserved for visiting professors for exceptional jurists and scholars. The inaugural holder of the chair was the Honorable Arthur J. Goldberg, former justice of the U.S. Supreme Court, former U.S. secretary of labor and former U.S. ambassador to the United Nations. Justice Goldberg taught 40 students in an innovative six-week seminar in Constitutional Litigation. With Justice Goldberg presiding, the students argued and judged 10 cases pending before the U.S. Supreme Court.

Others who have held the Brennan Chair include Jacques Beguin (professor of law at the University of Paris and former minister of higher education), and Senior Judge Howard A. Dawson (three times chief judge of the U.S. Tax Court).

The following individuals visited the law school as holders of the Brennan chair during the 1986-87 academic year:

- Professor Jacob Sundberg, holder of the Chair of Jurisprudence at the University of Stockholm, taught a semester-long seminar on Law and the Modern Economic Order;
- Congressman John Seiberling provided a semester-long seminar on the Legislative Process;
- California Supreme Court Justice Stanley Mosk was a jurist-in-residence making presentations on the use of state constitutions and international treaties to protect individual rights.

Honors and Awards

The American Bar Association Awards. The ABA Section of Urban, State and Local Government Law will award its 1987 Certificate of Excellence to the top student in Municipal Law (Local Government Law) and Land Use Law (Land Use Planning).

The Anderson Publishing Company awards to the highest-ranking graduating student in Corporations each year a copy of Anderson’s Ohio Corporation Desk Book, and to the highest-ranking graduating student in Wills a copy of Lynn Will Clauses.

The Banks-Baldwin Clinical Program Award. An award of a selected title from listed Banks-Baldwin Practice Manuals is made annually to the clinic student who, in the judgement of the faculty involved in the clinical program, demonstrates high achievement in the practical application of lawyering skills.

The Banks-Baldwin Law Publishing Company awards annually a two-volume text entitled Jacoby’s Ohio Civil Practice Under the Rules to the graduating law student displaying scholarship in the study of Code Reading, as determined by the dean, School of Law.

The Black Law Student Association (BLSA) presents annually an award of an engraved plaque to a member who has demonstrated overall high academic achievement.

The Bracton’s Inn Special Award. A plaque is awarded by members of Bracton’s Inn, case club of the School of Law, to a senior member of Bracton’s Inn in recognition of demonstrated superior performance in the Appellate Advocacy Program.

The Bureau of National Affairs, Inc. awards a one-year complimentary subscription to The United States Law Week to a graduating student who, in the judgment of the faculty, has made the most satisfactory progress during the senior year.

The Callaghan and Company Book Award. Established in 1986, an award of law books, one volume each, “Opening Statements” and “Closing Argument,” is awarded to each member of the two winning mock trial teams of Bracton’s Inn.

The Federal Bar Association Award for Constitutional Law. Established in 1986, the Federal Bar Association, Cleveland Chapter, has awarded a number of $500 awards to the students excelling in Constitutional Law classes. Four $125 cash awards will be given to each student receiving the highest grade in each section of Constitutional Law.

The Lawyer’s Co-Operative Publishing Co. and Bancroft-Whitney Co. Award. The Lawyer’s Co-Operative Publishing Company and Bancroft-Whitney Company: American Jurisdictional Practice Award Certificates and Am Jur Credit Vouchers (which may be redeemed toward the purchase of certain of the publishers’ books) are presented to students receiving the highest grade in courses with an enrollment of 12 or more students and which carry academic credit (except credit/noncredit courses).

The National Association of Women Lawyers. Established in 1986, the National Association of Women Lawyers presents an annual award to the outstanding law graduate of each American Bar Association approved law school. Criteria for selection includes academic achievement, motivation, contribution to a better society and presentation of a personable and professional image. The award will consist of a one-year honorary membership in the National Association of Women Lawyers.

The National Order of Barristers. Those faculty members of the School of Law who comprise the honorary benchers of the local chapter of the National Order of Barristers elect law students to the National Order of Barristers for their outstanding performance in Bracton’s Inn (case club of the School of Law).

The Judge W. E. Pardee Memorial Award. Established in 1963 in memory of the Honorable W. E. Pardee, judge on the original Ninth District Court of Appeals of Ohio, the grant of $500 is awarded to a participant, or team of participants, in Bracton’s Inn (case club of the School of Law) that best displays advocacy skill and professional decorum. The award goes to the team that represented the School of Law in the National Moot Court Competition.

The West Publishing Company annually awards four titles of Corpus Juris Secundum to students of all classes who have made the most significant contribution to overall legal scholarship, and four titles from the Hornbook Series to students with the highest academic average in each of the classes, as determined by the dean, School of Law.

Scholarships

The Edward I. Abramson Scholarship is a fund established to provide assistance to deserving and qualified students of the Jewish faith who are attending, or wish to attend, The University of Akron School of Law.

The Akron Bar Association Auxiliary Scholarship, established by the Akron Bar Association Auxiliary, provides an annual scholarship not to exceed $1,000 to a student in the full-time program of law study. The Akron Bar Association University Scholarship Committee, on the basis of scholarship, legal aptitude, character and need and with the advice of the dean, School of Law, shall make the selection giving first preference to a resident of Summit County, Ohio. A recipient may apply for an annual renewal of the scholarship.

The Akron Bar Association Foundation has established scholarships funds and no-interest loans for the purpose of providing funds to law school students from Summit County, including incoming freshmen, in need of finan-
cial assistance to continue their education. Interested students should write directly to the Akron Bar Association for application forms and further information. Applications must be received by the Akron Bar Association by April 30.

The Akron Baristas Club has established a scholarship fund for black minority students as selected by the Baristas Club of Akron, Ohio.

The Professor Hollis P. Allan Memorial Book Fund was established in 1980 in memory of a beloved law professor and is awarded as determined by the dean, School of Law.

The Ward Baldwin Memorial Fund, established in 1982 by the Akron Host Lion’s Club, provides financial assistance to or for the legally blind student who is studying law.

The Evan B. Brewer Book and Scholarship Award is funded by income from an endowment fund established in 1978 by attorney Evan B. Brewer. The award is given by the dean, School of Law, to deserving law students, as determined by the dean.

The Attorney Evan B. Brewer School of Law Scholarship, established in 1981, is awarded to law students as determined by the dean, School of Law.

The Briner, Catanzarite and Rakas University of Akron School of Law Taxation Scholarship, established in 1978, is awarded annually on the basis of merit to an entering student in the full-time program of law study who was the outstanding graduate of The University of Akron College of Business Administration. The fund is not renewable to the recipient.

The Dean's Club of the School of Law is a private endowment fund established by friends and alumni of the School of Law. One of the purposes of this fund is to attract highly qualified students by providing scholarship aid.

The Erie County Bar Association has established scholarships for the purpose of providing funds to law school students from Erie County.

The Farm Journal Tax Writing Scholarship is a challenge scholarship. Funds are earned by law student volunteers who prepare answers to letters from readers of the Farm Journal. Each letter, published, as part of the Money Matters feature, carries $50 to be added to the fund. Recipient of the scholarship is to be selected annually by the tax faculty on the basis of demonstrated proficiency in accurately answering questions posed by laymen. Funds will be provided annually by the Farm Journal upon request.

The Lee Forbstein Scholarship Fund was established by the Akron Education Association (AEA) in 1979 as a tribute to Lee Forbstein, for more than 30 years AEA legal counsel and a former member of the University’s Board of Directors. The scholarship covers tuition, books, fees, room and board, all or in part, for a student enrolled in the School of Law, with primary interest in the field of labor law. The student should be a resident of Akron, Ohio and a third-year law student; otherwise there are no restrictions as to race, creed, color, sex or national origin. Selection of the recipient is determined by the dean, School of Law, with assistance by the University Relations Committee of the AEA.

The Judge James G. France Scholarship is a fund established in 1979 by Margaret France in memory of her husband, James France, who gave the School of Law 22 years of distinguished service. The scholarship is awarded to a deserving law student demonstrating scholarly attainment as determined by the dean, School of Law.

The Gilbert Book Scholarship was established in 1984, the purpose of which is to assist black students only in the purchase of law books for their course work. The recipient must be a full-time, first or second-year day black student. The scholarship is awarded on the basis of need as determined by the dean, School of Law.

The Goodyear Tire & Rubber Company Scholarships, established in 1969 by the Goodyear Tire & Rubber Company Fund, will be used for tuition, books and emergency expenses of students admitted to the School of Law under the Legal Education Opportunity Program, on the recommendation of the dean, School of Law.

The Howland Memorial Fund provides Frank C. Howland Scholarships to deserving law students of demonstrated scholarly attainment, as nominated by the dean, School of Law.

The Judge Oscar A. Hunsicker Scholarship Fund is a scholarship created by The University of Akron School of Law class of 1981 in honor of Judge Oscar A. Hunsicker, Dean of the Akron Law School from 1941 to 1959. This fund provides tuition to law students based on leadership capabilities, academic achievement, professional qualities and financial need, as recommended by the dean and selected by a committee of School of Law student leaders.

The Kevin C. and Deborah A. Krull Scholarship, established in 1981, is awarded annually in the amount of $500 to a student in the part- or full-time non-grant law student who has completed at least one full year of study and has completed courses Tax I and II. The scholarship is awarded on the basis of merit and need to a student who has excelled in the study of taxation. The scholarship will be awarded by the dean, School of Law, upon recommendation of the senior tax professor. The scholarship is not renewable to the recipient.

The Matthew 25:31-46 Scholarship Fund is an endowed scholarship fund established in 1981 to provide tuition assistance for non-Ohio seniors enrolled in the School of Law preparing for service as poverty lawyers. Selection of the recipient and the amount of financial assistance is determined by the School of Law.

The Sanders J. Mestel Trial Advocacy Scholarship is a trust established in 1983 by Harry and Anne Mestel in memory of their son, Sanders J. Mestel. An award of $250 is made yearly to a graduating student from the School of Law who was admitted as an outstanding student in the area of Trial Advocacy, as selected by the dean.

The Herman Muehlestein Foundation of New York established a fund to provide scholarships to qualified students from the New York City area, as nominated by the dean, School of Law.

The Ohio Law Opportunity Fund is provided by members of the bench and bar in Ohio to assist Ohio residents from disadvantaged backgrounds as nominated by the dean, School of Law.

The Judge and Mrs. W. E. Pardee Memorial Scholarship was established in 1965 in memory of Judge and Mrs. W. E. Pardee. This scholarship, in a maximum amount of $500 per year per recipient, is awarded to full-time students of demonstrated scholarship in The University of Akron School of Law day program.

The Phi Alpha Delta Law Fraternity, International, annually makes available nationally twenty-one $50 awards, and one $1,000 award, to senior students who are members of the fraternity. Application should be made through the faculty adviser of the Grant Chapter, School of Law.

The Harley John Queen School of Law Scholarship Fund, established as a trust fund in 1982 and as an endowed scholarship fund in 1986, provides scholarships annually to law students, as determined by the dean, School of Law.

The Judge and Mrs. Charles Sacks Scholarship is a fund established in 1970, the Centennial Year of the University, in honor of Judge and Mrs. Charles Sacks by their children, Robert and Naomi Christian, by Laurel Fischer and Harvey and Shirley Friedman, of which the income will be used to provide scholarships to deserving students in the School of Law, on the recommendation of the dean, School of Law.

The Fully R. Spain, Jr., Memorial Fund was established in 1980 by family and friends in loving memory of Fully R. Spain, Jr., a 1973 School of Law graduate. This scholarship is provided for a student enrolled in the School of Law, as determined by the dean.

The Joseph Thomas Memorial Law Scholarship Fund is a fund established in 1976 by the Firestone Foundation in memory of Joseph Thomas, Esquire, the income from which is used to assist a financially deserving student or students of high academic potential and achievement residing in Summit County, on the recommendation of the dean, School of Law. The award may be renewed.

The School of Law Tuition Remission Scholarships are available for entering and continuing law students on the basis of scholarship and/or need as determined by the dean, School of Law.

The Judge Harold and Jeannette White Scholarship is funded by income received from the presentation of seminars in the field of bankruptcy law prepared or presented by Judge Harold White. Scholarships shall be made available to law students other than first-year law students, whose overall grade-point average places them in the upper one-third of their class. An interest in commercial law is preferred.

For additional information and application forms for the above scholarships, contact the associate dean at the School of Law (216) 375-7331.

Activities and Organizations

ARETE, a student-managed publication, publishes a monthly newsletter intended to serve as a forum for law students, faculty and outside opinions on a wide range of contemporary issues related to law and the School of Law. ARETE is open to students after the first year.

The Black Law Student Association (BLSA) was accredited as a law student organization in 1974 and is an affiliate of National BLSA, Inc. Dedicated to the twin objectives of increasing minority enrollment and retention, BLSA sponsors seminars on subjects such as legal rights of blacks, poor and oppressed people.
Bracton's Inn, styled after the old English inns at Court, is a student-run group having primary responsibility for developing student brief writing and oral advocacy programs. A student may become a member of the inn by engaging in any of the various oral advocacy programs offered during the school year. Among the activities sponsored by the inn are: client counseling competition, high school mock trial, voluntary mock trial, and Order of Barristers.

The Delta Theta Phi Law Fraternity, Seiberling Senate, was chartered in 1973 in honor of Congressman John F. Seiberling. The objective of Delta Theta Phi is to bring together congenial men and women of good will and common purpose who regard the study and practice of law as activities worthy of the highest human endeavor. A law student in good standing is eligible for membership after the first semester.

The Law School Alumni Association was formed in 1974 and has since supported activities and programs which enhance the quality of education at the School of Law. The association operates in conjunction with the Law Placement Office and assists students and graduates in their placement efforts. Members in the association provide support for various school activities and receive a newsletter, alumni directory and other benefits.

Founded in 1971, the International Law Society emphasizes the study of and active participation in international law. Interested students are encouraged to join to work toward the development of programming, panel discussions and competitive events highlighting this growing and exciting field of law. The International Law Society co-sponsors the annual International Law Symposium.

The Phi Alpha Delta Law Fraternity, International, Grant Chapter was established in 1962. Through service to the student, the school and the legal profession, Phi Alpha Delta strives to advance not only the attainment of a high standard of scholarship, but also the development of a spirit of good fellowship among its members. Speakers, workshops, parties, luncheons and the annual used-book sale are among some of the activities sponsored by Grant Chapter. The fraternity welcomes all students in good standing after the first semester.

The Student Bar Association develops innovative educational programming, maintains ties with the legal community through joint ventures and plans the various student social and legal activities throughout the school year. Membership is open to all law school students. The student desiring an opportunity to direct actively the course of student law school involvement is encouraged to seek election to this body.

Law Association for Women's Rights is concerned with the evolving role of the woman attorney within our legal system, as well as the changing rights of women in the community. This association is of local origin, non-aligned with any national organization. Its membership is comprised of male and female law students and members of the local bar. The group has a multi-faceted approach to achieving its goals, which include providing undergraduate women with law school information, heightening community awareness of women's rights and problems, and providing topical discussion groups.
The Department of Polymer Science and Polymer Engineering was established to consolidate the administration of the two academic departments, the Department of Polymer Science and its research affiliate, The Institute of Rubber Research under the direction of Professor J. L. White as director and department head to give thrust to polymer science since 1910 when Professor Charles M. Knight began offering courses in rubber chemistry. Master's theses treating rubber chemistry on the University 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 Science was formed which awarded M.S. and Ph.D. degrees in Polymer Science.

A Center for Polymer Engineering was created in 1983 and a Department of Polymer Engineering in the College of Engineering in January 1984 with Professor J. L. White as director and department head to give thrust to polymer processing and engineering applications. In 1988 the College of Polymer Science and Polymer Engineering was established to consolidate the administration of the two academic departments, the Institute of Polymer Science and the Center for Polymer Engineering.

The Department of Polymer Science and its research affiliate, The Institute of Polymer Science emphasize polymer synthesis, the physical chemistry, physics and mechanical behavior of polymers, and many of their applications. The Department of Polymer Engineering and its research affiliate, the Center for Polymer Engineering emphasize polymer processing (including reactive processing), solid state structural morphology and properties of polymers as related to process history as well as engineering analysis and design. Collaborative research between faculty in the two departments (and research affiliates) 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.

**DOCTOR OF PHILOSOPHY DEGREE**

Students in Polymer Engineering receive the Doctor of Philosophy degree through the College of Engineering, whereas the students in Polymer Science receive a Doctor of Philosophy degree directly from the College of Polymer Science and Polymer Engineering.

**Doctor of Philosophy in Polymer Science**

An interdisciplinary program leading to the Doctor of Philosophy in Polymer Science is administered by the Department of Polymer Science. Graduates from the three main disciplines (chemistry, physics and engineering) are guided into the appropriate courses of study and research in that field under the supervision of a faculty member. Research facilities of the Institute of Polymer Science are available for these 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:

- Complete a course of study prescribed by the student's advisory committee based on the committee's judgment of the student's background and on the result of any special examinations it might impose. This course will consist of a minimum of, but usually more than, 36 credits in graduate courses, as outlined below, or their equivalent, plus sufficient Ph.D. research credits to make a total of 84 credits (exclusive of Master of Science thesis credit). Credits for participation in either Polymer Science or Polymer Engineering seminars do not apply toward the degree. At least 12 credits of graduate course work and all dissertation credits must be completed at the University.
- Pass eight cumulative examinations which are given at intervals during the academic year. The candidate is urged to begin these examinations early in the graduate program.
- Complete 9871:6078 Polymer Science Seminar I and II
- Pass an oral examination upon completion of a research dissertation.
- Demonstrate competency in computer programming.
- Pass the general requirements for the Doctor of Philosophy degree.

**Doctor of Philosophy in Engineering (Polymer Engineering)**

The Department of Polymer Engineering and College of 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 College of Engineering 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 Engineering (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**

One may pursue Master of Science degrees in either Polymer Science or Polymer Engineering. Students in Polymer Engineering receive the Master of Science degree through the College of Engineering whereas students in Polymer Science receive a Master of Science degree directly through the College of Polymer Science and 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 a research project (9871:699) and the resulting six 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.

**Master of Science in Engineering (Polymer Engineering)**

The major emphases of the graduate program in polymer engineering are in polymer processing, engineering performance and structural and rheological characterization of polymers. This would involve an academic program of 33 credits, including 12 credits of
core courses, three credits of approved mathematics courses and six thesis credits.

- Polymer engineering core:
  9841:611 Structural Characterization of Polymers with Electromagnetic Radiation
  9841:621 Rheology and Polymer Processing
  9841:622 Analysis and Design of Polymer Processing Operations I
  9841:631 Engineering Properties of Solid Polymers
  9841:641 Polymeric Materials Engineering Science
  9841:642 Analysis and Design of Polymer Processing Operations II
  9841:651 Polymer Engineering laboratory

- Polymer engineering elective:
  9841:601 Polymer Engineering Seminar
  9841:623 Analysis and Design of Polymer Processing Operations II
  9841:642 Engineering Aspects of Polymer Colloids
  9841:651 Polymer Engineering laboratory

- Approved engineering and science elective (a minimum of three credits of approved science or mathematics required):
  3450 Approved Mathematics 3
  4300:681 Advanced Engineering Materials 3
  4600:622 Continuum Mechanics 3
  9871:613 Polymer Science laboratory 2
  9871:674 Polymer Structure and Characterization 2
  9871:675 Polymer Thermodynamics 2

- Thesis:
  9841:699 Thesis 6

- Attendance at and participation in department seminars as directed by the advisory committee is required.
SECTION 8

Research centers and institutes; continuing education and public services
Research Centers and Institutes

John S. Wodarski, Ph.D., Associate Vice President for Research and Graduate Studies

Patricia L. Carroll, Ph.D., Dean of the Graduate School

Charmaine C. Streharsky, M.S.T.E., Director of Research Services and Sponsored Programs

In the past, colleges and universities have been thought of as ivy-covered storehouses of knowledge where neatly packed information was dispensed to eager students. But this has never been true, for it is here that much of the new knowledge developed. And with the accelerating tempo of our times, there is an increased call for the universities to provide more new knowledge 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 and undergraduate students have the opportunity to participate, depending on the nature of the project and the relevant knowledge required. One consequence of 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, mechanical and civil 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 Research Council founded in 1962; it also serves as the policy-making body for research. The council consists of the dean of graduate studies and research, the director of research services and sponsored programs and the directors of the various research institutes.

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 purview of the institute, in keeping with the career of its namesake and the respect that he gained over many years in the political world, is to "give all citizens, and particularly young people, 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; to improve understanding of continuity and change in American political institutions; and to provide advanced experience in practical politics to students with primary career goals in political science."

Institute for Biomedical Engineering Research

Karen Mudry, 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 Engineering Research Center on the north edge of the campus.

Center for Economic Education

Fred M. Carr, Ph.D., Director

The Center for Economic Education exists to improve the economic literacy of individuals to help them function competently as citizens, producers and consumers. The center conducts workshops, seminars and economic programs for teachers, students and interested groups. It provides consulting services in the area of economic education and acts as a clearinghouse for the gathering and dissemination of economic education materials and programs. It also fosters an understanding and appreciation of the American economic system.

Center for Environmental Studies

Jim L. Jackson, Ph.D., Director

The Center for Environmental Studies matches the expertise of 95 affiliates in 33 disciplines with the needs of a student seeking study and research opportunities for complex environmental questions. 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 the Application of Geologic and Soils Information; 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 Oak Hill Center for Environmental Studies in the CVNRA. Expertise provided by the Oak Hill Center has benefited thousands of youngsters.

Training Center for Fire and Hazardous Materials

David H. Hoover, M.S., 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.

Institute for Futures Studies and Research

Gary Gappert, Ph.D., Director

The Institute for Futures Studies and Research was established in 1978 to provide a focal point for research on society's future. The center coordinates seminars and workshops and provides consulting services to business, industry and government in futures studies by establishing a local chapter of the World Future Society to encourage interest in forecasting, trends and ideas about the future.

Institute for Life-Span Development and Gerontology

Harvey L. Sterns, Ph.D., Director
Dr. Isadore Newman, Associate Director
Dr. Donald Stull, Assistant Director for Research

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 15 University departments, conduct research, 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, including the Adult Resource Center.

Examples of outreach activities include the Elderhostel program, offered each summer for older adults who participate in a week-long residential learning experience, and the Ohio Senior Olympics. 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 Nursing
Maryhelen Kreidler, R.N., Ed.D., Director
The Center for Nursing is the practice, education, and research arm of the College of Nursing. Since 1981 it has provided a research and practice laboratory for students and faculty. The center provides health promotion services to campus students, faculty and staff and community residents of all ages. These services include wellness assessments and nursing physicals, stress management and self-care assistance, family education and group support sessions. Outreach to the elderly, women, children and community agencies is also a major emphasis of the center.

Center for Organizational Development
Joseph C. Latona, Ph.D., Director
The Center for Organizational Development in the College of Business Administration is an outgrowth of the Institute of Business and Economic Research which was one of the four facets of the Research Council established in September 1962 by the University Board of Trustees. The institute was renamed in 1975 as its functions had been expanding to fill a community need. The general goal of the center is to update the organizational skills of area managers in all types of organizations and at all levels. The center cooperates with business, government, professional and service groups in evaluating and analyzing their specific needs, designing programs and coordinating programs to meet the particular needs of these groups.

Center for Peace Studies
Martha C. Leyden, Ed.D., Director
The Center for Peace Studies has been established to study the subject of international peace within the threefold framework of the University's goal of education, research and public service. A peace studies certificate program is available for the student who wishes to pursue the course of study, and the center sponsors special campus programs and an international newsletter. It is engaged in research projects and cooperates with organizations in the community interested in peace and with institutes and peace centers on other campuses. The center sponsors workshops for teachers who wish to incorporate peace concept into their teaching.

Center for Polymer Engineering
James L. White, Ph.D., Director
The Center for Polymer Engineering carries on fundamental and applied research in polymer processing, engineering performance and associated characterization.

The center, founded in 1983, seeks to be a major intellectual and research resource in northeast Ohio. The center maintains up-to-date and futuristic processing and characterization laboratories, with continued interest in development of new process technology and new materials. Its activities also include organization of academic symposia and various seminars related to polymer processing and engineering.

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

Small Business Institute
Joseph C. Latona, 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 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.

Center for Taxation Studies
Alvin H. Lieberman, J.D., CPA, Interim Director
The Center for Taxation Studies, established in 1985, is a joint venture of the College of Business Administration and the School of Law. Funding for the center is provided under an Academic Challenge grant, part of the Ohio Board of Regents' Selective Excellence Program.

The center focuses on subjects in tax policy which are directed toward legislative changes regarding federal, state and local taxation and their effect on individuals and businesses. Further, the center sponsors and monitors research by tax scholars and professionals. It also conducts taxation seminars, presentations and programs directed toward both the tax profession and public. The center oversees operation of the Tax Clinic and the Volunteer Income Tax Assistance (VITA) program. Studies concerning taxation are coordinated by the center with other disciplines on campus. For example, projects have been undertaken in the following areas: business, law, political science, urban studies, finance, economics and English (document design).

Institute for Technological Assistance
Andrew L. Simon, Ph.D., Executive Director
The institute coordinates public service functions of the University that cut across departmental and college boundaries and facilitates the performance of unconventional projects defined by contracts or protocols with foreign or domestic clients. Some of the typical projects in the past included the complete design of curricula and physical facilities of several colleges in the Middle East and the coordination and organization of American educational visits of South American educators. In a typical current project, the institute coordinates the activities of engineering students who help the National Park Service develop facilities in the Cuyahoga Valley National Recreation Area.

Center for Urban Studies
James L. Shanahan, Ph.D., Director
Gail A. Sommers, M.A., Assistant Director
One of the greatest challenges for an urban university is utilizing its resources for resolving urban problems and improving the urban environment. The Center for Urban Studies, established in 1965, was the University's response to that challenge. The center develops research and professional service projects in response to the needs of the urban community and to perceived urban issues. The center's objectives are to apply new methods and to experiment with new approaches to solving urban problems.

The center provides advisory and research expertise in a wide range of areas to both the public and private sectors. Within the area of comprehensive planning, assistance is provided to small communities and research on planning-related issues. The area of urban policy and economic development conducts research relevant to economic issues in northeastern Ohio. Urban extension provides technical assistance through such activities as the provision of data, the preparation of needs assessments for various agencies, and works with neighborhood-based organizations.

The center strives to stimulate within the University creative solutions to urban problems by coordinating the urban perspective of the various disciplines and professions. This multidisciplinary approach encourages faculty and graduate student participation from all departments with an urban focus. With its programs in research and professional service, the center provides the setting and facilities through which interested faculty and graduate students can become involved in urban research or professional service activities to 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 preparation.
Continuing Education, Public Services and Outreach (CEPSO)

Hilton T. Bonnwell, Ph.D., Associate Provost
E.J. “Bud” Houston, M.A., Director of Programs Division; College Liaison Officer for CEPSO

The Continuing Education, Public Services and Outreach division at The University of Akron is based on the missions of the University which relate to providing education and technical assistance to the citizens, agencies and businesses of the area, region and nation. These mission statements direct the University commitment to:

- Provide learning opportunities for the full spectrum of students.
- Prepare career-oriented persons for professional leadership roles in area, regional, national and international organizations and institutions.
- Offer educational and professional services to its various publics within available resources and established continuing education and outreach philosophies.
- Maintain its firmly established tradition of concern for the higher educational and cultural needs of our area.

The University Outreach mission of The University of Akron is implemented through an organized structure within the senior vice president and provost’s office. The associate provost for Continuing Education, Public Services and Outreach coordinates and takes a leading role in University efforts for all such University activities.

Continuing Education, Public Services and Outreach is a catalyst division, which focuses the skills and expertise of University personnel and units on the issues and problems of urban society and enhances the development of its citizens as leaders and members of the work force. Leaders from all walks of life can improve or maintain their professional competence, meet the demands of a changing society and prepare to use new skills to meet both personal and professional goals. The Center for Continuing Education, located in the Leslie M. Buckingham Center for Continuing Education, is the University’s focal point for campuswide outreach services. BCCE is also the center for The University Activities Calendar and Conference Services.

HISTORY

The University of Akron has a rich history of educating adults. In 1872, Buchtel College’s first class was composed of 46 regular college freshmen and 164 preparatory noncredit students, including Civil War veterans. Within a year, Buchtel College enrolled noncredit students in business courses in an outreach center in Barberton. Adult noncredit education and outreach to the community have remained part of the University’s basic fabric throughout the years.

PROGRAMS DIVISION (CREDIT)

E.J. “Bud” Houston, M.A., Director of Programs Division
Judy Vardon, Coordinator, Contingency Courses and Extension Credit Programs

(The Credit Programs are as follows)

Evening Study

The University of Akron has a rich and historic tradition of service to students who attend classes after 5 p.m. Evening class offerings run the full range from the associate level through the Ph.D. level.

Evening study is a continuation of daytime college campus life. Credit courses taken in the evening have the same high academic value. Full-time faculty members teach and are available to the student in the evening. Part-time faculty represent a complete array of academic backgrounds and practical experiences to enrich the quality of course work.

The president and his administrative staff and the collegiate deans are vitally concerned with supporting the University’s effort to serve the needs of the evening students — all 7000 of them.

Non-traditional Student Government coordinates various cocurricular activities. Organizations established for the evening student include Alpha Sigma Lambda, scholastic honorary, Gamma Beta, evening social sorority, and Chi Sigma Nu, evening social fraternity.

Summer Sessions

Summer sessions re-emphasize the urban nature and mission of The University of Akron and the total involvement of our community. Curricular patterns reflect the vibrant interaction between “town and gown.” Summer study satisfies myriad of student appetites and needs of the regular full-time student, the recent high school graduate, the transfer student, the part-time student and, equally important, those who want to rejuvenate their intellectual energies through summer study.

Summer Sessions serve more than 12,000 students, young and old, at all levels from noncredit avocation courses to the professional and Ph.D. levels. Faculty, students, administrators, and the community contribute talents and resource to further this dynamic, academic, and cultural process.

Extension Credit Courses

Off-campus credit courses are offered at a variety of locations throughout northeastern Ohio as well as from the East Coast to the Rockies. Arrangements can be made through the Programs Division (Credit) office. The locations provide convenience to the students and also take advantage of the unique laboratory or on-site training opportunities.

Academic Workshops

Academic workshops are designed to cover specific areas of knowledge in a shorter time period. They are offered throughout the year to serve the continuing professional education needs of a broad spectrum of regional professionals.

PROFESSIONAL DEVELOPMENT

Robert Strauber, B.S., Director of Noncredit Programs and Professional Development

Definition and Scope

In 1983, the Ohio Board of Regents defined noncredit continuing education as an institution’s sponsored offering which carries no credit toward a degree (e.g., associate baccalaureate, or higher degree). Noncredit does not include, however, offerings providing Continuing Education Units (CEUs) or similar professional certifications. Most licensed professors in Ohio now require continuing education as a criterion for license renewal.

Curriculum categories include:

- Skill training and development
- Professional and career enhancement programs
- Computers — end-user and business computer training
- Recreation, health and fitness

On-Site Contract Training

Continuing Education offers jobs and career related training at local and regional arm service organizations to help make more efficient use of training dollars. More than one hundred classes are held on-site in business and industry annually. Program consultants visit the site, discuss the particular work situation, analyze needs and develop a customized training program. The on-site training and educational programs are designed specifically to meet the requirements of the organization. Scheduling is done at the organization’s convenience and the instructors are provided through The University of Akron.


**Conferences and Seminars**

The staff conducts professional education seminars and conferences and assists in program planning for University and community organizations. The department offers development of on-site training for business, industry, government, education and nonprofit organizations. These programs may be local, statewide, national or international in scope.

**Teleconferencing**

The University has teleconferencing technology which makes outreach programming available for academic and faculty development, continuing education, and research briefings to national/international audience from programming available through worldwide resources.

**OFFICE OF INTERNATIONAL PROGRAMS**

Dr. Joseph Navari, Ph.D., Director of International Programs

The Office of International Programs has both programming and coordinating responsibilities in these areas of promotion and support of international activity, study abroad programming, agreements between The University of Akron and foreign institutions, and international visitors and scholars. It acts in a facilitative role to those units that directly relate to international students, such as international student undergraduate and graduate admissions and advisement, international student and scholar activities, and the English Language Institute.

The University serves a community that is international in scope and interest. Major industries that are located here have plants in every part of the globe, as do many of the city's smaller industries. Our student population includes more than 1000 foreign students and scholars from 88 countries. The University faculty has wide interests and has traveled extensively. The Office of International Programs has assisted the colleges of the University in developing programs to educate students on the international dimensions of knowledge. There are courses in non-Western studies, area concentrations, programs in international business and opportunities for students and alumni to travel overseas. These opportunities create greater international visibility for the University and increase the breadth of learning and understanding among students, faculty, and the global community.

**CAREER/LIFE PLANNING SERVICES FOR ADULTS**

Sandra Edwards, M.A., Director

The Adult Resource Center (ARC) offers career and life planning services to individuals and business organizations. Through workshops and individual assistance, people learn to assess their skills, abilities, and interests to maximize their career potentials. ARC helps individuals set personal, career, and educational goals. The Adult Resource Center serves as a training center for undergraduate and graduate students interested in adult development and career guidance.

**LONG-TERM CARE EDUCATION AND TRAINING CENTER**

Genevieve A. Gipson, R.N., M.S.Ed., Project Coordinator

The purpose of the Nursing Home Training Center is to improve the quality of life which is available to the elderly or disabled persons through training of personnel (and clients) in nursing homes, home health, adult day-care and other community and long-term care settings. Since 1975, the Akron training center has been one of the eight training centers in Ohio legislated by the state and funded in part by the Ohio Department of Health. Approximately 200 training events are provided annually to more than 6,000 students in 54 different training sites in 12 countries in eastern Ohio. A wide variety of professional continuing education credits are available to attendees.

**PROMOTIONAL SERVICES**

Eloise Lafferty, B.A., Director

The Promotional Services division aids and advises in the production of catalogs, brochures, flyers, fact sheets, newspaper advertising, and other marketing activities appropriate to promote University outreach activities. The services of this unit are available to all University units engaged in the service mission areas of the University.

**BUSINESS SERVICES**

Denise Garrett-Brown, A.A., Director of Business Services

The Business Services division processes the registrations for all noncredit courses, conferences, seminars, credit academic workshops, off-campus courses, and studies abroad activities. Transcripts and certificates for noncredit participants are provided by this office. The unit also renders budget cashiering, personnel, and reports functions for the University Outreach activities.

**UNIVERSITY ACTIVITIES CALENDAR**

Angela R. Bable, A.A., Coordinator, University Activities Calendar

The University Activities Calendar is located within the construct of the outreach office, however, it retains its own identity since it is involved with scheduling all activities and rooms for the University.

Anyone needing to use University facilities, or any University group needing to make arrangements for use of facilities, should call (216) 375-6000 and make such arrangements through the coordinator of University Activities Calendar.

People desiring information about any function on campus may call the above number 24 hours-a-day and seven days a week.
### Course Numbering System*

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**Department of Developmental Programs**

1020 Developmental Programs

**English Language Institute**

1030 English Language Institute

**University College**

1100 General Studies

**Air Force ROTC**

1500 Aerospace Studies

**Army ROTC**

1800 Military Science

#### Interdisciplinary Programs

1800 Divorce Mediation
1810 Afro-American Studies
1820 Home-based Intervention Therapy
1830 Environmental Studies
1840 Women’s Studies
1850 Institute for Life-Span Development and Gerontology
1860 Peace Studies
1870 Honors Program
1880 Medical Studies
1890 Environmental Health

#### Community and Technical College

2000 Cooperative Education
2015 Distinguished Student Program
2020 Associate Studies
2030 Associate Studies — Mathematics
2040 Associate Studies — Social Sciences
2100 Individualized Study
2200 Educational Technology
2210 Handicapped Services
2220 Criminal Justice Technology
2230 Fire Protection Technology
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2250 Public Service Technology
2260 Community Services Technology
2270 Labor Studies
2280 Hospitality Management
2290 Legal Assisting Technology
2420 Business Management Technology
2420 Real Estate
2440 Computer Programming Technology
2520 Marketing and Sales Technology
2540 Office Administration
2560 Transportation
2730 Histotechnology
2740 Medical Assisting
2760 Radiologic Technology
2770 Surgical Assisting
2780 Allied Health
2790 Respiratory Care
2840 Chemical Technology
2860 Electronic Technology
2870 Automated Manufacturing Technology
2880 Manufacturing Technology
2900 Instrumentation Technology

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*A more detailed explanation of the numbering system can be found in "Course Numbering Systems." Section 3 of this Bulletin*
DEVELOPMENTAL PROGRAMS

1020:

040 BASIC WRITING I
4 credits
Provides intensive practice in composition skills, grammar, sentence structure, and paragraph writing.

042 BASIC WRITING II
Provides additional practice in the basic writing skills required for college composition.

050 BASIC MATHEMATICS I
4 credits
Introduces the Basic concepts of elementary algebra and provides an extensive review of arithmetic operations.

052 BASIC MATHEMATICS II
Designed to review and strengthen skills needed for credit mathematics courses.

060 COLLEGE READING
4 credits
Designed to improve general reading ability and develop effective study strategies with emphasis on vocabulary development, basic comprehension, textbook reading, study and test-taking techniques.

072 DEVELOPMENTAL NATURAL SCIENCE: CHEMISTRY
Review of mathematics as applied in chemistry, fundamental principles in scientific approach to solving problems, basic concepts of general chemistry. May enroll in a second semester.

1021:100 UNIVERSITY ORIENTATION
1 credit
Acqusitions of the skills, techniques, information, and strategies necessary to assist new students in their transition from high school or work to the college environment.

1021:299 SPECIAL TOPICS: DEVELOPMENTAL PROGRAMS
Selected topics and subject areas of interest in developmental education.

ENGLISH LANGUAGE INSTITUTE

1030:

091 ENGLISH LANGUAGE INSTITUTE: WRITING
Provides intensive instruction in English writing for native speakers of languages other than English who are planning to seek admission to a United States university.

092 ENGLISH LANGUAGE INSTITUTE: READING
Provides intensive instruction in vocabulary and reading skills designed to develop the English reading ability of native speakers of languages other than English who are planning to seek admission to a United States university.

093 ENGLISH LANGUAGE INSTITUTE: SPEAKING/GRAMMAR
Provides intensive instruction in English grammar, with an emphasis on oral skills, for native speakers of languages other than English who are planning to seek admission to a United States university.

094 ENGLISH LANGUAGE INSTITUTE: LISTENING
Provides intensive laboratory and class instruction designed to improve the English listening skills of native speakers of languages other than English who are planning to seek admission to a United States university.

095 ENGLISH LANGUAGE INSTITUTE: COMPREHENSIVE
Provides intensive instruction in English writing, reading, listening, and speaking for speakers of languages other than English who are planning to seek admission to a United States university. Offered only during the summer.

*Institutional credit only

GENERAL STUDIES

1100:

105 INTRODUCTION TO PUBLIC SPEAKING
3 credits
Introduction to principles and practice of speaking by reading examples of speeches, studying techniques, and methods employed in and applying them in a variety of speaking situations.

106 EFFECTIVE ORAL COMMUNICATION
3 credits
Principles of communication in speaker-audience, group and formal settings, and application of the principles in speeches, group discussions and other oral and written assignments.

111.2 ENGLISH COMPOSITION
4 credits each
Sequential proficiency in reading and writing of English is obtained. Reading materials used are literary works of our Western tradition.

115.6 INSTITUTIONS IN THE UNITED STATES
3 credits each
Nonspecialized descriptive and comparative study of development of modern American institutions. Covers various aspects of growth and evolution of American governmental, social and economic institutions.

120-81 PHYSICAL EDUCATION
5 credits each
Participation in individual and group sports; individual can acquire knowledge and skills in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (120-81).

120 ARCHERY
144 SQUARE AND FOLK DANCE

121 BADMINTON
145 SQUASH RACQUETS

122 BASKETBALL
146 SWIMMING (beginning)

123 BOXING
147 SWIMMING (intermediate)

124 CANOEING
148 SWIMMING (advanced)

125 DIVING
149 TEAM HANDBALL

126 FITNESS
150 TENNIS (beginning)

127 GYMNASTICS (apparatus)
151 VOLLEYBALL

128 GYMNASTICS (tumbling)
152 WATER POLO

130 HANDBALL
153 WATER SAFETY

131 INDOOR SOCCER
154 WRESTLING

132 KARATE
170 VARSITY BASEBALL

133 LIFE SAVING
171 VARSITY BASKETBALL

134 MODERN DANCE
172 VARSITY CROSS COUNTRY

135 RACQUETBALL
173 VARSITY FOOTBALL

136 RUGBY
174 VARSITY GOLF

137 SAILING
175 VARSITY EIGHT

138 SCUBA
176 VARSITY SOFTBALL

139 SELF-PROTECTION
177 VARSITY SWIMMING

140 SKIING (cross country)
178 VARSITY TENNIS

141 SKIING (downhill)
179 VARSITY TRACK

142 SOCCER
180 VARSITY WRESTLING

143 SOCIAL DANCE
181 VARSITY VOLLEYBALL

**Varsity sports are one credit each.
1 credit each. Two periods each week.

VARIOUS PROGRAMS

211 NATURAL SCIENCE: BIOLOGY
3 credits
Designed for non-science majors to illustrate fundamental concepts of living organisms with emphasis on man's position in, and influence on, the environment.

221 NATURAL SCIENCE: CHEMISTRY
3 credits
Designed for non-science majors. Introduction to chemical principles at work in man and in the environment.
224 NATURAL SCIENCE: PHYSICS 3 credits
Introduction to and commentary upon, some of the most significant principles, perspectives and developments in contemporary physics. Intended for non-science majors.

332 WESTERN CULTURAL TRADITIONS 4 credits each
Sequential. Prerequisite: 64 credits or permission. Introduction to human experiences of the past as manifested in the ideas music and visual arts of Western civilization. The Greeks to the present. Two lecture/discussions per week. Courses 330-335 are designed to give a basic knowledge of past human experiences and an understanding of current events in some key areas of the non-Western world.

330 EASTERN CIVILIZATIONS: CHINA 2 credits
Prerequisite: 64 credits.

331 EASTERN CIVILIZATIONS: JAPAN 2 credits
Prerequisite: 64 credits.

332 EASTERN CIVILIZATIONS: SOUTHEAST ASIA 2 credits
Prerequisite: 64 credits.

333 EASTERN CIVILIZATIONS: INDIA 2 credits
Prerequisite: 64 credits.

334 EASTERN CIVILIZATIONS: NEAR EAST 2 credits
Prerequisite: 64 credits.

335 EASTERN CIVILIZATIONS: AFRICA 2 credits
Prerequisite: 64 credits.

Air Force ROTC

AEROSPACE STUDIES

1500:

113.4 FIRST YEAR AEROSPACE STUDIES 1.5 credits each (AS100). General Military Course. History of air and space forces. Leadership theory, fundamentals and practices. Communication skills developed. Leadership laboratory.

253.4 SECOND YEAR AEROSPACE STUDIES 1.5 credits each (AS200). General Military Course. History of air power history. Programs, lectures and class discussions. The pre-industrial-military environment is presented. Leadership laboratory.

303.4 THIRD YEAR AEROSPACE STUDIES 3 credits each (AS300). Professional Officer Course. Management concepts in the military. Leadership theory, fundamentals and practices. Communication skills developed. Leadership laboratory.

453.4 FOURTH YEAR AEROSPACE STUDIES 3 credits each (AS400). Professional Officer Course. Focuses attention on the military profession, military justice systems, civil-military interactions, and the framework and formulation of defense policy. Communication skills are developed. Leadership laboratory.

Army ROTC

MILITARY SCIENCE

1600:

100 INTRODUCTION TO MILITARY SCIENCE I 2 credits
A study of the mission of the Army, a geographical and cultural examination of the countries where U.S. soldiers are located, the principles of basic military leadership and management and an analysis of U.S. and Soviet military power. Leadership laboratory required. No military obligation incurred.

101 INTRODUCTION TO MILITARY SCIENCE II 2 credits
A study of the principles, techniques and roles of military leadership and human resource management and analysis of U.S. and Soviet military power. Leadership laboratory required. No military obligation incurred.

200 BASIC MILITARY LEADERSHIP 2 credits
Study of the principles of war and military strategy integrated into a military history program. Leadership laboratory required. No military obligation incurred.

201 SMALL UNIT OPERATIONS 2 credits
Study of the principles and techniques of small unit leadership. Leadership laboratory required. No military obligation incurred.

300 ADVANCED LEADERSHIP I 3 credits
Prerequisites: 100, 101, 200, 201 and/or permission. Study in the application of military tactics and equipment. Practical work with communications equipment. Leadership laboratory required.

301 ADVANCED LEADERSHIP II 3 credits
Prerequisite: 300 or permission. Study of leadership and tactics at the small-unit level. Practical work with land navigation. Leadership laboratory required.

400 MILITARY MANAGEMENT I 3 credits
Prerequisites: 300, 301, or permission. Study of officer management and application of personnel management skills. Leadership laboratory required.

401 MILITARY MANAGEMENT II 3 credits
Prerequisites: 300, 301, or permission. Study of officer management and application of personnel management skills. Leadership laboratory required.

490 SPECIAL TOPICS IN MILITARY SCIENCE 1-3 credits
May be repeated for a maximum of three credits. Prerequisite: permission of instructor. Content varies with special topics. Texts to be selected according to topic, and will use relevant texts periodically to support the course.

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. Application for negotiating separation and divorce agreements, division of personal and real property, income, custody, and future plans. (May be repeated for a maximum of three semester credits).

602 DIVORCE MEDIATION PRACTICUM 2 credits

AFRO-AMERICAN STUDIES

1810:

301 THE CIVIL RIGHTS MOVEMENT IN AMERICA: 1945-1974 3 credits
Social and political actions, events and environment which produced civil rights movement in America. Legal, political and organizational strategies, philosophical arguments, prominent black leaders, and black literature.

401 GENERAL SEMINAR IN AFRO-AMERICAN STUDIES 3 credits
Prerequisite: 300 or permission. Exploration and intensive examination of major issues related to race and minority group relations which normally stand outside the compass of any one subject major area.

420 SPECIAL TOPICS IN AFRO-AMERICAN STUDIES 1-2 credits
(May be repeated for a maximum of three semester credits). Prerequisite: permission of instructor.

HOME-BASED INTERVENTION THERAPY

1820:

603 HOME-BASED INTERVENTION THERAPY 3 credits
Prerequisite: Admission to Program. Overview of home-based intervention to include philosophy and description of his programming as well as assessment of family, their home and community environment.

604 HOME-BASED INTERVENTION TECHNIQUES AND PRACTICE 1 credit
Prerequisite: 603. Provides intervention techniques and skill areas for home-based intervention and learning opportunities for matching techniques with specific family problems.

605 HOME-BASED INTERVENTION INTERNSHIP 3 credits
Prerequisite: 604. Gives student 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.
### ENVIROMENTAL STUDIES

**1830:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>MAN AND THE ENVIRONMENT</td>
<td>2</td>
</tr>
<tr>
<td>490/590</td>
<td>WORKSHOP IN ENVIRONMENT STUDIES</td>
<td>1-4</td>
</tr>
<tr>
<td>602</td>
<td>EVALUATION OF ENVIRONMENT DATA</td>
<td>3</td>
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</table>

### WOMEN'S STUDIES

**1840:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>INTRODUCTION TO WOMEN'S STUDIES</td>
<td>3</td>
</tr>
<tr>
<td>486/686</td>
<td>RETIREMENT INSTITUTE FOR LIFE-SPAN DEVELOPMENT AND GERONTOLOGY</td>
<td>1-3</td>
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### INSTITUTE FOR LIFE-SPAN DEVELOPMENT AND GERONTOLOGY

**1850:**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>450</td>
<td>INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY</td>
<td>2</td>
</tr>
<tr>
<td>485</td>
<td>SPECIAL TOPICS</td>
<td>1-3</td>
</tr>
<tr>
<td>486/696</td>
<td>RETIREMENT SPECIALIST</td>
<td>1-3</td>
</tr>
<tr>
<td>490</td>
<td>WORKSHOP</td>
<td>1-3</td>
</tr>
<tr>
<td>499</td>
<td>PRACTICUM IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY</td>
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### MEDICAL STUDIES

**1880:**

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>201</td>
<td>MEDICAL SEMINAR AND PRACTICUM I</td>
<td>3</td>
</tr>
<tr>
<td>401/501</td>
<td>SPECIAL TOPICS: MEDICAL EDUCATION</td>
<td>1-3</td>
</tr>
<tr>
<td>410</td>
<td>EPIDEMIOLOGY</td>
<td>3</td>
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### ENVIRONMENTAL HEALTH

**1890:**

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>300</td>
<td>INTRODUCTION TO ENVIRONMENT HEALTH</td>
<td>3</td>
</tr>
</tbody>
</table>
INDIVIDUAL STUDIES OR INTERNSHIP IN ENVIRONMENTAL HEALTH 3-9 credits
(May be repeated for a maximum of six credits) Prerequisite: permission of instructor. An internship with an appropriate employer or approved equivalent.

SEMINAR IN ENVIRONMENTAL HEALTH 1 credit
(May be repeated for a maximum of two credits) Prerequisite: permission of instructor. Research reports by faculty, graduate students and invited speakers.

SPECIAL TOPICS IN ENVIRONMENTAL HEALTH 1-3 credits
(May be repeated for a maximum of six credits) Prerequisite: permission of instructor. Special courses offered once or occasionally in areas where no formal course exists.
ASSOCIATE STUDIES — MATHEMATICS

130 INTRODUCTION TO TECHNICAL MATHEMATICS 3 credits
- Elements of basic algebra, operations on signed numbers and polynomials; solutions and applications of first- and second-degree equations; English and metric systems; various types of graphs with applications; linear systems, trigonometry of right triangle. May not be used to fulfill General Studies mathematics requirement.

131 MATHEMATICAL ANALYSIS I 4 credits
- Prerequisites: Two units of high school mathematics, fundamental algebraic concepts, ratio, proportion and variation, graphing equations, right triangle trigonometry, linear systems, factoring and algebraic fractions, quadratic equations, trigonometric functions, oblique triangles, techniques of research, documentation and oral presentations.

132 MATHEMATICAL ANALYSIS II 3 credits
- Prerequisite: 131 or equivalent. Exponents and radicals, exponential equations, logarithms, natural logarithms, trigonometric formulas and identities, complex numbers.

141 MATHEMATICS FOR DATA PROCESSING I 4 credits
- Prerequisites: Two units of high school mathematics, including algebra; Numeration systems, fundamental algebraic concepts and operations; functions and graphs; systems of linear equations, determinants, matrices, factoring and algebraic fractions, and quadratic equations.

142 MATHEMATICS FOR DATA PROCESSING II 3 credits
- Prerequisite: 141 or equivalent. Sets, logic, basic probability and statistics, and mathematics of finance.

151 ELEMENTS OF MATHEMATICS I 2 credits
- Prerequisites: One year of high school algebra or equivalent. Test. Fundamental concepts and operations, functions and graphs, factoring and fractions, variation, quadratic equations.

152 ELEMENTS OF MATHEMATICS II 2 credits
- Prerequisite: 151 or two units of high school mathematics and placement test. Trigonometric functions, systems of linear equations, determinants, trigonometric functions of any angle, the tangent line, radians, the logarithm.

153 ELEMENTS OF MATHEMATICS III 2 credits
- Prerequisite: 152 or equivalent. Complex numbers, vectors and oblique triangles, exponents and radicals, binomial theorem, exponential and logarithmic functions.
210 INTRODUCTION TO INTERPRETING FOR THE DEAF

3 credits
Prerequisites: 104 and 1700:271. Introduction to basic theories, principles and practice of interpreting for the deaf in general and in specialized settings. A survey course intended to familiarize the student with ethics and guidelines appropriate in situations of deafness. This course also emphasizes interpreting processes and skills building.

104 INTRODUCTION TO SECURITY

3 credits
Prerequisites: 290, 2840:100. Designation must meet office certification requirements. Emphasis on basic patrol procedures, traffic enforcement, traffic engineering, and traffic safety education.

105 POLICE PATROL TRAFFIC OPERATIONS

3 credits
Prerequisites: 100. Examination of juvenile justice system, functions of its various components, adolescents subculture, legislation, causative factors, prevention and treatment methodologies and programs.

106 JUVENILE JUSTICE PROCESS

3 credits
Prerequisites: 100. Examination of juvenile justice system, functions of its various components, adolescents subculture, legislation, causative factors, prevention and treatment methodologies and programs.

107 MENTAL HEALTH AND THE CRIMINAL JUSTICE PROCESS

3 credits
Prerequisite: 100. In-depth exploration stressing philosophy that social values and ethics are basic principles of a sound criminal justice process. Roles of administration of justice practitioners in relation to public they serve.

108 CRIMINAL JUSTICE THEORY AND PRACTICE

3 credits
Prerequisites: 100, 2840:100. Determination and application of criminal justice administrative issues in personnel selection, training, achievement and personnel utilization. Complexity and cooperation between agencies. Advanced concepts for change within criminal justice system.

109 POLICE PATROL TRAFFIC OPERATIONS

3 credits
Prerequisites: 100. Designation must meet office certification requirements. Emphasis on basic patrol procedures, traffic enforcement, traffic engineering, and traffic safety education.

110 DYNAMICS OF VICE CRIME AND SUBSTANCE ABUSE

3 credits
Prerequisites: 100 and permission. Introduction to problems of vice crime and narcotics and drug abuse in our society. An examination of knowledge concerning issues involved in conceptual aspects of impact on society of physical and psychological results of substance abuse.

111 CRIMINAL CASE MANAGEMENT

3 credits
Prerequisites: 100 and permission. Reconstruction of chronological sequences of a crime including searching, preserving and evaluation of Physical and oral evidence. Scientific approach to criminal investigation.

112 SPECIAL TOPICS: CRIMINAL JUSTICE

1 credit
May be repeated for a total of six credits. Prerequisite: permission. Workshops and special programs in selected areas of criminal justice such as community relations, crime statistics, etc.

113 SPECIAL TOPICS: CRIMINAL JUSTICE

1 credit
May be repeated for a total of six credits. Prerequisite: permission. Workshops and special programs in selected areas of criminal justice such as community relations, crime statistics, etc.

114 SPECIAL TOPICS: CRIMINAL JUSTICE

1 credit
May be repeated for a total of six credits. Prerequisite: permission. Workshops and special programs in selected areas of criminal justice such as community relations, crime statistics, etc.

115 SPECIAL TOPICS: CRIMINAL JUSTICE

1 credit
May be repeated for a total of six credits. Prerequisite: permission. Workshops and special programs in selected areas of criminal justice such as community relations, crime statistics, etc.

116 CRIMINAL JUSTICE INTERNSHIP EVALUATION

1 credit
Prerequisite: 100. Thirty credits and permission. Supervised work experience in criminal justice agency on purpose of increasing student understanding of criminal justice process.
COMMERCIAL ART

2240:

110 MULTI-IMAGE PRODUCTION 3 credits
Prerequisites: 710:275 or 760:282. Students explore the equipment, techniques, and applications of multi-image presentations (with a producing a synchronized multi-projector A/V show).

122 INTRODUCTION TO COMMERCIAL PHOTOGRAPHY 3 credits
Prerequisite: 710:275. While working through a series of advertising-related photographic projects, students are introduced to the numerous commercial applications of studio and location photography.

124 DESIGN IN COMMERCIAL ART 3 credits
Projects in visual design fundamentals. Analysis of design/search process applied to advertising layout and composition. Design construction in pattern and self-contained forms.

130 MARKER RENDERING 3 credits
Prerequisites: 194, 710:121, 710:122. Teaches drawing and rendering skills utilizing markers and common visual languages necessary for communication with design professionals. Projects on various papers for comprehensive studio knowledge.

140 TYPOGRAPHY AND LETTERING 3 credits
Prerequisite: 194. Letter symbols studied in terms of communication and aesthetic design. History of letter forms, type indication, copyfitting and type specification for commercial application. Analysis of contemporary typography.

210 PORTRAIT/FASHION PHOTOGRAPHY 3 credits
Prerequisite: 122. The fundamentals of commercial portrait and fashion photography and explored through the study of styling, posing, lighting, and working with people.

224 ILLUSTRATION/ADVERTISING PHOTOGRAPHY 3 credits
Prerequisite: 122. Creative photographic skills are further developed at student-confront assignments closely related to current trends in illustration and advertising photography.

242 ADVERTISING LAYOUT DESIGN 3 credits
Prerequisite: 140. Problems in commercial graphic design, analysis, research, visual experiment and finished art. Emphasis on visual problem solving in advertising and communications.

245 DESIGNING FOR PRODUCTION 3 credits
Prerequisite: 140. Letter symbols studied in terms of communication and aesthetic design. History of letter forms, type indication, copyfitting and type specification for commercial application. Analysis of contemporary typography.

246 PUBLICATION DESIGN 3 credits
Prerequisite: 242, 245. Visual design and development of protective devices for packaging, shipment and display of consumer products. Analysis of product marketing potential and point of purchase advertising.

250 ADVANCED COMMERCIAL PHOTOGRAPHY 3 credits
Prerequisites: 210 and 224. Students explore advanced techniques within a commercial photography specialty of their choice while producing photographs for a commercially oriented portfolio.

252 PROFESSIONAL PHOTOGRAPHIC PRACTICES 3 credits
Prerequisites: 210 and 224. Students confront the business and marketing practices unique to the commercial photography industry while producing a photographically oriented self-promotional campaign.

290 SPECIAL TOPICS: COMMERCIAL ART 1-3 credits
Prerequisite: permission of instructor. Selected topics or subject areas of interest in commercial art.

295 PRACTICUM IN COMMERCIAL ART 1-2 credits (Repeatable to a maximum of nine hours.) Prerequisite: 760:231, 232, 233. Extended by portfolio competition or permission of the instructor. Provides experience through an intern placement and design studio. Involves responsibilities for the design and production of commercial materials. Includes organizational, accounting and managerial responsibilities.

PUBLIC SERVICE TECHNOLOGY

2250:

260 ADMINISTRATION AND SUPERVISION IN THE PUBLIC SERVICE 3 credits
Prerequisite: 2250:100 or 2250:101. Study of basic concepts of administration, organization, supervision, policy formulation as they pertain to public service agencies. Practical applications of supervisory responsibilities. Functions of police departments.

COMMUNITY SERVICES TECHNOLOGY

2260:

100 INTRODUCTION TO COMMUNITY SERVICES 3 credits
Introductory course to familiarize student with role of community services technician in service delivery. Uses, history and rationale for paraprofessionals, programs, volunteer experiences, self-awareness and interaction in community services.

150 INTRODUCTION TO GERONTOLOGICAL SERVICES 3 credits
Prerequisites: Basic knowledge to gerontology and role of community service technician in service delivery to aged. Topics include social, biological, economic and psychological aspects of aging, national and state legislation, services and service provider evaluation.

230 COMMUNITY-BASED RESIDENTIAL SERVICES 3 credits
Prerequisites: Core knowledge of community-based residential services and role of community services technician in service delivery to mentally disabled. Includes historical, social and legal forces in community-based services and practical aspects of operation of a residential facility.

232 ADVOCACY FOR THE DISABLED 3 credits
Prerequisites: 240 or permission. Continued in-depth exploration of service use patterns, causes of chemical abuse and treatment modalities. Skills to develop alternatives to drug abuse are reviewed.

250 COMMUNITY SERVICES FOR SENIOR CITIZENS 3 credits
Prerequisites: 150. A study of national and community resources for social service delivery to senior citizens. Specific agencies, program needs and senior citizens and resultant services.

253 RESIDENT ACTIVITY COORDINATION 3 credits
Prerequisites: 250. Designed to help student to work as a resident activity coordinator in Ohio nursing homes. General topics include: assessing and understanding the patient, administration of activities program, techniques of program planning.

260 ALCOHOL USE AND ABUSE 3 credits
Prerequisites: 260. Survey of use and abuse of alcohol in our society with particular emphasis on replacing common stereotypes, myths and attitudes with empirical understanding.

261 ALCOHOLISM TREATMENT 3 credits
Prerequisite: 260. Survey of theory and techniques in treatment of alcohol problems. Special emphasis on applicability and effectiveness of various resources and approaches.

262 BASIC HELPING SKILLS IN ALCOHOL PROBLEMS 4 credits
Prerequisite: 261 or permission. Introduces students to basic concepts of helping skills, provides opportunity to help develop ability to give and receive feedback about relevancy and effectiveness of behavior, develops responsibility for their own learning as related to working with alcohol problems.

263 GROUP PRINCIPLES IN ALCOHOLISM 1 credit
Prerequisite: 260 or permission. Introduces students to group dynamics, provides opportunity to increase self-image and group members, explores unique factors in alcoholism that influence group treatment. Practical group dynamics sessions.

264 ADOLESCENT CHILDREN OF ALCOHOLICS 1 credit
A didactic and experiential study of the characteristics, behaviors, problems and program of recovery of children and adults who have lived in an alcoholic home.

265 WOMEN AND CHEMICAL DEPENDENCY 3 credits
Prerequisites: 260 or permission. Exploration of social, psychological, physical and family consequences as contributing factors in the misuse of alcohol and drugs by women.

276 TECHNIQUES OF COMMUNITY WORK 4 credits
Prerequisite: 260 or permission. For those intending to work at community organization and outreach assignments in inner city and other poverty areas in the United States and for others desiring an understanding of both newly developing technical community service roles.

279 TECHNICAL EXPERIENCE IN COMMUNITY AND SOCIAL SERVICES 5 credits
Prerequisite: 276. Field experience.

280 FUNDAMENTALS OF VOLUNTEER MANAGEMENT 3 credits
Prerequisites: Permission. Provides community services technician with an understanding of the role of volunteers in community services. Includes legal and ethical issues, recruitment, training, evaluation, supervision, recognition, evaluation and hours.

281 RECRUITMENT AND INTERVIEWING OF VOLUNTEERS 3 credits
Prerequisites: 280 or permission. Will provide the student with knowledge for recruitment and interviewing of persons seeking volunteer positions. Will cover writing of volunteer job descriptions, methods of recruitment, techniques of interviewing, confrontation interviewing skills.

286 COUNSELOR ASSISTANT INTERNSHIP 4 credits
Prerequisite: Permission. Integrates counselor assistant experience with fundamental concepts and skills from academic studies. Students required to complete 200 hours of supervised field experience.

290 SPECIAL TOPICS: COMMUNITY SERVICES TECHNOLOGY 1-3 credits
Prerequisite: Permission. Selected topics or subject areas of interest in community services technology.

297 INDEPENDENT STUDY 1-3 credits
Prerequisites: Permission. Selected topics or subject areas of study under the supervision and evaluation of a selected faculty member with whom specific arrangements have been made.

LABOR STUDIES

2270:

101 INTRODUCTION TO LABOR STUDIES 3 credits
Overview of trade unionism in America from 18th Century to present with emphasis on factors leading to growth of union. Role of industrial unionism as alternative to craft unions. Trade union movements in other countries examined for their influence on American unions.

111 COLLECTIVE BARGAINING 3 credits
### HOSPITALITY MANAGEMENT

**2280:**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>122</td>
<td>LEGAL FRAMEWORK FOR COLLECTIVE BARGAINING</td>
<td>3 credits</td>
<td>Legal framework within which collective bargaining process takes place. Rights of employees, union, employer under federal and state laws discussed in context of organizing, election, and bargaining.</td>
</tr>
<tr>
<td>123</td>
<td>LABOR LEGISLATION AND ECONOMIC SECURITY</td>
<td>3 credits</td>
<td>Prerequisite: 122 or permission. Federal and state legislation governing employment conditions and standards. Includes minimum wage, health and safety, unemployment compensation, OSHA, and anti-discrimination. Social security, labor management reporting and disclosure.</td>
</tr>
<tr>
<td>212</td>
<td>COLLECTIVE BARGAINING II</td>
<td>3 credits</td>
<td>Prerequisite: 111. Mechanics and skills of formal grievance procedure in industrial, craft and public employees. Investigation and resolution of grievances, as well as role of arbitrator.</td>
</tr>
<tr>
<td>211</td>
<td>OCCUPATIONAL HEALTH AND SAFETY STANDARDS</td>
<td>3 credits</td>
<td>Prerequisite: 122. Study of OSHA, safety and health laws and regulations. Includes legal requirements and responsibilities for the protection of the workplace.</td>
</tr>
<tr>
<td>224</td>
<td>LABOR LAW IN THE PUBLIC SERVICE</td>
<td>3 credits</td>
<td>Prerequisite: 271. Provides basic understanding of public sector labor law and union organizing.</td>
</tr>
<tr>
<td>234</td>
<td>FAIR PRACTICES AND EQUAL OPPORTUNITY</td>
<td>2 credits</td>
<td>Prerequisite: 101. Rights and responsibilities of unions and union members as related to Title VII of the Civil Rights Act. The Young Rights Act and development of EEOC.</td>
</tr>
<tr>
<td>241</td>
<td>UNION LEADERSHIP</td>
<td>2 credits</td>
<td>Prerequisite: 101. Specific skills related to administration of local union structure and duties and responsibilities of officers.</td>
</tr>
<tr>
<td>251</td>
<td>PROBLEMS IN LABOR STUDIES</td>
<td>3 credits</td>
<td>Prerequisite: 122. Final semester seminar. Each student required to combine field research and classroom time to identify, explore and propose an approach to a current problem in labor-management relations.</td>
</tr>
<tr>
<td>261</td>
<td>INAGE ADMINISTRATION</td>
<td>3 credits</td>
<td>Prerequisites: 101, 111 or 122. Wage and salary determination, structure of wages and salaries, and fringe benefits and use of merit and incentive plans. Methods of compensation analysis. Impact of federal and state laws governing the payment of wages.</td>
</tr>
<tr>
<td>290</td>
<td>SPECIAL TOPICS: LABOR STUDIES</td>
<td>1-2 credits</td>
<td>(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or workshops in labor studies.</td>
</tr>
</tbody>
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### LEGAL ASSISTING

**2290:**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>INTRODUCTION TO LEGAL ASSISTING</td>
<td>3 credits</td>
<td>Covers the basics of legal assisting emphasizing the fundamental concepts of the legal system. Includes an overview of legal assisting career and ethical considerations.</td>
</tr>
<tr>
<td>102</td>
<td>BASIC LEGAL RESEARCH AND WRITING</td>
<td>3 credits</td>
<td>Prerequisite: 101. Will provide the student with basic research abilities necessary in law office. Includes use of law library tools (reporter systems, legal encyclopedias, codes, and computer).</td>
</tr>
<tr>
<td>110</td>
<td>TORT LAW</td>
<td>3 credits</td>
<td>Prerequisite: 101. Covers the traditional civil wrongs, from the plaintiff’s and defendent’s standpoint. Actual cases will be tailored and discussed. Stresses importance of preparation prior to trial.</td>
</tr>
<tr>
<td>111</td>
<td>FAMILY LAW</td>
<td>3 credits</td>
<td>Prerequisite: 101. Covers divorce and dissolution of marriage including child support, custody, alimony, etc. Client interviewing skill, the law, and procedures. Stressing the importance of clear, concise legal writing. Students will write briefs, motions, and complaints as part of their coursework.</td>
</tr>
<tr>
<td>120</td>
<td>ADVANCED LEGAL RESEARCH</td>
<td>3 credits</td>
<td>Prerequisite: 101, 04 Continuation of 104. Will expose students to the basic research and writing tools necessary for successful housekeeping department.</td>
</tr>
<tr>
<td>121</td>
<td>CIVIL PROCEDURE</td>
<td>3 credits</td>
<td>Prerequisite: 101. Covers aspects of legal assisting in different types of civil litigation. Includes all the important rules of discovery, motions, and pretrial practice.</td>
</tr>
<tr>
<td>122</td>
<td>DEBTOR-CREDITOR RELATIONS</td>
<td>3 credits</td>
<td>Prerequisite: 101. Covers bankruptcy, collection methods, consumer law, and credit. Includes a view of the court system and procedures and the numerous forms that are part of this practice.</td>
</tr>
<tr>
<td>123</td>
<td>ADVANCED PROBATE ADMINISTRATION</td>
<td>3 credits</td>
<td>Prerequisite: 101, 118. This is a continuation of 110 but will cover more complicated trusts and estates and will stress both state and federal tax forms.</td>
</tr>
<tr>
<td>220</td>
<td>LEGAL ASSISTING INTERNSHIP</td>
<td>4 credits</td>
<td>Prerequisite: 101. Student must have completed all first-year courses. Gives student experience in law firm and related office. Students work 14 hours per week in their placement and meet regularly with the Internship Coordinator.</td>
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</tbody>
</table>
REAL ESTATE

2430: Real Estate

105 REAL ESTATE PRINCIPLES
3 credits
Introduction to real estate as a profession, process, product and measurement of its productivity. The student is responsible for reading and discussions relative to real estate and the American system.

115 ELEMENTS OF HOUSING DESIGN AND CONSTRUCTION
2 credits
Prerequisites: 105, 185. Discussions and readings on neighborhoods and sites, details of the interior and exterior of homes, mechanical systems and house construction which help professionals discharge agency responsibilities.

125 ELEMENTS OF LAND AND REAL ESTATE DEVELOPMENT
2 credits
Prerequisites: 105, 185. Learning and applying step-by-step processes needed by professional developer in producing real estate for consumption.

185 REAL ESTATE LAW
2 credits
Prerequisite: 105. Concepts of contemporary real estate law. The student is responsible for readings covering units on estates, property rights, license laws, contracts, deeds, mortgages, civil rights and zoning.

205 INTRODUCTION TO REAL ESTATE MANAGEMENT
3 credits
Prerequisites: 105, 185. Survey course focusing on application of management process to the specialized field and product of real estate. Discussion and research topics include property analysis, marketing and administration.

215 ESSENTIALS OF REAL ESTATE ECONOMICS
2 credits
Prerequisites: 105, 185. Student learns and applies techniques of analysis found in economics to local real estate market and to parcels of real estate found within the market.

225 INDUSTRIAL REAL ESTATE
2 credits
Prerequisites: 105, 185. Elements course focusing on functions of industrial real estate broker. Topics of discussion and research include site selection, development, marketing and financing transfer of industrial property.

235 COMMERCIAL REAL ESTATE
2 credits
Prerequisites: 105, 185. Elements course focusing on functions of commercial real estate broker. Topics of discussion and research include site selection, development, marketing and financing transfer of commercial paper.

245 REAL ESTATE FINANCE
2 credits
Prerequisites: 105, 185. Study of contents of contemporary real estate finance. Units on reading and discussion include mortgage instruments, financial institutions, mortgage market, government influence on finance and risk analysis and mortgage lending.

255 VALUATION OF RESIDENTIAL PROPERTY
2 credits
Prerequisites: 105, 185. Learns to estimate value in residential property including cost of reproduction, market data and income approach. Student prepares an appraisal on a residential property.

265 REAL ESTATE BROKERAGE
2 credits
Prerequisites: 105, 185. Application of management functions of planning, organizing, directing, controlling and starting to real estate brokerage office. Student activities include reading, discussion and research.

275 SPECIAL PROJECT IN REAL ESTATE
2 credits
Prerequisites: 105, 185. Student learns and applies main concepts to profession of real estate. Topics include proration of taxes, area calculations, appraising mathematics, mortgage mathematics and closing statements.

290 SPECIAL TOPICS: REAL ESTATE
1-3 credits
Prerequisite: permission. Selected topics or subject areas of interest in business management technology.
MARKETING AND SALES TECHNOLOGY
2520:

103 PRINCIPLES OF ADVERTISING 3 credits
Review of basic principles and functions of current advertising practice. Includes overview of traditional and electronic communication media, types and economic functions of advertising and promotional techniques.

106 VISUAL PROMOTION 3 credits
Studio course in retail display and promotion techniques. Window, interior and point-of-purchase categories; principles of design as applied to commercial art; function in visual design; elements of design, color theory, lettering, printing process, layout to camera-ready art.

201 PRINCIPLES OF WHOLESALEING 3 credits
Examination of wholesaler and wholesaling function. Attention given to buying process and relationship of wholesaler to wholesaler.

202 RETAILING FUNDAMENTALS 4 credits
Presents basic principles and practices of retailing operations, including site selection, buying, pricing and promotion philosophies. Use is made of extensive projects and investigations and actual retail operations.

203 FUNDAMENTALS OF INDUSTRIAL DISTRIBUTION 3 credits
Prerequisite: 2420 101. An introductory examination of the industrial distribution network and pertinent middlemen involved. Includes wholesalers, service institutions and other channel members.

207 TECHNIQUES OF MERCHANDISING RESEARCH 2 credits
Prerequisite: 2420 101. Discussion of research for merchandise concepts, in planning research. Approach to research in a non-mathematical approach to analysis. Case histories of small merchandising.

210 CONSUMER SERVICE FUNDAMENTALS 2 credits
Prerequisite: 2420 101. Discussion of courses facing business today created by social issues in society. Emphasis on understanding viewpoints of all groups involved.

211 MATHEMATICS OF RETAIL DISTRIBUTION 3 credits
Prerequisite: 2420 170. Basic course dealing with merchandising mathematics. Includes understanding markup types, retail method of inventory, sales and stock planning and open-to-buy computations.

212 PRINCIPLES OF SALES 2 credits
Study of basic principles of selling, emphasizing individual demonstrations and sales projects. Includes review of sales function as integral part of marketing process.

215 ADVERTISING PROJECTS 2 credits
Prerequisites: 2420 101, 103. A workshop for students interested in developing their creative and creative professional skills. Projects would include "real world" situations facing prospective users of advertising.

217 MERCHANDISING PROJECTS 2 credits
Prerequisites: 2420 101, 250. Students would be charged with "creating" a retail operation including the establishment and defense of planning, site selection, merchandise and pricing strategies.

219 SALES PROJECTS 2 credits
Prerequisite: 212. Allows students to sharpen skills necessary to make an effective sales presentation. Extensive use of video tape analysis, team as well as individual sales presentations.

221 AAF ADVERTISING CAMPAIGN I, II 3 credits
Prerequisite: 211. A workshop for students interested in developing their advertising techniques. Course looks at advertising in our society and how and why it has been used by advertising practitioners, uses individual and group projects.

290 SPECIAL TOPICS: MARKETING AND SALES 1-3 credits
May be repeated for a total of four credits. Prerequisite: permission. Selected topics or subject areas of interest in sales and merchandising.
141 PC WORD PROCESSING FOR NONMAJORS 2 credits
Prerequisite: 150 or 140, or permission. Introduction to word processing software for non-major administration majors. Training on personal computers for personal and business communication using various word processing software.

150 BEGINNING KEYBOARDING 3 credits
For the beginning student or one who desires a review of fundamentals. Includes basic keyboard, letters, and tables and manuscripts. Minimum requirement: 30 wam with a maximum of 5 errors for 3 minutes.

151 INTERMEDIATE KEYBOARDING 3 credits
Prerequisite: 150 or equivalent. Further development of typewriting. Advanced letter styles, forms, reports, and shortcuts. Minimum requirement: 40 wam with a maximum of 5 errors for 5 minutes.

171 SHORTHAND PRINCIPLES 4 credits
Gregg shorthand theory is taught. Minimum attainments: reading from notes at 100 wam and taking dictation from material at 50 wam for 3 minutes. Credit not allowed if taken after 172.

172 SHORTHAND REFRESHER AND TRANSCRIPTION 4 credits
Accelerated review of Gregg shorthand theory. Minimum attainments: reading from notes at 100 wam and taking dictation from new material at 60 wam for 3 minutes. Credit allowed if taken after 171.

173 SHORTHAND AND TRANSCRIPTION 4 credit
Prerequisite: 171; corequisite or prerequisite: 151. Emphasis on overcoming skill in taking shorthand dictation and transcribing at typewriter. Minimum speed attainment of 70 wam on new material required.

241 INFORMATION MANAGEMENT 3 credits
Prerequisite: 150 or equivalent. Study of creation, classification, encoding, transmission, storage, retention, transfer and disposition of information. Emphasis on written, oral and machine language communication media used in business information systems.

243 INTERNSHIP 2 credits
Prerequisite: Permission of instructor. Work experience in office environment integrates computer and human factors information on instruction on information management systems. Sharing of knowledge gained during internship on-campus seminars.

247 AUTOMATED OFFICE SYSTEMS 4 credit
Prerequisite: 151. Examination of automated methods of controlling information. Application of office information management techniques.

253 ADVANCED KEYBOARDING 3 credits
Prerequisite: 151 or equivalent. To increase student's ability to do office-style production typewriting with minimal supervision. Minimum requirement: 50 wam with a maximum of 5 errors for 5 minutes.

254 LEGAL KEYBOARDING 2 credits
Prerequisite: 151. Develops skill in typing legal documents and printed legal forms from rough draft materials; from straight copy material.

283 BUSINESS COMMUNICATIONS 3 credits
Prerequisite: 159 and 220 or equivalent. Business writing with emphasis on communicating in typical business situations and expressing ideas effectively to achieve specific purposes. Includes business letters, memorandums, application letters, resumes and a business report.

284 ADVANCED BUSINESS COMMUNICATIONS 3 credits
Prerequisite: 159 and 220 or equivalent. Provides information about business and practice in oral and advanced written communications to strengthen skills necessary in today's business world.

285 WOMEN IN MANAGEMENT 3 credits
Deals with gender-related needs and problems of women in management and supervision.

287 ADVANCED DICTATION AND TRANSCRIPTION 4 credits
Prerequisite: 173 or equivalent. Emphasis on building dictation speed, producing manuscripts; increasing shorthand and shorthand vocabulary and reviewing theory and expert shortcuts. Minimum speed attainment: 90 wam for 5 minutes.

275 ADMINISTRATIVE OFFICE PROCEDURES 3 credits
Prerequisite: 125, 253, and 281. Corequisite: 281. An integrated approach in applying the knowledge and skills necessary to perform efficiently and effectively in an office administration career.

286 EXECUTIVE DICTATION AND TRANSCRIPTION 4 credits
Prerequisite: 173, and 220 or equivalent. Emphasizes work in shorthand speed transcription. Repeated use of shorthand dictation and transcribing. Role of shorthand reporter.

287 LEGAL DICTATION AND TRANSCRIPTION 4 credits
Prerequisite: 274. Develops shorthand and transcription skills of legal correspondence, basic pleadings, legal papers, reports and rules of practice. Minimum speed at end of course is 100 wam.

288 INTERNSHIP FOR LEGAL SECRETARIAL MAJORS 2 credits
Prerequisite: Permission of instructor. Work experience in a law office environment integrated with academic instruction to combine theory with on-the-job performance.

289 LEGAL OFFICE PROCEDURES 4 credits
Prerequisite: 254, corequisite: 277. Provides an understanding of various facets of the law, legal and practice to use documents, important legal procedures and typical office routine.

290 WORD PROCESSING CONCEPTS 2 credits
Modern word processing and administrative management principles and procedures, selection, operation and control of office functions. Special emphasis given to secretary's dual role as administrative assistant and corresponding secretary.

291 MACHINE TRANSCRIPTION 2 credits
Prerequisite: 151 or permission. Transcription from taped dictation with emphasis on the accuracy of the resulting document. Special emphasis on developing accuracy, increasing productivity will be emphasized.

295 KEYBOARDING ON WORD PROCESSING EQUIPMENT 3 credits
Prerequisite: 252 or permission. Demonstration and laboratory practice on various word processing machines used to process data in a modern office. Word processors include those with a magnetic or electronic storage.

296 WORD PROCESSING APPLICATIONS 3 credits
Prerequisite: 266. Simulation of word processing center. Students assume a dual role as a typist-secretary and supervisor.

298 WORD PROCESSING ON COMPUTERS 2 credits
Prerequisite: 286 or permission. Use of a word processing software package for advanced text and table editing, basic math functions, disk file management, library function, text merging and dictionaries.

299 SPECIAL TOPICS: SECRETARIAL SCIENCE 1 credit
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest.
196 2740: Medical Assisting

MEDICAL ASSISTING

2740:

100 INTRODUCTION TO MEDICAL ASSISTING 2 credits
Prerequisite: admission to program. Introduction to field of radiology including history of medicine and radiology. Ethical and professional responsibilities of radiologic technologists. Basic protection and basic skills. Orientation to radiology departments of affiliated hospitals.

140 MEDICAL AND SURGICAL DISEASES, RADIOLOGY 3 credits
Prerequisites: 101 and 161. Fundamental principles of disease processes, functional derangements. Background in pathology needed for radiographer will be provided by lecture and laboratory demonstrations.

151 PHYSICAL SCIENCE FOR RADIOLOGIC TECHNOLOGY I 2 credits
Prerequisites: 202, 210, and 121. Introduction to systems of measurement. Matter, force, motion, work, power, energy, basic electricity and magnetism.

185 A Radiographic Principles I 3 credits

190 RADIOGRAPHIC POSITIONING I 3 credits

191 RADIOGRAPHIC POSITIONING II 3 credits

286 CLINICAL APPLICATION III 5 credits
Prerequisite: 185. Summer clinic internship in which student practices all radiographic procedures under supervision. Some independent performance with minimal supervision.

287 CLINICAL APPLICATION IV 4 credits
Prerequisites: 286 and permission. Clinical performance with supervision. Application of advanced level Special techniques, nuclear medicine, therapy, medical surgical pathology, x-ray examination and critique. Maintenance of equipment, department administration, ethical, legal, and professional responsibilities. Clinical experience in hospital radiology departments.

288 CLINICAL APPLICATION V 4 credits
Prerequisite: 287. Clinical experience and minimal supervised clinical procedures of diagnostic radiology.

289 CLINICAL APPLICATION VI 5 credits
Prerequisite: 288. Continuation of 288; first internship. Terminal course including review, lecture on correlation and interpretation of radiologic technology. Prepares student for certification examination.

290 SPECIAL TOPICS: RADIOLOGIC SCIENCE 1-3 credits
(May be repeated with a change in topic.) Prerequisite: permission. More advanced study in one or more topics in radiologic sciences. Emphasis and topics vary from year to year but will be in areas where a formal course is not otherwise available.

RADIOLOGIC TECHNOLOGY

2760:

101 INTRODUCTION TO RADIOLOGIC TECHNOLOGY 2 credits
Prerequisite: admission to program. Introduction to field of radiology including history of medicine and radiology. Ethical and professional responsibilities of radiologic technologists. Basic protection and basic skills. Orientation to radiology departments of affiliated hospitals.

140 MEDICAL AND SURGICAL DISEASES, RADIOLOGY 3 credits
Prerequisites: 101 and 161. Fundamental principles of disease processes, functional derangements. Background in pathology needed for radiographer will be provided by lecture and laboratory demonstrations.

185 A Radiographic Principles I 3 credits

190 RADIOGRAPHIC POSITIONING I 3 credits

191 RADIOGRAPHIC POSITIONING II 3 credits

260 CLINICAL EXPERIENCE IN MEDICAL ASSISTING 3 credits
Prerequisites: 155 and permission. A period of practice experience held in the office of a qualified physician.

290 SPECIAL TOPICS: MEDICAL ASSISTING 1-2 credits
Prerequisite: permission. Selected topics or workshops of interest in medical assisting technology.

SURGICAL ASSISTING

2770:

100 INTRODUCTION TO SURGICAL ASSISTING TECHNOLOGY 4 credits
Prerequisite: admission to the program. Study of basic principles which underlie patient care in the operating room. Role of operating room technician and legal responsibilities defined.

121 SURGICAL ASSISTING PROCEDURES I 2 credits
Prerequisite: 100. Didactic and laboratory practice in principles and practices of surgical assis­ting, the surgical patient, surgical procedures, care and maintenance of equipment and materials, immediate postoperative responsibilities and emergency situations in operating room.

131 CLINICAL APPLICATION I 2 credits
Corequisites: 100 and 121. Student assigned to surgical service of affiliated hospitals. Emphasis on aseptic techniques and skills associated with their implementation.

148 SURGICAL ANATOMY I 2 credits
Corequisites: 300, 301, 302, 303. Emphasis on human anatomy and understanding the body in its three dimensions and the relationships of parts to one another in the various surgical specialties.

151 CLINICAL EXPERIENCE I 2 credits
Corequisites: 100, 121. Clinical experience in campus laboratory and surgical unit of affiliated hospitals. Involves emphasis on aseptic techniques, patient care concepts and suture techniques.

152 CLINICAL EXPERIENCE II 3 credits
Prerequisites: 100, 121, 151. Corequisites: 148. Students assigned to assist in surgery and carry out preoperative and postoperative care procedures under supervision of surgeon or resident surgical staff.

153 CLINICAL EXPERIENCE III 5 credits
Prerequisite: 152. Students assigned to surgical services of affiliated hospitals to assist in surgery and carry out preoperative and postoperative care procedures as assigned by, and under the supervision of, surgeon or resident surgical staff.

222 SURGICAL ASSISTING PROCEDURES II 4 credits
Prerequisite: 121. Continuation of 221.

223 CLINICAL APPLICATION II 5 credits
Prerequisite: 131, corequisite: 222. Student assigned to surgical service of affiliated hospitals. Emphasis on "scrubbing" in general surgery and gynecology procedures.

233 CLINICAL APPLICATION III 5 credits
Prerequisites: 223 and 222. Student assigned to surgical service of affiliated hospitals. Emphasis on "scrubbing" in the specialty areas.

234 CLINICAL APPLICATION IV 2 credits
Prerequisites: 223 and 224. A student is assigned to surgical services of affiliated hospitals. Assists in surgery and carries out preoperative and postoperative care procedures as assigned by, and under the supervision of, the surgeon or the resident surgical staff.

236 CLINICAL APPLICATION V 2 credits
Prerequisite: 234. A student is assigned to surgical services of affiliated hospitals. Assists in surgery and carries out preoperative and postoperative care procedures as assigned by, and under the supervision of, the surgeon or the resident surgical staff.

237 INTRODUCTION TO MEDICINE 2 credits
Prerequisites: 241, 242. Pathophysiology, clinical manifestations, therapeutic management of medically related disorders.

244 MEDICAL HISTORY AND PHYSICAL EVALUATION 2 credits
Prerequisites: 241, 242. Techniques of obtaining medical histories and physical evaluations. Techniques of interviewing and physical diagnosis.

245 ROENTGENOGRAM ASSESSMENT 1 credit
Prerequisites: 243, 244. An introduction to the detection of gross abnormalities in roentgenograms of the head, neck, chest, abdomen, pelvis and extremities.

246 MEDICAL LABORATORY PROCEDURES 1 credit
Prerequisites: 242. An introduction to the detection of gross abnormalities in roentgenograms of the head, neck, chest, abdomen, pelvis and extremities.

247 PULMONARY ASSESSMENT AND ELECTROCARDIOGRAPHY 2 credits
Prerequisites: 242. Oxygen administration, humidity control, breathing exercises, postural drainage, percussion techniques, intermittent positive pressure breathing, management of ventilators and bedside ventilation measurements. Electrocardiogram recording techniques, interpretation of electrocardiographic abnormalities and arrhythmias.

249 SURGICAL ANATOMY II 3 credits
Prerequisite: 148. Emphasis on human anatomy and understanding the body in its three di­mensions and the relationships of parts to one another in the various surgical specialties.
ALLIED HEALTH

2780:

101 INTRODUCTION TO PHYSICAL THERAPY  2 credits
Prerequisite: History of physical therapy, survey of treatment procedures. Role and rationale for physical therapist assistant. Legal, ethical responsibilities.

106, 107 ANATOMY AND PHYSIOLOGY FOR ALLIED HEALTH I, II  3 credits each
Prerequisite: permission. Introduction to the study of human structure and function. No laboratory. (Will not satisfy General Studies science requirement.)

2790:

121 INTRODUCTION TO RESPIRATORY CARE  2 credits
Prerequisite: admission to program. Basic science and laws governing gasses as well as apparatus to administere and monitor oxygen. Covers equipment used to generate and give aerosol therapy. Lecture/ laboratory.

122 RESPIRATORY PATIENT CARE  3 credits
Prerequisites: 121, 3100:206. Conveys basic hospital practices in patient care: suctioning and care of the suction machine, patient care in the hospital, and hands-on experience on hospital equipment. Laboratory.

123 MECHANICAL VENTILATORS  2 credits
Prerequisite: 122, 131, 141. Introduction to different brands of ventilators and their functions. Airway and airway complications.

131 CLINICAL APPLICATIONS I  3 credits
Prerequisites: 121, 3100:206. Corequisite: 3100:207. Full admission to the program. (Implies the student has a clinical space. Students identified as Alternates do not have a clinical space.) Introduces student to patient needs in hospital and hands-on experience on hospital equipment. Laboratory.

132 CLINICAL APPLICATIONS II  2 credits
Prerequisites: 122, 131, 141, 3000:207. First of several rotations through hospitals. Mechanical ventilation is stressed.

133 CLINICAL APPLICATIONS III  5 credits
Prerequisites: 123, 132, 201. Semester is broken into three, five-week rotations, one at each hospital to cover specialty area for that site. Laboratory.

134 CLINICAL APPLICATIONS IV  5 credits
Prerequisites: 133, 142, 223. Semester has three, five-week sessions. Thee, will be spent at different clinical sites working on their specialty areas. Laboratory.

141 PHARMACOLOGY  2 credits
Corequisites: 2840:100 and 3100:130. Drugs administered by respiratory therapy and effect, route of action in the body. Lecture.

142 PATHOLOGY FOR RESPIRATORY CARE  2 credits
Prerequisites: 201, 3100:130. Discussion of disease processes, diseases of lung and heart, their effect on respiratory therapy.

201 ANATOMY AND PHYSIOLOGY OF CARDIOPULMONARY SYSTEMS  3 credits
Prerequisite: 3100:207. Study of normal anatomy and physiology of heart and lungs. Lecture.

223 ADVANCED RESPIRATORY CARE  3 credits
Prerequisites: 142, 223. Covers area of pulmonary rehabilitation. Includes essentials of establishing a respiratory therapy department. Lecture/laboratory.

224 PULMONARY REHABILITATION AND THE RESPIRATORY CARE DEPARTMENT  2 credits
Prerequisites: 142, 223. Covers area of pulmonary rehabilitation. Includes essentials of establishing a respiratory therapy department. Lecture/laboratory.

290 SPECIAL TOPICS: RESPIRATORY CARE  1-3 credits
(May be repeated for a maximum of three credits) Prerequisite: permission. Selected topics or subject areas of interest in respiratory therapy technology.

CHEMICAL TECHNOLOGY

2840:

100 BASIC CHEMISTRY  3 credits
Elementary treatment of facts and principles of chemistry emphasizing application. Elements and compounds important in everyday life, biological processes and medicine. Introduction to laboratory techniques. Primary for medical assistant, criminal justice and allied health students. Laboratory.

101 INTRODUCTORY CHEMISTRY  3 credits
Facts and theories of general chemistry. Elements and compounds and their uses. Elementary treatment of atomic structure, gaseous state, periodic table, water, solutions. For chemical technology and bachelor of technology students. Laboratory.

102 INTRODUCTORY AND ANALYTICAL CHEMISTRY  3 credits
Prerequisites: 101 or permission. Chemical equilibria, solution, gas laws, properties, methods of separation, analysis, and synthesis. Laboratory.

105 CHEMICAL CALCULATIONS I  1 credit
Corequisite: 101 or permission. Introduction to introductory chemistry courses. Topics include unit conversions, percentages, graphs, significant figures, moles. Suitable as a refresher course.

106 CHEMICAL CALCULATIONS II  1 credit
Corequisite: 102 or permission. Continuation of calculations review for introductory chemistry. Chemical equilibria, concentrations, pH, solubility products, redox reactions, calorimetry.

121 ORGANIC PRINCIPLES  4 credits
Structure, nomenclature and classification of simple organic compounds: their physical and chemical properties, methods of separation, analysis and synthesis. Laboratory.

201 QUANTITATIVE ANALYSIS  4 credits
Prerequisite: 102. Theory of quantitative analytical chemistry including gravimetric, volumetric and electrochemical procedures. Laboratory.

202 INSTRUMENTAL METHODS  4 credits
Prerequisites: 201 and one year of physics; or permission. Instrumentation employed in qualitative and quantitative analysis. Theory and practice in chromatographic, spectrophotometric, and other instrumental methods. Laboratory.

210 SCIENTIFIC GLASS BLOWING  1 credit
Prerequisite: permission. Introduction to art of glass blowing: Fabrication and blowing of scientific glassware and chemical apparatus.

250 ELEMENTS OF PHYSICAL CHEMISTRY  3 credits
Prerequisites: 102, 2820:153, 2030:154. Physical properties governing behavior of chemical systems: Introducory thermodynamics, solution properties, chemical equilibrium, phase rule, chemical kinetics and structure of matter. Laboratory.

255 LITERATURE OF SCIENCE AND TECHNOLOGY  1 credit
Prerequisite: permission. Literature of science and technology as used to gather technical information. Techniques of abstracting and the computer search.

260 COMPOUNDING METHODS  2 credits
Prerequisites: 102, 121 or permission. Principles and methods of selecting and compounding rubber for specific end uses. The compounder's art. Processing and testing of basic elastomers and products. Laboratory.

270 NATURAL AND SYNTHETIC ORGANIC POLYMERS  4 credits
Prerequisite: 121 or permission. Structure and properties of macromolecules with particular reference to carbohydrates, proteins, nucleic acids, rubber, synthetic thermoplastic, thermosetting and elastomeric polymers.

290 SPECIAL TOPICS: CHEMICAL TECHNOLOGY  1-2 credits
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in chemical technology.
ELECTRONIC TECHNOLOGY

2860:

110 BASIC ELECTRICITY AND ELECTRONICS
Prerequisite: 220:130 or equivalent. Principles of electronics: resistors, inductance, capacitors, transistors, microprocessors, power sources, motors, generators, test equipment, circuit diagnosis, troubleshooting. Credit not applicable toward the A.A.S. in Electronic Technology.

120 DC CIRCUITS
Corequisite: 2030:152. 4 credits

122 AC CIRCUITS
3 credits

123 ELECTRONIC DEVICES
Corequisite: 122. Physical theory, characteristics, operational parameters and incircuit consideration of solid-state electronic devices.

116 INTRODUCTION TO DIGITAL CONCEPTS
1 credit

225 LINEAR INTEGRATED CIRCUITS
Prerequisite: 123 or 271. Principles and use of electrical and electronic instruments including moving coil instruments, bridges, oscilloscopes and signal generators. Analysis of measurement errors.

227 MEASUREMENTS
2 credits

231 CONTROL PRINCIPLES
3 credits

237 DIGITAL CIRCUITS
Prerequisite: 123 or 127. Introduction to devices and techniques used in design of combinational logic circuits. Topics include number systems, binary arithmetic codes, Boolean algebra, Karnaugh mapping, and implementation of combinational logic circuits. 4 credits

238 MICROPROCESSOR FUNDAMENTALS
4 credits

242 MACHINERY AND CONTROLS
Prerequisites: 122 and 123 or 271. Principles, characteristics and applications of DC and AC generators and motors. Basic control circuits for rotating machinery. Principles of industrial electronic devices used in machinery control such as limiters, SCR's, transducers. Laboratory practice with industrial machines in practical industrial circuits.

251 COMMUNICATIONS CIRCUITS
2 credits

255 ELECTRONIC DESIGN AND CONSTRUCTION
2 credits

260 ELECTRONIC PROJECT
Prerequisite: successful completion of circuit analysis course. 2 credits

270 SURVEY OF ELECTRONICS I
Corequisite: 2030:152. 3 credits

271 SURVEY OF ELECTRONICS II
Prerequisite: 270. 3 credits

290 SPECIAL TOPICS: ELECTRONIC TECHNOLOGY
1-2 credits (May be repeated for a total of four credits.) Prerequisite: permission. Selected topics or subject areas of interest in electronic technology.

300 ADVANCED CIRCUIT THEORY
3 credits

352 DIGITAL SYSTEMS
4 credits

354 ADVANCED CIRCUIT APPLICATIONS
4 credits

360 COMPUTER SIMULATIONS TECHNOLOGY
3 credits

400 COMPUTER SIMULATIONS TECHNOLOGY
Prerequisite: 260. 3 credits

406 COMMUNICATION SYSTEMS
3 credits

420 BIOMEDICAL ELECTRONIC INSTRUMENTATION
3 credits

430 SENIOR TOPICS IN ELECTRONIC TECHNOLOGY
3 credits

451 INDUSTRIAL ELECTRICAL SYSTEMS
Prerequisites: 354, 3460:201 or 205 or 2820:210. Electric power, industrial nameplates, power factor correction, mutual inductance, linear transformers, power transformers, polyphase systems, per-phase analysis, system grounding, protective device coordination, computer-aided analysis.

453 CONTROL SYSTEMS
Prerequisites: 211, 231, 254. 4 credits

465 COMPUTER-AIDED DRAFTING I
Prerequisite: 2920:210. Continuation of 2940:210. Deals with computer-aided drafting techniques. 2 credits

466 COMPUTER-AIDED DRAFTING II
Prerequisite: 2920:246. 2 credits

470 MANUFACTURING PROJECT
Prerequisite: Final semester. Advanced CADCAM topics are presented. A comprehensive project is undertaken.

480 AUTOMATED MANUFACTURING TECHNOLOGY
Prerequisites: 410, 6000:301, 2920:448. A study of the automated production system. The various topics studied thus far — CAD, CNC, and management are integrated. Several companies are used as case studies. 2 credits

MANUFACTURING TECHNOLOGY

2880:

100 BASIC PRINCIPLES OF MANUFACTURING MANAGEMENT
A basic overview of the concepts of management and their interrelationships to a manufacturing environment. Includes production control, quality control, work measurement, and employee motivation. 4 credits

110 MANUFACTURING PROCESSES
Study of the machines, methods, and processes used in manufacturing. 2 credits

130 WORK MEASUREMENT AND COST ESTIMATING
Prerequisite: 100. Time and motion study. Development of accurate work methods and production standards. 3 credits

201 ROBOTICS AND AUTOMATED MANUFACTURING
Prerequisite: 100 or permission of instructor. Study of manufacturing automation and the computer based products and processes available for this task. Robots, machine controllers, and machine/process interfaces are investigated. 3 credits

210 CONTROLLING AND SCHEDULING PRODUCTION
Prerequisite: 100. Production order followed from sales order through requisitioning, plant loading, scheduling and shipping. Also covers material control and inventory record keeping. Critical path, linear programming and EDP techniques discussed. 2 credits

211 COMPUTERIZED MANUFACTURING CONTROL
Prerequisite: 100. Processing of production order by computer through requisitioning, plant loading, scheduling and shipping. Also covers material control and inventory record keeping. Critical path, linear programming and EDP techniques discussed. 3 credits

220 COMPUTER NUMERICALLY CONTROLLED MANUFACTURING
Prerequisite: 110, 2030:233 CNC programming for CNC mills and lathes. Includes machine setup, tool selection, as well as feed and speed calculations. 3 credits

231 PLANT LAYOUT
Prerequisite: 100. Solution of activities for a production facility. Optimum arrangements of factors of production: manpower, materials, and equipment. 2 credits

232 LABOR MANAGEMENT RELATIONS
Prerequisite: 100. Study of background of labor movement, management viewpoints, legal framework for modern labor organizations and collective bargaining process. 3 credits

241 INTRODUCTION TO QUALITY ASSURANCE
Prerequisite: 100 and 2030:133. Theory and practice of inspection and sampling techniques for measurement of quality, QC charts, sampling plans, mill specs, checking machine capabilities and setting tolerances. 3 credits

290 SPECIAL TOPICS: INDUSTRIAL TECHNOLOGY
Prerequisite: permission. Selected topics or subject areas of interest in industrial technology. 1-2 credits
INSTRUMENTATION TECHNOLOGY

2900:

121 FUNDAMENTALS OF INSTRUMENTATION 4 credits
Prerequisite: 2320:151 and 2860:123 or 2860:270. Study of variables encountered in process instrumentation, indicating and recording devices and applications of physical principles affecting measurement and control.

232 PROCESS CONTROL 3 credits
Prerequisite: 2860:231. Study of analysis and design of process control systems with emphasis on techniques and instrumentation used in process control. Digital control fundamentals introduced.

239 PULSE CIRCUIT TESTING 3 credits

240 CALIBRATION AND STANDARDIZATION 1 credit
Prerequisite: 2860:231. Laboratory experience in calibration and standardization of electrical and electronic systems. Instrument theory, maintenance, troubleshooting, specifications, performance and safety working practices included.

241 INSTRUMENTATION PROJECT 2 credits
Prerequisite: Fall semester or permission. Design and construction of testing of an approved instrumentation project by an individual student, promoting independent study, initiative, assumption of responsibility and application of skills attained in related courses.

290 SPECIAL TOPICS: INSTRUMENTATION TECHNOLOGY 1-2 credits
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in instrumentation technology.

MECHANICAL TECHNOLOGY

2920:

101 INTRODUCTION TO MECHANICAL DESIGN 3 credits
Prerequisite: 2940:121, corequisite 2030:132. Topics in engineering drawing, conventions, sections, dimensioning, allowances and tolerances, assembly drawings. Practice dimensional conversions, fastenings, test planning, data reduction. Discuss technical ethics and responsibilities.

110 FUNDAMENTAL SCIENCE FOR AUTOMOTIVE TECHNOLOGY 4 credits
Prerequisite: 2030:130 with grade of C or better. Scientific relationships of automotive system. Force, work, energy, friction, fluid properties, and thermodynamic principles of the engine. Credit not applicable toward the A.S. in Mechanical Technology.

122 TECHNICAL DRAWING II 3 credits
Prerequisite: 121. Sections and conventions, dimensioning, allowances and tolerances. Threads and fasteners. Descriptive geometry. Intersections, development.

142 DESIGN MATERIALS 3 credits
Fundamental properties of materials. Material testing. Applications of methods to control material properties.

201 MECHANICAL DESIGN I 4 credits
Prerequisite: 2940:121. Principles of stress and strain, combined stress, and Mohr's circle. Experimental stress analysis by strain gage and other methods. Introduction to finite element stress analysis.

231 KINEMATICS/DYNAMICS 2 credits

243 KINEMATICS 2 credits
Prerequisite: 122 and 2980:125. Study of rigid body motions of simple linkages, cams, gears and gear trains. Graphical vector solutions emphasized. Industrial applications presented.

244 DYNAMICS 2 credits

245 MECHANICAL DESIGN II 5 credits

247 TECHNOLOGY OF MACHINE TOOLS 3 credits
Set up and operation of tool room machines. Lathe, drill press, shaper, milling machine and tool grinder. Operating plans and layout.

249 APPLIED THERMAL ENERGY 2 credits
Prerequisite: 2030:255. Thermodynamic principles. Study of power cycles. Applications in IC engines, compressors, steam power cycles, refrigeration.

251 FLUID POWER 2 credits

252 THERMO-FLUIDS LABORATORY 1 credit
Prerequisite: 249, corequisite 211. Laboratory experiments in applied thermal energy and fluid power.

290 SPECIAL TOPICS: MECHANICAL TECHNOLOGY 1 credit
(Repeatable for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in mechanical technology.

310 ECONOMICS OF TECHNOLOGY 3 credits
Prerequisite: 151. Economic principles as they pertain to technology. Equivalences, alternatives, costs, depreciation, valuation. Project studies.

335 WELDING, THEORY AND PRACTICE 3 credits

336 WELDING PROJECTS 3 credits
Prerequisite: 335. Individual projects containing elements of analysis, design and laboratory implementation.

339 ADVANCED TECHNOLOGY OF MACHINE TOOLS 2 credits
Prerequisite: 247. Corequisite 242. Selected topics dealing with sophisticated metal cutting techniques.

346 MECHANICAL DESIGN III 4 credits
Prerequisite: 245. Continuation of design of mechanical components: gears, bearings, brakes, and fasteners. Topical topics presented will be coordinated with assigned design projects.

347 PRODUCTION MACHINERY AND PROCESSES 3 credits

348 INTRODUCTION TO NUMERICAL CONTROL 3 credits
Prerequisite: 2940:121, 2030:154 Introduction to numerical control (N/C) of operation of machine tools and other processing machines. Includes programming types of N/C systems, economic evaluation.

360 FUNDAMENTALS OF AUTOMOTIVE SYSTEMS 3 credits
Prerequisite: 249. Study of fuel systems and injection of various sub-systems. Diagnosis of malfunction of important systems and use of diagnosis methods such as vacuum gauge, compression and cylinder leakage test gauges, dwell meter and ignition scope. Laboratory demonstrations with hands-on experience for student dependent on available laboratory time. Field trips to automotive companies for operation of computer controlled testing and diagnosis.

365 FUNDAMENTALS OF HEATING AND AIR CONDITIONING 3 credits
Prerequisite: 249. Basic design knowledge of heating and air conditioning. Includes basic heat transfer concepts, heat loss and gain of buildings, factors to consider in the design of heating and cooling equipment.

402 MECHANICAL PROJECTS I 2 credits
Prerequisite: senior standing. Individual projects emphasizing creative technical design.

405 INDUSTRIAL MACHINE CONTROL 3 credits
Prerequisite: 2860:270. Principles and design of industrial machine control systems. Application oriented study of typical control devices. Utilization of programmable controllers as the system logic controllers.

448 NUMERICAL CONTROL PROGRAMMING 3 credits
Prerequisite: 248. Introduction to computer-assisted interactive part programming system. Writing of milling and drilling programs.

460 MECHANICAL SIMULATION 3 credits
Prerequisite: 2860:261. Structural, thermal and dynamic aspects of mechanical systems simulated using FORTRAN. Performances studied using both deterministic and trial-and-error methods. Responses in both time and frequency domains to various forcing functions. Prediction of tolerances and performance specifications by statistically studying systems produced by simulated production line.

495 INSPECTION TOURS 7 credits
Prerequisite: Senior standing. Trips through area industrial plants and technical facilities.

497 SENIOR HONORS PROJECT IN MECHANICAL TECHNOLOGY 1-3 credits
May be repeated for a total of six credits. Prerequisites: senior standing in Honors Program, permission of area Honors Preceptor and major in mechanical technology. Independent research leading to completion of senior honors thesis or other original work.

DRAFTING TECHNOLOGY

2940:

121 TECHNICAL DRAWING I 3 credits
Lettering and proper use of drawing instruments; freehand sketching; geometric drawing, orthographic projection; pictorials, introduction to basic descriptive geometry.

122 TECHNICAL GRAPHICS 5 credits
Prerequisites: 210, 121. Computer applications as related to sectional views, pictorials, orthographic views, dimensioning, auxiliary views, graphs, descriptive geometry, and working drawings.

140 SURVEY OF ENGINEERING TECHNOLOGY 3 credits
Prerequisite: 2030:151. Introductory course in basic concepts pertaining to mechanical, civil and electrical technology. A study of technical terminology and applied math. Graphic solutions will be emphasized.

150 DRAFTING DESIGN PROBLEMS 2 credits
Prerequisite: 2030:152, 2920:121. Introductory course in basic concepts in engineering technology computations. A study of technical terminology and applied mathematics.

160 MANUFACTURING AND CONSTRUCTION PROCESSES 2 credits
Firms and field trips in various technologies familiarize student with manufacturing and construction processes. Written or oral reports will be required after each firm or field trip.

170 SURVEYING DRAFTING 3 credits
Prerequisite: One week, six hours laboratory. Prerequisite: 121 corequisite: 2030:154. Provides basic understanding of drafting procedures, techniques and tools required for the various phases of survey office work. Production of topographic maps, plan and profile drawings, cross-section drawings and earthwork calculations.

180 INTRODUCTION TO CAD 1 credit
Introduction to computer drafting, hardware capabilities, drawing, dimensioning, modules. Top, back, front views, sections, end, and 3D. Credit not applicable toward the A.S. in Drafting Technology.

200 ADVANCED DRAFTING 2 credits
Prerequisite: Sixteen hours laboratory. Prerequisite: 122. Principles of descriptive geometry applied to practical problems pertaining to the civil and mechanical fields of technology.

210 COMPUTER DRAFTING 3 credits
Prerequisite: One hour, six hours laboratory. Prerequisite: 121. Provides understanding of equipment and computer-assisted drafting and of numerical control (N/C) concept. Includes: design of important technology and drafting standards relating to N/C.

230 MECHANICAL SYSTEMS DRAFTING 3 credits
Prerequisite: Sixteen hours laboratory. Prerequisite: 122. Familiarizes student with computer techniques and drawing layouts for installations of systems concerning plumbing, heating and air conditioning.
SURVEYING AND CONSTRUCTION TECHNOLOGY

2980:

122 BASIC SURVEYING 3 credits
Basic tools and computations for surveying; measurements of distance, elevations, and angles; traverse surveys. Field practice.

123 SURVEYING FIELD PRACTICE 2 credits
Prerequisite: 122. Practical experience in use of surveying equipment and methods of surveying. Provides student with responsibility for making decisions and planning and directing complete project.

125 STATICS 3 credits

222 CONSTRUCTION SURVEYING 3 credits
Prerequisite: 122. Methods and procedures for establishing line and grade for construction. Circular, spiral and parabolic curves. Cross-sectioning methods and earthwork. Field practice.

224 LAND SURVEYING 3 credits
Prerequisite: 122 or permission. Historical development of boundaries. Rectangular system of public land surveys. Systems to describe property, working and interpretation of deed descriptions, surveyor's rights, duties and responsibilities.

225 ADVANCED SURVEYING 4 credits
Prerequisite: 122. Introduction to theory of errors, precise leveling, baseline measurements, triangulation, trilateration and bearings from celestial observations. Photogrammetry. Field practice.

226 SURVEYING FIELD PROJECT 3 credits
Prerequisite: last semester or permission. Provides opportunity to research and develop a specific drafting project within chosen field of interest.

290 SPECIAL TOPICS: DRAFTING TECHNOLOGY 1-3 credits
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics on subject areas of interest in drafting technology.

2920:121 3 credits

2920:122 3 credits
Prerequisite: 122. Familiarizes student with terms and layouts concerning electronic, electrical and instrumentation systems.

2940: Drafting Technology 3 credits
Prerequisite: permission. Provides student with responsibility for making decisions and planning and directing complete project related to design.

2980:121 3 credits
Prerequisite: 2920:121. Duties of structural draftsman in construction technology. Emphasis on heavy timber, steel, concrete or a combination of these materials.
Buchtel College of Arts and Sciences

COOPERATIVE EDUCATION

3000:

301 COOPERATIVE EDUCATION 0 credits
(May be repeated) for cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.

310 INTRODUCTION TO ECOLOGY LABORATORY 1 credit
Concurrent: 149. Short field trips and laboratory studies illustrating natural and man-modified characteristics of selected local ecosystems.

312 INTRODUCTION TO ECOLOGY 2 credits
Basic principles governing structure and function of natural ecosystems. Various options for managing natural resources. Human populations, biotic communities and related technologies at global level emphasized. Not available for credit toward a degree in biology. Laboratory.

318 INTRODUCTION TO BIOLOGICAL AGING 3 credits
Prerequisites: 1100, 211. Survey of normal anatomical and physical changes in aging and age-related diseases. For students in gerontological programs at Wayne College. Not for B.S. biology credit.

319 PRINCIPLES OF BIOLOGY 4 credits
Molecular, cellular basis of life, energy transformations, metabolism, nutrient procurement, gas exchange, internal transport, homeostatic mechanisms, control systems in plants and animals. Laboratory.

320 PRINCIPLES OF BIOLOGY 4 credits
Prerequisite: 111. Cell reproduction, genetics, development, evolution, classification, behavior ecology of plants and animals. (111-112 are an integrated course in biology for majors and related fields.) Laboratory.

327 PRINCIPLES OF MICROBIOLOGY 3 credits
Basic principles and terminology of microbiology, cultivation and control of microorganisms; relationship of microorganisms to man and his environment; medical microbiology. Laboratory.

319/3191 HEALTH-CARE DELIVERY SYSTEMS* 1 credit
Each Health-care principles and practices. Restricted to the student in NEDUCOM, six-year BS/MS program. Not available toward credit as major in Medical sciences.

328/3287 HUMAN ANATOMY AND PHYSIOLOGY 4 credits each
Sequential. Prerequisite: one year of college chemistry. Study of structure and function of the human body. Laboratory.

329 HUMAN ANATOMY AND PHYSIOLOGY 4 credits each
Prerequisite: one year of college chemistry. Study of structure and function of the human body. Laboratory.

311 GENETICS LABORATORY 1 credit
Prerequisite: 112. Principles of heredity, principles of genetics.

322 GENETICS LABORATORY 1 credit
Prerequisite or corequisite: 211. Fundamental principles of genetics illustrated by experiments with Drosophila and other organisms.

327 GENERAL ECOLOGY 3 credits
Prerequisite: 112. Study of interrelationships between organisms and environments.

325 ANATOMY AND PHYSIOLOGY OF SPEECH AND HEARING 3 credits
Prerequisite: 265. Study of anatomy and physiology of organs directly and indirectly responsible for sound production and production of speech. Laboratory.

326 INTRODUCTORY HUMAN PHYSIOLOGY 4 credits
Study of physiological processes in human body, particularly at organ systems level. Not open to preprofessional majors. Laboratory.

329/3291 HEALTH-CARE DELIVERY SYSTEMS* 1 credit
Each Health-care principles and practices. A continuation of 319/1 for a second year students in NEDUCOM, six-year BS/MS program. Not available toward credit as major in biological sciences. Some field trips.

331 CELL BIOLOGY 3 credits
Prerequisites: 112 and 3150/202 (organic and biochemistry). Study of structure and function of cells using microbial and animal cells for demonstration of common tenets.

315 EVOLUTIONARY BIOLOGY DISCUSSION 1 credit
Prerequisite: 211. Informal discussions of various aspects of organic evolution of general or special interest.

316 EVOLUTIONARY BIOLOGY 3 credits
Prerequisite: 211. History of evolutionary thought, Darwinian and post-Darwinian concepts of evolution, molecular evolution, evolutionary history of plants and animals.

331 MICROBIOLOGY 4 credits
Prerequisites: 112 and 3150/202 or equivalent. Survey of prokaryotes with emphasis on the bacteria: their morphology, cultivation and chemical relationships. Relationships of microorganisms to man and his environment. Laboratory.

341 FLORA AND TAXONOMY I* 3 credits
Prerequisite: 112. Identification and biology of common plants of this region. Recommended for teachers of science. Prerequisites: 111 or 3150/202 or equivalent. Survey of plants with emphasis on the plants: their morphology, cultivation and chemical relationships. Relationships of microorganisms to man and his environment. Laboratory.

342 FLORA AND TAXONOMY II* 3 credits
Prerequisite: 112. Classification systems, taxonomic principles. An emphasis on the plants: their morphology, cultivation and chemical relationships. Plant collection. Laboratory.

341 INvertebrate Zoology* 4 credits
Prerequisite: 112. Identification of invertebrate groups, their classification, and field history of representative forms. Laboratory.

354 GENERAL ENTOMOLOGY* 4 credits
Prerequisite: 112 Structure, physiology, life cycles and economics; importance of insects, survey of orders and major families. An insect collection is made. Laboratory.

355 PARASITOLOGY 4 credits
Prerequisite: 112. Principles of parasitism; survey of the more important human and veterinary parasitic diseases. Laboratory.

356 HISTOLOGY I 3 credits
Prerequisite: 311. Cellular structure of organs in relation to their functional activity, life history, comparative development. Laboratory.

356 HISTOLOGY II 3 credits
Prerequisite: 365. Microscopic study of animal tissue preparations and histological stains; emphasis on functional differences. Laboratory.

361 HUMAN GENETICS 2 credits
Prerequisite: 112 or 362. Principles of genetics in the human, including mendelian genetics, genotypes, distribution of population, and sex linkage. Not open to biology majors.

362 LABORATORY TECHNIQUES AND INSTRUMENTATION IN BIOLOGY 2 credits
Prerequisites: 112 and 3510/3520/3530. Introduction to instruction and instrumentation used in biological laboratories.

363 TECHNIQUES AND INSTRUMENTATION LABORATORY IN BIOLOGY 1 credit
Prerequisite or corequisite: 363. Application of biological techniques and instrumentation with emphasis on staining and identification of cellular components and microorganisms. Includes enzymology, use of radioisotopes and light and electron microscopy.

392 BIOLOGY OF AGING 3 credits
Prerequisites: 112 or 265 or equivalent. Introduction to anatomical and physiological changes occurring in organ systems of man during aging process; cellular basis for three changes; biological theories of aging.

400/500 FOOD PLANTS 2 credits
Prerequisite: 211 or permission of instructor. A survey of the plants used for human food, including their history, structure, uses.

422/522 CONSERVATION OF BIOLOGICAL RESOURCES* 4 credits
Prerequisite: 217 or permission. Basic principles for management of plant and animal resources and natural areas. Political, economic, and social aspects of resource management. Laboratory with field trips.

424/524 FRESHWATER ECOLOGY* 3 credits
Prerequisite: 217 Field, laboratory study of lake ecosystems. Species composition of selected biotic communities, community energetics, nutrient cycling. Laboratory study of a local lake. Laboratory.

425/525 FRESHWATER ECOLOGY FIELD AND LABORATORY STUDIES 3 credits
Prerequisites: 217 or permission of instructor. Field and laboratory study of local lakes, ponds, and reservoirs. Collection, identification, and ecology of aquatic plants and animals, especially phytoplankton, zooplankton, and benthic organisms.

426/526 APPLIED AQUATIC ECOLOGY* 3 credits
Prerequisite: permission. Biological methods for assessing quality of natural waterways. Emphasis given to use of benthic invertebrates as indicators of water quality. Laboratory.

428/528 BIOLOGY OF BEHAVIOR 2 credits
Prerequisites: 217 and 266 Biological basis of behavior: ethological theory, function, causation, significance, evolution and adaptability of behavior.

429/529 BIOLOGY OF BEHAVIOR LABORATORY 2 credits
Prerequisite or corequisite: 428/528 and permission of instructor. Individualized, directed study to provide the student with firsthand experience in observing, describing and interpreting animal behavior.

431/531 BACTERIAL PHYSIOLOGY 3 credits
Prerequisites: 331 and 3150/3520. Biochemical activities in bacterial cell, emphasizing enzymatic mechanisms of metabolic transformations. Energy relationships in carbohydrate and biosynthetic pathways stressed.

432/532 ADVANCED GENERAL BACTERIOLOGY 4 credits
Prerequisite: 331. Study of the groups of bacteria involved in the production of food or chemicals, those found in soil and water and those involved in microbial biogenetic cycles. Laboratory.

433/533 PATHOGENIC BACTERIOLOGY 4 credits
Prerequisites: 331 and prerequisite or corequisite 437 Study of major groups of bacteria which produce infections in man. Biochemical properties of microorganisms which engender virulence and nature of host resistance. Laboratory.

435/535 VIROLOGY 4 credits
Prerequisite: 331. Physical, chemical and biological properties of viruses including mechanisms of infection, genetics and tumor formation, methods of cultivation and identification. Laboratory.

*Field trips involved; minor transportation costs.
### BIOLOGY/NEUROCOM: 3110:

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
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<tbody>
<tr>
<td>620</td>
<td>MICROSCOPIC ANATOMY</td>
<td>4</td>
<td>Prerequisites: graduate standing, permission and cell biology, histology suggested. Morphological basis for normal and disturbed functions; structure-function relationships in human microscopical anatomy. Lectures, special laboratory, learning techniques using human tissues.</td>
</tr>
<tr>
<td>630</td>
<td>HUMAN GROSS ANATOMY AND EMBRYOLOGY</td>
<td>3</td>
<td>Prerequisites: graduate standing and permission. An intensive survey of human macroanatomy.</td>
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<tr>
<td>641</td>
<td>FUNCTIONAL NEUROANATOMY</td>
<td>6</td>
<td>Prerequisites: permission or graduate standing. Study of structure and function of mammalian nervous system with emphasis on human brain and human behavior. Laboratory.</td>
</tr>
<tr>
<td>643</td>
<td>NEUROPHYSIOLOGY</td>
<td>4</td>
<td>Prerequisites: 641. The relation of aspects of the neurosciences to the fundamental properties of nervous tissue, establishing a firm base in experimental neurobiology. Laboratory.</td>
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<tr>
<td>660</td>
<td>RADIOISOTOPES IN MEDICINE</td>
<td>1</td>
<td>Prerequisite: permission or graduate standing. A study of the use of radioisotopes in medicine and research. Successful completion of this course qualifies the student for approval by the Medical Regulatory Commission for the use of nuclear research in biologic laboratories.</td>
</tr>
<tr>
<td>665</td>
<td>SPECIAL TOPICS: BIOLOGY/NEUROCOM</td>
<td>1-6</td>
<td>Prerequisite permission of instructor. Advanced topics in medical education covering areas not otherwise available. May be repeated with a change in topic.</td>
</tr>
</tbody>
</table>

### MEDICAL TECHNOLOGY: 3120:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>SPECIAL TOPICS LABORATORY: MANAGEMENT, EDUCATION AND SAFETY</td>
<td>14</td>
<td>Seminars, lectures, workshops in medical technology not included in formal clinical courses. Minimum one credit required for graduation.</td>
</tr>
<tr>
<td>410</td>
<td>CLINICAL ANALYSIS OF URINE AND OTHER BODY FLUIDS</td>
<td>1</td>
<td>Prerequisites: 3100, 361, 362 or equivalent. Physiology of renal system; theory of renal functions in health and disease states. Theory of other fluid systems in diagnosis of disease.</td>
</tr>
<tr>
<td>411</td>
<td>CLINICAL ANALYSIS OF URINE AND OTHER BODY FLUIDS II</td>
<td>1</td>
<td>Prerequisites: 3100, 361, 362 or equivalent. Renal function tests to include chemical and microscopic examination of urine. Methods of detection of chemical and cellular elements of other body fluids.</td>
</tr>
<tr>
<td>420</td>
<td>CLINICAL CHEMISTRY AND BIOCHEMISTRY</td>
<td>4</td>
<td>Prerequisites: 3000, 383, 384 or equivalent. 3150:101, 202, 323, 336 or equivalent. Concepts of clinical biochemistry; identification and quantification of specific chemical substances in body fluids in normal and disease states; principles of instrumentation and quality control.</td>
</tr>
</tbody>
</table>
CHEMISTRY 3150:

121.1 INORGANIC CHEMISTRY I, II 3 credits each Sequential. Designed primarily for a student in medical technology. Fundamental laws and theories of chemistry, the more important elements and their components. Laboratory 3 credits Fundamentals of organic, inorganic and physiological chemistry. Discussion.

129.130 INTRODUCTION TO GENERAL ORGANIC AND BIOCHEMISTRY I, II Sequential. Introduction to the principles and fundamentals of organic and biochemistry. Structure and chemistry of carbohydrates, lipids, proteins, biochemistry of enzymes, metabolism, body fluids and filtration effects 4 credits each

132.2 PRINCIPLES OF CHEMISTRY II 4 credits Introduction to basic facts and principles of chemistry including atomic and molecular structure, states of matter and thermodynamics. For chemistry major, premedical student and most other science majors. Laboratory. Discussions (day sections).

131. PRINCIPLES OF CHEMISTRY II 3 credits Prerequisite: 132. Continuation of 132, including aqueous solution theory, chemical kinetics, equilibrium, electrochemistry and nuclear chemistry. For chemistry major, premedical student and most other science majors. Discussion (day sections).

134 QUALITATIVE ANALYSIS 2 credits Corerequisite: 1333. Laboratory course applying principles of chemical equilibrium to inorganic processes and the study of unknown compounds. 2 credits each

201.2 ORGANIC CHEMISTRY AND BIOCHEMISTRY I, II 4 credits each Sequential. Prerequisite: 122. Designed especially for student in medical technology. Principles of organic chemistry with emphasis on biological systems. Laboratory.

203 NUTRITIONAL BIOCHEMISTRY 3 credits Prerequisite: 122 or 130. Catabolic processes for energy production and nutritional requirements in liver, heart and skeletal muscle and adipose tissue. Biochemistry of diabetes, heart disease, obesity and atherosclerosis. May not be used to meet undergraduate major requirements in chemistry.

283.4 ORGANIC CHEMISTRY LECTURE I, II Sequential. Prerequisite: "A" or permission. Structure and reactions of organic compounds, mechanisms of reactions. 3 credits each

285.6 ORGANIC CHEMISTRY LABORATORY I, II 2 credits each Sequential. Corequisites: 262, 264. Laboratory experiments to develop techniques in organic chemistry and illustrate principles.

303.4 ELEMENTARY PHYSICAL CHEMISTRY I, II 3 credits each Sequential. Prerequisites: 264, 3650:262 or 292, 3450:222 or permission of instructor. Chemical thermodynamics and kinetics (I) and molecular structure and spectroscopy (II). Not accepted for credit toward B.S. degree in chemistry or chemical engineering.

313.4 PHYSICAL CHEMISTRY LECTURE I, II 3 credits each Sequential. Prerequisites: 264, 3450:223, 3650:292 or permission of instructor. Gases, thermodynamics, thermoschemistry, solutions, colloids, chemical equilibrium, phase rule, chemical kinetics, electrochemistry, electrolytic equilibria, atomic and molecular structure.

335.6 ANALYTICAL CHEMISTRY FOR LABORATORY TECHNICIANS I, II Sequential. Prerequisites: 133, 134 or 122. Intended primarily for preparing to become a laboratory or hospital technician. Theory and calculations in quantitative and qualitative analysis, laboratory, methods in hospital laboratories. 4 credits each

360 ADVANCED CHEMISTRY LABORATORY I 2 credits Corequisites: 313, 423 or permission. Integrated laboratory experience covering the areas of quantitative analysis, physical chemistry, instrumental techniques, and inorganic chemistry.

361.4 ADVANCED CHEMISTRY LABORATORY II 3 credits Corequisite: 380; prerequisites: 314 and 424 or permission. Integrated laboratory experience covering the areas of quantitative analysis, physical chemistry, instrumental techniques and inorganic chemistry.

401.51 BIOCHEMISTRY LECTURE I 3 credits Prerequisite: 264. Biochemistry of amino acids and proteins, enzymes, roles as biocatalysts, structure, biochemistry of nucleic acids, nucleic acids, carbohydrates and lipids; energy storage, utilization.

402.52 BIOCHEMISTRY LABORATORY II 3 credits Prerequisite: 401.51. Carbohydrate lipids and amino acid metabolism, protein, nucleic acid biosynthesis and gene function.


408/508 THE PROFESSIONAL CHEMIST IN INDUSTRY 2 credits Prerequisite: senior year or degree in chemistry or chemical engineering or permission. Business, legal, societal, economic and other nontechnical aspects of a chemist's profession.

411/51 PHYSICAL CHEMISTRY FOR BIOLOGY MAJORS 3 credits Prerequisites: 266 and 3450:148 and permission. Gases, thermodynamics, electrochemistry, chemical kinetics, macromolecules and colloids, special topics in biochemistry, biophysics and molecular biology.

415.515 CHEMICAL INSTRUMENTATION 3 credits Prerequisite: permission. Principles and applications of electrical and electronic devices and various transducers for chemical analysis. Laboratory.

418/516 INSTRUMENTAL METHODS OF ANALYSIS 3 credits Prerequisite: 415/515. Principles and applications of analytical chemical techniques based on physical measurements. Laboratory.

421/521 QUALITATIVE ORGANIC ANALYSIS 4 credits Prerequisite: 296. Identification and characterization of organic substances, separation and identification of components of organic mixtures. Laboratory.

423 ANALYTICAL CHEMISTRY I 3 credits Prerequisite: 292 or permission. Theoretical principles of quantitative and instrumental analysis.

424 ANALYTICAL CHEMISTRY II 3 credits Prerequisite: 313 or permission. Instrumental analysis with emphasis on newer analytical tools and methods.

CYTOTECHNOLOGY 3130:

40 INTRODUCTION TO CYTOLoGY A brief course in which by means of lecture and demonstration the student becomes familiar with the cytotechnologist's role with cytology laboratories. Areas covered include historical background of clinical cytology, microscopy and basic histology.

410 CYTOSUPPRESSION 2 credits Combined lecture and laboratory of different cytologic techniques, stain preparation, staining procedures, mounting and cover slipping of specimens. Also included are pertinent laboratory measurements, record keeping, and safety measures for cytopreparation laboratory.

410 CYTONEUROLOGICAL CYTOPATHOLOGY 5 credits Anatomy, histology and cellular morphology of female reproductive system. Study of disease, processes and endocrinopathies, inflammation and infections. Emphasis on gynecologic pelvic pathology. 5 credits

410.2 GENITO-URINARY CYTOPATHOLOGY 3 credits Study of normal and abnormal histology and cytopathology of kidney, bladder and lower urinary tract. Emphasis on recognition of cancer cells and various benign pathologic conditions in the urinary tract by microscopic studies of urine sediment.

415 RESPIRATORY CYTOPATHOLOGY 3 credits Study of disease processes as related to cytology of respiratory tract. Covers anatomy, normal histology and cytology, inflammatory and mucoid diseases, benign proliferative disorders and malignant neoplasms with emphasis on their associated cell morphology.

415 BODY FLUIDS CYTOPATHOLOGY 4 credits Anatomy, histology and clinical aspects of benign and malignant diseases involving body cavities, central nervous system and synovial cavities are presented. Emphasis is placed in cellular morphology of primary and metastatic tumors and in different disease states.

418 CYTOPATHOLOGY OF THE ALIMENTARY TRACT 3 credits Anatomy, histology and pertinent physiology of the oral cavity, esophagus, stomach, small and large intestines, liver, and gall bladder. The biologic behavior, clinical presentation and cellular morphology of various benign epithelial lesions and malignant tumors emphasized.

418 BREAST SECRETION AND NEEDLE ASPIRATION SMEARS 2 credits The study of anatomy and histology of body organs subject to needle aspiration biopsy with emphasis on cellular morphology of both benign and malignant tumors.

418 CYTGENETICS 1 credit Basic genetic principles are taught by laboratory study for the recognition and interpretation of chromosome aberrations and their cytogenetic manifestations. Techniques of sex chromosome determination, culturing and harvesting of blood cells, preparation of metaphase plate and preparation of karyotypes.

418 CYTOLOGY SEMINARS AND RESEARCH 3 credits Collections of American Society of Cytology Seminars are presented. Current cytology cases from within department are also discussed. Based on projected slides and pertinent clinical history, a student formulates opinions on each case. Each case presented is discussed in depth by student with faculty moderator. A term paper on an independently selected topic in cytology is to be submitted and presented to the class and faculty.

420 CYTOLOGY PRACTICUM 5 credits Involves the hour of daily procuring of routine gynecologic and nongynecologic specimens. Abnormal cases are reviewed with a pathologist who is a recognized cytologist pathologist. Correlation of clinical data, follow up of patients and proper reporting is emphasized. The goal is to be able to screen accurately at least 40 cases of gynecologic specimens per day.
465/563 ADVANCED ORGANIC CHEMISTRY 3 credits
Prerequisites: 264, 304 or 314 or permission. Introduction to study of mechanisms of organic reactions.

472/572 ADVANCED INORGANIC CHEMISTRY 3 credits

480 ADVANCED CHEMISTRY LABORATORY III 2 credits
Prerequisite: 391; corequisite: 404. Integration of laboratory experience covering the areas of quantitative analysis, physical chemistry, instrumental techniques, and inorganic chemistry.

481 ADVANCED CHEMISTRY LABORATORY IV 2 credits
Prerequisite 480 and 472 or permission. Integrated laboratory experience covering the areas of quantitative analysis, physical chemistry, instrumental techniques, and inorganic chemistry.

490/590 WORKSHOP IN INSTRUMENTATION 1-3 credits
May be repeated. Group studies of special topics in chemistry. May not be used to meet undergraduate or graduate major requirements in chemistry.

497 HONORS PROJECT IN CHEMISTRY 2 credits
May be repeated for a total of eight credits. Prerequisites: junior or senior standing and senior participation in Program and permission of department honors preceptor. Independent research leading to completion of honors thesis under guidance of honors project adviser.

498 SPECIAL TOPICS: CHEMISTRY 1-3 credits
May be repeated. Prerequisite: permission. Assignment of special problems to student, designed as an introduction to research problems.

499 RESEARCH PROBLEMS 2 credits
May be repeated for a total of eight credits. Prerequisite: permission. Assignment of special problems to student, designed as an introduction to research problems.

Graduate Courses

601,2 CHEMISTRY OF POLYMERS I, II 2 credits each
Sequences. Prerequisites: 264 and 266 or permission of instructor. History, classification and identification of polymers and copolymers. Types and methods of polymerization. Non-linear and synthetic polypeptides, nucleic acids.

504,5 CHEMISTRY OF POLYMERS LABORATORY I, II 2 credits each
Sequences. Prerequisites: 264, 266. Preparation, identification of polymers to illustrate polymerization methods in 601, 602, 649.

610 BASIC QUANTUM CHEMISTRY 3 credits
Prerequisite: 314 or permission of instructor. Quantum mechanics with applications to molecular systems. Includes angular momentum, molecular hamiltonians, variational and perturbation methods and molecular orbital theories.

611 SPECTROSCOPY I 3 credits
Prerequisite: 310 or permission of instructor. Interaction of light with matter. Linear and nonlinear spectroscopy. Rotations, vibrational and electronic spectroscopy. Radiationless transitions and photochemistry.

613 SYNTHETIC METHODS OF ORGANIC CHEMISTRY 2 credits
Prerequisite: 264. Discussion of synthetic organic chemistry. Standard syntheses of organic compounds as well as newer techniques.

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

629,30 THEORETICAL INORGANIC CHEMISTRY I, II 2 credits each
Sequences. Prerequisites: 314, 472 or permission. Detailed treatment of chemistry of transition elements. Group theoretical applications, allied field theory, kinetics and mechanism, magnetism, electronic spectra, molecular orbital theory.

635 THERMODYNAMICS AND STATISTICAL THERMODYNAMICS 3 credits
Prerequisites: 321 and 314 or permission of instructor. Rigorous treatment of laws of thermodynamics and their applications to selected chemical systems. Fundamentals of statistical thermodynamics and applications to systems in chemical equilibrium.

636 CHEMICAL KINETICS 3 credits
Prerequisites: 303 or permission of the instructor. Phenomenological kinetics. Experimental methods of investigation and analysis of reaction systems. Theoretical treatments of reaction rates.

649 CHEMISTRY OF ELASTOMERS 2 credits
Prerequisites: 264, 266 or permission. Study of molecular structure and chemical reaction and properties of natural and synthetic rubbers; polymerization processes in formation of synthetic elastomers.

651 ENZYMATIC REACTIONS I 2 credits
Prerequisites: 401, 402 or instructor's permission. General aspects of enzyme catalyzed reactions. Enzyme structure, methods of determining reaction mechanisms, kinetics and soildodynamic and transfer reactions of phosphorous, glycol and acyl groups.

652 ENZYMATIC REACTIONS II 2 credits
Prerequisites: 401, 402 or permission of instructor. Specific bio-organic reactions continued, elimination, oxidation/reduction, isomerizations, rearrangements, catalysis.

663 ADVANCED METABOLISM 2 credits
Prerequisites: 401, 402 or permission of instructor. Study of advanced pathways in carbohydrates, lipid and protein metabolism, with emphasis placed on metabolic dysfunction.

664 MEMBRANE BIOGENESIS 2 credits
Prerequisites: 401, 501 and 402, 502. Structure, function and biosynthesis of membranes, compartmentation of intracellular and secretory proteins, posttranslational modification, mitochondrial and endoplasmic reticulum.

688 BIOINORGANIC CHEMISTRY 2 credits
Prerequisites: 401, 402, 407 or permission of instructor. Survey of the structure and properties of metal complexes with carbohydrate, nucleic acids, metalloproteins, metalloenzymes and metalloproteins. Water in biology; metal in medicine.

687 ADVANCED BIOCHEMISTRY TECHNIQUES 2 credits
Prerequisites: 402, 408, 428 or permission. Advanced analytical chemistry in biochemistry laboratory. Purification and characterization of DNA, RNA, and protein, study of metabolic pathways in bacteria using advanced biochemistry techniques.

671 THERMAL ANALYTICAL TECHNIQUES 2 credits
Prerequisite: permission. Methods of differential thermal analysis, thermogravimetry and related techniques and methods of programming, recording, data treatment and effects of atmosphere and sample parameters described with applications.

672 ADVANCED ANALYTICAL CHEMISTRY 2 credits
Optional laboratory. Corequisite: 478 or equivalent. Advanced techniques for separation, determination and identification of classical as well as recent techniques.

673 STEREOCHEMISTRY OF ORGANIC COMPOUNDS 2 credits
Prerequisite: 264. Stereochemistry and its application to reactions of organic chemistry.

674,5 PHYSICAL CHEMISTRY OF POLYMERS I, II 2 credits each
Sequences. Prerequisite: 314 or permission of instructor. Basic statistical ideas, molecular weights, distributions, sizes and shapes, kinetics and mechanism of polymerization; thermodynamic relations of polymer solutions.

685,5 EXPERIMENTAL PHYSICAL CHEMISTRY OF POLYMERS I, II 2 credits each for 685, 686. Prerequisites: 316, 428. Theory and application of instrumental measurement. Interpretation of data.

699 MASTER'S RESEARCH CHEMISTRY 1-6 credits
For properly qualified candidates for master's degree. Supervised original research in analytical, inorganic, organic, physical or biochemistry.

701 CHEMICAL LITERATURE 2 credits
Prerequisite: permission. Online searching of chemical databases. Major emphasis is placed on Chemical abstracts, but other databases are included. Lecture and online searching.

710 SPECIAL TOPICS: ANALYTICAL CHEMISTRY 1-2 credits
May be repeated. Prerequisite: permission. Topics in advanced analytical chemistry. Electroanalysis, activation analysis, atomic absorption spectrometry, mass spectrometry, liquid-liquid, liquid-solid and gas chromatography, ion-exchange, thermocathetal methods, separations, standards, sampling, recent developments.

711 SPECIAL TOPICS: INORGANIC CHEMISTRY 1-2 credits
May be repeated. Prerequisite: permission. Consideration of topics in modern inorganic chemistry such as coordination compounds, chemistry of the solid state, representative elements, noncovalent solvents, organometallic compounds, homogeneous catalysis.

712 SPECIAL TOPICS: ORGANIC CHEMISTRY 1-2 credits
May be repeated. Prerequisite: permission. Topics in advanced organic chemistry such as natural products, heterocyclic compounds, photochemistry.

713 SPECIAL TOPICS: PHYSICAL CHEMISTRY 1-2 credits
May be repeated. Prerequisite: permission. Subject from modern physical chemistry.

714 SPECIAL TOPICS: POLYMER CHEMISTRY I, II 1-2 credits each
Corequisites: 264, 266, 314, 316 or permission. Study of topical subjects of current interest. Chemistry of macromolecules encompassing organic, inorganic or physical chemistry aspects including laboratory work where applicable. Lectures and/or laboratory.

715 SPECIAL TOPICS: BIOCHEMISTRY 1 credits
May be repeated. Prerequisite: permission. Consideration of topics in biochemistry such as enzymes and disease, genetic engineering, membrane structure and functions and recent developments in field.

783,4 PHYSICAL ORGANIC CHEMISTRY I, II 3 credits each
Sequences. Prerequisites: 610 or permission. Consideration of physical-chemical principles that determine course of an organic chemical reaction; discussion of reactive intermediates.

786 THEORETICAL ORGANIC CHEMISTRY 2 credits
Prerequisite: 784. Application of modern quantum chemistry and thermodynamics to problems of organic chemistry.

699 DOCTORAL RESEARCH CHEMISTRY 1-16 credits
Open to qualified student accepted as a candidate for Doctor of Philosophy in Chemistry. Supervised original research undertaken in organic, inorganic, physical, analytical or biochemistry.

CLASSICS

3200:

199 MYTHOLOGY OF ANCIENT GREECE 3 credits
Study, legend and folklore in ancient Greece, with some attention to religion (Olympian deities, Orpheus, etc.) and the transmission of Greek myth to Rome and the West. No foreign language necessary.

190 THE MAKING OF ENGLISH WORDS FROM LATIN AND GREEK ELEMENTS 3 credits
The science of Latin and Greek on English vocabulary with some attention to the use of these languages in the scientific and legal fields. No foreign language is necessary.

313 ARCHAEOLOGY OF GREECE 3 credits
The ruins and monuments of Greece, history reconstructed by examination of the material remains. No foreign language necessary. Required of majors.

314 ARCHAELOGY OF ROME 3 credits
The ruins and monuments of Rome; history reconstructed by examination of the material remains. No foreign language necessary. Required of majors.

361 THE LITERATURE OF GREECE 3 credits
Major writers of ancient Greece and their influence on later European literature. No foreign language necessary. Required of majors.

362 THE LITERATURE OF GREECE 3 credits
Major writers of ancient Rome and their influence on later European literature. No foreign language necessary. Required of majors.

401,5/501,2 EGYPTOLOGY I AND II 3 credits each
May be repeated with change of subject. Prerequisites: permission of instructor. Classical Egyptian language necessary. Required of majors.

404,5/504,5 ASYLLABY 3 credits each
May be repeated for credit with another cuneiform language. Prerequisite: permission of instructor. The Akkadian language, history and antiquities of Mesopotamia.
300 MONEY AND BANKING 3 credits
Prerequisite: 201. Institutions of money, banking and credit, monetary expansion and contraction, and their effects on the economy. An examination of the role of money and bank system.

385 ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT 3 credits
Prerequisite: 100, 202, 244 or permission. Introduction to economic analysis of use of natural resources and economic policies. Problems of water and air pollution, natural environments, natural resource scarcity, conservation, economic growth.

389 ECONOMICS OF ENERGY 3 credits
Prerequisites: 201, 202 or permission of the instructor. Focus on understanding economic theory as applied to the energy sector. Topics include issues relating energy with inflation, economic growth and public policy will also be examined.

400 MACROECONOMICS 3 credits
Prerequisites: 201, 202. Changes in national income, production, employment, price levels, long-range economic growth, short-term fluctuations of economic activity.

405 ECONOMICS OF THE PUBLIC SECTOR 3 credits
Prerequisites: 201, 202. Considers nature and scope of government activity national for government intervention, problems of public choices, taxation and revenue raising, cost-benefit analysis, program development and evaluation.

406/506 STATE AND LOCAL PUBLIC FINANCE 3 credits
Prerequisite: 410 recommended. 405. Examines economic rationale and problems of provision of goods and services by different governmental units. Considers alternative revenue sources and special topics.

410 MICROECONOMICS 3 credits
Prerequisites: 201, 202. Advanced analysis of consumer demand, producer costs, market structures, determinants of labor income.

420 MATHEMATICAL ECONOMICS I 3 credits
Prerequisites: 201, 3460:147, 148 or 149 or permission of instructor. Mathematical treatment of economic theory in the framework of comparative statics. Emphasis on the theory of the firm, theory of consumer behavior, general equilibrium analysis and welfare analysis.

421 MATHEMATICAL ECONOMICS II 3 credits
Prerequisite: 420 or permission of instructor. Use of calculus and linear algebra to dynamic economic analysis; solution techniques, some significant dynamic models from literature.

428 ECONOMETRIC METHODS AND APPLICATIONS 3 credits
Prerequisites: 6500:321, 322 or the equivalent permission of the instructor. The study and use of regression and analysis of variance in analyzing economic data. Students will learn to specify and test economic hypotheses and make economic projections. Use of the computer will be extensive.

427/527 ECONOMIC FORECASTING 3 credits
Prerequisites: 6500:322 or permission of instructor. Study of methods for building, identifying, fitting and checking dynamic economic models and the use of these models for forecasting. Emphasis is on the application of available computer software systems.

420/520 HUMAN RESOURCE POLICY 3 credits

431 LABOR AND THE GOVERNMENT 3 credits
Prerequisite: 330. Development of public policy for control of industrial relations, from Judicial concept of 19th Century to statutory and administrative cover of World War II and postwar periods.

432 THE ECONOMICS AND PRACTICE OF COLLECTIVE BARGAINING 3 credits
Prerequisite: 202. Principles and organization of collective bargaining, collective bargaining agreements, issues presented in labor disputes and settlements, union status and security, wage scales, technological change, production standards, etc.

439/535 THE DEVELOPMENT OF AMERICAN CORPORATE STRUCTURE 3 credits

440/540 SPECIAL TOPICS: ECONOMICS 3 credits
Prerequisite: consent. Opportunity to study special topics and current issues in economic analysis.

450/550 COMPARATIVE ECONOMIC SYSTEMS 3 credits
Prerequisites: 201, 202 or permission of instructor. Systems of economic organization, ranging from the theoretical framework of a perfectly free market economy to the socialist varieties. Historical evolution of economic systems covering problems of theory and practice.

490/590 ECONOMIC DEVELOPMENT AND PLANNING FOR UNDERDEVELOPED COUNTRIES 3 credits
Prerequisites: 201, 202. Basic principles in economic development. Theories of development. Government planning for development. Trade and development of underdeveloped countries. No credit for graduate majors in economics.

491/591 INTERINATIONAL ECONOMICS 3 credits
Prerequisites: 201, 202. International trade in foreign exchange, policies of free and controlled trade, international monetary problems.

475/575 DEVELOPMENT OF ECONOMIC THOUGHT 3 credits
Prerequisites: 201, 202. Evolution of theory and method, relation of ideas of economists contemporary to important ones.

511/518 MONEY AND BANKING POLICY 3 credits
Prerequisites: 201, 345. Control over currency and credit, control of central banks and governments. United States Treasury and Federal Reserve System.

487 URBAN ECONOMICS: THEORY AND POLICY 3 credits
Prerequisite: 419. Theoretical and empirical analyses of allocation, growth and structure in urban economy. Urban problems. Special attention given to resource allocation in urban public sector.

490 INDEPENDENT STUDY IN ECONOMICS 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission of instructor. Independent study in economics under supervision and evaluation of selected faculty member.

491/591 WORKSHOP IN ECONOMICS 1-3 credits
(May be repeated) Group study of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only.

497 HONORS PROJECT 1-3 credits
(May be repeated for a total of six credits) Prerequisite: senior standing in Honors Program. Individual senior honors thesis on a creative project relevant to economics approved and supervised by faculty member of the department.

360 INDUSTRIAL ORGANIZATION AND PUBLIC POLICY 3 credits
Prerequisites: 201, 202. Basic industrial structure and how conduct in performance of industry and way in which antitrust policy is designed to provide remedies where performance is unsatisfactory.

380 ECONOMICS OF THE PUBLIC SECTOR 1-3 credits
Prerequisite: 201. Evolution of theory and method, relation of ideas of economists contemporary to important ones.

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(May be repeated for a total of six credits) Prerequisite: senior standing in Honors Program. Individual senior honors thesis on a creative project relevant to economics approved and supervised by faculty member of the department.

360 INDUSTRIAL ORGANIZATION AND PUBLIC POLICY 3 credits
Prerequisites: 201, 202. Basic industrial structure and how conduct in performance of industry and way in which antitrust policy is designed to provide remedies where performance is unsatisfactory.
371 INTRODUCTION TO LINGUISTICS 3 credits
Broad range of topics on language and introduction to its scientific study. Topics include language origins and historical diacritics, sounds systems, syntax, semantics, animal languages, writing systems and language universals.

376 LEGAL WRITING 3 credits
Intensive practice in writing for pre-law students through assignments based on actual legal situations and real cases. Particular attention to stating legal issues, writing persuasively, applying rules of law, and other topics that will help those preparing for law school and the profession.

377 ADVANCED POETRY WRITING 3 credits
Prerequisite: 277 or permission. Advanced practice in writing poems, emphasis on shaping publishable works. Survey of themes. Close discussion of student poems, individual conferences with instructor.

378 ADVANCED FICTION WRITING 3 credits
Prerequisite: 278 or permission. Advanced practice in writing short stories, emphasis on shaping publishable works. Survey of market. Close discussion of student stories, individual conferences with instructor.

386 FILM CRITICISM 3 credits
Application of literary critical theory to the study of film.

390 WOMEN IN MODERN NOVELS 3 credits
Students will read various modern novels to increase their awareness of how these texts reflect, reinforce, but more often challenge traditional attitudes towards women, their places and circumstances.

391 SPECIAL TOPICS: LITERATURE AND LANGUAGE 3 credits
(May be repeated for credit as different topics are offered) Prerequisite: 1102. Traditional and modern topics in English literature and language, supplementing course listed in this General Bulletin, generally constructed around theme, genre and language study.

390 PROFESSIONAL WRITING I 3 credits
Designed to help prepare students for a career as professional business writer. Stress on theory and practice of writing business communications, such as reports, letters, memo's, telegrams, contracts, annual reports, promotional brochures for technical products, services, scientific abstracts, proposals. Also covering contemporary writing such as format, graphic display and technical writing, adaptation of technical material to non-technical reader.

399 THE GOTHIC IMAGINATION 3 credits
A survey of the major writers and works of the gothic movement as expressed in the literature of the 18th century. The emphasis in the course is on the "popular" nature of the literature and its major themes/symbolism.

400/500 ANGO SAXON 3 credits
Studies in Old English language and Old English prose and poetry, including Beowulf.

403/503 DEVELOPMENT OF THE ARTHURIAN LEGEND 3 credits
Traces evolution of Arthurian materials from 540 to 1500 and beyond, with emphasis on characters, themes, events and treatments.

406/506 CHAUCER 3 credits
Close study of Chaucer's major works — The Canterbury Tales and Froissart and Chretien de Troyes in Middle English.

407/507 MIDDLE ENGLISH LITERATURE 3 credits
Study of general topics, themes and styles of the major Middle English literary works written from 12th to 15th Centuries. Readings in Middle English.

412/512 SPENSER 3 credits
Close reading of major narrative and lyric poems and selections from the minor works, all studied in the context of Elizabethan aesthetic theory. Learning and politics.

416/516 METAPHYSICAL POETS 3 credits
Selected 17th-Century English poets that are a useful addition to any student. The course examines the particular style and themes of the major and sacred poets who wrote in the metaphysical mode. Particular emphasis is placed on Herbert, Crashaw, Vaughan, Tennyson, Marvell, Cowley, Cleveland, Southwell and King.

418/518 MILTON 3 credits
Emphasis on Milton's major poems and prose works. Paradise Lost, Paradise Regained, Areopagitica, the divine tracts and poems of the 1645 edition. Student becomes acquainted with Milton the man and Milton the artist.

421/521 SWIFT AND POPE 3 credits
Close reading of the major satires of Swift and Pope. Concentration on the rhetorical strategies of each author within the context of the shifting intellectual and cultural milieu at the end of the 17th and beginning of the 18th centuries.

424/524 EARLY ENGLISH FICTION 3 credits

425/525 STUDIES IN ROMANTICISM 3 credits
Literary, Philosophical, psychological and social revolutions of romantic period as reflected in works of such major writers as Wordsworth, Byron and Keats.

430/530 BRITISH FICTION 3 credits
Poetry, prose of the late 19th Century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers.

431/531 VICTORIAN FICTION 3 credits
Reading of at least five major novelists of Victorian era, of varying length, by Emily Bronte, Dickens, Eliot, Thackeray and Hardy. Characterization, theme and attitude toward life emphasized.

434/534 CHARLES DICKENS 3 credits
Growth of Dickens as a novelist, with attention to the social and political backgrounds of the novels and changes in their structure and treatment of character.

435/535 20TH CENTURY BRITISH POETRY 3 credits
Concentrated study of major poets of Welles, Auden and T. S. Eliot. Reading and discussion of their major works, with emphasis on the development of British short story from 1925 to present.

439/539 MODERN BRITISH AND IRISH DRAMA 3 credits
Study of major British dramatists, principally those post World War II. Focal figures are Shaw, Galsworthy, O'Casey, Osborne, Arden and Pinter.

443/543 MELVILLE 3 credits
A study of Herman Melville's life and works. Primary emphasis will be on Melville's major fiction (e.g. Moby Dick, The Confidence Man, Billy Budd), but some attention will also be given to his poetry and travel sketches.

446/546 AMERICAN AUTOBIOGRAPHY 3 credits
An inquiry into the nature of autobiographical writing, with particular attention to the ontology of the "autobiographical self," including such authors as Henry Adams, Sherwood Anderson, Mark Twain, Gertrude Stein, Langston Hughes, William Carlos Williams, Irenne UKey and Maya Angelou.

450/546 AMERICAN ROMANTIC FICTION 3 credits
Examination of early American fiction, tracing its genesis, romantic period and seminal movements toward realism. Works discussed include Cooper, Poe, Hawthorne and Melville.

459/549 AMERICAN FICTION: REALISM AND NATURALISM 3 credits
An introduction to realist fiction in America (e.g. Howells, James, Crane, Dreiser), tracing developments in American fiction against background of cultural and historical change.

455/555 MODERN BRITISH FICTION 3 credits
Study of significant American short and long fiction from World War I to the present.

455/551 AMERICAN POETRY TO 1900 3 credits
Survey of American poetry of the 17th, 18th and 19th Centuries.

452/552 MODERN AMERICAN POETRY 3 credits
Survey of 20th Century American poetry beginning with Edwin Arlington Robinson and ending with contemporary poets.

453/553 AMERICAN WOMEN POETS 3 credits
Study of modern American poets with special emphasis on the major works of Defoe, Richardson, Smollett, Sterne.

454/554 20TH CENTURY AMERICAN DRAMA 3 credits
Examination of major established playwrights (including O'Neill, Miller and Williams) and sampling of new and rising ones.

455/555 THE AMERICAN SHORT STORY 3 credits
A study of the development of the short story as a particular American genre, from Washington Irving to the present.

458/558 FAULKNER 3 credits
An in-depth study of William Faulkner's major novels and short stories, primarily those set in the imaginary Yoknapathapawha region.

467/567 MODERN EUROPEAN FICTION 3 credits
Representative European writers from about 1850 to present, in translation. Focus on fiction of such writers as Zola, Toulouse, Dostoevsky, Mann, Proust, Kafka and Schnitzeljant.

468/568 CRITICISM AND LOVE IN EARLY WESTERN LITERATURE 3 credits
An analysis of the use of sex and love in the literature of the Western World from Group Roman times to 1800, with special emphasis on how sexuality and "romantic" love are used as allegorical, satiric, fantastic or fetishic devices.

470/570 HISTORY OF ENGLISH LANGUAGE 3 credits
Development of English language, from its beginnings; sources of its vocabulary, its sounds, its rules, semantic change, political and social influences on changes, dialect origins, correctness.

471/571 U.S. DIACRITICS: BLACK AND WHITE 3 credits
Study of differences in pronunciation, vocabulary and grammar among U.S. language varieties; Central regional and social varieties are examined. Clearness, focusing on Black English and Acaulical speech explored.

472/572 SYNTAX 3 credits
Prerequisites: 277 or permission. Principles of syntactic description. Sentence structures are investigated from a variety of languages, with emphasis on English.

473/573 SEMINAR IN TEACHING ESL: THEORY AND METHOD 3 credits
Prerequisites: 277 or permission. Theoretical approaches to linguistic description and language acquisition as relevant to learning of a second language. Elaboration of principles for teaching of English as a second language based on research in linguistics, psychology,istics and second language pedagogy.

475/575 THEORY OF RHETORIC 3 credits
Ancient and modern theories of rhetoric, with attention to classical oration, "topics" of rhetoric and their application to teaching of English.

476/576 THEORY AND TEACHING OF BASIC COMPOSITION 3 credits
Review of current research and experimentation of specific instructional methods for teaching basic composition.

482 SENIOR HONORS PROJECT IN ENGLISH 1-3 credits
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and approval of honors preceptor, or only to English majors enrolled in Honors Program. Independent study leading to completion of senior honors thesis or other original work.

483/583 FANTASY AND SCIENCE FICTION 3 credits
Selected British and American fantasy and science fiction from the 1880s to the present.

484/584 FANTASY 3 credits
A study of forms of literature, primarily fiction, based on and controlled by an over-riding of what is generally considered as possible.

489/589 SEMINAR IN ENGLISH 2-3 credits
(May be repeated with different topics) Special studies, and methods of literary research, in selected areas of English and American literature and language.

490/590 WORKSHOP IN ENGLISH 1-3 credits
(May be repeated with different topics) Groups of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English, for elective credit only.

498 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of instructor. Directed study in a special field of interest chosen by student in consultation with instructor.
335 RECREATION RESOURCE PLANNING 3 credits
Prerequisite: 330 or permission. Effects of physical and economic environment on natural patterns. Case studies of important recreational activities and areas in which tourism contributes significantly to the area economy.

340 CARTOGRAPHY 3 credits
Use of graphic/cartographic principles and techniques as a means of presenting information.

341 MAPS AND MAP READING 3 credits
Interpretation and use of various map materials. Study of basic map elements, symbolism and methods of creating maps. Historical aspects associated with these developments also considered. Laboratory.

350 GEOGRAPHY OF THE UNITED STATES AND CANADA 3 credits
Prerequisite: 100 or permission. Regional and topical study of United States and Canada, with emphasis on environmental, economic and cultural patterns and their interrelationships.

351 OHIO: ENVIRONMENT AND SOCIETY 3 credits
Regional and topical analysis of cultural, economic and environmental patterns, also in comparison with other states.

353 LATIN AMERICA 3 credits
Prerequisite: 100 or permission. Analysis of relationship of cultural and economic patterns with particular emphasis on environmental, economic and cultural patterns within Latin America.

356 EUROPE 3 credits
Prerequisite: 100 or permission. Regional and topical analysis of cultural, economic and environmental patterns, excluding U.S.S.R.

358 U.S.R. 3 credits
Prerequisite: 100 or permission. Regional and topical analysis of cultural, economic and environmental patterns, with comparison to other major world regions.

360 ASIA 3 credits
Prerequisite: 100 or permission. Environmental, cultural and economic geography of East, Southeast, South Asia and Middle East with emphasis on the contemporary environment.

363 AFRICA SOUTH OF THE SAHARA 3 credits
Prerequisite: 100 or permission. Environmental and human basies of regional contrasts. Emphasis on topcal environmental systems and changing patterns of resource utilisation.

385 PLANNING SEMINAR 1 credit
Prerequisite: permission of instructor. Development of planning studies including completion of project, covering a planning topic in depth. Projects are presented by student and critically analyzed.

397 SPECIAL PROBLEMS 1-3 credits
Prerequisite: 100 or permission. May be repeated for a total of five credits. Prerequisite: permission of instructor. Directed reading and research in special field of interest.

405/505 GEOGRAPHIC INFORMATION SYSTEMS 3 credits
Prerequisites: eight credits of advanced geography courses at the 300 level or above, but not including regional courses, or permission. Requirements and techniques for using all types of Geographic Information Systems (GIS). For students wishing to become applied geographers, physical and social scientists, resource managers, planners, environmental analysts.

421/521 TRANSPORTATION SYSTEMS PLANNING 3 credits
Prerequisite: 320 or permission. Study and analysis of transportation systems from a geographic perspective.

428/528 INDUSTRIAL AND COMMERCIAL SITE LOCATION 3 credits
Prerequisite: 320 or permission. Relationship between land, resources, population, transportation and industrial and commercial location process.

433/533 URBAN, REGIONAL AND RESOURCE PLANNING 3 credits
Prerequisite: 330 or permission. Role of geographic investigation in city, regional and resource planning.

438/536 URBAN LAND USE ANALYSIS 3 credits
Prerequisite: 330 or permission. Use of classification systems and their spatial application in urban areas. Land use data are collected by student by field work and analyzed to identify the associations and structure of subregions.

438/538 WORLD METROPOLITAN AREAS 3 credits
Prerequisite: 330 or permission. Comparative analysis of metropolitan regions. Urbanism, land use, housing, transportation, population and role of cities in economic development in different cultures.

442/542 THEATIC CARTOGRAPHY 3 credits
Prerequisite: 341 or permission. Principles and techniques used in thematic mapping. Stresses use of maps to indicate certain characteristics of classes of information both qualitative and quantitative.

444/544 MAP COMPIILATION AND REPRODUCTION 3 credits
Prerequisite: 341 or permission. Production of new/improved maps from existing maps, aerial photographs, surveys, new data and other sources. Includes special cartographic considerations for photography, lithography and printing.

447/547 INTRODUCTION TO REMOTE SENSING 3 credits
Prerequisite: 341 or permission. Study of machine photography and non-machine photography developed by radar, thermal, multispectral and satellite sensors. Emphasis on use in geograpical, geological, biological and engineering research.

448/548 AUTOMATED COMPUTER MAPPING 3 credits
Prerequisite: 341 or permission. Study of computer-assisted map compilation and execution. Emphasis on integration of computer and cartographic skills and techniques. Problems adapted to specialized interests of student.

449/549 ADVANCED REMOTE SENSING 3 credits
Prerequisite: 447/547 or permission. Current research in remote sensing. Applications in study of man's cultural and biophysical environment. Practice in planning, design, execution and interpretation of remote sensing studies.

450/550 DEVELOPMENT PLANNING IN THE THIRD WORLD 3 credits
A study of planning concepts and techniques for developing countries, including growth and development, planning agencies, regional inequities and alternative approaches.

471/571 MEDICAL GEOGRAPHY AND HEALTH PLANNING 3 credits
Spatial analysis of diseases; their socioeconomic correlates; diffusion pattern of infectious diseases with particular reference to North America, health planning processes and spatial analysis of health-care delivery systems.

481/581 GEOGRAPHIC RESEARCH METHODS 3 credits
Prerequisites: 12 credits in geography. Techniques in geographic research. Library resources. Techniques of professional writing.

GEOGRAPHY 3350:

100 INTRODUCTION TO GEOGRAPHY 3 credits
Analyzes world patterns of population characteristics, economic activities, settlement features, landforms, climate as interrelated.

310 PHYSICAL AND ENVIRONMENTAL GEOGRAPHY 3 credits
Landforms, weather and climate, soils and vegetation and natural hazards. Nature and destruction of these environmental elements and their significance to man. Laboratory.

314 CLIMATOLOGY 3 credits
Prerequisite: 310 or permission. Analysis and classification of climates, with emphasis on regional distribution. Basic techniques in handling climatic data.

320 ECONOMIC GEOGRAPHY 3 credits
Geographical basis for production, exchange, consumption of goods. Effect of economic pattern on man's culture and politics.

322 ENERGY AND ECOLOGY 3 credits
Prerequisite: 320 or permission. Traditional fossil fuels and recent development of alternative sources of energy studied along with electricity production. Production and consumption patterns, effects of conservation measures on environmental damage and energy policy considerations.

330 RURAL AND URBAN SETTLEMENT 3 credits
Origin, function and rationale of settlements. Includes analysis of rural settlement landscape as well as fundamentals of urban geography.
360 INTRODUCTORY INVERTEBRATE PALEONTOLOGY 4 credits

Prerequisite: 202 or permission. Introductory course emphasizing morphology and evolution of major invertebrate groups with consideration of practical applications of paleontology. Laboratory.

356 FIELD METHODS IN GEOLOGY 2 credits

Prerequisites: 101 and 102 or permission. Use of geologic field equipment including Brunton compasses, alidades and plate planes, stereoscopes and aerial photographs.

404/504 ASTROGEOLOGY 3 credits

Prerequisites: 340/522, 3650/529 or permission. Relations of planet earth to the solar system and universe. Analysis and implications of data from lunar and space probes.

410/510 REGIONAL GEOLOGY OF NORTH AMERICA 3 credits

Prerequisites: 101, 102, 210 or permission recommended. 350. Examination of stratigraphic principles of North America emphasizing structural setting, stratigraphy and processes responsible for landforms in such province. Laboratory.

411/511 GLACIAL GEOLOGY 3 credits

Prerequisites: 210 or permission. Causes and effects of Pleistocene expansion of polar ice masses with emphasis on glacial deposits and world climatic changes.

421/521 COASTAL GEOLOGY 3 credits

Prerequisites: 101, 324 or permission. Study of the origins and evolution of coasts and coastal deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features.

425/525 ADVANCED STRATIGRAPHY 3 credits

Prerequisites: 230, 324 or permission. Emphasis on correlation, depositional sequences, sedimentation and tectonics, stratigraphic terrains and land analysis. Laboratory in the field.

432/532 OPTICAL AND X-RAY METHODS 3 credits

Prerequisites: 230 and 231. Techniques for the study of minerals and rocks using the petrographic microscope and x-ray diffraction equipment. Laboratory.

433/533 PETROGRAPHY 3 credits

Prerequisites: 324. Origin and petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and mineral assemblages in thin section. Laboratory.

436/536 PETROLEUM GEOLOGY 3 credits

Prerequisites: 350 or permission; recommended: 324. Natural occurrences of petroleum. Characteristics, origin, entrapment and exploration methods. Laboratory.

438/538 COAL GEOLOGY 3 credits

Prerequisites: 101, 102, 210 recommended. 324. Origin, composition and occurrence of coal with emphasis on depositional environments, coalification processes, exploration, evaluation and exploration. Laboratory.

437/537 ECONOMIC GEOLOGY 3 credits

Prerequisites: 231 and 350. Study of metallic and nonmetallic mineral deposits emphasizing paragenesis and exploration. Laboratory.

441/541 FUNDAMENTALS OF GEOPHYSICS 3 credits

Prerequisites: 340/523 or permission. Fundamental concepts in earth geophysics, planetary physics, geodesy, and geomagnetism. Contributions of geophysics to recent major developments in geoscience.

444/544 EXPLORATION GEOPHYSICS 3 credits

Prerequisites: 340/523, 3650/529 or permission. Basic principles and techniques of geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical methods and application to geological problems. Laboratory.

450/550 ADVANCED STRUCTURAL GEOLOGY 3 credits

Prerequisite: 350 or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory.

455/555 REMOTE AEROPALEONTOLOGY 3 credits

Prerequisite: 3650/529. Introduction to techniques of micropaleontology evolution and paleoecology of selected microfossil groups. Laboratory.

470/570 GEOCHEMISTRY 3 credits

Prerequisite: minimum of 12 credits in chemistry and geology or permission. Chemical constitution of the earth, bath, open and closed, with emphasis on ground-water and mineral-water relations. Laboratory.

474/574 GROUNDWATER HYDROLOGY 3 credits

Prerequisite: 101. Origin, occurrence, regime and utilization of groundwater. Qualitative and quantitative presentation of geological and geophysical aspects of groundwater hydrology. Laboratory.

490/590 WORKSHOP 1-3 credits

(May be repeated) Group studies or special topics in geology. May not be used to meet undergraduate or graduate major/requirement in geology. May be used for electives only.

495 FIELD STUDIES IN GEOLOGICAL STRUCTURES AND PROCESSES 1 Credit

Prerequisite: may be repeated for a total of four credits. Field trip course emphasizing phases of geology not readily studied in Ohio. Includes trip preparation and post-trip examination. Student will bear trip expenses.

496/596 GEOLOGY FIELD CAMP 5 credits

Prerequisites: 350 and permission; recommended: 231, 234, 395. Emphasis on collection, recording and interpretation of field data; detailed structural and stratigraphic field study.

497 SENIOR HONORS PROJECT IN GEOLOGY 1-3 credits

(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program, permission of department honors committee and major in geology or natural science. Independent research leading to completion of senior honors thesis or other original work under guidance of student's honors project adviser.

498 SPECIAL TOPICS 1-3 credits

Prerequisite: permission of instructor. Special lecture courses offered once or only occasionally in areas where no formal course exists.

499 RESEARCH PROBLEMS 1-3 credits

May be repeated for a total of six credits. Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.
610 APPLIED QUANTITATIVE GEOMORPHOLOGY 3 credits
Prerequisite: 210. Quantification of geomorphic processes and associated landforms. Application of statistical methods and evaluation of validity of these methods. Examination of these methods in practical problems. Laboratory.

623 CARBONATE PETROLOGY 3 credits
Prerequisites: 324 and 423/532 or permission of instructor. Detailed examination of selected carbonate suites with emphasis on depositional facies and diagenetic alteration. Laboratory.

624 SILICICLASTIC SEDIMENTOLOGY 3 credits
Prerequisites: 324 and 423/532 or permission of instructor. Basic processes that transport sediment and the stratification associated with these processes. Furthermore, the study of depositional systems and associated facies architecture. Laboratory.

631 ROCKS AND MINERALS 4 credits
Prerequisites: 101 and permission. Intensive course integrating crystallography, mineralogy and petrology for the science teacher and graduate student from disciplines other than geology.

632 IGNEOUS PETROLOGY 3 credits
Prerequisite: 433/533. Origin and paragenesis of igneous rocks. Theory, petrochemistry and occurrences of major igneous rock types. Selected rock suites studied. Laboratory.

633 METAMORPHIC PETROLOGY 3 credits
Prerequisite: 433/533. Textures, chemistry of metamorphic reactions, phase diagrams and occurrences of metamorphic rocks. Selected rock suites studied. Laboratory.

634 CLAY MINERALOGY 3 credits
Prerequisite: 433/533. Classification, identification, genesis of clay minerals, clay rock use. Exploitation. Laboratory stresses methods of identification of clay minerals, analysis, petrographic interpretation of clay minerals in suites of samples from the rock record. Laboratory.

638 ORE MICROSCOPY 3 credits
Prerequisites: 433/533, 437/537. Identification, study of ore minerals, their textures using reflected light microscope. Discussion of physical, chemical and opaque mineralogy. Laboratory.

639 NUCLEAR GEOLOGY 3 credits
(Two hour lecture, three hour laboratory) Prerequisites: minimum of seven credits in chemistry, eight credits in physics, eight credits in calculus and eight credits in geology or permission. Discusses nature of radioactive and stable isotopes, their applications in geology. Radioactive minerals, radioactive background and disposal of radioactive wastes. Nuclear analytical techniques may also be discussed: lecture, laboratory and field study.

640 GEOSTATISTICS 3 credits
Prerequisites: 101, 3400-461/561 or an equivalent course in statistics. Application of statistical methods to geography. Includes tests of hypotheses, trend surface analysis, analysis of variance, nonparametric statistics and time series analysis.

645 TERRESTRIAL HEAT FLOW 3 credits

646 BOREHOLE GEOPHYSICS 3 credits
Prerequisites: 446/546 or permission of instructor. Basic principles and techniques of geophysical logging with emphasis on electrical, radioactive and sonic methods and their quantitative evaluation. Applications in oil, gas and groundwater exploration. Laboratory.

648 GLOBAL TECTONICS 3 credits
Prerequisites: 433/533 or permission. Theoretical study of physical forces involved in formation and deformation of earth's crust with emphasis on plate tectonics and associated dislocation features.

674 ADVANCED GROUNDWATER HYDROLOGY 3 credits
Prerequisite: 474/574. Study of water table and artesian aquifers under steady and nonsteady state conditions. Collection and evaluation of field data with regard to theory, water well and well field design. Laboratory and field work.

675 GEOCHEMICAL METHODS OF PROSPECTING 2 credits
Prerequisites: nine credits in chemistry, nine credits in mineralogy and petrology recommended. 537 and 570. Application of geochemical methods of analysis and interpretation to search for ore deposits, emphasis on stability, mobility and associations of elements in geologic environments. Laboratory.

678 URBAN GEOLOGY 3 credits
Prerequisite: 210, 230 or permission. Problems of urbanization related to our fine weather, quality and creation of waste. Geologic hazards. Case histories. Application of geologic data to urban development.

680 SEMINAR IN GEOLOGY 3 credits
(May be repeated for a total of six credits) Selected topics with reference material from original sources.

684 SELECTED TOPICS IN GEOLOGY 1.5 credits
(May be repeated for a total of eight credits) Prerequisite: permission. Topics not regularly offered as formal courses, generally of classic or current importance. Entrile lectures, readings, discussions and/or independent study.

695 ADVANCED FIELD STUDIES 1 credit
(May be repeated for a total of four credits) Prerequisite: permission. Field trip course emphasizing phases of geology not readily studied in Ohio. Includes pretrip preparation, field observations and data gathering, posttrip examination and/or written report. Student will be required to prepare a written report.

986 GRADUATE RESEARCH PROBLEMS 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.

999 THESIS RESEARCH 1-6 credits
Independent and original investigation. Must be successfully completed, report written and defended before a committee.

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201 UNITED STATES HISTORY FROM THE CIVIL WAR 4 credits
Survey of American history from Age of Discovery through colonization, and nascent building to Civil War Era.

202 UNITED STATES HISTORY SINCE THE CIVIL WAR 4 credits
Survey of United States history from Civil War Era to present.

207 EUROPE: RENAISSANCE THROUGH THE 18TH CENTURY 4 credits
Survey from Renaissance, Reformation, development of nation states, religious wars, Age of Louis XIV and Enlightenment.

208 EUROPE: 19TH AND 20TH CENTURIES 4 credits
Survey of European history from French Revolution and Napoleon. 19th Century "isms": foreign policy, imperialism, nationalism, absolutism and popular uprisings. Black People of the United States 3 credits
Survey of social, economic, political and cultural history of Afro-Americans from 17th century to present.

232 EVOLUTION OF AMERICAN BUSINESS 3 credits
Examining the evolution of the American business system from the Colonial era to the present.

304 THE ANCIENT NEAR EAST 3 credits
Mesopotamia, Egypt, Israel, her neighbors to Persian Empire.

305 GREECE 3 credits
Myans and Mycenaeans; classical Greece to triumph of Macedon.

306 ROME 3 credits
Rome and Hellenistic East to end of classical times.

307 THE EASTERN ROMAN EMPIRE (324-1453) 3 credits
Byzantine culture and history from 324 to the fall of 1453.

335 SPORTS IN AMERICAN HISTORY SINCE 1865 3 credits
Examination of the reciprocal relationship between sports and various institutions of society: family, religion, politics, education, economics, race, ethnicity, diplomacy and war.

336 WOMEN IN MODERN EUROPE 3 credits
A survey of the history of women in Europe since 1500, with emphasis on their roles and the obstacles attendant on modernization.

337 THE WEST IN THE DEVELOPMENT OF THE UNITED STATES 3 credits
Examination of westward movement from Revolution to closing of frontier: types of frontier, impact of the West on nation's development.

338 WOMEN IN THE UNITED STATES 3 credits
Examining roles, status, self-image and activities of women in context of American social, economic and political movements.

339 AMERICAN IMMIGRATION 3 credits
Examination of European migrants to American colonies and United States; their reasons for leaving Europe and coming to America, and their experience after arrival.

340 PEACE AND WAR: THE HISTORICAL PERSPECTIVE 3 credits
Historical examination of theories of war and peace, including study of leaders, groups and ideas for peace.

341 SOVIET AND UNITED STATES WOMEN IN THE 20TH CENTURY 3 credits
An historical and comparative study of the status of women in both societies, with special attention to changing conditions, the efforts by women, individually and collectively, to define and shape role.

350 SELECTED TOPICS IN HISTORY 3 credits
Selected topics in history including experimental and interdisciplinary studies, as well as those subjects that are available in this General Bulletin. See departmental office for current subject.

360 THE VIETNAM WAR 3 credits
An examination and evaluation of all aspects of the war in Vietnam, political, military, diplomatic and economic, including its impact domestically then and later.

397 INDIVIDUAL STUDY OR RESEARCH IN HISTORY 1-3 credits
(May be repeated for a total of four credits) Prerequisite permission. For individual study or research in history, including special projects, summer study tours or specialized training.

410 HONORS SEMINAR 3 credits
Prerequisite: permission of department head or instructor. Selected readings and/or supervised writing. For student seeking to graduate with honors in history and for student in Honors Program.

452 SPECIAL STUDIES IN HISTORY 3 credits
Includes experimental and interdisciplinary studies, as well as those subjects that are available in this General Bulletin. See departmental office for information on particular offerings.

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331 UNITED STATES SOCIAL-CULTURAL HISTORICAL TO 1877 3 credits
Concepts and attitudes considered in their social, cultural framework. Emphasis on population growth, rural and urban life, literature, the arts, family life, slavery and impact of Civil War.

454 UNITED STATES SOCIAL-CULTURAL HISTORICAL TO 1877 3 credits
Concepts and attitudes; emphasis on business, agrarianism, self-made man, progressivism, impact of world war, social-economic changes, trends in literature and art, social structure and change, black Americans, women's movements.

455 HISTORICAL METHODS 2 credits
Practice of historical research and writing. Required for history major and for graduate major who has not taken equivalent course elsewhere but does not count for graduate credit requirements.

460/465 THE AMERICAN REVOLUTIONARY ERA: POLITICAL, MILITARY, AND CONSTITUTIONAL ASPECTS 3 credits
The struggle for the rights of Englishmen and independence; the impact of war on American society and the creation of republican institutions.

467/470 UNITED STATES DIPLOMACY TO 1919 3 credits
Examination of basic policies, diplomacy of expansion and emergence of a world power.

468/471 UNITED STATES DIPLOMACY SINCE 1914 3 credits
Examination of foreign relations of the United States, diplomatic efforts and international relations since 1914.

490/510 HISTORICAL ADMINISTRATION 3 credits
Organization and administration of nonacademic Historical agencies (e.g. societies, museums, libraries, etc.). Some field experience in a local historical agency.

491/511 FUNCTIONS OF HISTORICAL AGENCIES 3 credits
Prerequisite: 490/510 or permission. The functions and programs of historical agencies. Students will develop a project that involves participating in an agency function.

493 BLACK SOCIAL AND INTELLECTUAL HISTORY 3 credits
Examination of black thought and activities reflective of Afro-American culture, conditions facing black people within America and efforts toward coordinated black activity.
447/547 EUROPEAN ABSOLUTISM AND THE ENLIGHTENMENT, 1648-1789 3 credits
Constitutional, diplomatic, cultural, intellectual and social developments of 17th Century Europe.

448/548 EUROPE IN THE FRENCH REVOLUTIONARY ERA, 1788-1815 3 credits
Development of Revolution, Napoleon's regime and satellites.

451/551 19TH CENTURY EUROPE, 1815-1871 3 credits
Europe in the century of change: revolution, romanticism, industrialization, democratization, first wars of the Industrial Age.

452/552 19TH CENTURY EUROPE, 1871-1914 3 credits
Socialism, imperialism, nationalism and the great war. The belle époque and contemporary artistic and intellectual currents.

454/554 20TH CENTURY EUROPE, 1914-1939 3 credits
Europe between world wars; Russian revolution, fascism and national socialism; plights of democracy.

455/555 20TH CENTURY EUROPE SINCE 1939 3 credits
Europe in World War II, the cold war and attempts at unity.

458/558 RUSSIA TO 1801 3 credits
Survey of Russian history from Kievan period to death of Paul I, emphasizing development of autocratic government, Russian culture, reigns of Peter and Catherine.

459/559 RUSSIA SINCE 1801 3 credits
Survey of 19th and 20th Centuries. Special emphasis on problems of modernization, the revolution and development of communists.

460/560 WAR AND WESTERN CIVILIZATION 3 credits
War and society in Europe. America and beyond from ancient world to present with special emphasis on period since 1740.

467/567 EUROPE AN 1800 TO 1888 3 credits
Survey of Europe from the Anglo-Saxon conquest to the Revolution of 1868. Medieval and early modern institutions, social and cultural life.

471/571 ENGLAND SINCE 1688 3 credits
Survey of English history from 1668 to the present. The reform of English institutions and life, modernization of the economy, the welfare state, society and war.

472/572 TUDOR AND STUART ENGLAND, 1485-1714 3 credits
Emphasis on social, economic and cultural topics. Including literature, art and architecture.

473/573 WESTERN SCIENCE SINCE 1800 3 credits
Science in Greek, Roman, Islamic, European societies with special emphasis on the scientific revolution of the 17th and 17th Centuries.

476/576 WESTERN SCIENCE SINCE 1800 3 credits
Science in Greek, Roman, Islamic, European societies. Atomic physics and weapons, evolution, genetics, medical medicine.

479/579 WESTERN TECHNOLOGY 3 credits
Technology in Mesopotamia, Egypt, Greece, Rome, medieval Europe, first and second industrial revolutions in Europe, America.

480/580 TRADITIONAL CHINA 3 credits
Selective study of institutional, intellectual, political and artistic developments in Chinese civilization from antiquity to 18th Century. Emphasis on general features of traditional Chinese civilization.

481/581 MODERN CHINA 3 credits
Survey of China since 18th Century with focus on process of modernization. Background of contemporary scene stressed.

482/582 IMPERIALISM IN EAST ASIA IN THE 19TH AND 20TH CENTURIES 3 credits
An examination of the East Asian relations in the modem period, highlighting China's response to British, Russian, and Japanese Imperialism in the 19th and 20th centuries.

485/585 JAPAN 3 credits
Survey of History of Japan from antiquity to present; emphasis on developments since 1850, impact of the West and modernization process.

490/590 WORKSHOP IN HISTORY (May be repeated) Group studies of special subjects pertaining to history. May be used for elective credit only. May not be used to meet undergraduate or graduate major requirements in history.

497 HONORS PROJECT (May be repeated for a total of six credits) Prerequisite: senior standing in Honors Program.
An individual research project relevant to history, supervised by a member of the Department of History, culminating in an undergraduate thesis.

Graduate Courses

622 READING SEMINAR IN ANCIENT HISTORY 4 credits
Study of historical literature, sources of materials and major interpretations of ancient history, especially Greek and Roman periods.

623 WRITING SEMINAR IN ANCIENT HISTORY 4 credits
Prerequisite: 622. Research and writing in selected topics of ancient history, particularly Greek and Roman eras.

625 READING SEMINAR IN MEDIEVAL HISTORY 4 credits
Study of historical literature, sources of materials and major interpretations of medieval European history.

626 WRITING SEMINAR IN MEDIEVAL HISTORY 4 credits
Prerequisite: 625. Research and writing in selected topics of European medieval history from barbarian invasions through later Middle Ages.

631 READING SEMINAR IN MODERN EUROPEAN HISTORY TO 1815 4 credits
Study of historical literature, sources of materials, major interpretations of early modern European history up to Napoleon's fall.

632 WRITING SEMINAR IN MODERN EUROPEAN HISTORY TO 1815 4 credits
Prerequisite: 631. Research and writing in selected topics of early modern European history, occasionally including social, economic and intellectual subjects.

634 READING SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815 4 credits
Study of historical literature, sources of materials and major interpretations of modern European history since early 19th Century.

635 WRITING SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815 4 credits
Prerequisite: 634. Research and writing in selected topics of modern European history, occasionally including social, economic and intellectual subjects.
899 WRITING SEMINAR IN LATIN AMERICAN HISTORY since 1865 2 credits
Prerequisite: 669. Research and writing in selected topics of United States history since Civil War.

900 HISTORIOGRAPHY 3 credits
Study of historians, historical writings, and interpretations through the ages. Required for master's degree if candidate has not had equivalent undergraduate or graduate course elsewhere.

901 HISTORY TEACHING PRACTICUM 3 credits
Required undergraduate assistantship. Required of all graduate assistants each fall semester. Training and experience in college teaching of history under the supervision of an experienced faculty member. Credits may not be used to meet degree requirements.

902 DISSERTATION 3-12 credits
Research and writing in selected topics of United States history from Civil War period to 1965.

903 EMPIRE AND THE EMPIRE 4 credits
Prerequisite: 121. Indefinite and definite integral differentials, cross-section, variable, numerical integration, improper integrals, and infinite integrals.

127 TRIGONOMETRY 2 credits
Prerequisite: Mathematics Placement Test. A standard right triangle approach to trigonometry, including trigonometric and inverse trigonometric functions and graphing, identities, equations, triangle solutions, complex numbers.

131 NUMBER SYSTEMS 1 credit
Prerequisite: 100 or placement test. Ancient number systems, number bases, Euclidean algorithm, modular arithmetic.

132 ELEMENTARY GEOMETRY 1 credit
Prerequisite: 100 or placement test. Definitions and measure of line segments, angles, and triangles in Euclidean plane geometry. Hilbert's axioms.

136 SYSTEMS OF MEASUREMENT 1 credit
English and metric systems of weights and measures. Troy, avoirdupois and apothecaries system.

138 MATHEMATICS OF FINANCE 1 credit
Prerequisite: 100 or placement test. Simple and compound interest, bank discount, ordinary annuities, annuities due, annuities in perpetuity.

145 COLLEGE ALGEBRA 4 credits
Prerequisite: Placement. Real numbers, equations and inequalities, linear and quadratic functions, exponential and logarithmic functions. Systems of equations, matrices, determinants, determinants and combinations.

149 PRECALCULUS MATHEMATICS 4 credits
Prerequisite: 145 or placement. Functions, polynomial functions, complex numbers, exponential and logarithmic functions, systems of equations, trigonometric functions, mathematical induction, sequences, and binomial theorem.

211 CALCULUS FOR THE LIFE SCIENCES I 3 credits
Prerequisite: 149 or equivalent. A calculus course for students majoring in the biological and health sciences. Functions, limits and continuity, differentiation, applications of derivatives, exponential and logarithmic functions, integration.

212 CALCULUS FOR THE LIFE SCIENCES II 3 credits
Prerequisite: 211. A calculus course for students majoring in the biological and health sciences. Trigonometric functions, applications of derivatives of integration and differentiation, differential and difference equations, systems of several variables, infinite series, vectors, and matrices.

216 CONCEPTS OF CALCULUS I 3 credits
Prerequisite: 145 or placement. Functions, limits and continuity, differentiation and applications of differentiation, exponential functions, integration and applications of integration, mathematics of finance.

217 CONCEPTS OF CALCULUS II 4 credits
Prerequisite: 149 or placement. Functions, linear functions, exponential functions, and integration techniques. Hospital, discount, integration techniques, difference equations, series.

221 ANALYTIC GEOMETRY-CALCULUS I 4 credits
Prerequisite: 149 or equivalent. Real numbers, analytic geometry, limits, continuity, derivatives of algebraic and trigonometric functions, tangent and normal lines, extrema of functions, Rolle's theorem, mean value theorem, related rates, antiderivatives, definite integrals, areas, volumes, arc length.

222 ANALYTIC GEOMETRY-CALCULUS II 4 credits
Prerequisite: 221. Derivatives of exponential, logarithmic trigonometric, inverse trigonometric, hyperbolic and inverse hyperbolic functions; methods of integration, moments, centroids, indeterminate forms, polar coordinates, vector algebra, cylindrical and spherical coordinates, vector valued functions, curvature.

232 GEOMETRY-CALCULUS III 4 credits
Prerequisite: 222. Sequences, series, power series, Taylor and Maclaurin series, binomial series, functions of several variables, line, continuity, partial derivatives, differentials, directional derivatives, maxima and minima, double and triple integrals, surface area.

235 DIFFERENTIAL EQUATIONS 3 credits
Prerequisite: 220. Methods of forming and solving important types of differential equations. Analysis of models involving differential equations of first order and simple equations of second order.

289 SELECTED TOPICS IN MATHEMATICS 1-3 credits
Prerequisite: Permission. Selected topics of interest in mathematics.

301 HISTORY OF MATHEMATICS 2 credits
Prerequisite: 222. Origin and development of mathematical ideas.

307 FUNDAMENTALS OF ADVANCED MATHEMATICS 3 credits
Prerequisite: 222. Logic, solving problems and doing proofs in mathematics. Sets, extended set operations, and indexed family sets; induction; binary relations; functions, cardinality, introduction to concepts of algebra and analysis.

312 LINEAR ALGEBRA 3 credits
Prerequisite: 222. Study of vector spaces, linear transformations, matrices, determinants, inner products, the eigenvalue problem, quadratic forms, and canonical forms.

335 INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS 3 credits
Prerequisite: 222 or equivalent. Basic techniques for solving ODES; an introduction to theoretical topics including existence and uniqueness of solutions, linear systems, stability of solutions, and phase plane analysis.

410/510 ADVANCED LINEAR ALGEBRA 3 credits
Prerequisite: 312. Study of vector spaces, linear transformation, canonical and quadratic forms, inner product spaces.

411/511 ABSTRACT ALGEBRA I 3 credits
Prerequisite: 307 or permission. Study of groups, rings, fields, integral domains, vector spaces, fields extensions, Galois theory.

412/512 ABSTRACT ALGEBRA II 3 credits
Prerequisite: 307 or permission. Study of groups, rings, fields, integral domains, vector spaces, fields extensions, Galois theory.

413/513 THEORY OF NUMBERS 3 credits
Prerequisite: 222 or permission. Euclidean algorithm, unique factorization theorem, congruences, primitive roots, indices, quadratic residues, number-theoretic functions, Gaussian integers and continued fractions.

414/514 VECTOR AND TENSOR ANALYSIS 3 credits
Prerequisite: 223. Vector algebra, calculus of scalar-vector, vector-scalar, vector-function integrals, integral theorems, coordinate transformations, cartesian, contravariant, covariant vectors, tensors, fundamental operations with tensors, differentiation of tensors, applications.
401/515 COMBINATORICS AND GRAPH THEORY 3 credits
Prerequisite: 222 or permission. Introduction to basic ideas and techniques of combinatorial mathematics, properties of structures, enumeration, applications to communication theory, coding theory, computer science, etc.

421/232, 3 ADVANCED CALCULUS I AND II 3 credits each
Sequential. Prerequisite: 235. Real number system, sequences, series, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals.

423/523 COMPLEX VARIABLES 3 credits
Prerequisite: 223. Complex variables: elementary functions, differentiation and analytic functions, integration and Cauchy's theorem, power series and Laurent series; residue theorem; applications such as conformal mappings, inversion of integral transforms.

427/577 INTRODUCTION TO NONLINEAR ANALYSIS 3 credits
Prerequisite: 223 and 4360:201 or 330 or knowledge of FORTRAN. Mathematical analysis of numerical methods for solving equations, interpolating function values, approximating derivatives and integrals, and approximating functions.

428/526 NUMERICAL LINEAR ALGEBRA 3 credits
Prerequisite: 223 and 4360:201 or 330 or knowledge of FORTRAN. Mathematical analysis of numerical methods for approximating solutions of linear systems, unconstrained minimization problems.

429/529 NUMERICAL SOLUTIONS FOR ORDINARY DIFFERENTIAL EQUATIONS 3 credits

430/530 NUMERICAL SOLUTIONS FOR PARTIAL DIFFERENTIAL EQUATIONS 3 credits
Prerequisite: 432/532 or equivalent. For advanced undergraduate and graduate students. The study of finite difference and finite element methods for partial differential equations—consistency, stability, convergence and computer implementation.

437/531 SPECIAL FUNCTIONS AND OPERATIONAL CALCULUS 3 credits
Prerequisite: 235 or 335. Series solutions of second order ordinary differential equations, Bessel functions, orthogonal polynomials, self-adjoint boundary value problems and Fourier series; Laplace transforms, Fourier transforms.

433/532 PARTIAL DIFFERENTIAL EQUATIONS 4 credits
Prerequisite: 235 or 335. The classical initial value and boundary value problems of mathematical physics developed and solved using Fourier series and integral transforms.

435/535 SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS 3 credits
Prerequisite: 335 or 336. Series solutions to second order, second order with other 336 or 436 or permission. Analysis, solution of systems of equations, linear, non-linear; topics: stability theory, perturbation methods, asymptotic methods; applications from physical, social sciences.

436/536 MATHEMATICAL MODELS 3 credits
Prerequisite: 235 or 335, and a 2-hour sequence in an approved area, or permission. Formulation and analysis of mathematical models in social and physical sciences. Analysis of deterministic and stochastic models. Topics may include stochastic processes, linear programming, graph theory, theory of measurement.

438/538 ADVANCED ENGINEERING MATHEMATICS I 3 credits
Prerequisite: 235 or 335, and a 1-hour sequence in an approved area, or permission. Advanced mathematical methods, including calculus of variations, Green's functions, vector analysis, complex variables, partial differential equations, related numerical methods—applied to typical engineering problems. Does not satisfy elective requirements for mathematical sciences degree.

439/539 ADVANCED ENGINEERING MATHEMATICS II 3 credits
Prerequisite: 436/536. Advanced mathematical methods, including calculus of variations, Green's functions, vector analysis, complex variables, partial differential equations—applied to engineering problems. Does not satisfy elective requirements for mathematical sciences degree.

441/541 CONCEPTS IN GEOMETRY 4 credits
Prerequisite: 222 or permission of instructor. Axonometric treatment of Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformation groups, projective geometry, inversion in a circle.

442/524 PROJECTIVE GEOMETRY 3 credits
Prerequisite: 222 or permission. Complex projective plane, duality, homogeneous coordinates, 11 congruence, cross ratios, harmonic ranges, conics, quadric surfaces, quadrilaterals, applications to Euclidean geometry, quadric surfaces.

445/545 INTRODUCTION TO TOPOLOGY 3 credits
Prerequisite: 312 or permission. Introduction to topological spaces and topologies, mappings, cardinality, homeomorphisms, connected spaces, metric spaces.

489/589 TOPICS IN MATHEMATICS (May be repeated for a total of six credits) 1-3 credits
Prerequisite: permission of instructor. Selected topics in mathematics and applied mathematics at an advanced level.

491/591 WORKSHOP IN MATHEMATICS (May be repeated) 1-3 credits
Prerequisite: permission of instructor. Group studies of special topics in mathematics and statistics. May not be used to meet undergraduate major requirements in mathematics and statistics. May be used for elective credit only.

497 INDIVIDUAL READING 1-3 credits
Prerequisites: senior standing and permission. Mathematics majors only. Directed study designed at an introduction to research problems, under guidance of selected faculty member.

498 SENIOR HOMORS PROJECT 1-3 credits
Prerequisite: 489 (Honors). Directed study for senior honors in the Hons Program who has completed 489 honors. An introduction to research problems in mathematical sciences under the guidance of selected faculty.

Graduate Courses

601 INTRODUCTION TO ANALYSIS 4 credits
Prerequisite: permission. An introduction to the basic ideas of mathematical analysis, with applications to problems in science and engineering.

611 TOPICS IN ALGEBRA 3 credits
Prerequisite: 221. Advanced study of selected topics in some of the following areas: semigroups, groups, rings, modules and fields.

621 REAL ANALYSIS 3 credits
Prerequisite: 222 or permission. In-depth study of real analysis—metric spaces, normed vector spaces, integration theory, Hilbert spaces.

622 MEASURE THEORY 3 credits

625 ANALYTIC FUNCTION THEORY 3 credits
Prerequisite: 422/522. Theory of analytic functions of one complex variable: Cauchy's theorem, residue theory, analytic continuation, boundary behavior.

627 ADVANCED NUMERICAL ANALYSIS I AND II 3 credits each

631 CALCULUS OF VARIATIONS 3 credits
Prerequisite: 235 or 335. Problems with fixed and movable endpoints; problems with constraints, generalization to several variables, the maximum principle, linear and non-linear equations, the connective between classical theory and the maximum principle.

632 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS 3 credits
Prerequisite: 430/530 or permission. Existence, uniqueness and stability of solutions to general classes of partial differential equations. Methods for solving these classes introduced, emphasizing both analytical and numerical techniques.

633/534 METHODS OF APPLIED MATHEMATICS I AND II 3 credits each
Prerequisites: 221 or 528 or permission. Methods of applied mathematics concentrating on techniques of analysis of differential and integral equations—applied complex analysis, integral transforms, partial differential equations, and integral equations.

635 OPTIMIZATION 3 credits
Prerequisite: 425/525 or permission. Unconstrained and constrained optimization theory and methods in applied problems.

636 ADVANCED COMBINATORICS AND GRAPH THEORY 3 credits
Prerequisite: 222 or 335. Theory of techniques of combinatorics as applied to network problems and graph theoretic problems.

642 DIFFERENTIAL GEOMETRY 3 credits
Prerequisite: 422/522. Analytic representation or space curves, surfaces, intrinsic geometry of surfaces in large.

645 TOPOLOGY 3 credits
Prerequisite: 422/522. Set theory, ordinal and cardinal numbers, topological spaces, metric spaces, completely regular spaces.

647 ADVANCED TOPICS IN MATHEMATICS 1-3 credits
(Repeatable for a total of six credits) Prerequisites: permission of instructor. Topics chosen to supplement current offerings. May be taken only on a credit/no credit basis.

691 MATHEMATICS AND STATISTICS SEMINAR 2 credits
(Repeatable for a total of four credits) Prerequisites: senior standing and permission. Seminar-type discussions on special topics in mathematics and statistics. May be taken only on a credit/no credit basis.

695 PRACTICUM IN MATHEMATICS AND STATISTICS 1-3 credits
(Repeatable for a total of four credits) Prerequisites: permission of instructor. Seminar-type discussions involving special problems and/or projects, involving students supervised by a faculty member.

699 THESIS RESEARCH 2 credits
(Repeatable for a total of four credits) Prerequisites: permission. Properly qualified candidate for master's degree may obtain four credits for research experience which culminates in presentation of faculty-supervised thesis.

COMPUTER SCIENCE 3460:

125 DESCRIPTIVE COMPUTER SCIENCE 2 credits
Prerequisites: 222 and 3450:114. Introduction to basic concepts of computer science, including data representation, storage, execution of programs, debugging, and computer organization.

126 INTRODUCTION TO BASIC PROGRAMMING 2 credits
Prerequisites: 222 and 3450:114. Introduction to syntax and semantics of BASIC language: assignment statement and arithmetic, control statements and loops, input/output.

127 COMPUTERS IN TODAY'S WORLD 3 credits
Prerequisites: 222 and 3450:114. Introduction to nature of computers and their capabilities. Special attention given to topics such as effects of computer on privacy, employment, and education; ethics in computer community. Potential for computer crime. Designed for non-majors.

128 ADVANCED BASIC PROGRAMMING 1 credit
Prerequisites: 125 or equivalent. A review of 126 to include such topics as arrays, files, graphics, simulations, subroutines, top-down programming, control structures and application of these topics to include the concepts of the 68000 microprocessor.

201-7 INTRODUCTION TO PROGRAMMING LANGUAGES 2 credits each
Prerequisites: 222 and 3450:114. Introduction to syntax and semantics of programming languages: assignment statement and arithmetic, control statements and loops, input/output, subroutines.

201 INTRODUCTION TO FORTRAN PROGRAMMING 2 credits
Prerequisites: 3450:114 or equivalent. Does not meet computer science major, minor and/or certificate requirements.

202 INTRODUCTION TO COBOL PROGRAMMING 2 credits
Prerequisites: 3450:114 or equivalent. Does not meet computer science major, minor and/or certificate requirements.

203 INTRODUCTION TO PASCAL PROGRAMMING 2 credits
Prerequisites: 3450:114 or equivalent. Does not meet computer science major, minor and/or certificate requirements.

204 INTRODUCTION TO PL/1 PROGRAMMING 2 credits
Prerequisites: programming experience and 3450:114 or equivalent. Does not meet computer science major, minor and/or certificate requirements.
206 INTRODUCTION TO C PROGRAMMING
Provides the student with sufficient programming experience and 3460:147. Provides the student with fundamental programming skills allowing access to Assembly or high-level macros. 2 credits

207 INTRODUCTION TO SAS PROGRAMMING
Prerequisites: Programming experience and 3460:147 or equivalent. Programming in the SAS language including SAS procedures to external storage and retrieval, data modification and programming, input and output handling. 2 credits

208 COMPUTER PROGRAMMING I
Prerequisite: 316. Introduction to problem-solving methods and algorithm development. Programming in a high-level language including how to design, code, debug and document programs using techniques of good programming style. 3 credits

210 COMPUTER PROGRAMMING II
Prerequisites: 208 and 3460:221 or 3450:215. Method of representation of d-information on a digital computer, character representation, fixed point floating point numbers, introduction to computer organization, algorithms and machine language programming. Boolean algebra, computer circuits. 3 credits

250 SELECTED TOPICS IN COMPUTER SCIENCE
Prerequisite: permission. Selected topics of interest in computer science. 13 credits

252 PROGRAMMING APPLICATIONS WITH COBOL
Prerequisite: 216. Applications of COBOL, Jr. and JCL manipulation, introduction to business data processing techniques. 3 credits

253 ASSEMBLY LANGUAGE PROGRAMMING
Prerequisite: 216. Basic computer organization and data representation. Programming in assembly language on a typical digital computer Subroutine linkage and macro instructions. 3 credits

307 APPLIED SYSTEMS PROGRAMMING
Prerequisite: 306. Design and implementation of assemblers, linkers, loaders and macro processes to interconnect complex programs. 3 credits

316 INTRODUCTION TO DATA STRUCTURES
Prerequisites: 316 or 3460:222 or 3460:216 or permission. Standard data structures, stacks, queues, deques, trees, graphs, vectors, arrays, files, searching, sorting. 3 credits

330 SURVEY OF PROGRAMMING LANGUAGES
Prerequisite: 290 or programming experience in a high level BLOCK-structured procedural language such as LISP. An introduction to the concepts, theory, and philosophy introduced by programming languages. Not to be used to satisfy minor or certificate requirements in the Department of Mathematics and Computer Science. 3 credits

419/519 INTRODUCTION TO DISCRETE STRUCTURES
Prerequisite: 290 or permission. Introduction to a number of structures in algebra of particular use to student in computer science. Topics include algorithms and flow chart language, graphs and digraphs, trees, lattices codes. 3 credits

420/520 STRUCTURED PROGRAMMING
Prerequisite: 316 and 418. Techniques of block programming using a structured programming language. Program reliability, program verification and program generation. 3 credits

426/526 OPERATING SYSTEMS
Prerequisites: 307, 316, and 330 or knowledge of C. Introduction to various types of operating systems: batch processing systems, multiprogramming systems and interprocess communication; storage management, protection and resource control. Deadlock problem. Course is independent of any particular operating system. 3 credits

428/528 UNIX SYSTEM PROGRAMMING
Prerequisite: 3460:428 (and 330 or 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. 3 credits

431/531 THEORY OF PROGRAMMING LANGUAGES
Prerequisites: 316 and 330. More advanced concepts underlying programming languages and their applications, formal definitions of programming languages, Backus Normal Form, semantic analysis, compiler design. 3 credits

435/535 ANALYSIS OF ALGORITHMS
Prerequisites: 316 and 418. Design and analysis of efficient algorithms for random access machines, derivation of pattern classification algorithms. 3 credits

440/540 COMPILER DESIGN
Prerequisites: 307 and 316. Techniques used in writing and modifying compilers including translation, loading, execution, symbol tables and storage allocation. Compilation of simple expressions and statement organization of a compiler for handling lexical, syntax analysis, object code generation, error diagnostics and code optimization. Use of compiler writing languages and prototyping. The course requires a project involving compiler writing. 3 credits

455/555 DATA COMMUNICATION AND NETWORKS
Prerequisite: 216 and 330. Introduction to data communications, interfacing computer networks, codes, modes of transmission, errors, protocol. 3 credits

457/557 COMPUTER GRAPHICS
Prerequisite: 216 and 330. Introduction to computer graphics, introduction to vector graphics, representation and languages for graphics. 3 credits

450/560 ARTIFICIAL INTELLIGENCE AND HEURISTIC PROGRAMMING
Prerequisites: 316 and 330. Study of various programs which have displayed some intelligent behavior. Exposition of level at which computers can display intelligence. 3 credits

455/565 COMPUTER ORGANIZATION
Prerequisite: 306. An introduction to the hardware organization of the computer at the register, processor and systems level. An in-depth study of the architecture of a particular computer's instruction set. 3 credits

457/567 MICROPROCESSOR PROGRAMMING AND INTERFACING
Prerequisites: 306, 316. Detailed study of a particular microprocessor architecture and instruction set. Includes device interface components. Real-time programming concepts. 3 credits

470/570 AUTOMATA, COMPUTABILITY AND FORMAL LANGUAGES
Prerequisite: 316. Introduction to formal languages and their relation to automata. Topics include description of languages, regular context-free and context-sensitive grammars; finite, pushdown and linear-bound automata, Turing machines, closure properties, computational complexity, stack automata and decidability. 3 credits

475/575 DATA-BASE MANAGEMENT
Prerequisites: 216 and 330 or knowledge of C. Fundamentals of data base organization, data manipulations and representation, data integrity, privacy. 3 credits

480/580 TOPICS IN COMPUTER SCIENCE
May be repeated for a total of six credits. Prerequisite: permission of instructor. Selected topics in computer science at an advanced level. 1-3 credits

491/591 WORKSHOP IN COMPUTER SCIENCE
Group projects of topical and theoretical interest in computer science. May not be used to meet graduate or undergraduate requirements in mathematics, statistics or computer science. 1-3 credits

497/597 INDIVIDUAL READING IN COMPUTER SCIENCE
(May be repeated) Prerequisite: permission. Computer science major only. Directed studies in the mathematical sciences under the guidance of designated faculty members. 1-3 credits

498 SENIOR HONORS PROJECT
Prerequisite: 489 (honors). Direct study for senior student in the Honors Program who has completed 3460:489 (honors). An introduction to research problems in the mathematical sciences under the guidance of selected faculty. 1-3 credits

Graduate Courses

610 SYMBOLIC AND NUMERICAL METHODS
Prerequisites: 3450:223 and 3450:312 or 3450:328, or 410/310 and 3460:330 or knowledge of LISP. Computer applications of symbolic methods using an advanced symbolic manipulation language (MACSYMA). Laboratory programming for MACSYMA. Theoretical and practical aspects of combining symbolic and numerical methods. 3 credits

753-7 INTRODUCTION TO STATISTICS
Introduction to fundamental ideas of statistics at precalculus level including topics from the following:

253 HYPOTHESIS TESTING (PARAMETRIC)
Prerequisite: 250. 1 credit

255 REGRESSION AND CORRELATION
Prerequisite: 253. 1 credit

256 EXPERIMENTAL DESIGN
Prerequisite: 253. 1 credit

258 STATISTICAL COMPUTATIONS ON THE MICROCOMPUTER
Prerequisites: 253 or 262, 253 and 3460:126. The utilization and generation of computer programs in the BASIC language to implement algorithms for the solution of a variety of statistical problems. 1 credit

260 EXPLORATORY DATA ANALYSIS
Prerequisites: 293, 295, 261. Topics include stem and leaf displays, inter-value displays, graphical description of data, resistant line, smoothing data (optional), two-way tables (optional). 1 credit

260B BASIC STATISTICS
Prerequisite: Mathematics Placement Test. Applied approach to data description and statistical inference. Hypothesis testing, estimation, one-sample parametric and nonparametric methods. Analysis of ratios, rates, and proportions. Computer Applications. 3 credits

261 INTRODUCTORY STATISTICS I
Prerequisite: Mathematics Placement Test. Descriptive statistics, tabular and graphical data description, probability distributions, introduction to statistical inference (hypothesis testing), testing, estimation, one-sample parametric and nonparametric methods. Computer applications. 2 credits

262 INTRODUCTORY STATISTICS II
Prerequisite: 261 or equivalent. Parametric and nonparametric methods of statistical inference for paired data and two-sample problems; one-way ANOVA, simple linear regression and correlation. Computer applications. 2 credits

270 INTRODUCTION TO STATISTICAL COMPUTING
Prerequisite: 260 or 262 or permission of the instructor. Introduction to statistical computing using statistical packages. Emphasis is on interpreting and using computer output of statistical problems involving descriptive statistics, hypothesis testing, regression, and correlation. 2 credits

415/515 MATHEMATICAL CONCEPTS FOR STATISTICS
Prerequisites: 3450:223, 3450:312, or equivalent. Topics from matrix algebra and analysis, quadratic forms, eigenvalues and roots, generalized inverses, vector functions, continuity, differentiation, extremum problems, multivariate integration, infinite series, and application. May not be used to meet graduate degree requirements for mathematical sciences majors. 4 credits

450/550 PROBABILITY
Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes. 3 credits

451/551,2 THEORETICAL STATISTICS I AND II
3 credits each. Prerequisites: 3450:223, 3450:222. Elementary combinational probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, test of hypotheses, regression and correlation, introduction to experimental designs. 6 credits

461/561 APPLIED STATISTICS I
Prerequisite: 3460:223 or 261 or permission. Applications of statistical theory to natural and physical sciences and engineering, including probability distributions, interval estimation, hypothesis testing (parametric and nonparametric), and simple linear regression and correlation. 4 credits

462/562 APPLIED STATISTICS II
Prerequisite: 461/561 or equivalent. Applications of the techniques of regression and multivariable analysis of variance. 4 credits

465/565 DESIGN OF SAMPLE SURVEYS
Prerequisite: 461/561 or equivalent. Design and analysis of frequently used sample survey techniques. 3 credits

467/567 RESPONSE SURFACE METHODOLOGY
Prerequisite: 462/562 or equivalent. First and second order response surface designs, efficient experimental plans, methods for the analysis, and optimization of response functions. 3 credits

475/575 THEORETICAL FOUNDATIONS OF STATISTICAL QUALITY
Prerequisite: 460/560 or equivalent. Course provides a solid foundation in the theory and applications of statistical techniques widely used in industry. 3 credits
GERMAN

3530:

101,2 BEGINNING GERMAN I AND II
4 credits each
Sequential. Reading, speaking, writing and listening comprehension: intensive drill in pronunciation; short stories, outside reading and supplementary work in language laboratory.

201,2 INTERMEDIATE GERMAN I AND II
3 credits each
Sequential. Prerequisite: 102 or equivalent. Grammar, review, practice in reading, writing, speaking, listening comprehension, short stories, plays, novels on intermediate level; outside reading and supplementary work in language laboratory.

207,8 INTERMEDIATE GERMAN I AND II READING OPTIONS
3 credits each
Sequential. Prerequisite: 202 or equivalent. Reading of representative works. Conducted in German.

250 19TH CENTURY GERMAN LITERATURE IN TRANSLATION
2 credits
Reading and discussion of works of Schiller, Goethe and other poets on 19th century Germany. Conducted in German.

301,2 GERMAN CONVERSATION AND COMPOSITION
3 credits each
Prerequisite: 202 or equivalent. Advanced composition using German models, special attention to words and idioms and development of oral expression and conversational ability.

305,6 INTRODUCTION TO GERMAN LITERATURE
3 credits each
Prerequisite: 202 or equivalent. Introduction to study of German literature. Reading and class discussion in German of representative works.

356,6 INTRODUCTION TO GERMAN LITERATURE
1-3 credits
Prerequisite: permission.

ITALIAN

3550:

101,2 BEGINNING ITALIAN I AND II
4 credits each
Sequential. Reading, speaking, writing and listening comprehension: intensive drill in pronunciation; short stories, outside reading and supplementary work in language laboratory.

201,2 INTERMEDIATE ITALIAN I AND II
3 credits each
Sequential. Prerequisite: 102 or equivalent. Grammar review, practice in reading, writing, speaking, listening comprehension; short stories, plays, novels on intermediate level; outside reading and supplementary work in language laboratory.

207,8 INTERMEDIATE ITALIAN I AND II READING OPTION
3 credits each
Sequential. Prerequisite: 202 or equivalent. Reading of works in Italian. Conducted in Italian.

301,2 ITALIAN COMPOSITION AND CONVERSATION
3 credits each
Prerequisite: 202 or equivalent. Italian composition using Italian models, special attention to words and idioms and development of oral expression and conversational ability.

305,6 INTRODUCTION TO ITALIAN LITERATURE
3 credits each
Prerequisite: 202 or equivalent. Introduction to study of Italian literature. Reading and class discussion in Italian of representative works.

356,6 INTRODUCTION TO ITALIAN LITERATURE
1-3 credits
Prerequisite: permission.

RUSSIAN

3570:

101,2 BEGINNING RUSSIAN I AND II
4 credits each
Reading, speaking, writing, and understanding; intensive drill in pronunciation and supplementary work in Russian laboratory.

201,2 INTERMEDIATE RUSSIAN I AND II
3 credits each
Prerequisite: 102 or equivalent. Grammar review, practice in reading, writing, speaking, short stories, novels on intermediate level; outside reading and supplementary work in language laboratory.

207,8 INTERMEDIATE RUSSIAN I AND II READING OPTION
3 credits each
Sequential. Prerequisite: 202 or equivalent. Reading of texts in Russian dealing with culture of Russian-speaking people. Discussion of content of these texts in Russian along with review of grammar to extend necessary for accurate understanding of texts. Not open to majors.

301,2 RUSSIAN COMPOSITION AND CONVERSATION
3 credits each
Prerequisite: 202 or equivalent. Advanced composition using Russian models, special attention to words and idioms; development of oral expression and conversational ability.

305,6 INTRODUCTION TO RUSSIAN LITERATURE
3 credits each
Prerequisite: 202 or equivalent. Reading and class discussion in Russian of representative works.

309,10 RUSSIAN CIVILIZATION AND CULTURE
3 credits each
Prerequisite: 202 or equivalent. Reading and discussion of Russian texts relating to developments in Russian civilization and culture.

401,2 TRANSLATION: RUSSIAN
3 credits each
Prerequisite: 202 or equivalent. Intensive reading of scientific articles in chemistry, physics, mathematics, biology and medicine.

420,1 RUSSIAN LITERATURE OF THE 19TH CENTURY:
3 credits each
Prerequisites: 301 or 302 or permission. Readings from representative authors such as Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, Goncharov and others.

427,8 RUSSIAN LITERATURE OF THE 20TH CENTURY
3 credits each
Prerequisites: 202 or equivalent. Reading and discussion of selected literary works from Gorky to Solzhenitsyn.

439 ADVANCED RUSSIAN SYNTAX, GRAMMAR AND CONVERSATION
3 credits
Prerequisite: 404 or equivalent. Advanced work in composition, translation into Russian and idiomatic use of the spoken language.

497,8 INDIVIDUAL READING IN RUSSIAN
1-3 credits each
Prerequisite: permission.
SPANISH

3580:

101, 2 BEGINNING SPANISH I AND II 4 credits
Sequentials. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation; short stories, outside reading and supplementary work in language laboratory.

201, 2 INTERMEDIATE SPANISH I AND II 3 credits each
Sequentials. Prerequisite: 102 or equivalent and permission. Grammar review in reading, writing, listening and speaking, short stories, plays novels on intermediate level, outside reading and supplementary work in language laboratory.

207A INTERMEDIATE SPANISH I AND II READING OPTION 3 credits each
Sequentials. Prerequisite: 102 or equivalent and permission. Reading of texts in Spanish dealing with culture of Spanish-speaking people. Not open to majors.

301, 2 SPANISH COMPOSITION 3 credits each
Prerequisite: 202 or equivalent and permission. Advanced composition using Spanish models, special attention to words and idioms, development of oral expression and communicability.

305 INTRODUCTION TO HISPANIC LITERATURE 4 credits
Prerequisite: 202 or equivalent. Reading and discussion of works written in Spanish with emphasis on the literature of contemporary authors. Conducted in Spanish.

311 SPANISH-AMERICAN CULTURAL EXPERIENCE 1-2 credits
Prerequisite: permission. Student’s residence and/or independent study in Spanish-speaking countries which results in demonstrable assimilation of country’s culture may earn a maximum of two credits.

350 CONTEMPORARY LATIN AMERICAN FICTION IN TRANSLATION 3 credits
(May not be taken for credit toward the Spanish major). Reading, discussion of novels, short stories of major Spanish American and Brazilian writers. Designed as an elective for upper-level students. Texts and discussion in English.

351, 2 SPANISH LITERATURE AND CULTURE 3 credits each
Prerequisite: 305 or permission. Reading and discussion of Spanish literature and culture, with emphasis on the role of science in the formation and justification of value judgments. Conducted in Spanish.

360 SPANISH LITERATURE OF THE 18TH AND 19TH CENTURIES 3 credits
Prerequisite: 305 or permission. Reading and analysis of representative works that illustrates major developments in the 18th and 19th centuries, including major developments in Spanish literature and culture. Student teaching experiences are periodically reviewed and evaluated. These credits may not be applied toward degree requirements.

401, 2 ADVANCED COMPOSITION AND CONVERSATION 3 credits each
Prerequisites: 202 or equivalent permission. Development of proficiency in speaking and writing Spanish at a level that beyond that achieved in 302. Conducted in Spanish.

403 ADVANCED GRAMMAR 3 credits
Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

405/505 SPANISH LINGUISTICS: PHONOLOGY 4 credits
Prerequisite: permission. Descriptive study of Spanish phonetics and morphology, of Spanish and English sounds, historical aspects, regional accents and sociolinguistic variation. Conducted in Spanish.

406/506 SPANISH LINGUISTICS: SYNTAX 4 credits
Prerequisite: permission. Descriptive study of Spanish syntax, introduction to theories of grammar, overview of Spanish semantics and pragmatics. Conducted in Spanish.

407/507 MEDIEVAL AND RENAISSANCE SPANISH LITERATURE 4 credits
Prerequisite: 305 or permission. Reading and discussion of representative works that mark the beginnings of Spanish literature in poetry, prose and drama, with emphasis given to the works of Cervantes, D. de Mora, Spain. Conducted in Spanish.

415/511 SPANISH LITERATURE OF THE GOLDEN AGE 4 credits
Prerequisite: 305 or permission. Reading and discussion of representative novels and short stories with special emphasis on works of Miguel de Cervantes, drama, poetry and essays of 17th and 18th centuries studied. Conducted in Spanish.

412/512 CERVANTES: DON QUIJOTE 4 credits
Prerequisite: 305 or permission of the Instructor. Reading and analysis of Don Quixote as the first modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.

415/515 18TH AND 19TH CENTURY SPANISH DRAMA AND POETRY 4 credits
Prerequisite: 305 or permission. Reading, discussion and lectures. Study of Neoclassicismo and Romanticismo. Conducted in Spanish.

416/516 19TH CENTURY SPANISH PROSE 4 credits
Prerequisite: 305 or permission. Reading, discussion and lectures. Study of Realismo, Naturalismo and La Generacion del 98. Conducted in Spanish.

418/518 20TH CENTURY SPANISH PROSE 4 credits
Prerequisite: 305 or permission of the instructor. Reading and discussion of representative works of prose fiction with a selection of works that illustrates major developments and themes. Conducted in Spanish.

419/519 20TH CENTURY SPANISH DRAMA/POETRY 4 credits
Prerequisite: 305 or permission of the instructor. Reading and discussion of representative writers of modernism and theses in both genres. Conducted in Spanish.

422/522 SPECIAL TOPICS IN HISPANIC CULTURE 1-4 credits
(May be repeated). Reading and discussion of significant works in literature or culture in Spain and Latin America not studied in other courses.

423/523 SPANISH-AMERICAN LITERATURE BEFORE 1900 4 credits
Prerequisite: 305 or permission. Reading of representative Spanish-American literature from the discovery in 1900. Oral and written reports. Conducted in Spanish.

424/524 20TH CENTURY SPANISH-AMERICAN LITERATURE 4 credits
Prerequisite: 305 or permission. Reading and analysis of selected works, essays, poems and short fiction written by outstanding Spanish-American authors of this century. Conducted in Spanish.

425/525 20TH CENTURY SPANISH-AMERICAN NOVEL 4 credits
Prerequisite: 305 or permission. Reading and discussion of representative contemporary Latin American and Spanish-American novels. Conducted in Spanish.

427A/527A SPANISH AND SPANISH-AMERICAN LITERATURE AND CIVILIZATION 4 credits each
Prerequisite: 302 or 306 or permission. Emphasis on customs, traditions, literary and artistic conditions that constitute Spain’s specific contribution to Western civilization. Study of Spanish-speaking world. Conducted in Spanish.

430/530 WOMEN IN 20TH CENTURY HISPANIC LITERATURE 4 credits
Prerequisite: 305 or permission. Reading and analysis of selected works from the 20th Century that depict women in Hispanic countries. Methodologies of feminist criticism will be studied. Conducted in Spanish.

471/571 SPANISH LANGUAGE READING PROFICIENCY 4 credits
Designed to develop proficiency in reading comprehension.

497 INDIVIDUAL READING IN SPANISH 1-3 credits
Prerequisite: permission.

Graduate Courses

601 SEMINAR ON MEDIEVAL SPANISH LITERATURE 4 credits
Reading and discussion of monumental medieval literary works of Spain such as Poema de mio Cid, El Conde Lucanor, El Libro de buen amor. Conducted in Spanish.

609.10 SEMINAR ON SPANISH LITERATURE OF THE GOLDEN AGE: SPANISH LITERATURE 4 credits each
Reading and discussion of representative works from Renaissance to late Baroque period. Studies in essay, novel, theatre, poetry and philosophical writings. Conducted in Spanish.

613 SEMINAR ON SPANISH-AMERICAN LITERATURE 4 credits
Studies in representative writers preceding the “Boom.” Reading and discussion of various genres and authors representing significant literary developments. Conducted in Spanish.

617 SEMINAR ON 20TH CENTURY SPANISH-AMERICAN LITERATURE 4 credits
Reading and discussion of contemporary writers with emphasis on theatre, novels and short stories. Conducted in Spanish.

621 SEMINAR ON 20TH CENTURY SPANISH LITERATURE 4 credits
Studies of representative present-day writers with analyses and discussions of novel, theatre, poetry and short stories. Conducted in Spanish.

615 SPANISH TEACHING PRACTICUM 2 credits
Prerequisite: teaching, assistantship or permission. Orientation and practice of particular aspects of teaching Spanish language and culture. Student teaching experiences are periodically reviewed and evaluated. These credits may not be applied toward degree requirements.

697A INDIVIDUAL READINGS IN SPANISH 1-4 credits each
Course content is approved and the reading course is completed under the guidance of a faculty member. Conducted in Spanish.

699 THESIS WRITING 4 credits

PHILOSOPHY

3600:

101 INTRODUCTION TO PHILOSOPHY 3 credits
Introduction to philosophical problems and attitudes through acquaintance with thoughts of some leading thinkers of Western tradition.

120 INTRODUCTION TO ETHICS 3 credits
Introduction to problems of moral conduct through readings from the tradition and class discussions, noting differences between “natural” and “artificial” moral principles.

125 THEORY AND EVIDENCE 3 credits
Introduction to logical and critical thinking. Includes such topics as meaning, inferential fallacies, propositional logic, predicate and syllogistic logic and natural of induction.

170 INTRODUCTION TO LOGIC 3 credits
Introduction to logic and critical thinking. Includes such topics as meaning, inferential fallacies, propositional logic, predicate and syllogistic logic and natural induction.

141 HISTORY OF ANCIENT PHILOSOPHY 3 credits
Studies in the development of ancient Greek philosophy from pre-Socratics to Aristotle. Readings from primary sources in translation.

186 AMERICAN PHILOSOPHY 3 credits
Prerequisite: one course in philosophy or permission of instructor. Movements of ideas in American from Royce to present.

232 PHILOSOPHY OF RELIGION 3 credits
Prerequisite: 101 or permission of instructor. Discussion, analysis of problems of theology, nature of religious experience, God's nature, existence, immortality, sin, reason, free will, redemption, reason.

280 SOPHOMORE TOPICS IN PHILOSOPHY (May be repeated for a total of six credits) Prerequisite: permission of instructor. Selected topics in philosophy at the sophomore level.

312 HISTORY OF MEDIEVAL PHILOSOPHY 3 credits
History of philosophy from the 3rd century to 16th century. Major philosophers studied include St. Augustine, St. Anselm, Peter Abelard, St. Thomas Aquinas, Duns Scotus and William of Ockham. Readings from primary sources.

313 HISTORY OF MODERN PHILOSOPHY 3 credits
Prerequisite: one course in philosophy. Analysis of major philosophical issues of 17th and 18th centuries. Readings from Descartes through Kant. Readings from primary sources in translation.

314 19TH CENTURY PHILOSOPHY 3 credits
Prerequisite: one course in philosophy or permission of instructor. Inquiry into philosophical, significant ideas of Hegel, Marx, Schopenhauer, Mill, Nietzsche.

322 ADVANCED TOPICS IN ETHICS 3 credits
Prerequisite: one course in philosophy or permission of instructor. An examination of ethical theory such as the Naturalistic Fallacy, Ethical Non-Cognitivism, Prescriptive Theories, Theories of Rights, Theories of Punishment, Nihilism, Relativism, Moral Skepticism. Specific topics will be announced in the course schedule.

324 SOCIAL AND POLITICAL PHILOSOPHY 3 credits
Prerequisite: one course in philosophy or permission of instructor. An examination of the normative justification of social, political institutions and practices. Analyses concepts such as rights, justice, equity, political obligation from historical as well as contemporary points of view. Application to particular social issues covered.

332 DIALECTICAL MATERIALISM 3 credits
Prerequisite: permission of instructor. Includes Hegelian and other origins as well as its development in writings of Marx, Engels. Lenin and contemporary writers. Focus on metaphysics, social philosophy, philosophy of history, nature of man, ethics, aesthetics.
PHILOSOPHY

350 PHILOSOPHY OF ART
3 credits
Prequisite: One course in philosophy or permission of instructor. An examination of theories of the nature of art and the grounds of aesthetic evaluation. Analysis of such concepts as representation, form, content, expression, institution, convention, meaning, truth as they apply in the context of the arts.

361 BIOMEDICAL ETHICS
3 credits
Prerequisites: 101, 120 or 170, or permission of instructor. The identification, analysis and evaluation of ethical issues arising most critically in the biomedical setting, e.g., abortion, termination of treatment, definition of death, IV, AIDS.

382 BUSINESS ETHICS
3 credits
Prerequisites: 101, 120 or 170, or permission of instructor. Basic moral theories, moral principles and the decision-making process, applied to issues in business.

383 POLICE ETHICS
3 credits
Prerequisites: 101, 120 or 170, or permission of instructor. Basic moral concepts and their application to the criminal justice system. Concerned with such issues as punishment, the use of force and conflict resolution.

371 PHILOSOPHY OF MIND
3 credits
Nature of mind and the relationship between mind and body. Specific topics such as the limits of human reason, personal identity, the role of human thought in action and whether machines can think are also considered.

374 SYMBOLIC LOGIC
3 credits
Prerequisite: 170 or permission of instructor. Detailed consideration of propositional and first-order predicate logic. Introduction to class logic, modal logics and axiomatics.

380 JUNIOR TOPICS IN PHILOSOPHY
(May be repeated for a total of six credits) Prerequisite: permission of instructor. Selected topics in philosophy at the junior level.

390 JUNIOR HONORS COLLOQUIUM
3 credits
Prerequisite: Junior standing in Honors Program or junior standing as philosophy major or minor. Prerequisite: permission of instructor by first semester faculty member. Selection of topics, research, writing and defense of one or more philosophical projects. Preparation and foundation for senior honors project in philosophy.

411/511 LATIN DIALOGUES OF PLATO
3 credits
Prerequisites: one introductory course and 211 or permission of instructor. Readings of dialogues in translation, commencing with Theaetetus including: Parmenides, Sophist, Statesman, Philosopher.

418/518 ANALYTIC PHILOSOPHY
3 credits
Prerequisites: 211, 312 and 313 or permission of instructor. Study of ideal and ordinary language movements in 20th Century British and American philosophy. Deals with such figures as Russell, Carnap, Ayer, Moore, Wittgenstein, Ryle and Austin.

419/519 BRITISH EMPIRICISM
3 credits
Prerequisites: one introductory course and 313 or permission of instructor. Intensive analysis of selected major writings of Locke, Berkeley and Hume.

421/521 PHILOSOPHY OF LAW
3 credits
Prerequisite: one course in philosophy or permission of instructor. Philosophical inquiry into the nature of law and legal institutions.

422/522 CONTINENTAL RATIONALISM
3 credits
Prerequisite: one introductory course and 313 or permission of instructor. Intensive analysis of selected major writings of Descartes, Spinoza and Leibniz.

424/524 EXISTENTIALISM
3 credits
Prerequisite: one introductory course in philosophy. 314 or permission of instructor. In-depth inquiry into the thought of Kierkegaard, Jaspers, Heidegger, Sartre, Trotsky and other existentialists with their concern for man and his condition.

426/526 PHENOMENOLOGY
3 credits
Prerequisites: one introductory course, 314 or permission of instructor. Inquiry into methodology of Husserl and Heidegger and their influence upon Western European and American thought.

432/532 ARISTOTLE
3 credits
Prerequisites: 211, 312 and 313 or permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of man and ethics. Taught in alternate years.

434/534 KANT
3 credits
Prerequisite: 313 or permission of instructor. Study of Kantian system of thought and its relation to history of philosophy. Includes thorough investigation of one or more of Kant's philosophical works.

444/544 PROBLEMS IN PHILOSOPHY
3 credits
Prerequisites: two courses in philosophy or permission of instructor. Thorough, critical examination of one major philosophical problem.

462/582 THEORY OF KNOWLEDGE
3 credits
Prerequisites: three courses in philosophy. Examination of nature of knowledge; theories of perception, conception and truth, problem of induction and relation of language to knowledge.

484/584 PHILOSOPHY OF SCIENCE
3 credits
Prerequisites: 101, 170 or permission of instructor. Nature of scientific inquiry, types of explanation, laws and causality, theoretical concepts and reality. Also considers critics of hypothetical-deductive view of science, e.g., Hempel and Kuhn.

471/571 METAPHYSICS
3 credits
Prerequisites: 211, 312 and 313 or permission of instructor. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.

480/580 SEMINAR
(May be repeated) Prerequisite: permission of instructor.

481/581 PHILOSOPHY OF LANGUAGE
3 credits
Prerequisites: 101 and 170 or permission of instructor. Contemporary philosophies about nature of language and its relation to reality and human thinking, includes discussion of views of linguists such as Chomsky.

490 SENIOR HONORS PROJECT IN PHILOSOPHY
(May be repeated for a total of six credits) Prerequisite: 390 or senior standing in Honors Program or senior honors standing as philosophy major or permission of instructor or nomination by department faculty member. Research leading to completion of senior honors thesis involving original work under faculty supervision.

497/597 INDIVIDUAL STUDY
(May be repeated for a total of six credits) Prerequisites: completion of required courses of philosophy major or permission of instructor and department head. Directed independent study of philosophy, philosophical or philosophical problem under guidance of selected faculty member. Subject matter determined by selected faculty member in consultation with student. Graduate credit requires significant additional work which may include additional research paper.

Graduate Courses

615 SEMINAR: HISTORY OF PHILOSOPHY
3 credits
May be repeated for a total of 12 credits Prerequisite: permission of instructor. Study in philosophical works of one major philosopher.

626 ETHICAL THEORY
3 credits
Examination of problems related to conduct and decision making in light of the Western tradition as well as contemporary insights of positivism, phenomenology, existentialism, logical analysis, naturalism and pragmatism.

675 LOGICAL THEORY
3 credits
Advanced topics in logic such as modal logics and axiomatics. Recommended for law student, as logic of normative systems is treated. It is suggested that a graduate student be familiar with material covered in a course like 314 before taking this course.

680 SEMINAR
(May be repeated for a total of nine credits)

699 SEMINAR: THESIS SUPERVISION
2 credits

PHYSICS

3650:

130 DESCRIPTIVE ASTRONOMY
3 credits
Qualitative and non-mathematical introduction to subjects of astronomy and astrophysics. Includes semester course for students not majoring in physics or astronomy.

131 MUSIC, SOUND AND PHYSICS
3 credits
Qualitative introduction to sound production, perception and reproduction, with emphasis on musical examples.

137 LIGHT
3 credits
Introductory, qualitative course dealing with nature of light, and interaction of light with material objects to produce common visual effects.

138 PROPERTIES OF LIGHT LABORATORY
1 credit
Prerequisite or corequisite: 131 or permission. Introductory laboratory dealing qualitatively and quantitatively with properties of light and interaction of light with material objects.

141 PHYSICS, ENERGY AND MAN
3 credits
Introductory, qualitative course dealing with nature of energy including its availability, conservation and utilization by man. Energy resources, conversion efficiencies, environmental effects of energy production; recent developments.

160 PHYSICS IN SPORTS
3 credits
An introduction to physics, particularly mechanics. Athletic activities utilized to illustrate principles.

261 PHYSICS FOR THE LIFE SCIENCES I
4 credits
Prerequisites: high school algebra, trigonometry or 3450:149 as corequisite or permission. Introductory course for professional work in biology and health professions and services. Emphasizes life science applications. Mechanics: laws of motion, force, work, energy, power; properties of matter: gases, liquids, solids, fluids. Mechanics.

262 PHYSICS FOR THE LIFE SCIENCES II
4 credits

267A LIFE SCIENCE PHYSICS COMPUTATIONS I AND II
1 credit each
Corequisites: 261 and 262 or 292 and 3450:223. Optional companion courses to 261, 262 provide additional computational experience in applications of physics to life sciences, emphasizing use of algebra and trigonometry. Particularly recommended for student with modest mathematical preparation.

291 ELEMENTARY CLASSICAL PHYSICS I
4 credits

292 ELEMENTARY CLASSICAL PHYSICS II
4 credits
Prerequisite: 291. Wave phenomena: sound, light, optics, electricity and magnetism; atomic and nuclear physics; radioactivity.

293A PHYSICS COMPUTATIONS I AND II
1 credit each
Corequisites: 291 and 292 or 291 and 292. Optional companion courses to 291, 292 provides experience in problem solving, and elaborates application of calculus to simple physical phenomena. Particularly recommended for a freshman and for student with modest preparation in mathematics or physical sciences.

301 ELEMENTARY MODERN PHYSICS
3 credits
Prerequisite: 292 or permission of instructor. Special relativity, introduction to quantum physics, hydrogen atom and complex atoms, atomic spectra, topics in nuclear and solid state physics.

310 ELECTRONICS
3 credits
Prerequisites: 262 or 292. AC and DC circuit theory, digital integrated logic circuits, counters, digital wave-shaping, A to D and D to A conversion and applications.

320 OPTICS
3 credits
Prerequisites: 262 or 3450:223 Geometric optics, reflection, mirrors, refraction, lenses, optical instruments. Physical optics: waves, superposition, coherence, lasers, interference, diffraction, absorption and reflection, double refraction, polarization, optical activity.

321 PHYSICS LABORATORY TECHNIQUES
2 credits
Prerequisite: permission of instructor. Design and fabrication of simple mechanical systems, photography in data collection, electronic chassis construction, printed circuit techniques, optical measuring instruments.

322 INTERMEDIATE LABORATORY I AND II
2 credits each
Prerequisites: 262 or 292. Laboratory course stressing measurement techniques with contemporary laboratory apparatus. Experience in design, instrument calibration and reporting emphasizing modern physics experiments and measurement of fundamental natural constants.

325 LABORATORY DATA ANALYSIS
3 credits
Prerequisites: 250 and 3450:209. Numerical methods for analysis of laboratory data. Computer methods and programs to draw correct inferences and maximize usefulness of laboratory data.
Graduate Courses

605 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS I
Prerequisite: permission. Review of FORTRAN and basic topics in computer science. Numerical solution of physics problems, including Newmark's and Schrödinger's equations. Treatment and reduction of experimental data. plots, simulation.

606 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS II
Prerequisite: permission. Data reduction. Gawk program, comparison of theoretical models with data, linear and non-linear least squares curve-fitting. May accommodate scientific problems of individual interest.

615 ELECTROMAGNETIC THEORY I
Prerequisite: ECE 325 or permission of instructor. Electrodynamics and magnetostatics at advanced level for graduate students. Boundary value problems, dielectrics, multiple expansions, time-varying fields. Maxwell's equations and electromagnetic waves, reflection, refraction, wave guides and cavities.

616 ELECTROMAGNETIC THEORY II
Prerequisite: 615. Scattering and absorption, plasma physics, special theory of relativity. Dynamics of relativistic particles in fields, collisions of charged particles. Radiation from moving charges, bremsstrahlung, multiple fields.

625 QUANTUM MECHANICS I
Prerequisites: 441/441, 445/451 or permission of instructor. Basic concepts of quantum mechanics, representation theory, particle in a central field, angular momentum and spins. Clebsch-Gordan coefficients, perturbation theory, scattering, transition probabilities.

626 QUANTUM MECHANICS II

631 PHYSICS OF POLYMERS I
Prerequisite: 3450:235 or permission of instructor. Polymeric states of matter, crystallinity, rubber elasticity, viscoelasticity, transport and electrical properties, glassy state, fracture processes. Elasticity at large strains, phenomenological viscoelasticity, dielectric properties, diffusion, introduction to NMR spectroscopy of polymers.

632 PHYSICS OF POLYMERS II
Prerequisite: 631 or permission. Phase transitions, temperature dependence of mechanical and electrical properties, crystalline polymers, kinetics of crystallization, fracture, adhesion, dielectric properties, applications of NMR spectroscopy to polymers.

635,6 PHYSICS OF POLYMERS LABORATORY I AND II
2 credits each. Prerequisite: 611; may not be used to meet requirements for graduate courses in physics. Introductions to polymer problems and modern techniques in polymer science and engineering.

641 LANGMUIRIAN MECHANICS
Prerequisite: 615. Theory of adsorption, surface tension. Thermodynamics of adsorption, theory of capillarity, surface tension, adsorption. Multivariate applications of surface chemistry.

661 STATISTICAL MECHANICS
Prerequisite: 441/441 or permission of instructor. Fundamental principles of statistical mechanics, Gibbs, Fermi and Bose statistics, solids, liquids, gases, phase equilibrium, chemical reactions.

684 ADVANCED NUCLEAR PHYSICS
Prerequisite: 625. Quantum mechanics applied to nuclei. Interaction of radiation with nuclei, nuclear scattering, reactions, energy levels of nuclei.

685 SOLID-STATE PHYSICS I

686 SOLID-STATE PHYSICS II

689 SPECIAL PROBLEMS IN THEORETICAL PHYSICS
May be repeated. Prerequisite: permission. Intended to facilitate exploration of particular areas of interest in theoretical physics, by consultation with faculty member and independent study.

690 SPECIAL PROBLEMS IN EXPERIMENTAL PHYSICS
May be repeated. Prerequisite: permission. Intended to encourage development of experimental techniques in selected areas, under faculty supervision.

691 SEMINAR IN THEORETICAL PHYSICS
May be repeated. Prerequisite: permission.

692 SEMINAR IN NMR SPECTROSCOPY
May be repeated. Prerequisite: permission.

693 SEMINAR IN SOLID-STATE PHYSICS
May be repeated. Prerequisite: permission.

697 GRADUATE RESEARCH
Prerequisite: permission. Candidates for M.S. degree may obtain up to five credits for laboratory research projects. Grades and credit received at completion of such projects.

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.

699 MASTER'S THESIS RESEARCH
1-5 credits. 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.
POLITICAL SCIENCE

3700:

100 GOVERNMENT AND POLITICS IN THE UNITED STATES 4 credits
Examination of American political system with emphasis on fundamental principles, ideas, institutions and processes of modern government. Lecture and discussion sections (day classes only).

123 CURRENT POLICY ISSUES 3 credits
Surveys contemporary public policy issues by applying a broad conceptual framework. Cannot be used for credit toward major in political science.

200 COMPARATIVE POLITICS 4 credits
Introduction to comparative political analysis; description of political systems of Great Britain, France, Germany and Soviet Union. Contrast between democracy and totalitarianism emphasized.

201 INTRODUCTION TO POLITICAL RESEARCH 3 credits
Introduction to the research process in political science through an introduction to the logic of social science inquiry and contemporary techniques of analysis.

205 STATE AND LOCAL GOVERNMENT AND POLITICS 3 credits
Examination of institutions, processes and intergovernmental relations at state and local levels.

220 AMERICAN FOREIGN POLICY 3 credits
Examination of American foreign policy-making process, public opinion and other limitations on policy, specific contemporary problems in selected areas.

302 AMERICAN POLITICAL IDEAS 3 credits
Study of major thinkers and writers of American political thought.

303 INTRODUCTION TO POLITICAL THOUGHT 3 credits
Survey of major ideas and concepts of Western political theory from pre-Socratics through period of Enlightenment.

304 MODERN POLITICAL THOUGHT 3 credits
Examination of central concepts of political thought from 19th Century to present. Modern liberalism, communism, fascism, and totalitarianism emphasized.

310 INTERNATIONAL POLITICS AND INSTITUTIONS 4 credits
Relations among nations examined in political context.

311 THE POLITICS OF INTERNATIONAL TRADE AND MONEY 3 credits
Prerequisite: 310 or permission of instructor. Examines trade and money as sources of international power; focuses on the evolution of the Bretton Woods monetary and GATT trade regimes.

319 BRITAIN AND THE COMMONWEALTH 3 credits
Description and analysis of government and politics of Great Britain and leading nations of the Commonwealth.

321 WESTERN EUROPEAN POLITICS 3 credits
Description and analysis of government and politics of France, Germany, Italy and Switzerland, with appropriate references to Scandinavia and Low Countries.

322 SOVIET AND EAST EUROPEAN POLITICS 3 credits
Theory and practice of government and politics in Soviet Union; comparison with selected communist states of Eastern Europe.

323 POLITICS OF CHINA AND JAPAN 3 credits
Examination of governmental structures and political processes of China and Japan.

325 COMPARATIVE PUBLIC POLICY 3 credits
Considers the formulation, decisions, implementation, impact of public policies in a comparative perspective. Examining public policies in a variety of countries the relationship between economic and political systems to policy outcomes is observed.

326 POLITICS OF DEVELOPING NATIONS 3 credits
General introduction to concepts and theories of political development and political institutions, elite-recruitment and political processes of selected emerging nations.

327 AFRICAN POLITICS 3 credits
Examination of patterns of government and politics of nations south of Sahara.

330 CANADIAN POLITICS 3 credits
An examination of the instructions and processes of Canadian government, a survey of some of the pressing issues confronting public decision makers in Canada.

340 AMERICAN POLITICAL PARTIES AND INTEREST GROUPS 3 credits
Role of political parties and interest groups in political process. Development of structure and function of parties, patterns of party allegiance and voting behavior; interest groups and their effects on government.

341 THE AMERICAN CONGRESS 3 credits
Examination of structure and function of Congress, with comparative materials on legislative process on all levels. Presidential and congressional conflict examined.

342 MINORITY GROUP POLITICS 3 credits
Examination of political behavior of racial, religious and ethnic minority groups in the United States.

350 THE AMERICAN PRESIDENCY 3 credits
The presidency as focal point of politics, policy and leadership in American political system.

360 THE JUDICIAL PROCESS 3 credits
Role of police, lawyers, courts and judges in context of American political process. Structure and process of judicial policy making and limitations on judicial power.

370 PUBLIC ADMINISTRATION: CONCEPTS AND PRACTICES 4 credits
Examination of administrative theories and their application in public bureaucracies. Emphasis is placed on practices to improve the quality of public sector administration.

380 URBAN POLITICS AND POLICIES 4 credits
Examination of problems emerging from urban and regional complexities in the United States. Structure and processes of political decision making at this level analyzed.

381 STATE POLITICS 3 credits
Analysis of the state political process in terms of its capacity to deal with a wide range of socioeconomic problems. Special emphasis on legislatures, administrations, parties and interest groups.

382 INTERGOVERNMENTAL RELATIONS 3 credits
Analysis of problems of the intergovernmental relations in the United States. Interactions of local, state, federal units of government will be considered.

391 HONORS IN POLITICAL SCIENCE 3 credits
Prerequisites: at least 17 credits and a 3.25 average in political science and permission of advisor.

392 SELECTED TOPICS IN POLITICAL SCIENCE 1-3 credits
May be repeated, but no more than three credits can be applied to major in political science. Topics of substantial current importance, specialized topics within political science or experimental courses.

395 INTERNSHIP IN GOVERNMENT AND POLITICS 2-9 credits
May be taken twice for a total of nine hours. No more than four credits may be applied toward major in political science. Prerequisite: Three courses in political science at The University of Akron, 2.0 average in political science, and permission of instructor. Supervised individual placement with public office holders, party groups, governmental agencies, law firms and other organizations providing professional level work.

397 INDEPENDENT STUDY 1-4 credits
May be repeated for a total of four credits. Prerequisites: senior standing, 3.0 grade-point average and permission of adviser.

402/502 POLITICS AND THE MEDIA 3 credits
Examination of the role of the press in political decision making. An emphasis on the press, the media and political decision makers.

405/505 POLITICS IN THE MIDDLE EAST 3 credits
The role of the state system in the Middle East after World War I; an analysis of the socio-cultural, ideological forces influencing the political behavior of the people of the Middle East.

410/510 INTERNATIONAL DEFENSE POLICY 3 credits
Prerequisite: At least one of the following: 3700, 220, 310, 3400, 340, 407, 408, or permission. Introduction to political and military policies of East and West. Major focus on historical, conceptual, and ethical dilemmas confronted in developing and implementing defense policy.

411/511 THEORIES OF INTERNATIONAL POLITICAL ECONOMY 3 credits
Prerequisites: 310 or permission of instructor. Course examines the predominant and competing theories of international political economy, including imperialism, world systems analysis, long wave theory, neo-marxism, and neo-realism.

415/515 COMPARATIVE FOREIGN POLICY 3 credits
Prerequisite: 310 or 220 or permission. Study of foreign policies of selected nations, with special attention to processes and instruments of decision making of the major powers.

420/520 ISSUES AND APPROACHES IN COMPARATIVE POLITICS 3 credits
Prerequisite: 200 or permission of instructor. Detailed examination of approaches to the study of comparative politics, political parties, elites and various theories of revolution.

425/525 AMERICAN POLITICS 3 credits
Prerequisite: 200 or permission of instructor. Examination of patterns of government and politics in Latin American area.

440/540 PUBLIC OPINION AND POLITICAL BEHAVIOR 4 credits
Prerequisite: 100 or 120 or permission. Nature and role of public opinion in political process: historical development, current methods of measurement. Political behavior of American electorate.

441/541 THE POLICY PROCESS 3 credits
Prerequisites: eight credits in political science. Intensive study of policy-making process, emphasizing roles of various participants in executive and legislative branches as well as private individuals and groups.

442/542 METHODS OF POLICY ANALYSIS 3 credits
Prerequisite: 201. Examination of methods available for analyzing public policies. Techniques of cost-benefit analysis; evaluation research; qualitative and quantitative are covered as well as consideration of ethical questions in policy analysis, the practical problems facing policy analysts.

451/551 THE SUPREME COURT AND CONSTITUTIONAL LAW 3 credits
Prerequisite: 100 or permission. Interpretation of the Constitution by the Supreme Court with emphasis on federal judicial, legislative and executive powers; separation of powers; and federalism.

470/573 CAMPAIGN MANAGEMENT 3 credits
Prerequisite: Six credits of political science or permission. Reading, research and practice in campaign management decision making.

471/571 CAMPAIGN FINANCE 3 credits
Prerequisite: six credits of political science or permission. Reading and research in financial decision making in political campaigns.

472/572 PARTY AND INTEREST GROUP: ORGANIZATION AND MANAGEMENT 3 credits
Prerequisite: six credits of political science or permission. Reading and research in political party and interest group organization and management decision making.

476/572 THE SUPREME COURT AND CIVIL LIBERTIES 3 credits
Prerequisite: 100 or permission. Interpretation of the Constitution by the Supreme Court with emphasis on freedom of speech and press, freedom of religion, criminal rights and right to privacy.

480/580 POLICY PROBLEMS 3 credits
May be repeated for a total of six credits. Prerequisite: 360 or permission. Intensive study of selected problems in public policy.

490/590 WORKSHOP 1-3 credits
May be repeated for a total of six credits. Prerequisites: senior standing in Honors Program and permission. Open only to a political science major in Honors Program. Independent study leading to completion of senior honors thesis or other original work.

Graduate Courses

600 SCOPE AND THEORIES OF POLITICAL SCIENCE 3 credits
Prerequisite: Six credits in political science or permission of instructor. Emphasis on the scope and content of political theory; theory construction and validation in political science.

601 RESEARCH METHODS IN POLITICAL SCIENCE 3 credits
Prerequisites: six credits of political science, including 440 (or a satisfactory equivalent) or permission of instructor. Techniques of quantitative research methodology in political science; utility and limitations of quantitative analysis.

610 SEMINAR IN INTERNATIONAL POLITICS 3 credits
Prerequisites: six credits of political science or permission. Analysis of current problems in theory and practice of politics and organization.

620 SEMINAR IN COMPARATIVE POLITICS 3 credits
Prerequisites: six credits of political science or permission. Research on selected topics in comparative politics. Comparative method.
626 SEMINAR IN POLITICS OF DEVELOPING NATIONS 3 credits
Prerequisites: six credits of political science or permission. Selected topics investigated. Emphasis on theories of political development.

630 SEMINAR IN NATIONAL POLITICS 3 credits
Prerequisites: six credits of political science or permission. Reading and research on formulation, development, and implementation of national policy in one or more areas of contemporary significance.

641 SEMINAR IN INTERGOVERNMENTAL RELATIONS 3 credits
Prerequisites: six credits of political science or permission. Graduate-level examination of problems resulting from changing relations between levels of government in the United States, with comparisons with other federal systems.

690 SPECIAL TOPICS IN POLITICAL SCIENCE 1-3 credits
Prerequisites: six credits of political science or permission. Civil liberties and judicial process viewed in political context. Readings and research on selected topics.

698 SEMINAR IN INTERGOVERNMENTAL RELATIONS 3 credits
Prerequisites: six credits of political science or permission. Civil liberties and judicial process viewed in political context. Readings and research on selected topics.

697 INDEPENDENT RESEARCH AND READINGS 1-4 credits
Prerequisites: six credits of political science or permission. Reading and research on the development of public policy issues and modes of decision making used by policy makers.

670 SEMINAR IN THE ADMINISTRATIVE PROCESS 3 credits
Prerequisites: six credits of political science or permission. Intensive examination of administrative management of public issues. Readings and research on selected topics.

680 SEMINAR IN URBAN AND REGIONAL POLITICS 3 credits
Prerequisites: six credits of political science or permission. Focus on processes of policy formulation and execution in modern metropolitan communities, with emphasis on structural-functional context.

690 SPECIAL TOPICS IN POLITICAL SCIENCE 1-3 credits
Prerequisites: six credits of political science or permission. Graduate-level examination of selected topics in American politics, comparative politics, international politics or political theory.

695 INTERNSHIP IN GOVERNMENT AND POLITICS 3-6 credits
(May be repeated for a total of six credits.) Prerequisite. Permission of graduate adviser. Supervised individual placement with public political office holders, party groups, governmental agencies, law firms and other organizations providing professional-level work.

697 INDEPENDENT RESEARCH AND READINGS 1-4 credits
(May be repeated, but not more than six credits toward the master's degree in political science)
Prerequisites: permission.

698 POLITICAL SCIENCE PRAC'TICUM 2 credits
Prerequisite: permission. Professional seminar required of new graduate students. May not be applied toward degree requirements. Covers disciplinary subfields, teaching, research practice, career tracks and program selections.

699 THESIS 2-6 credits

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**PSYCHOLOGY 3750:**

100 INTRODUCTION TO PSYCHOLOGY 3 credits
Introduction to scientific study of behavior. Survey of physiological basis of behavior; sensation and perception, development, learning and cognition, personality, social interaction and other selected topics.

105 PROFESSIONAL AND CAREER ISSUES IN PSYCHOLOGY 1 credit
Corequisite: 100. An overview of the field of psychology including educational requirements, career options and professional issues for students considering a psychology major.

110 QUANTITATIVE METHODS IN PSYCHOLOGY 4 credits
Prerequisite or corequisite: 100. Presentation of data, descriptive statistics, correlation, hypothesis testing and introduction to statistical methodologies in psychology, including computer applications.

220 INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY 4 credits
Prerequisites: 100 and 110 or instructor's permission. Lectures plus laboratory experience concerning problems in social, developmental, and clinical psychology involving the use of systematic design, methods, apparatus and apparatus, collection and analysis of data and interpretation of results.

230 DEVELOPMENTAL PSYCHOLOGY 4 credits
Prerequisite: 100. Developmental and nature of behavioral changes from conception to death.

240 INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY 4 credits
Prerequisite: 100. Survey of applications of psychology in industry, business and government. Emphasis on understanding employees and evaluation of their behavior.

250 BIOPSYCHOLOGY 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Relationship between behavior and its biological/physiological foundations including brain structure and function, sensation, perception, learning and memory and other topics.

335 DYNAMICS OF PERSONALITY 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Overview of theory and research involving the development, maintenance and assessment of personality and individual differences.

340 SOCIAL PSYCHOLOGY 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Examination of individual responses to social environment. Social perception, attitude formation and change, affiliation and attraction, altruism, group processes and nonverbal behavior.

345 COGNITIVE PROCESSES 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Survey of the basic phenomena, concepts and theories in the areas of human perception, learning, memory and cognition.

400/500 PERSONALITY 4 credits
Prerequisites: 100, 335 or instructor's permission. Consideration of current conceptualizations of the normal personality with emphasis on methods of measurement, experimental findings and research techniques.

410/510 PSYCHOLOGICAL TESTS AND MEASUREMENTS 4 credits
Prerequisites: 100, 110 or permission. Consideration of nature, construction and use of tests and measurements in industry, government and education. Includes aptitude and achievement tests, rating scales, attitude and opinion analysis.

420/520 ABNORMAL PSYCHOLOGY 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Survey of syndromes, etiology, diagnosis and treatment of major psychological conditions ranging from transient maladjustments to psychoses.

430/530 PSYCHOLOGICAL DISORDERS OF CHILDREN 4 credits
Prerequisites: 100 and 220 or permission. Survey of syndromes, etiologies and treatments of behavioral disorders in children from standpoint of developmental psychology. Behavioral data and treatment approaches emphasized.

435 CULTURAL PSYCHOLOGY 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Influence of culture and ethnicity upon development of individual psychological processes including functioning, identity, social motives, sex roles and values.

441 CLINICAL AND COUNSELING PSYCHOLOGY I 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Overview of the fields of clinical and counseling psychology including counseling and psychotherapy, approaches, vocational counseling, assessment, research, training and professional issues.

442 CLINICAL AND COUNSELING PSYCHOLOGY II 4 credits
Prerequisite: 441. Overview of individual counseling and psychotherapy, group counseling, counseling and ability testing, marriage and family counseling, hypnosis, sex therapy, psychopharmacology and related specialties.

443/543 HUMAN RESOURCE MANAGEMENT 4 credits
Prerequisites: 240 or instructor's permission. The application of psychological theory to the effective management of human resources in an organization, including recruitment, selection, training and retention of personnel.

444/544 ORGANIZATIONAL THEORY 4 credits
Prerequisites: 240 or instructor's permission. The application of psychological theory to macro-level processes in organizations including leadership, motivation, task performance, organizational theories and development.

445/545/645 PSYCHOLOGY OF SMALL GROUP BEHAVIOR 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Intensive investigation of factors affecting behavior in small groups including effects of personality, social structures, task, situational and social roles.

446 RESEARCH DESIGN AND ANALYSIS 4 credits
Prerequisites: 100, 110 and 220 or instructor's permission. Review of psychological methodology including research design and analysis, internal and external validity, measurement of concepts and specific analytic techniques.

450/550 COGNITIVE DEVELOPMENT 4 credits
Prerequisite: 245 or instructor's permission. Theory and research on life-span changes in cognitive processes including concept formation/categorization, information processing and Piagetian assessment tasks.

450/560 HISTORY OF PSYCHOLOGY 3 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Psychology as a scientific and historical discipline. Survey of the pre-scientific period and details of development of systematic viewpoints in 19th and 20th Centuries.

475 PSYCHOLOGY OF ADULTHOOD AND AGING 4 credits
Prerequisites: 100 and 220 or instructor's permission. Psychological aspects of human development from adolescence to old age including age-related changes in sensory, intellectual, emotional, social, physical and personal adaptation and coping strategies.

480 SPECIAL TOPICS IN PSYCHOLOGY 1-4 credits
(May be repeated) Prerequisite: 100 or permission. Comprehensive survey of contemporary status of specialized topics and issues in psychology. Emphasis on original source materials, critical analysis and synthesis of empirical and theoretical aspects.

485 APPLIED DEVELOPMENTAL PSYCHOLOGY 4 credits
Prerequisites: 100 and four credits of psychology or instructor's permission. Coverage of conceptual and methodological issues dealing with implementation problems in life-span developmental psychology from a multidisciplinary and problem-focused approach.

486/999 HOMN PROJECTS IN PSYCHOBIOLOGY 4 credits
Prerequisites: successful completion. May not be used to meet undergraduate or graduate major requirements in psychology.

490/590 WORKSHOP IN PSYCHOLOGY 1-3 credits
Prerequisites: successful completion. May not be repeated. Minimum of four credits required for Psychology Technician Program. Prerequisites: 110, 220, 230 or 240, 335 or 340, 410 and acceptance into the B.S. Psychology Technician Program and departmental permission. On-site supervised individual placements as a psychology assistant in appropriate community and institutional organizational settings.

497 INDEPENDENT READING, AND/OR RESEARCH IN PSYCHOLOGY 1-3 credits
(May be repeated to a total of six credits.) Independent reading and/or research in an area of psychology under the supervision and evaluation of a selected faculty member.

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**Graduate Courses**

601 PSYCHOLOGICAL RESEARCH USING QUANTITATIVE AND COMPUTER METHODS I AND II 4 credits
Prerequisites: graduate standing in psychology or the joint doctoral program in counseling psychology or special nondegree students with permission. Psychological research problems applying quantitative and computer methods. Topics include research design, sampling, controls, threats to validity, hypotheses testing, psychological measurement, error, robustness and power.

610 PSYCHOLOGY CORE I: ORGANIZATIONAL, SOCIAL AND APPLIED 4 credits
Prerequisites: graduate standing in psychology or the joint doctoral program in counseling psychology or special nondegree students with permission. Psychological research problems applying quantitative and computer methods. Topics include research design, sampling, controls, threats to validity, hypotheses testing, psychological measurement, error, robustness and power.

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**Graduate Courses**

601 PSYCHOLOGICAL RESEARCH USING QUANTITATIVE AND COMPUTER METHODS I AND II 4 credits
Prerequisites: graduate standing in psychology or the joint doctoral program in counseling psychology or special nondegree students with permission. Psychological research problems applying quantitative and computer methods. Topics include research design, sampling, controls, threats to validity, hypotheses testing, psychological measurement, error, robustness and power.
620 PSYCHOLOGY CORE II: DEVELOPMENTAL, PERCEPTUAL AND COGNITIVE
4 credits
Prerequisite: graduate standing in psychology or the joint doctoral program in counseling psychology or permission based on a psychology undergraduate major or an appropriate background as determined by the instructor. Survey of the theories of development, and the fundamental aspects of human development, perception, learning and memory, cognition and information processing, including an historical perspective.

630 PSYCHOLOGY CORE III: COUNSELING, INDIVIDUAL
4 credits
Prerequisite: graduate standing in psychology or the joint doctoral program in counseling psychology or permission based on a psychology undergraduate major or an appropriate background as determined by the instructor. Survey of techniques of an individual counseling major or an appropriate background as determined by the instructor. Survey of the biological foundations of behavior including sensory processes, psychophysics and scaling, perception (from a comparative and evolutionary perspective), animal learning and the evolution of intelligence, behavior genetics, neuropsychiatry, psychopharmacology, and the physiological bases of psychological processes such as emotion, motivation, learning, identity differences, intelligence and consciousness. Topics are considered within an historical perspective.

640 PSYCHOLOGY CORE IV: SENSORY, BIOPSYCHOLOGICAL AND EXPERIMENTAL
4 credits
Prerequisite: graduate standing in psychology or the joint doctoral program in counseling psychology or permission based on a psychology undergraduate major or an appropriate background as determined by the instructor. Survey of theoretical, logical, and empirical aspects in sensory, physiological, and psychological psychology. Prerequisites: 630; 671; 672. Graduate standing in psychology and permission of instructor. Evaluation of selected theoretical and methodological issues in study of social psychology from developmental perspective. Topics include attitude formation, sex roles, moral development, altruism, aggression, attraction, attribution processes, and personality development.

725 DEVELOPMENTAL PSYCHOLOGY: PRENATAL, INFANCY AND EARLY EXPERIENCE
4 credits
Prerequisite: 620 or permission Survey of psychological aspects of prenatal period, infancy and early childhood. Emphasis on understanding how early experience structures adult development.

726 CHILD PSYCHOLOGY
4 credits
Prerequisite: 620 or permission. Current research in child psychology covers some emphasis on cognitive development. Topics include language, memory, intelligence, hyperactivity and selected aspects of social development.

727 PSYCHOLOGY OF ADOLESCENCE AND ADULTHOOD
4 credits
Prerequisite: 620 or permission. Aspects of development, aging with emphasis on life-span changes in personality, stress, coping and decision making. Evaluation of changes in intelligence, personality, perception, learning, memory and socialization and intervention approaches.

730 SOCIAL DEVELOPMENTAL PSYCHOLOGY
4 credits
Prerequisites: 620 or permission. Emphasis on the investigation of selected theoretical and methodological issues in study of social psychology from developmental perspective. Topics include attitude formation, sex roles, moral development, altruism, aggression, attraction, attribution processes, and personality development.

732 TEORIES OF LEARNING
4 credits
Prerequisite: 620 or permission. Contemporary review of research and theory in language and memory. Process-oriented approach adopted with emphasis on developmental issues.

733 COGNITIVE DEVELOPMENT
4 credits
Prerequisite: 620 or permission. Theory and research concerning development of cognitive abilities including concept formation, problem solving, and thinking. Topics include major theories, research paradigms and methods of investigation and review of empirical findings.

735 DEVELOPMENTAL BIOLOGY
Prerequisites: 640, 660, and 670. Graduate standing in psychology or permission of instructor. Survey of developmental biology; changes over life span with emphasis on physical, biological and psychological correlates of such change. Topics include central nervous system, skeletal and circulatory systems, and endocrine mechanisms.

736 THE PSYCHOLOGY OF MENTAL RETARDATION
4 credits
Prerequisite: 620 or graduate standing in psychology or permission of instructor. Current knowledge about the cognitive, emotional, social, and behavioral problems of the mentally retarded. The first half of the course is a broad survey emphasizing methodological and clinical aspects of mental retardation. The second half involves an in-depth exploration of selected topics, including: New research, current issues in research, and methodological issues.

737 THE PSYCHOLOGY OF LEARNING DISABILITIES
4 credits
Prerequisites: 620 or graduate standing in psychology or permission of instructor. Examination and analysis of the theories and research regarding learning disabilities and reading disabilities. Emphasis is on a critical evaluation of the research which investigates hypothesized process differences between learning-disabled and normal achieving children.

738 APPLIED DEVELOPMENTAL PSYCHOLOGY
4 credits
Prerequisites: 620 and graduate standing in psychology or permission of instructor. Examination and analysis of psychological methodologies and techniques applied in applied developmental settings. Topics include field methodologies, evaluation and prevention of psychological and educational problems.

750 INDUSTRIAL GERONTOLOGY
4 credits
Prerequisite: 620 and graduate standing in psychology or departmental permission to students who have completed 610 and 620. Study of age-related issues in work involving adult and older adult workers. Topics include personnel selection, training, motivating and appraising older employees; health and safety, job design, vocational guidance, and retirement.

751 SURVEY OF COUNSELING METHODS
4 credits
Prerequisites: 620 and 630; graduate standing in psychology or permission of instructor. An experiential survey of treatment methods from a variety of theoretical approaches. Approaches include, but are not limited to, behavioral, gestalt, cognitive and psychodynamic methods.

752 ADVANCED PSYCHOLOGICAL TESTS AND MEASUREMENTS
4 credits
Prerequisites: 620 and graduate standing in psychology or departmental permission to students who have completed 610. Analysis of test construction techniques and statistical analyses of tests with a review of published tests and measurements used in psychology. Study of psychological theory and principles involved in the selection of instruments for testing in personality, intelligence, aptitude and achievement.

753 ORGANIZATIONAL PSYCHOLOGY
4 credits
Prerequisites: 605 and graduate standing in psychology or departmental permission for other students who have completed 610. Topics include general principles of personnel selection and placement, work motivation and morale, group dynamics, career development, employee training, and job satisfaction.

754 PERSONNEL SELECTION AND PERFORMANCE EVALUATION
4 credits
Prerequisites: 620 and graduate standing in psychology or permission to students who have completed 610. Review of strategies employed by industrial/organizational psychologists for personnel selection, placement and promotion. Survey of objective and subjective criteria used in performance appraisal including test validation and training effectiveness.

755 TRAINING AND ORGANIZATIONAL DEVELOPMENT
4 credits
Prerequisites: 610 and graduate standing in psychology or permission to students who have completed 610. Review of industrial/organizational psychology and techniques in training. Emphasis is on a critical evaluation of the research which investigates hypothesized process differences between learning-disabled and normal achieving children.

756 RESEARCH METHODS IN PSYCHOLOGY
2 credits
Prerequisites: 610, 620 and graduate standing in psychology or permission to student. Scientific method and its specific application to psychology. Topics include data collection, validity, reliability, and application of general linear model and its alternative analytic methods and computer applications.

760 ROLE OF ATTITUDES AND VALUES IN INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY
4 credits
Prerequisites: 610 and graduate standing in psychology or departmental permission to students who have completed 610. Survey of theories of motivation specifying both the intrinsic and extrinsic determinants of worker motivation. The leadership process and its relation to motivation, group performance and attributions is also analyzed.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
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<tr>
<td>385: Sociology</td>
<td>100</td>
<td>INTRODUCTION TO SOCIOLOGY</td>
<td>4</td>
<td>Credits</td>
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<tr>
<td>385: Sociology</td>
<td>104</td>
<td>SOCIAL PROBLEMS</td>
<td>3</td>
<td>Credits</td>
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<td>385: Sociology</td>
<td>301</td>
<td>METHODS OF SOCIAL RESEARCH I</td>
<td>3</td>
<td>Credits</td>
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<td>385: Sociology</td>
<td>302</td>
<td>METHODS OF SOCIAL RESEARCH II</td>
<td>3</td>
<td>Credits</td>
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<td>385: Sociology</td>
<td>315</td>
<td>SOCIOLOGICAL SOCIAL PSYCHOLOGY</td>
<td>3</td>
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<td>385: Sociology</td>
<td>320</td>
<td>SOCIAL INEQUALITY</td>
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<td>321</td>
<td>POPULATION</td>
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<td>323</td>
<td>SOCIAL CHANGE</td>
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<td>324</td>
<td>SOCIAL MOVEMENTS</td>
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<td>330</td>
<td>CRIMINOLOGY</td>
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<td>335</td>
<td>SOCIAL BEHAVIOR IN ORGANIZATIONS</td>
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<td>385: Sociology</td>
<td>336</td>
<td>SOCIOLOGY OF WORK AND OCCUPATIONS</td>
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<td>Credits</td>
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<td>385: Sociology</td>
<td>340</td>
<td>THE FAMILY</td>
<td>3</td>
<td>Credits</td>
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<tr>
<td>600</td>
<td>Fundamentals of Sociology</td>
<td>3 credits</td>
<td>Accelerated introduction to sociology for the graduate student deficient in sociological background or from other disciplines who intends to take further graduate courses in sociology.</td>
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<tr>
<td>603</td>
<td>Sociological Research Methods</td>
<td>3 credits</td>
<td>Advanced research methods including advanced statistical techniques. Lecturalelaboratory.</td>
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<tr>
<td>604</td>
<td>Social Research Design</td>
<td>3 credits</td>
<td>Advanced study of problems in a research design, i.e., those encountered in their preparation, seminar or dissertation.</td>
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<tr>
<td>657</td>
<td>Computer Applications in Social Sciences</td>
<td>3 credits</td>
<td>Prerequisite: elementary statistics course. Permission to use computers and their applications in social sciences. (Same as KSU 7224) Seminar.</td>
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<tr>
<td>613</td>
<td>Sociology Program Evaluation and Program Improvement</td>
<td>3 credits</td>
<td>Prerequisite: permission. Program evaluation as it occurs in different social programs. Topics include theory of evaluation, value assumptions, political dimensions, ethical issues, social change: use of evaluation and alternatives.</td>
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<tr>
<td>615</td>
<td>Epistemological and Method Health Research</td>
<td>3 credits</td>
<td>Prerequisite: permission. Designed to introduce the student to the methodology of developing and understanding information concerning the distribution of illness and injury in society and evaluation of interventions to reduce the burden.</td>
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<tr>
<td>610</td>
<td>Sociological Theory</td>
<td>3 credits</td>
<td>Examination of the classical theoretical statements that form the foundation of sociological theory. Emphasis on classic sociological theory and its contributions to contemporary theory and research. Seminar.</td>
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<tr>
<td>620</td>
<td>General Systems Theory</td>
<td>3 credits</td>
<td>Analysis of general systems theory as a model for society and as a heuristic framework for theory and research. (Same as KSU 7207) Seminar.</td>
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<tr>
<td>631</td>
<td>Social Psychology</td>
<td>3 credits</td>
<td>Intensive examination of social psychological theory and research, both classic and contemporary. Provides student with background and working knowledge of social psychological theory and principles. (Same as KSU 7230) Seminar.</td>
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<tr>
<td>632</td>
<td>Small Group Theory</td>
<td>3 credits</td>
<td>Prerequisite: permission. Theoretical and applied aspects of small group dynamics. Topics include leadership emergence, effective group development and functioning, power, norms, and individual behavior among others. (Same as KSU 7232) Seminar.</td>
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<tr>
<td>634</td>
<td>Personality and Social Systems</td>
<td>3 credits</td>
<td>Examination of contemporary theory and research on linkages between personality and society. Synthesis of findings in modern socialization and occupation and sex roles. (Same as KSU 7233) Seminar.</td>
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<tr>
<td>635</td>
<td>Sociology of Communication</td>
<td>3 credits</td>
<td>Examination of communication media, content, audiences and impact within sociological context. (Same as KSU 7234) Seminar.</td>
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<tr>
<td>638</td>
<td>Critique of Mass Communications Research</td>
<td>3 credits</td>
<td>Prerequisite: permission. Syntetic evaluation of theoretical, methodological and empirical aspects of mass communication. (Same as KSU 7237) Seminar.</td>
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<tr>
<td>639</td>
<td>Sociology of Sex Roles</td>
<td>3 credits</td>
<td>Prerequisite: permission. Advanced review of theories and research on origins, characteristics and changes in sex roles. Emphasis on agent/empirical research on sex role patterns and processes in Western industrial societies. Seminar.</td>
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<tr>
<td>645</td>
<td>Social Organization</td>
<td>3 credits</td>
<td>General society of mass communications, confusions and problems pertaining to creation, alteration and dissolution of social organization at various levels of size and complexity. (Same as KSU 7226) Seminar.</td>
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<tr>
<td>646</td>
<td>Social Stratification</td>
<td>3 credits</td>
<td>Prerequisite: permission. Material dealing with social class and castes with special reference to American social structure. (Same as KSU 7254) Seminar.</td>
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<tr>
<td>648</td>
<td>Complex Organizations</td>
<td>3 credits</td>
<td>Prerequisite: permission. Relations as social systems and their effect on individuals. Problems of professionals in bureaucracies. (Same as KSU 7245) Seminar.</td>
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<tr>
<td>651</td>
<td>Sociology of Work</td>
<td>3 credits</td>
<td>Examination of work as behavioral phenomenon in human societies; contrasts with non-work; significance of occupations, professions and work types in organization of work. (Same as KSU 7254) Seminar.</td>
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<tr>
<td>652</td>
<td>Seminar in Race Relations</td>
<td>3 credits</td>
<td>Prerequisite: permission. Analysis of the structure and dynamics of race and ethnic relations with attention given to both historical and contemporary issues. (Same as KSU 7230) Seminar.</td>
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<tr>
<td>653</td>
<td>Conflict</td>
<td>3 credits</td>
<td>Prerequisite: permission. Current conceptions of human conflict. Discussion of vital concepts, and techniques for understanding conflict phenomena. Power, values, ideology, roles, revolution and war. (Same as KSU 7287) Seminar.</td>
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<tr>
<td>656</td>
<td>Medical Sociology</td>
<td>3 credits</td>
<td>Prerequisite: permission. Introduces a general survey of the field of medical sociology with special emphasis on application of sociological concepts and methods as tools to aid in the analysis of health and health care in the contemporary urban United States. (Same as KSU 7232) Seminar.</td>
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<tr>
<td>657</td>
<td>Urban Health Care</td>
<td>3 credits</td>
<td>Prerequisite: permission. Relationship between urban social structures and processes and organization and functioning of health-care delivery systems in urbanized nations. Seminar.</td>
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</tr>
<tr>
<td>658</td>
<td>Field Research in Urban Life Styles</td>
<td>3 credits</td>
<td>Prerequisite: permission. Examination of various life styles in contemporary urban society. Explores issues of theory and methodology in urban life-stykes research through evaluation of both classic and contemporary studies. Includes application of concepts and techniques in actual field research. Seminar.</td>
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</tr>
<tr>
<td>659</td>
<td>Deviance and Disorganization</td>
<td>3 credits</td>
<td>Prerequisite: permission. Examination of nature and types of deviance. Problems and issues in theory and research. (Same as KSU 7290) Seminar.</td>
<td></td>
</tr>
<tr>
<td>664</td>
<td>Sociology of Criminal Behavior</td>
<td>3 credits</td>
<td>Analysis of relationship of crime and delinquency to social structure and social processes. Responses by criminal justice agencies. Seminar.</td>
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<tr>
<td>665</td>
<td>Delinquency: Theory and Research</td>
<td>3 credits</td>
<td>Prerequisite: permission. Analysis of theories of delinquency, ecological, class, structural, sub-cultural, etc. Review of relevant research also presented. Seminar.</td>
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</tr>
<tr>
<td>666</td>
<td>Sociology of Corrections</td>
<td>3 credits</td>
<td>Prerequisite: permission. Analysis of social control as social system: its formal structure and informal dynamics. Analysis of present state of corrections research. Seminar.</td>
<td></td>
</tr>
<tr>
<td>667</td>
<td>Family Analysis</td>
<td>3 credits</td>
<td>Analysis and evaluation of sociological theory and research in the family. Concentration on techniques of family construction and research design in sociological study of the family. (Same as KSU 7254) Seminar.</td>
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<tr>
<td>670</td>
<td>Social Gerontology</td>
<td>3 credits</td>
<td>Prerequisite: permission. Impact of aging upon individuals and society. Reactions of individuals and society to aging. (Same as KSU 7287) Seminar.</td>
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<tr>
<td>679</td>
<td>Political Sociology</td>
<td>3 credits</td>
<td>Description, analysis and interpretation of political behavior through application of sociological concepts. (Same as KSU 7254) Seminar.</td>
<td></td>
</tr>
<tr>
<td>680</td>
<td>Sociology of Education</td>
<td>3 credits</td>
<td>Selected problems in sociological analysis of educational systems. Emphasis on such social determinants of learning as class, race, family and peer subcultures. (Same as KSU 7254) Seminar.</td>
<td></td>
</tr>
<tr>
<td>681</td>
<td>Cross Cultural Perspectives in Aging</td>
<td>3 credits</td>
<td>Prerequisite: permission. A comparison of aging in various cultures and societies around the world.</td>
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<tr>
<td>686</td>
<td>Population</td>
<td>3 credits</td>
<td>Analysis of basic population theory and methods. Trends and differentials in fertility, mortality, migration and selected sociodemographic variables also considered. (Same as KSU 7266) Seminar.</td>
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</tr>
<tr>
<td>687</td>
<td>Social Change</td>
<td>3 credits</td>
<td>Advanced seminar in theories of social change. (Same as KSU 7230) Seminar.</td>
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</tr>
<tr>
<td>688</td>
<td>Human Ecology</td>
<td>3 credits</td>
<td>Selected problems in analysis of social behavior in relation to physical environment. Overview of theory of methods and applications of human ecology. (Same as KSU 7250) Seminar.</td>
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<tr>
<td>689</td>
<td>Urban Sociology</td>
<td>3 credits</td>
<td>Seminar on theory and measurement of social ecology of urban areas. Emphasis on trends and differentials in social and organizational behavior in urban America. Seminar.</td>
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<tr>
<td>690</td>
<td>Readings in Contemporary Sociological Literature</td>
<td>1-3 credits</td>
<td>Prerequisite: permission. Seven credits of sociology and permission of advisor. Instructor and head of department. Intensive readings and interpretation of written material in student’s chosen field of interest. Regular conferences with instructor.</td>
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<tr>
<td>692</td>
<td>Directed Research</td>
<td>1-3 credits</td>
<td>Prerequisite: permission. Empirical research to be conducted by the student under graduate faculty supervision.</td>
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<tr>
<td>693</td>
<td>Thesis</td>
<td>2-6 credits</td>
<td>May be repeated for a total of six credits. Prerequisite: permission. Supervised thesis writing.</td>
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</tr>
<tr>
<td>700</td>
<td>College Teaching of Sociology</td>
<td>2 credits</td>
<td>Prerequisite: teaching assistant or permission. Training and experience in college teaching of sociology. Not approved as credit toward a degree. Seminar.</td>
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<tr>
<td>705</td>
<td>Measurement and Measurement of Social Attitudes</td>
<td>3 credits</td>
<td>Prerequisite: 603 and 604 or permission. Seminar in theories of social attitudes and techniques for their measurement. (Same as KSU 7223) Seminar.</td>
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<tr>
<td>706</td>
<td>Multivariate Techniques in Sociology</td>
<td>3 credits</td>
<td>Prerequisites: 603 and 604 or permission. A sociological graduate student only. Methodological problems using advanced multivariate techniques in analysis of sociological data. Topics include nonexperimental causal analysis such as recursive and nonrecursive path analysis. (Same as KSU 7217) Seminar.</td>
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<tr>
<td>707</td>
<td>Measurement in Sociology</td>
<td>3 credits</td>
<td>Prerequisites: 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.</td>
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<tr>
<td>708</td>
<td>Advanced Techniques in Research</td>
<td>1-3 credits</td>
<td>Prerequisite: permission. Emphasis on advanced, multivariate statistical analysis and design of experimental studies. Seminar. (Same as KSU 7218) Seminar.</td>
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<tr>
<td>709</td>
<td>Analysis of Sociological Data</td>
<td>3 credits</td>
<td>Prerequisites: 706 or permission. Critical examination of data analyses techniques having particular relevance to research problems in sociology. (Same as KSU 7218) Seminar.</td>
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<tr>
<td>710</td>
<td>Social Sampling</td>
<td>3 credits</td>
<td>Prerequisites: 603, 604 or permission. Theory and methods of sampling in sociology. Topics include sample design, sampling efficiency, nonresponse, mortality in longitudinal designs, urban, organizational, and survey sampling, stratified and cluster sampling. Seminar.</td>
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<tr>
<td>711</td>
<td>Survey Research Methods</td>
<td>3 credits</td>
<td>Prerequisites: 603, 604 or permission. Critical evaluation of survey research. In-depth study of design and administration of social surveys. (Same as KSU 7220) Seminar.</td>
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<tr>
<td>712</td>
<td>Experimental and Quasi-Experimental Research in Sociology</td>
<td>3 credits</td>
<td>Prerequisites: 603, 604 or permission. Application of experimental and quasi-experimental methods in sociological research with special attention given to appropriate designs, statistical analyses and empirical interpretation. Seminar.</td>
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<tr>
<td>714</td>
<td>Qualitative Methodology</td>
<td>3 credits</td>
<td>Prerequisites: 603, 604 or permission. Qualitative methods, and theory testing. The application of such techniques as participant observation, open-ended interviewing, content analysis, and participant observation. Seminar.</td>
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</table>
ANTHROPOLOGY 3870:

357 MAGIC, MYTH AND RELIGION
Prerequisite: 150 or 3850:100. Analysis and discussion of the data concerning the elements, roles and functions of magic and religion in a broad range of human societies, with emphasis on the non-Western, pre-industrial societies. Examination of belief and ritual systems of such societies.
3 credits

358 INDIANS OF NORTH AMERICA
Prerequisite: 150 or permission. Ethnographic survey of native cultures of North America, with emphasis on variations in ecological adaptations, social organization and modern American-Indian social, political and economic systems.
3 credits

397 ANTHROPOLOGICAL RESEARCH
May be repeated. Prerequisite: permission. Individual study of problem areas of specific interest to an individual student. Research and study in one semester, or over two consecutive semesters.
1-3 credits

605 HISTORY AND THEORY IN ANTHROPOLOGY
Prerequisite: 150 or permission. Survey of theories and problems in social and cultural anthropology. Historical development, methods of inquiry and contemporary theoretical perspectives.
3 credits

655 CULTURE AND PERSONALITY
Prerequisite: 150 or permission. Examination of functional and causal relationships between cultural patterns and individual cognition and behavior. Lecture
3 credits

677 CULTURE AND MEDICINE
Prerequisite: 150 or permission of instructor. Analysis of various aspects of Western and non-Western medical systems from an anthropological perspective. Compares historical medical systems around the world.
3 credits

681/681 LANGUAGE AND CULTURE
Prerequisite: 150 or permission. Examination of language and interaction of language, cognition and culture. Lecture.
3 credits

693/693 SOCIAL ANTHROPOLOGY
Prerequisite: 150 or permission. Comparative structural analysis of non-Western systems of kinship and social organization in terms of status, role, reciprocal expectation, nomenclature, nuclear family and extended households and other kinship groupings. Lecture.
3 credits

72/722 SPECIAL TOPICS: ANTHROPOLOGY
May be repeated. Prerequisites: 150 and permission. Designed to meet needs of students with interests in selected topics in anthropology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research or advanced course work not presently offered by department on regular basis.
1-3 credits

Graduate Courses

651 SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS
3 credits

697 INDEPENDENT INVESTIGATION
Prerequisites: permission of instructor and head of department. Independent research in various students' chosen field of interest. Regular conferences with instructor. Preparation of a research paper.
1-3 credits

990 WORKSHOP
May be repeated. Group studies of special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only.
1-3 credits

999 WORKSHOP
May be repeated. Group studies of special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only.
1-3 credits

000 BASIC ANALYTICAL RESEARCH
Prerequisite: permission. Examination of basic framework of social science research methods and basic complementary statistical techniques, including probability and sampling most useful in urban studies.
3 credits

601/601 ADVANCED RESEARCH AND STATISTICAL METHODS
Prerequisite: 600. Extends study of social science to include more advanced research designs and multivariate statistical techniques.
3 credits

602 AMERICAN URBAN DEVELOPMENT
Examination of major literature on processes of urbanization in the United States and selected facets of urban institutional development.
3 credits

610 URBAN POLITICS
Prerequisite: permission. Empirical analysis of urban political structure and major political problems.
3 credits

611 URBAN ADMINISTRATION
Prerequisite: permission. Organization and management characteristics of various types of urban administrative units examined within framework of organization and management theory.
3 credits

612 NATIONAL URBAN POLICY
Prerequisite: permission. Major federal policies that relate to urban problems examined in regard to their impact on urban management processes, implementation, and impact.
3 credits

613 INTERGOVERNMENTAL MANAGEMENT
Prerequisite: permission. Examination of the field of intergovernmental relations as it applies to urban administration and management.
3 credits

614 ETHICS AND PUBLIC SERVICE
Prerequisite: permission. Examination of the ethical problems and implications of decisions and policies made by those whose actions impact on the broad public. Case studies of decision making in both the public and private sectors (government and private business and the professions) s are studied in relation to classical literature in ethical theory.
3 credits

615 PUBLIC ADMINISTRATION THEORY
Prerequisite: 602, 611 and 610 or equivalent. Examine the development of Public Administration theory, and the current status of theoretical developments in the field of public administration.
3 credits
616 PERSONNEL MANAGEMENT IN THE PUBLIC SECTOR 3 credits
Fundamental issues and principles of public sector personnel administration, including recruitment, selection, training, motivation, supervision, evaluation, labor relations and affirmative action.

617 LEADERSHIP AND DECISION-MAKING IN LOCAL GOVERNMENT 3 credits
Introduction to the acquisition and utilization of the skills and techniques of leadership and decision-making in the government environment.

618 CITIZEN PARTICIPATION 3 credits
The fundamental theory, background, techniques, and issues of citizen participation in urban policy making.

620 SOCIAL SERVICES PLANNING 3 credits
Prerequisite: permission. In-depth analysis of the social services requirements and various ways in which social services planning functions are carried out in urban communities.

621 URBAN SOCIETY AND SERVICE SYSTEMS 3 credits
Prerequisite: permission. Analysis of social bases of urban society, hierarchies, social problems, relationships to planning, public services.

622 HEALTH PLANNING AND PUBLIC POLICY 3 credits
Basic knowledge of the health service delivery system is provided for planners and administrators in the public sector.

630 INTRODUCTION TO PLANNING PRACTICE AND THEORY 3 credits
Introduction to the history, theories, and forms of urban planning.

631 FACILITIES PLANNING 3 credits
Study of need, process, and limitation of urban facilities planning.

632 LAND-USE CONTROL 3 credits
Prerequisite: permission. Acquaint student with public and private approaches to land use control in the United States and examine the political, economic, social, and legal forces which have shaped existing land use legislation.

633 COMPARATIVE PLANNING 3 credits
A survey of national, regional, and local planning institutions, plans and planning implementation measures in use in the developed world. Particular attention is given to the planning experiences of European nations and their impact on American planning theory and practice.

636 PARKS AND RECREATION 3 credits
Prerequisite: permission. Deals with theory, practice, evaluation of recreational administration, planning parks planning.

637 FIELD METHODS IN URBAN AND REGIONAL PLANNING 3 credits
Prerequisite: 630. Taught jointly with 637 to provide students with extensive experience in applying the quantitative methods and analytic procedures of urban planning to actual public policy issues.

638 FIELD METHODS IN URBAN AND REGIONAL PLANNING/LABORATORY 3 credits
Prerequisite: 630. This course is taught jointly with 637 to provide students with extensive experience in applying quantitative methods and analytic procedures to urban planning to actual public policy issues.

640 FISCAL ANALYSIS 3 credits
Prerequisite: permission. Study of revenue and expenditure patterns of the city's government.

641 URBAN ECONOMIC GROWTH AND DEVELOPMENT 3 credits
Prerequisite: permission. Examination of urban economic unit and its susceptibility to social, economic, political and physical change.

642 MUNICIPAL BUDGETING 3 credits
Prerequisite: permission. Theories, premises, assumptions, methodologies upon which municipal budgeting are based.

643 URBAN POLICY ANALYSIS 3 credits
Prerequisite: permission. Develop and apply conceptual, technical capabilities to the emphasis of public policy in American cities. Identification of major policy issues, measurement techniques and analytical models of public policy, analyses of policy formation and choice-making processes, analysis of policy impact, the problems and processes of public implementation.

650 COMPARATIVE URBAN SYSTEMS 3 credits
Prerequisite: permission. Conceptual schemes and methodology for comparative urban analysis among a number of major cities selected from each continent.

670 RESEARCH FOR FUTURES PLANNING 3 credits
Prerequisite: 600 and 601 and completion of eight credits of core curriculum in urban studies. An overview of the techniques associated with the field of futures research and their application to long-term urban planning.

671 PROGRAM EVALUATION IN URBAN STUDIES 3 credits
Prerequisite: 600 or equivalent. Major considerations appropriate for conducting evaluations of a wide variety of human service programs and policies affecting urban and metropolitan areas.

672 ALTERNATIVE URBAN FUTURES 3 credits
Overview of topics and issues associated with alternative urban futures and their implications for planning and public policy in urban communities.

673 COMPUTER APPLICATIONS FOR URBAN RESEARCH 3 credits
Prerequisites: 630 or 600 and completion of courses such as SPSS-PC, SPSS-X and SAS to research problems in urban studies, public administration, and urban planning.

680.1 SELECTED TOPICS IN URBAN STUDIES 1-3 credits each
Prerequisite: permission. Selected topics in specific areas of urban planning. In various developmental processes of cities, or in various urban policy and administrative issues. (A maximum of 3 credits may be earned in 680 and 681.)

690 URBAN STUDIES SEMINAR 3 credits
Prerequisites: 16 credits of urban studies core plus quantitative methods. Urban research methods applied to specific urban research area. Comprehensive paper required.

695 INTERNSHIP (May be repeated for a total of three credits) Prerequisite: permission. Facultly-supervised work experience in which student participates in policy planning, administrative operations in selected urban, state and federal governments and urban agencies.

697 INDIVIDUAL STUDIES (May be repeated for a total of four credits) Directed individual readings or research on specific area or topic.

700 ADVANCED RESEARCH METHODS I 3 credits
Prerequisite: master's level satisfied or permission. Introduction to statistical techniques and methodologies used in public and post-doctoral research. Emphasis on conceptual and mathematical interrelationships.

701 ADVANCED RESEARCH METHODS II 3 credits
Prerequisite: 700 or equivalent. Continuation of 700. Emphasis placed upon conceptual and mathematical interrelationships of multivariate statistical techniques as well as application of these techniques through computer analysis of urban data sets.

702 URBAN POLICY: THE HISTORICAL PERSPECTIVE 3 credits
Prerequisite: permission. Critical examination of major ideas about the city from Aristotle to the 20th Century and the impact of urbanization on society and public policy.

703 SYSTEMS AND PROCESSES OF POLICY DEVELOPMENT 3 credits
Analysis of administrative process within public organizations, federal, state, and local, in United States, emphasis on urban community.

704 BUREAUCRACY AND URBAN CONSTITUENCIES 3 credits
Prerequisite: permission. Seminar designed to analyze public bureaucracy and public interest as central phenomena of contemporary public administration in America.

705 ECONOMICS OF URBAN POLICY 3 credits
Prerequisite: master's level knowledge of macroeconomics and microeconomics or special permission. Use of research tools of economic analysis in seminar format to examine options available to urban policy makers in operation of public services and economic development of cities.

706 PROGRAM EVALUATION 3 credits
Prerequisite: permission. Provides concepts for student in evaluation of programs, both external and internal, to work settings.

707 URBAN PLANNING AND MANAGEMENT STRATEGIES 3 credits
Prerequisite: permission. Analysis of urban planning policy issues and strategies for implementation in public policy formulation. Emphasis on use of planning process as integrative mechanism.

708 URBAN TUTORIAL 3 credits
Prerequisite: permission. Intensive study of a particular approved field or topical area of urban studies with a tutor. Student enrolls in a total of 12 hours of tutorial credit and more than 12 only if tutorial field is changed, as approved by Committee on Doctoral Studies. No case will a student enroll in more than three credits per term.

899 DISSERTATION RESEARCH (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.
GENERAL ENGINEERING
4100:

101 TOOLS FOR ENGINEERING
- Correlate: 3450:221. Introduction to engineering. Free hand, engineering, and CAD drawing, introduction to computer programming, computer applications including word processing, spreadsheets, data base. Introduction to engineering economics. Required for Chemical, Civil, and Electrical Engineering majors.

180 ENGINEERING DESIGN
- One credit. Introduction to freshman engineering student in problem-solving techniques in engineering design. Required of all entering engineering freshmen in Evening College.

201 ENERGY AND ENVIRONMENT
- Courses 3 credits.

202 ATMOSPHERIC POLLUTION

206 FORTRAN (SCIENCE/ENGINEERING)
- Prerequisite: 2020:334 or 3450:221. Introduction to use of digital computers in scientific and engineering applications. For student mapping in engineering or physical sciences. No credit for person having completed 3460:201.

300 COOPERATIVE EDUCATION WORK PERIOD
- Credit for cooperative education student who has completed sophomore year. Practice in industry and comprehensive written reports of this experience. Offered spring semester of third year.

301 COOPERATIVE EDUCATION WORK PERIOD
- Required for cooperative education student only. Practice in industry and comprehensive written reports of this experience. Offered fall semester of fourth year.

302 COOPERATIVE EDUCATION WORK PERIOD
- Required for cooperative education student only. Practice in industry and comprehensive written reports of this experience. Offered summer after fourth year.

CHEMICAL ENGINEERING
4200:

120 ENGINEERING FUNDAMENTALS
- Introduction to problem-solving and format, computational exercise, dimensions, units, physical measurements.

121 CHEMICAL ENGINEERING COMPUTATIONS
- Prerequisites: 120 or permission of computer programming language, flowcharting, introductory simulation and introductory numerical analysis.

200 MATERIAL AND ENERGY BALANCES
- Prerequisites: 120, 4100, 3450:221, and 3150:134. Introduction to material, energy balance calculations applied to solution of chemical problems.

225 EQUILIBRIUM THERMODYNAMICS
- Prerequisites: 200 and 3450:222. Second law of thermodynamics, entropy, applications, comprehensive treatment of gases and liquids, fluid and chemical equilibria, flow processes, power production and refrigeration processes covered.

305 MATERIALS SCIENCE
- Prerequisites: 3150:133 and 3650:292 and junior standing. Structure, processing and properties of metals, ceramics and polymers. Special topics such as composites, corrosion, and wear.

321 TRANSPORT PHENOMENA I
- Prerequisites: 200 and 3450:222. Constitutive equations for momentum and energy transfer. Development of microscopic and macroscopic momentum and energy equations. Analog and dimensional correlations. Problems and applications in unit operations of chemical engineering.

322 TRANSPORT PHENOMENA II
- Prerequisite: 321. Constitutive equations for mass transfer. Development of microscopic and macroscopic momentum, energy and mass transfer equations for binary systems. Problems and applications in unit operations of chemical engineering.

330 CHEMICAL REACTION ENGINEERING
- Prerequisite: 225. Nonequilibrium processes including chemical reaction mechanisms, rate equations and ideal reactor design applied to homogeneous and heterogeneous systems.

351 FLUID AND THERMAL OPERATIONS
- Prerequisite: 321. Applications of fluid mechanics including piping, pumping, compression, metering, agitation and separations. Applications of heat transfer by convection, conduction, and radiation to design of process equipment.

352 TRANSPORT LABORATORY
- Prerequisites: 322 and 351. Experiments in fluid, heat and mass transfer. Data collection, analysis and reporting in various formats. Relationship to theory emphasized.

353 MASS TRANSFER OPERATIONS
- Prerequisites: 215, 311, and 322. Theory and design of staged operations including distillation, extraction, absorption. Theory and design of continuous mass transfer devices.

408 POLYMER ENGINEERING
- Prerequisite: permission or senior standing. Commercial polymerization, materials selection and property modification, polymer processing, applied rheology and classification of polymer industry.

435 PROCESS ANALYSIS AND CONTROL
- Prerequisites: 330, 353. Response of simple and chemical processes and design of appropriate control systems.

441 PROCESS ECONOMICS AND DESIGN
- Prerequisites: 330, 351, 353. Economic evaluation of chemical plants including investment, profitability, capital investment and operating costs. Design of chemical process equipment.

442 PLANT DESIGN
- Prerequisite: 441. Integration of process and equipment design for a total plant including instrumentation, site selection and plant layout. Culminates with a case study or A.I.Ch.E. Student Contest Problem.

454 OPERATIONS LABORATORY
- Prerequisite: 352, 353. Comprehensive experiments and analysis in combined heat and mass transfer, thermodynamics and reaction kinetics. Comprehensive reports.

461/561 SOLIDS PROCESSING
- Prerequisites: 321 and 353 or permission. Comprehensive problems in sedimentation, fluidization and other operations involving mechanics of particulate solids in liquid and gas continua.

463/563 POLLUTION CONTROL
- Prerequisite: 353 or permission. Air and water pollution sources and problems. Engineering aspects and methodologies.

466/566 DIGITIZED DATA AND SIMULATION
- Prerequisite: permission. Data acquisition and analysis by digital devices, digital control applications and design.

470/570 ELECTROCHEMICAL ENGINEERING
- Prerequisites: 332, 330. Chemical engineering principles as applied to the study of electrode processes and to the design of electrochemical reactors. Topics include electrochemical thermodynamics, cell polarizations, Faraday's Law, electrode kinetics, transport processes in electrochemical systems, current distributions, reactor design, experimental methods, commercial processes, and batteries and fuel cells.

496 TOPICS IN CHEMICAL ENGINEERING
- Prerequisites: 332, 330, 351 and 353. Discussion of laws of thermodynamics and their application. Prediction and understanding of thermodynamic data. Phase and reaction equilibria. Synthesis of materials and processes. Reaction mechanisms and catalysis. (May be repeated for a total of six credits)

497 HONORS PROJECT
- Prerequisite: permission. Individual creative project pertaining to chemical engineering culminating in undergraduate thesis, supervised by faculty member of the department.

498 RESEARCH PROJECT
- Prerequisite: permission. Individual research project pertinent to chemical engineering under faculty supervision. Report required.

Graduate Courses

600 TRANSPORT PHENOMENA
- Prerequisite: 322 or permission. Systematic presentation of conservation of momentum, energy and mass at microscopic and macroscopic levels in conjunction with illustrative examples and analogies.

605 CHEMICAL REACTION ENGINEERING
- Prerequisite: 330 or permission. Kinetics of homogeneous and heterogeneous systems. Reactor design for ideal and non-ideal flow systems.

610 CLASSICAL THERMODYNAMICS
- Prerequisite: 225. Discussion of laws of thermodynamics and their application. Prediction and understanding of thermodynamic data. Phase and reaction equilibria.

630 CHEMICAL PROCESS DYNAMICS
- Prerequisites: 332, 330. Development and solutions of mathematical models for chemical processes including simulation and optimization models based on transport phenomena principles, population balance methods and systems analysis.

631 CHEMICAL ENGINEERING ANALYSIS
- Prerequisites: 332, 225, 330. Mathematical analyses of problems in transport processes, chemical kinetics and control systems. Solution techniques for these problems and their practical significances are stressed. Hueristic proofs will be given for necessary theory developments.

635 ADVANCED POLYMER ENGINEERING
- Prerequisite: 322 or 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer morphology.

640 ADVANCED PLANT DESIGN
- Prerequisite: permission. Topical treatment of process and equipment design. Scale-up, optimization, process synthesis, process economics. Case problems.

696 TOPICS IN CHEMICAL ENGINEERING
- (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, bioengineering, simultaneous heat and mass transfer phenomena and new separation techniques.

698 SPECIAL PROBLEMS
- (May be repeated for a total of four credits) Prerequisite: permission of department head. For the qualified candidate for M.S., and for the candidate for Ph.D. Credit dependent upon nature and extent of project developed by faculty member and department head.

700 M.S. THESIS
- (May be repeated to a maximum of six credits) For properly qualified candidate for master's degree. Supervised original research in specific area of chemical engineering selected on basis of availability of staff and facilities.

701 ADVANCED TRANSPORT PHENOMENA
- Prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multiphase reactive transport and multiphase transport. Illustrative practical examples presented.
CIVIL ENGINEERING

4300:

130  INTRODUCTION TO ENGINEERING  3 credits
Introduction to civil engineering for freshman engineering student. Tasks and opportunities of civil engineer. Introduction to problem-solving techniques. Required of all civil engineering freshmen.

201  STATICS  3 credits
Corrigenda: 3450/222 and 3460/221. Forces, resultant, co-ordinates, equilibrium of force systems; distributed forces; centers of gravity; analysis of simple structures; moment of inertia, kinematics of particles.

202  INTRODUCTION TO MECHANICS OF SOLIDS  3 credits
Prerequisite: 201. Axial force; bending moment diagrams; axial stress and deformation; stress-strain diagrams; torsion; flexural stress; flexural shear stress; compound stresses; inerterial moments; beams; columns.

230  SURVEYING  3 credits
Basic tools and computations for surveying: measurement of distance and elevation; traverse surveys. Laboratory field practice.

306  THEORY OF STRUCTURES  3 credits
Prerequisite: 202. Stability and deflection; statically determinate trusses and frames; approximate frame analysis; influence lines; moving loads; virtual work analysis; moment area theorem; fixed-end conditions of members; moment distribution for continuous beams and frames.

313  SOIL MECHANICS  3 credits
Prerequisite: 202 or permission. Physical properties of soils. Soil water and groundwater flow. Stress displacements, volume changes, consolidation within a soil mass. Soil strength. Compaction.

314  GEOTECHNICAL ENGINEERING  3 credits

323  WATER SUPPLY AND POLLUTION CONTROL  3 credits
Prerequisites: 3150-133, 4600-310. Water and wastewater characteristics, criteria, operation, and distribution. Water and wastewater treatment process flowsheets, design and operation, Wastewater and sewage disposal.

341  HYDRAULIC ENGINEERING  3 credits
Flow in pipelines and drainage networks, pumps and pumping stations, seepage; elements of hydrology, flow in open channels, design of hydraulic structures, water resources engineering.

431  TRANSPORTATION ENGINEERING  3 credits
Prerequisite: 202 or equivalent. Review of matrix algebra, structural analysis concepts: stiffness, free-body diagrams, framing, reaction forces. Hands-on lab experience to reinforce framing analysis concepts.

433  ENGINEERING MATERIALS LABORATORY  2 credits
Prerequisite: 202. Study of laboratory instrumentation and standard techniques in testing of engineering materials. Data analysis.

434  STEEL DESIGN  3 credits
Prerequisite: 306. Tension, compression members, openweb post, beams, bearing plates, column, bolted, welded connections.

435  REINFORCED CONCRETE DESIGN  3 credits
Prerequisites: 306. Ultimate strength analysis and design; compression steel; diagonal strut analysis; slabs; two-way slabs; columns isolated and combined footings.

437  ADVANCED STRUCTURAL DESIGN  3 credits
Prerequisites: 401. Composite design: plate girders, plastic design, cantilever retaining walls; torsion in RC members; deflection of RC members; continuous girder design bridge.

439  ADVANCED STRUCTURAL ANALYSIS  3 credits

441/541  DESIGN OF EARTH STRUCTURES  3 credits
Prerequisites: 314 or permission. Design of earth structures: dams, highway fills, cofferdams, etc. Principles of construction techniques, quality control, embankment analysis, instrumentation, foundation soil stabilization, seepage analysis, and control design. Graduate students will perform more advanced analysis and design.

448/548  SOIL AND ROCK EXPLORATION  3 credits
Prerequisite: 314 or permission. Site exploration criteria and planning. Conventional, sonic, X-rays, testing and including data in testing methods. Theory of geophysics and geophysical methods. Fundamentals of seismic, electrical resistivity, gravity, magnetic and radiometric measurements. Air photo interpretation.

452/552  WATER POLLUTION PRINCIPLES  4 credits
Prerequisite: 323. Principles of aquatic chemistry and microbiology. Chemical reaction engineering fundamentals presented with emphasis on applying them to water, wastewater treatment.

452/552  ENVIRONMENTAL ENGINEERING DESIGN  3 credits
Prerequisite: 323. An introduction to the physical, chemical and biological processes utilized in the treatment of water and wastewater, with design parameters emphasized.

457/557  WATER QUALITY MODELING AND MANAGEMENT  3 credits
Prerequisite: 333. Analysis and simulation of the physical, chemical and biochemical processes affecting stream quality. Development of management strategies based upon the application of quantitative modeling techniques to environmental systems.

458/558  HAZARDOUS AND SOLID WASTES  3 credits
Prerequisite: senior standing or permission of instructor. Hazardous and solid waste quantities, properties and sources are presented. Handling, processing, storage and disposal methods are discussed with non-technical constraints outlined.

464  HYDRAULIC DESIGN  3 credits
Prerequisite: 341. Collection and critical evaluation of hydraulic data related to actual design problems selected by instructor. Development and analysis of design alternatives. Preparation of reports.

453/543  APPLIED HYDRAULICS  3 credits
Prerequisite: 341. Review of design principles: urban hydraulics, slum channel mechanics, embankment, coastal engineering.

465  HYDROLOGY  3 credits

466  HYDRAULICS LABORATORY  1 credit
Prerequisite: 341. Introduction to laboratory and field devices for hydraulic measurements. Reconstruction and presentation of hydraulic data. Individual assignments of model studies of hydraulic structures.

469  URBAN PLANNING  2 credits
Prerequisite: 341. Historical developments in urban planning, urban planning techniques and patterns, comprehensive master planning studies, planning regulations, design problems, class projects, class project presentation.

461/551  MATRIX ANALYSIS OF STRUCTURES  3 credits
Prerequisites: 306 or equivalent. Review of matrix algebra, structural analysis concepts: stiffness, free-body diagrams, framing, reaction forces. Hands-on lab experience to reinforce framing analysis concepts.

462  STRUCTURAL VIBRATION AND EARTHQUAKES  3 credits

463/553  OPTIMUM STRUCTURAL DESIGN  3 credits
Prerequisite: 306. Basic concepts in structural optimization. Mathematical programming methods including unconstrained minimization, multidimensional minimization and constrained minimization.

454/554  ADVANCED MECHANICS OF MATERIALS  3 credits
Prerequisites: 202 or equivalent. Three-dimensional state of stress and strain analysis. Uniformly bending of straight and curved members with shear deformation. Beams and slabs, plastic foundations. Saint Venant's torsional problems. Inelastic analysis of bending and torsional problems. Introduction to energy method; Instability behavior of prismatic members.

463/563  TRANSPORTATION PLANNING  3 credits
Prerequisite: 361. Theory and techniques of development and analysis and evaluation of transportation system plans. Emphasis on understanding and using tools and professional methods applicable to solve transportation planning problems, especially in urban areas.

464/564  HIGHWAY DESIGN  3 credits
Prerequisite: 361. Study of modern design of geometric and pavement features of highways. Design problem and computer use. Graduate students will produce a more complete design.
465/556 PAVEMENT ENGINEERING 3 credits
Prerequisite: 361. Theories of elasticity, viscoelasticity and of layered systems as applied to pavements. Pavement materials characterization; pavement design; pavement restoration for rigid and flexible pavements.

466/556 TRAFFIC ENGINEERING 3 credits
Prerequisite: 361. Vehicle behavior, urban travel characteristics, traffic flow theory, traffic studies, accidents and safety, traffic signs and marking, traffic signal planning, traffic control and transportation administration.

468/568 HIGHWAY MATERIALS 2 credits
Prerequisite: 361, 368. Selection of pavement materials. Properties of aggregates, manufacture and properties of portland cement concrete, properties of asphalt materials, design and testing of hot mix asphalt pavement mixtures, and of surface treatments. Laboratory preparation of specimens and determination of properties. Graduate student requirement: Graduate students will be required to perform an additional eight-hour asphalt laboratory (Abson recovery of asphalt from solution) and to prepare a paper on a highway materials topic.

471 CONSTRUCTION ADMINISTRATION 3 credits
Prerequisite: senior standing or permission. Organization for construction, construction contracts, estimating, bidding, bonds and insurance. Construction financial management and supervision of construction, scheduling using critical path method.

472 CONSTRUCTION ENGINEERING 3 credits
Prerequisite: senior standing or permission. Construction equipment selection and management. Techniques of various civil engineering construction operations including blasting, tunneling, concrete framework and dewatering.

473 CONSTRUCTION MATERIALS 3 credits
Prerequisites: 360, 4200-305. Composition, structure and mechanical behavior of structural materials such as concrete, wood, masonry, plastics and composite materials. Discussion of applications and principles of evaluating material properties.

474/574 UNDERGROUND CONSTRUCTION 2 credits
Prerequisite: 361. Determination of design and techniques of underground construction. Selection of proper method for individual job. Design of underground openings, support systems and linings.

480 RELIABILITY-BASED DESIGN 3 credits
Prerequisite: 3470. Basic concepts of reliability. Probabilistic techniques in civil engineering. Risk analysis and reliability based design.

481 CIVIL ENGINEERING SYSTEMS 2 credits
Prerequisite: senior standing or permission. Systems approach to civil engineering problems. Mathematical modeling; project planning, scheduling and cost analysis, basic operations research methods, decision analysis. Management of engineering design of complex civil engineering systems.

482 SPECIAL PROJECTS 1-3 credits
Prerequisites: senior standing and permission. Directed individual or group research or study in student's field of interest. Topic subject to approval by adviser.

497 HONORS PROJECT 1-3 credits (May be repeated for a total of six credits) Prerequisite: senior standing in Honors Program. Individual creative project or design relevant to civil engineering, supervised by faculty member of the department.

Graduate Courses

604 DYNAMICS OF STRUCTURES 3 credits

605 STRUCTURAL STABILITY 3 credits

606 ENERGY METHODS AND ELASTICITY 3 credits
Prerequisite: 602. Work and complementary work, Strain energy and complementary strain energy, Virtual work and energy theorems. Variational methods. Application of the notion of boundary value problems in elasticity. Selected topics in energy methods and elasticity.

607 PRESTRESSED CONCRETE 3 credits
Prerequisite: 404. Basic principles of design. Design of double-tie roof girders; shear, deflection length, columns, piers, design of highway bridge girders; prestressed, post-tensioned, continuous girders, corbels, volume-change forces, connections.

608 MULTISTORY BUILDING DESIGN 3 credits
Prerequisite: 401. Floor systems, staggered truss system, braced frame design; unbraced frame design; drift indices; monocoque (tube and partial tube) systems, earthquake design, fire protection. Analysis by STRUDL.

609 FRACITATE ELEMENT ANALYSIS I 3 credits
Prerequisite: 601. Introductory computer programming. Detailed computer programming of various topics from continuum mechanics. Such areas as planes, axisymmetric and 3-D stress analysis, conduction, fluid mechanics, transient problems and geometric and material nonlinearities.

610 INTRODUCTION TO COMPOSITE MECHANICS 3 credits
Prerequisite: 601 or equivalent. Fundamental concepts of composites, composite micro-mechanics, macro-mechanics and laminate theory are discussed from geometrically non-linear problems in laminae analysis for stiffness and strength. The geometric, mechanical, hygrothermal behavior or composites will be described in terms of corresponding properties of the constituents. Emphasis will be placed on the physics of composite behavior, design and analysis of fiber composite laminates subjected to mechanical and environmental loading conditions.

611 FOUNDAMENTAL OF SOIL BEHAVIOR 2 credits
Prerequisite: 314. Introduction to mechanics of structure and fundamental physics-chemical and mechanical properties of engineering soils viewed as particulate matter.

612 ADVANCED SOIL MECHANICS 3 credits
Prerequisite: 314. Study of mechanics of behavior of soil as continuum. Principles of stress, strain, deformation, shear strength, pore water pressures as applied to mechanical behavior of soil masses.

613 ADVANCED GEOTECHNICAL TESTING 3 credits
Prerequisites: 510, 612. Theory and practice of static and dynamic in situ and laboratory soil testing. Testing procedures, applicability, limitations. General evaluation of geotechnical parameters for routine and special site conditions. One lecture, two laboratories per week.

614 FOUNDATION ENGINEERING I 3 credits
Prerequisite: 310 or permission. Foundation bearing capacity and settlement analysis. Design of shallow and deep foundation systems. Pile driving and load test procedures and analysis. Theory and design of earth-retaining structures including retaining walls, tiebacks and bulwarks.

615 FOUNDATION ENGINEERING II 3 credits
Prerequisite: 614 or permission. Soil-structure interaction theory and applications to underground structures including conduits, tunnels and shafts. Advanced foundation construction methods and problems including dewatering, soil stabilization, underpinning and cattlemen. Scope stability analysis.

618 ROCK MECHANICS 3 credits
Prerequisite: 601 or permission. Mechanical nature of rocks; linear elasticity and applications to rock problems; inelastic behavior of rocks, time dependence and effects of pore pressure, experimental characterization of rock properties; failure theory and crack propagation.

620 SANITARY ENGINEERING SYSTEMS 3 credits
Prerequisite: 333. Application of both laboratory methods and theory to solution of sanitary engineering problems involving water pollution, stream regeneration, special industrial wastes, and similar problems.

621 WATER AND WASTEWATER LABORATORY 2 credits
Prerequisite: 426 or permission of instructor. Conduct of laboratory experiments related to the design and operation of water and wastewater treatment processes. Experimental design, laboratory procedure, data collection, analysis and report preparation.

622 WATER TREATMENT PLANT DESIGN 3 credits
Prerequisite: permission. Design of water treatment plants for potable, industrial and commercial uses. Development of water sources, treatment methods and financing used to design best practical methods in terms of cost-benefits.

623 WASTEWATER TREATMENT PLANT DESIGN 3 credits
Prerequisite: permission. Application of theory and fundamentals to design of wastewater treatment plant systems. System design is focused on processes which meet water quality criteria. Economic analyses made to determine best practical designs to be utilized.

624 ENGINEERING MANAGEMENT OF WATER UTILITIES 2 credits
Prerequisite: permission. Comprehensive study of various functions of water utility and engineering management operations pertaining to intricate and complex processes. Fundamentals of responsibility and duties applicable to water utility systems.

625 WATER AND WASTEWATER PROCESSES I 3 credits
Prerequisite: 423. Theory, current research associated with physical chemical processes, impact on design-coagulation/flocculation, sedimentation, filtration, absorption, processes emphasized.

626 WATER AND WASTEWATER PROCESSES II 3 credits
Prerequisite: 423. Theory, current research associated with biological chemical processes, impact on design-activated sludge, fixed film processes, gas transfer, sludge stabilization, sludge dewatering processes emphasized.

640 ADVANCED FLUID MECHANICS 3 credits

644 OPEN CHANNEL HYDRAULICS 3 credits
Application of basic principles of fluid mechanics to flow in open channels. Criteria for analysis of uniform, gradually varied and rapidly varied flows. Study of movement and transportation of sediments. Design problems utilizing numerical techniques.

645 APPLIED HYDRAULICS 3 credits
Discussion of water cycle such as precipitation, evaporation, stream flows, floods, infiltration. Methods of analysis and their application to studies of water demand, storage, transportation including mathematical modeling of urban runoff and statistical hydrology.

650 COASTAL ENGINEERING 3 credits
Prerequisite: 202. Basic principles governing mechanical behavior of materials with respect to elastic, plastic and creep responses, stress rupture, low and high cycle and thermal fatigue. Failure theories and fracture phenomena in brittle and ductile materials. Crack propagation and life prediction of engineering materials.

682 ELASTICITY 3 credits

683 PLASTICITY AND VISCOELASTICITY 3 credits

684 ADVANCED REINFORCED CONCRETE DESIGN 3 credits

685 ADVANCED STEEL DESIGN 3 credits
Prerequisite: 401. Properties of steel, fasteners, bearing, friction pins, Gusset plates, bolts in tension, end plates, weld joints, cyclic loads, fatigue analysis, types of detail, torsion, stability design.

686 EXPERIMENTAL METHODS IN STRUCTURAL MECHANICS 3 credits

687 LIMIT ANALYSIS IN STRUCTURAL ENGINEERING 3 credits

694 ADVANCED SEMINAR IN CIVIL ENGINEERING 1-3 credits
Prerequisite: permission. Advanced projects, reading, studies, or experimental in various areas of civil engineering.

697 MASTER'S RESEARCH 1-3 credits
Prerequisite: permission. Research on some suitable topic in civil engineering as approved by the department. Graded as credit/No credit and can be repeated. Credit cannot be applied towards master’s degree.
ELECTRICAL ENGINEERING

4400:

101 INTRODUCTION TO ELECTRICAL ENGINEERING
Corequisites: 1100:111 and 3400:149. Introduction to freshman engineering student to problem-solving techniques. Required of all entering electrical engineering freshmen.

231 CIRCUITS I
Prerequisite: 3650:201. Fundamentals of circuit analysis including loop and mesh methods, phase techniques, resonance, polyphase circuits and magnetic coupling in circuits. 3 credits

232 CIRCUITS II
Prerequisite: 231. Corequisite: 3450:235. Network theorems, Fourier methods, transfer functions, Laplace and Fourier transforms and their use in analyzing dynamic operation of circuits. 3 credits

320 BASIC ELECTRICAL ENGINEERING
Prerequisite: junior standing in engineering; corequisite: 3450:235. Covers fundamental aspects of electric circuits, electronics and electrical machinery. Not open to electrical engineering major. 4 credits

333 DISCRETE-TIME SYSTEMS
Prerequisite: 232, 2450:235, 4100:206. Introduction to the analysis and design of discrete-time linear systems. System states, classical solutions, Z-transform solutions, convolution techniques, matrices, state-variable methods, and digital filters are included. 3 credits

334 ACTIVE CIRCUITS
Prerequisite: Applications of operational amplifiers including bilinear transfer functions, scaling, cascade design, biquad circuits, lowpass, highpass, bandpass/filters, Chebyshev response, sensitivity, delay filters, frequency transformations, ladder design, simulink element modeling, testing, simulation and switched-capacitors. 3 credits

343 ELECTRICAL MEASUREMENTS
Prerequisite: 331, 343. Study of DC and AC meters and bridges. Evaluation of errors in measurement techniques, test equipment measurements, and digital filters are included. 4 credits

344 INSTRUMENTATION
Prerequisite: 334, 362. Analysis and characteristics of transducers, including instruments and their components, and digital filters are used in electrical measurements. 3 credits

353 ELECTROMAGNETIC FIELDS I
Prerequisite: 3450:233. Static and dynamic fields treated on vector basis with Maxwell's equations in point and integral forms. Dynamic electromagnetic fields with applications including particle dynamics and propagation equations. 3 credits

359 TRANSMISSION LINES AND NETWORKS
Prerequisites: 333, 362. Theory and analysis of distributed and lumped transmission lines and networks. 3 credits

430 PHYSICAL ELECTRONICS
Prerequisites: 232. Corequisite: 363. PN junction, diffusion, tunneling, FET and BJT device physics, equivalent circuits for electronic devices, time and frequency analysis, biasing and logic families. 3 credits

381 ELECTRONIC DESIGN
Prerequisites: 333, 360. Power amplification, feedback, oscillators, linear integrated circuits, modulation and demodulation circuits. 4 credits

382 ELECTRONIC CIRCUITS
Prerequisites: 333, 363. Equivalent circuits for electronic devices. Time and frequency domain analysis. Rectification, voltage and power amplification, feedback, oscillators, linear IC's. 4 credits

383 SWITCHING AND LOGIC
Prerequisites: 232, 343. Analysis of computer circuits. Introduction to use of Boolean algebra and minimizing techniques in analyzing switching circuits. 4 credits

385 MICROPROCESSOR SYSTEM
Prerequisite: 363. Consideration of microcomputer hardware and software and peripheral devices. Instructions set of selected microprocessor. Introduction to microcomputer software. 3 credits

371 CONTROL SYSTEMS I
Prerequisite: 333. Introduction to servomechanisms and feedback. Modeling and response of feedback control systems. Stability of linear systems. Systems include analog simulation and basic servomechanism. 3 credits

380 ILLUMINATION
Fundamentals of illumination and principles underlying specifications and design for adequate electrical lighting. 2 credits

381 ENERGY CONVERSION
Prerequisites: 231 and 353. Nontechnical to electrical energy conversion and vice versa through chemical, solar, and electromechanical energy conversion and/or theoretical and practical problems. 3 credits

385 ENERGY CONVERSION LAB
Prerequisite: 381. Theoretical and practical studies in machines, transmitters and machines. 2 credits

386 ENERGY CONVERSION LABORATORY
Prerequisite: 388. Required for all EE students. Laboratory course to follow 384. Electric-magnetic forces and torque, electromagnetic energy conversion. 1 credit

390 ELECTRONIC APPLICATIONS
Prerequisite: 3450:234. Selected microprocessors. 3 credits

450/459 ENGINEERING OF DATA COMMUNICATIONS
Prerequisites: 362, 363, 445. Data communication systems and their design and operation; error control and error correction methods, digital transmission; and digital transmission media. 3 credits

462 INTRODUCTION TO LASERS
Prerequisite: 333. Introduction to basic concepts of laser (laser) action, emission processes and their roles in laser action; types of lasers; presentation of generalized operating criteria. 3 credits

463/563 ANTENNA
Prerequisites: 353 or equivalent. Transmitting and receiving antenna parameters, reciprocity theorem, mutual coupling, radiation patterns, and image theory of antenna arrays. Various forms of wire antennas, printed antennas are considered. 3 credits

454 ELECTROMAGNETIC FIELDS II
Prerequisite: 353 or permission. Advanced field theory including boundary value problems and nonlinear fields. Applications of Maxwell's equations. 3 credits

455 MICROWAVES
Prerequisites: 353, 359. Dynamic fields, Maxwell's equations and wave equations. Field analysis, wave guides, microwave components, and systems. 4 credits

451 PHYSICS OF ELECTRONIC DEVICES
Prerequisites: 3560:301, 353, 362. Physics of semiconductors. Band theory, energy distribution and electron motion. PN junctions, BJT and FET devices, electron emission and ballistic, gas discharge, dielectric and magnetic materials. Device modeling. 3 credits

230 4300: Civil Engineering
Graduate Courses

600 ADVANCED MICROCOMPUTER SYSTEMS 3 credits
Prerequisite: 365 or permission. Discussion of multiprocessing, numerical data processors, multiprocessing system bus architectures, 16-bit and 32-bit microprocessor architectures, 16-bit and 32-bit microprocessor architectures, multi-level protection and virtual memory, as supported by commercial microprocessors.

631 CIRCUIT ANALYSIS 3 credits
Prerequisite: Graduate standing. Operational methods, time domain analysis, state variable methods and matrix techniques applied in circuit analysis. Realizability and synthesis of driving point impedance and transfer functions.

641 RANDOM SIGNAL ANALYSIS 3 credits
Prerequisite: 467. Analysis, interpretation and smoothing of engineering data through application of statistical and probability methods.

642 STATISTICAL COMMUNICATIONS 3 credits
Prerequisite: 448 or 641. Detection and estimation of signals in communication systems, line and network systems with random inputs, narrow-band systems, mean squared error filter, modulation and information theory.

646 DIGITAL SIGNAL PROCESSING 3 credits
Prerequisite: Calculus, operating system techniques. Modern signal processing techniques including DFT, DFT filter design, spectral estimation (FFT algorithm and maximum entropy method).

648 DETECTION AND ESTIMATION THEORY 3 credits
Prerequisite: 64. Characteristics of noise in communications, optimum receiver principles, waveform selection and encoding of information.

651 ELECTROMAGNETIC FIELDS 3 credits
Prerequisite: Graduate standing in electrical engineering. Introduction to advanced electromagnetic concepts at graduate level.

652 ADVANCED ELECTROMAGNETICS 3 credits

655 ADVANCED ANTENNA THEORY AND DESIGN 3 credits
Prerequisite: 453 or equivalent. Basic properties and recent advances of microstrip antennas. Analysis and design of reflector antennas. Analysis and synthesis of linear and planar antenna arrays.

661 DESIGN OF DIGITAL SYSTEMS 3 credits

682 TOPICS IN ELECTRONICS 3 credits
Prerequisite: Permission of department head. Discussions of recent advances in electronics.

671 DISCRETE CONTROL SYSTEMS 3 credits
Prerequisite: 427/527 or permission. Theory, techniques for analysis, design of discrete control systems, Z-transform technique, stability analysis, frequency response, Optimization, Digital computer control.

673 NONLINEAR CONTROL 3 credits
Prerequisite: 672 or permission. Designed to provide students with qualitative insights into nonlinear systems as well as techniques for controlling such systems. Topics include describing functions, Poppo and circle criteria, jump resonances, subharmonics, phase plane, conservative systems, Lyapunov theorems, bifurcation of attractors, and routes to chaos.

674 CONTROL SYSTEM THEORY 3 credits
Prerequisite: 672. Advanced modern control theory for linear, nonlinear systems. Controllability, observability, state variable feedback, estimation, control nonlinear system analysis, stability problems.

675 SYSTEM SIMULATION 3 credits
Prerequisite: 472 or permission of the instructor. This course is designed to provide the control engineer with tools necessary to simulate continuous systems on a digital computer. Topics include linear multistep methods, non-linear methods, stiff systems, optimization, parallel computing and simulations languages.

676 RANDOM PROCESS ANALYSIS 3 credits
Prerequisite: 654. Analysis and design of control systems with stochastically defined input. Introduction to estimation filters.

681 POWER SYSTEM ANALYSIS 3 credits
Prerequisite: 480. Short circuit and load flow analyses of power systems with emphasis on computer solution. Transient machine analysis.

682 POWER SYSTEM STABILITY 3 credits
Prerequisite: 651. Steady state and transient stability of power systems with emphasis on computer solution.

683 ECONOMICS OF POWER SYSTEMS 3 credits
Prerequisite: 451. Analysis and operation of power system for economic dispatching using a computer.

684 PROTECTIVE RELAYING 3 credits
Prerequisite: 651. Principles and application of relays as applied to protection of power systems.

685 SURGE PROTECTION 3 credits
Prerequisite: 480. Phenomena of lightning and switching surges on electrical systems. Protection of systems and apparatus by line design, application of protective devices and insulation coordination.

686 DYNAMICS OF ELECTRIC MACHINES 3 credits

688 CONTROL OF ELECTRIC MACHINES 3 credits
Prerequisites: 381, 403. Elements of control circuits for electric drives, techniques for torque speed control of electric machines.

693 SPECIAL PROBLEMS 1-3 credits
Prerequisite: Permission of department head. For a qualified graduate student. Supervised research or investigation in a major field of training or experience. Credit dependent upon nature and extent of project.

699 MASTER'S THESIS 1-6 credits
Prerequisite: Permission of department head. Research and thesis on some suitable topic in electrical engineering.

703 TOPICS IN ELECTROMAGNETICS 3 credits
Prerequisite: 651. Introduction to advanced techniques in fields. Topics include application of Green's functions, techniques and related boundary value problems.

712 MODEL REDUCTION TECHNIQUES FOR CONTROL SYSTEMS 3 credits
Prerequisite: 674 or permission of the instructor. Application of minimal realization techniques to reduced order models of multivariate systems. Methods covered include: Routh approximation, Cauer first, second, and third forms, aggregation, singular perturbation, balancing. Introduction to controller order reduction.

714 ADVANCED LINEAR CONTROL SYSTEMS 3 credits
Prerequisite: 674 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 H2 optimality criterion for controller design is included. Special emphasis will be given to the robust stabilization problem and the disturbance attenuation problem.

717 OPTIMAL CONTROL I 3 credits
Prerequisite: 674. Formation of optimal control problems; application of variational calculus, maximum principle and optimality principle to control problems. Computational techniques in optimization.

717 OPTIMAL CONTROL II 3 credits
Prerequisite: 716. Sensitivity problem in optimal control, system identification, implementation and application of adaptive control.

718 ADAPTIVE CONTROL 3 credits
Prerequisite: 671 or permission of instructor. This course will provide the advanced graduate student with the techniques required for the control of time-varying nonlinear and stochastic systems. Topics include minimum prediction error control, least squares estimation, certainty equivalency adaptive control. Kalman filtering, minimum variance control. LQG control and stochastic, adaptive control.

719 ADVANCED TOPICS IN CONTROL 3 credits
Prerequisite: 776. Discussions of recent advances in control systems.

724 ADVANCED SEMINAR 1-3 credits
Prerequisite: May be taken more than once. Prerequisite: permission of department head. For a qualified graduate student. Supervised research or investigation in a major field of training or experience. Credit dependent upon nature and extent of project.

790 PRELIMINARY RESEARCH 1-15 credits
Prerequisite: completion of qualifying examination and approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

809 DOCTORAL DISSERTATION 1-15 credits
Prerequisite: completion of candidacy examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.

ENGINEERING COMPUTER SCIENCE

4450: PROGRAMMING FOR ENGINES 3 credits
Prerequisite: 4450 or permission. Software design cycle. Introduction to computer organization and assembly. Compiled syntax and use of high level languages for systems software. Required for Electrical Engineering majors.
401 COMPUTER METHODS 3 credits
Prerequisites: 410.305 or equivalent in FORTRAN, and 3450.235. Numerical methods and techniques in use of central computer facilities to solve problems in science and engineering. Plotting and other FORTRAN libraries. Job Control Language. Interactive computing.

420-430 SOFTWARE ENGINEERING 3 credits
Prerequisites: 3460.209 and instructor's permission. Software life cycle. Specification, design and implementation of team projects.

432 SYSTEM SIMULATION 3 credits
Prerequisites: 410.105 or modeling and simulation of discrete and continuous time systems. Using FORTRAN and SIMSCRIPT. Discrete event models and GPSS. SIMSCRIPT.

441 EXPERT SYSTEMS IN ENGINEERING 3 credits
Prerequisite: Any computer programming course. Introduction to expert systems. Characteristics of major expert system categories and finding expert systems using course software.

470/570 INTEGRATED SYSTEM DESIGN 3 credits
Prerequisite: 470/480-465. Proprietary for 470/480-560. Introduction to computer structures, design methods and development tools for VLSI systems. VLSI devices and fabrication processing and control design. Layout methods and tools. Design systems.

497/597 SPECIAL TOPICS: COMPUTER SCIENCE 1-2 credits
(May be taken more than once) Prerequisite: Permission of department head. Special topics in computer engineering.

Graduate Courses

608 COMPUTER ARCHITECTURE 3 credits
Prerequisite: 4400.203 or equivalent. Introduction to computer design. Design methodologies. Processor organization and design of instruction sets. Parallel processing. Memory organizations. Computer system configurations.

610 COMPUTER ARCHITECTURES I 3 credits
Prerequisite: 410.206 and 3450.235. Organization of scientific and engineering problems for computer solutions. Analysis of error and convergence properties of algorithms.

611 COMPUTER ARCHITECTURES II 2 credits
Prerequisite: 610 or permission. Data structures and algorithm design for minimum execution time and memory requirements.

693 SPECIAL PROBLEMS 1-2 credits
(May be taken more than once) Prerequisite: Permission of department head. For graduate students. Independent research or investigation in student's major field. Credit depends upon nature and extent of project.

794 ADVANCED SEMINAR 1-3 credits
(May be taken more than once) Prerequisite: Permission of department head. Advanced level coverage of various topics. Intended for students seeking Ph.D. in engineering.

MECHANICAL ENGINEERING

4600:

125 ENGINEERING GRAPHICS 2 credits
Freehand sketching techniques. Orthographic projection and pictorial representation of typical machine elements.

150 ENGINEERING DESIGN: MECHANICAL ENGINEERING 1 credit
Introduction to engineering profession. Engineering curriculum and programs of study. Introduction to the use of the digital computer.

203 DYNAMICS 3 credits
Prerequisite: 4300.101. Kinematics and kineos of particles and rigid bodies. Principles of work, energy, momentum and impulse.

300 THERMODYNAMICS I 4 credits
Prerequisites: 3430.221 and 3650.210. Basic concepts of thermodynamics. The pure substance, the system and first and second laws of thermodynamics. Entropy, availability, power and force equations.

301 THERMODYNAMICS II 3 credits

305 THERMAL SCIENCE 2 credits
Prerequisites: 3430.222 and 3650.210. Credit allowed for both 300 and 305. Introduction to first and second laws of thermodynamics. Perfect gas relations, equations of state, cycle analysis. Introduction to conduction, convection and radiative heat transfer.

310 FLUID MECHANICS 3 credits

315 HEAT TRANSFER 3 credits
Prerequisites: 160, 300, 310, or 4000.206. Fundamentals of heat transfer by conduction, convection and radiation.

321 KINEMATICS OF MACHINES 3 credits
Prerequisites: 125, 203. Displacements, velocities, accelerations and introduction to forces in flight motion mechanisms. Introduction to design of gears, gear trains and cam mechanisms.

336 ANALYSIS OF MECHANICAL COMPONENTS 3 credits

337 DESIGN OF MECHANICAL COMPONENTS 3 credits
Prerequisites: 336. Analysis and design to analysis of fasteners, welds, springs, balls and bearings. Design and introduction to journal bearings and lubrication. Component design and analysis.

340 SYSTEMS DYNAMICS AND RESPONSE 3 credits
Prerequisite: 3450.225. A unified approach to modeling, analysis, response and stability of engineering systems; analog, digital and hybrid computer simulation of interdisciplinary engineering problems are included.

360 ENGINEERING ANALYSIS 3 credits
Prerequisites: 160, 3450.225, or 4100.206. Analytical and numerical methods of solution of mechanical engineering problems.

380 MECHANICAL METALLURGY 2 credits
Prerequisite: 336. Structures of common metallic materials and study of their macroscopic mechanical behavior. Phase changes and heat treatment. Theories of failure.

400/500 THERMAL SYSTEM COMPONENTS 3 credits
Prerequisites: 301, 310, 315. Performance analysis and design of basic components of thermal energy exchange and conversion systems. Components studied include heat exchangers, pumps, compressors, turbines and expansion engines.

401 DESIGN OF ENERGY SYSTEMS 2 credits
Prerequisites: 400, 460. Analysis and design of systems for energy exchange. Performance of major energy system components and their integration into complex practical systems. Design project required.

410/510 HEATING AND AIR CONDITIONING 3 credits
Prerequisites: 301, 310. Thermodynamics of gas mixtures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling and humidity.

411/511 COMPRRESSIBLE FLUID MECHANICS 3 credits

412/512 FUNDAMENTALS OF FLIGHT 3 credits
Prerequisite: 203 or equivalent. Introduction to basic aerodynamics, airplane performance, stability and control. Aeronautics and propulsion. Design considerations are emphasized.

415/515 ENERGY CONVERSION 3 credits
Prerequisites: 301, 310. Topics from fields of internal combustion engines, cycle analysis, modern conversion devices.

418/518 HEAT TRANSFER PROCESSES 3 credits
Prerequisite: 315 Analysis. Design of extended surfaces. Natural convective, combined modes of heat transfer and heat transfer with a change of phase. Heat transfer in magnetohydrodynamic systems.

420 INTRODUCTION TO FINITE ELEMENT METHOD 3 credits

422/552 EXPERIMENTAL STRESS ANALYSIS I 3 credits
Prerequisites: 336 or 4000.202. Experimental methods of determining stress or strain: bridge technique, strain gauges, photoelasticity.

430/530 MACHINE DYNAMICS 3 credits
Prerequisites: 331. Static and dynamic forces in machines, problems of inertia, dynamic equilibrium, hydrodynamics. Balancing of rotating, reciprocating, cyclic type motion. Computer simulation of transient mechanism dynamics. Other topics in advanced dynamics.

431/531 FUNDAMENTALS OF MECHANICAL VIBRATIONS 3 credits
Prerequisites: 203 and 3450.225. Undamped and forced vibrations of systems having one or two degrees of freedom.

432/532 VEHICLE DYNAMICS 3 credits

440/540 SYSTEM DYNAMICS AND CONTROL 4 credits

441/541 CONTROL SYSTEMS DESIGN 3 credits
Prerequisites: 315, 341, 360. Methods of feedback control system design such as minimum pole, root locus, frequency domain. Compensation techniques. Multivariable and nonlinear design methods and computer-aided control design.

442/542 INDUSTRIAL AUTOMATION CONTROL 3 credits
Prerequisite: 440 or equivalent. Operation of basic control mechanisms. Study of mechanical, hydraulic, pneumatic, fluidic control systems, including application areas. Tuning of control devices for optimum performance of systems. Case studies on control applications from industry. Boilers, furnaces, process heaters.

443/543 OPTIMIZATION METHODS IN MECHANICAL ENGINEERING 3 credits
Prerequisite: 440. Development and method of solution of optimization problems in mechanical engineering. Use of dynamic programming and operational research methods for optimization including computer utilization and applications.

444/544 ROBOT DESIGN, CONTROL AND APPLICATION 3 credits
Prerequisites: 321, 440 or equivalent. Robust design and control. Kinematic transformations, velocities and accelerations, path trajectories and dynamics, control and sensing in robotics. The automated factory with robotic applications.

460 CONCEPTS OF DESIGN 3 credits
Prerequisite: 337. Introduction to design. Creatively and inventiveness. Tools of decision making, engineering economics, feasibility, optimization. Case studies.

461 DESIGN OF MECHANICAL SYSTEMS 2 credits
Prerequisites: 321, 431, 460. Design of mechanical design project and case studies.

472/562 PRESSURE VESSEL DESIGN 3 credits
Prerequisite: 336 or 4300.202. Introduction to modern pressure vessel technology. Topics include basic structural considerations, materials and their environment and design criteria for pressure vessels.

483 MECHANICAL ENGINEERING MEASUREMENTS LABORATORY 2 credits
Prerequisites: 203, 300, 310. Development of methods to measure temperature, pressure, flow rate, viscosity, and motion. Includes both lecture and laboratory experience and emphasizes calibration and accuracy of appropriate instruments.

484 MECHANICAL ENGINEERING LABORATORY 2 credits
Prerequisite: 463. Corequisites: 315 and 431. Laboratory experiments in area of dynamics, vibrations, thermodynamics, fluids, heat transfer and control.

486 SPECIAL TOPICS 1-3 credits
Prerequisite: permission. Brief description of current content to be announced in schedule of classes.
Graduate Courses

680 GAS DYNAMICS

683 THERMODYNAMICS
Prerequisite: 310 or equivalent. Extension and generalization of basic laws of thermodynamics with application to a wide variety of physical and biological systems. Introduction to irreversible thermodynamics, the third law and statistical thermodynamics.

690 FINITE ELEMENT ANALYSIS I
Prerequisite: 622. Introductory development of finite element method as applied to various topics from mechanics and non-mechanical areas. Theoretical and practical aspects covered include plane, axisymmetric and 3D stress analysis, conjugate methods; transient problems and geometric and material nonlinearity.

690 FINITE ELEMENT ANALYSIS II
Prerequisite: 610. Development of computer programs for the finite element method. Emphasis on use of modern computers and the application of computer programs for analysis.

691 COMPUTATIONAL FLUID MECHANICS
Prerequisite: 610 or permission of instructor. Study of numerical methods in fluids; numerical methods and analysis of fundamental field equations of fluid and solid mechanics by applying basic concepts of numerical analysis, conservation of mass and energy. Development of computational fluid dynamics; laminar and turbulent flows, complex geometries, and geometric and material nonlinearity.

695 CONDUCTION HEAT TRANSFER
Prerequisite: 315 or equivalent. Study of one-, two- and three-dimensional heat conduction. Development and application of analysis techniques for conduction.

696 CONVECTION HEAT TRANSFER
Prerequisite: 315 or equivalent. Heat transfer from laminar, turbulent, internal, and external flows. Convective heat transfer at high velocities. Heat transfer to liquid metals, high Prandtl number fluids.

697 RADIATION HEAT TRANSFER

698 BOILING HEAT TRANSFER AND TWO-PHASE FLOW

699 EXPERIMENTAL STRESS ANALYSIS I
Prerequisite: 420/522 Dynamic strain gage methods, transducer design. More stresses techniques, the stress and strain at advanced level models.

700 INTRODUCTION TO TIRE MECHANICS
Prerequisite: permission. Tires as vehicle component. Tread friction and wear. Tires include structures, tire stress and strains and advanced tire models.

701 CONTINUUM MECHANICS
Prerequisite: 336 or permission. Analysis of stress and deformation. Study of fundamental field equations of fluid and solid mechanics by applying basic concepts of numerical analysis, conservation of mass and energy. Development of computational fluid dynamics; laminar and turbulent flows, complex geometries, and geometric and material nonlinearity.

702 APPLIED STRESS ANALYSIS I

703 FUNDAMENTAL OF FRACTURE MECHANICS

705 ANALYSIS OF MECHANICAL COMPONENTS
Prerequisite: 622 or equivalent. Torsion and fluid flow. Fatigue, creep analysis and introduction to fracture mechanics.

706 NONLINEAR ENGINEERING PROBLEMS

707 VIBRATIONS OF DISCRETE SYSTEMS
Prerequisite: 431/531. Study of vibrations of multidegree of freedom systems including free and forced vibrations, damped and transient response, normal mode vibrations and matrix iteration techniques. Application to seismic design and shock design.

708 KINEMATIC DESIGN
Prerequisite: 621 and permission of instructor. The geometry of constrained motion. Analysis of relative plane motion using vectors and the digital computer. Curve shape, synthesis. Singularity of linkage and product design to computer aided design.

709 RELIABILITY IN DESIGN
Prerequisite: 337 or equivalent and 3420/4616. The reliability determination of mechanical components and systems and its use in design, distribution, reliability determination, normal and lognormal theories, Weibull theory, Weibull spectrum analysis, reliability theory and confidence limits.

710 COMPUTERIZED MODELING OF STRUCTURES
Prerequisite: 630 or equivalent. Modal analysis theory and measurement techniques. Digital signal processing concepts, structural dynamics theory, modal parameter estimation with hands-on experience of modal parameter estimation methods in vibration analysis.

711 ADVANCED DYNAMICS OF ROTATING MACHINERY
Prerequisite: 430/530. Dynamic modeling and simulation of complex rotor-bearing systems. Steady state, transient and stability analysis with inertia, gyroscopic, imbalance, rotor box, disk-shaft and impeller-shaft interaction effects.

635 STRESS WAVES IN SOLIDS AND FLUIDS
Prerequisite: 531 or equivalent. Plane wave equation. Propagation of elastic plastic structures through solid media, transmission, reflection, absorption and reflection phenomena. Low and high velocity impact. Dynamic fracture. Numerical simulation techniques.

642 SYSTEM ANALYSIS AND CONTROL DESIGN
Prerequisite: 440 or equivalent. Unstructured models of modeling and response analysis, control, liability and observability, stability theory and analysis of linear and nonlinear engineering processes. Design of feedback controls for optimum performance for multivariable real time control application.

643 DISTRIBUTED PROCESS CONTROL DESIGN AND APPLICATIONS
Prerequisite: 440 or equivalent. Digital and continuous control algorithms. Process control fault detection. Implementation, self-learning, diagnostics, intelligent control systems. Case studies and experiments from various engineering disciplines.

645 PROCESS IDENTIFICATION AND CONTROL COMPUTER
Prerequisite: 440 or equivalent. Obtaining mathematical models of processes from noisy close loops. Methods of digital control design. Case studies on computer control of selected processes.

646 EXPERT SYSTEMS IN CONTROLS AND MANUFACTURING
Prerequisite: 440/540 or equivalent. Expert system methodologies for process control, computer integrated flexible manufacturing and robotics.

650 TRIBOLOGY
Prerequisite: Fundamentals of friction lubrication and wear. Friction, ductile materials, components. Advanced wear, boundary lubrication, friction, lubrication and bearings, rolling element bearings, ball bearings, and surface engineering.

660 ENGINEERING ANALYSIS
Prerequisite: B.S. in engineering. Study of analysis techniques as applied to specific engineering problems. Applications include beam deflections, acoustics, heat conduction and hydrodynamic stability.

669 SPECIAL TOPICS
Prerequisite: permission. For qualified candidate for graduate degree. Supervised research in a major field of study. Consent of advisor and department head required.

669 MASTER'S THESIS
Prerequisite: permission of adviser. Supervised research in a specific area of mechanical engineering.

704 FINITE ELEMENT ANALYSIS II

705 FINITE ELEMENT ANALYSIS III

706 DYNAMICS OF VISCOUS FLOW II
Prerequisite: 610. Introduction to turbulence. Turbulence modeling and turbulent boundary layers. Practical methods of solution of boundary layer problems. Transition process.

710 HYDRODYNAMICS STABILITY

715 ADVANCED TRIBOLOGY
Prerequisites: 665, 616. Friction analysis. Friction analysis and non-nomogeneous or non-linear boundary value problems. Heat conduction, heat transfer with melting, solidification and boiling, heat transfer in porous systems and hydrodynamically and thermally unsteady convection.

717 APPLIED STRESS ANALYSIS II
Prerequisite: 623 Continuation of 623 Development of approximate solution techniques, including finite elements, method of weighed residuals (Rayleigh-Ritz, Galerkin, Trefftz, collocation, least squares, etc.) and finite differences.

718 NONLINEAR CONTINUUM MECHANICS
Prerequisites: 612 Finite deformation and strain, stress, constitutive equations, strain energy functions. Solution of finite deformation problems in hypoplasticity, coupled thermoelasticity, composite, electroelasticity and micropolar theories.

719 VIBRATIONS OF CONTINUOUS SYSTEMS
Prerequisite: 630. Analysis of continuous vibrating systems, using separation of variables, energy, variational, Rayleigh-Ritz and other approximate techniques. Concepts and solutions of integral equations as applied to continuous systems.

720 RANDOM VIBRATIONS
Prerequisite: 630 or equivalent. Stationary random processes and their transmission through linear time-invariant discrete and continuous vibrating systems. Analysis of random data and interaction between mechanisms of linear systems.

721 ADVANCED MODAL ANALYSIS OF STRUCTURES

722 OPTIMIZATION THEORY AND APPLICATIONS
Prerequisite: permission. Theory of optimization in engineering systems, development and method of solution optimization problems for physical processes, large systems. Use of dynamic programming, operational research methods for system optimization, control.

723 ADVANCED METHODS FOR ENGINEERING ANALYSIS
Prerequisites: 4350/5350 or equivalent. Applications of finite difference and finite element methods, variational methods, integral methods and similarity transforms to engineering problems in mechanics, fluid mechanics and heat transfer.

724 ADVANCED SEMINAR IN MECHANICAL ENGINEERING
May be repeated for a total of nine credits Prerequisite: permission of department head. Special projects and studies in various areas of mechanical engineering. Intended for student seeking Ph.D. in engineering degree.

898 PRELIMINARY RESEARCH
Prerequisite: approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

899 DOCTORAL DISSERTATION
May be taken more than once Prerequisite: approval of Advisory Committee. Original research by Ph.D. candidate.
CONSTRUCTION TECHNOLOGY: 4980:

351 CONSTRUCTION QUALITY CONTROL
Prerequisites: 2980:237 or permission. Overview of quality control concepts and techniques as related to the construction industry, including necessary statistical tools, exposes students to civil, mechanical and electrical inspection requirements.

352 FIELD MANAGEMENT
Prerequisites: 2980:232 or permission. Planning, scheduling and controlling of field work within time and cost constraints.

354 FOUNDATION CONSTRUCTION METHODS
Prerequisites: 2980:234. Soil mechanics and soils exploration as related to construction. Foundation construction methods and practices in the interest of safety and suitability economy.

355 COMPUTER APPLICATIONS IN CONSTRUCTION
Prerequisite: Admission into the BCT program or permission of instructor. Focuses on real-time and batch-programming of construction-oriented problems. Includes graphics, simulation. Basic programming, flowcharting, hardware and software and management information applications.

356 SAFETY IN CONSTRUCTION
The purpose of this course is to explain what creates hazards and why, and to suggest where to anticipate trouble in each phase of the work as it progresses.

357 CONSTRUCTION ADMINISTRATION
Prerequisite: Junior standing. Construction specification, office organization, preparation of construction documents, bidding, bonds. Construction management and supervision. Agreement and contracts.

358 ADVANCED ESTIMATING
Prerequisite: 355 or permission of the instructor. The course focuses on estimating and bidding for public and private construction. Includes highway, industrial and building construction with microcomputers to facilitate bid price.

381 CONSTRUCTION FORMWORK
Prerequisite: 2980:234 or permission. Introduction to design and construction of field structures. Emphasis on design and construction of formwork and temporary wood structures.

453 LEGAL ASPECTS OF CONSTRUCTION
Prerequisite: Admission into the BCT program or permission of instructor. Study of business of contracting and subcontracting and legal problems therein such as breach of contract, performance, payment, indemnity, subsistence. Review of AIA standard contracts and construction industry rules of arbitration.

462 MECHANICAL SERVICE SYSTEMS
Introduction to materials and equipment used in mechanical heating, ventilating, air conditioning, water and waste systems.

463 ELECTRICAL SERVICE SYSTEMS
Introduction to materials and equipment in electrical and acoustical systems of buildings. Includes illumination, electrical sources, materials and distribution, acoustical problems and materials.

465 HEAVY CONSTRUCTION METHODS
Prerequisite: 2980:232 or 4300:472. Management techniques in planning, estimating and directing heavy construction operations.

466 HYDRAULICS
Prerequisite: 2020:233. Introduction to hydraulics. Flow in closed conduits and open channels, distribution, systems, storage requirements, and basic concepts of hydraulic structures. Basic concepts of seepage and working knowledge of pumps.

487 SPECIAL PROJECTS
Prerequisites: Senior standing and permission of instructor. Directed individual or group research or study in student's field of interest. Topic subject to approval by advisor.

488 CONSTRUCTION MANAGEMENT
Prerequisites: Senior-level standing, 352 and 357. Construction Management takes established construction practices, current technological advances and latest management methods and makes them into an efficient, smooth working system.

470 ADVANCED CONSTRUCTION GRAPHICS
This course focuses on construction graphics through microcomputer systems. Includes computer-aided drafting, data processing, computer output, design and drafting, and the latest technological advances in computer graphics.
Graduate Courses

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COOPERATIVE EDUCATION

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College of Education
ELEMENTARY EDUCATION 5200:

100 STUDENT PARTICIPATION: 1 credit (30 field hours) (credit/noncredit)
  Observation

141 HANDICRAFTS IN THE ELEMENTARY SCHOOL: 2 credits (10 clinical hours)

200 STUDENT PARTICIPATION: 1 credit (30 field hours) (credit/noncredit)

225 ELEMENTARY FIELD EXPERIENCE I: 2 credits

Prerequisite: Student must be enrolled in or have completed 286 and 141. Planned field experience emphasizing field settings where the student works with small groups of children in an urban elementary classroom.

286 CHILDREN'S LITERATURE: 3 credits (15 clinical hours)

Survey of materials for children in prose, poetry and illustrations from early historical periods to modern types; criteria of selection and methods of presentation; critically examined.

300 STUDENT PARTICIPATION: 1 credit (30 field hours) (credit/noncredit)

Prerequisite: 200. Planned field experience where student works in small and large group settings in elementary schools.

310 INTRODUCTION TO EARLY CHILDHOOD EDUCATION: 3 credits

Prerequisite: 7400:265. Provides the student with background information on who is served, types of programs available, role of the adults and goals of early childhood education.

315 ISSUES AND TRENDS IN EARLY CHILDHOOD EDUCATION: 3 credits

Prerequisite: 7400:265 and 9000:250. In-depth course of issues impacting on children from birth to kindergarten, their families and the early childhood three educational process.

321 ART FOR THE GRADES: 2 credits (15 clinical hours)

Prerequisite: 141. Art requirements in elementary grades; laboratory work to give teachers knowledge of materials and mediums and in handling them.

325 ELEMENTARY FIELD EXPERIENCE II: 2 credits (50 field hours)

Prerequisite: Student must be enrolled in or have completed 338.333. Student must have successfully completed 225. Planned field experience emphasizing field settings where the student works with large groups of children in a suburban elementary classroom.

330 EARLY ELEMENTARY EDUCATION: 3 credits

Prerequisite: 5100:250. First of two courses designed to introduce student specifically to primary-aged child and the learning style.

331 EARLY ELEMENTARY EDUCATION II: 3 credits

Prerequisite: 330. Curriculum needs of primary-aged child.

333 SCIENCE FOR THE ELEMENTARY GRADES: 3 credits

Prerequisite: 5100:250. For a prospective elementary school science teacher. Development of a point of view toward science teaching and study of methods of presenting science material.

334 TEACHING ART IN THE ELEMENTARY SCHOOL: 2 credits

Prerequisite: 141 and 521. An education major's teaching experience in an elementary or middle school.

336 ELEMENTARY SCHOOL MATHEMATICS I: 3 credits

Prerequisite: 5100:250. First of two courses designed to introduce student specifically to primary-aged child and the learning style.

337 ELEMENTARY SCHOOL MATHEMATICS II: 3 credits

Prerequisite: 336. Second of two courses designed to introduce student specifically to primary-aged child and the learning style.

338 THE TEACHING OF SOCIAL STUDIES: 3 credits

Prerequisite: 5100:250. Social studies in elementary school and varied means of implementing program.

339 PRINCIPLES OF DIAGNOSTIC TEACHING OF READING: 3 credits

Prerequisite: 337. Nature of reading problems in classroom setting, methods and materials employed in corrective reading program by classroom teacher.

340 ELEMENTARY EDUCATION I — LABORATORY: 1 credit

Corequisite: 330. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

341 ELEMENTARY EDUCATION II — LABORATORY: 1 credit

Corequisite: 331. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

342 SCIENCE FOR THE ELEMENTARY GRADES — LABORATORY: 1 credit (30 clinical/field hours)

Corequisite: 333. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

344 TEACHING ART IN THE ELEMENTARY SCHOOL — LABORATORY: 1 credit (30 clinical/field hours)

Corequisite: 334. Provides an opportunity for art education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop processes for use by learner.

346 TEACHING ELEMENTARY SCHOOL MATHEMATICS — LABORATORY: 1 credit (30 clinical/field hours)

Corequisite: 336. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

349 PROBLEMS OF DIAGNOSTIC TEACHING OF READING — LABORATORY: 1 credit (30 clinical/field hours)

Prerequisites: 337 and 347; corequisite: 339. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

350 MULTICULTURAL EDUCATION: CONCEPTS, PROGRAMS AND PRACTICES: 3 credits (15 clinical hours)

Designed to provide teacher education student with knowledge, skills and attitudes which will enable them to model behavior and implement curricular programs consistent with the concept of cultural pluralism.

356 TEACHING ELEMENTARY SCHOOL MATHEMATICS II: 2 credits (12 clinical hours)

Prerequisite: University College math requirement, 336. Students will learn to diagnose and remediate mathematical difficulties exhibited by children. They will devise teaching strategies and materials for individual mathematical learning differences.

360 TEACHING IN THE NURSERY CENTER: 2 credits

Prerequisite: 5100:250, 5200:310, 7400:265. 280, 270. Assists students with the integration of knowledge, skills, attitudes and values learned in the pre-kindergarten program as they participate with young children.

365 COMPREHENSIVE MUSCIPANSHIP FOR THE ELEMENTARY CLASSROOM TEACHER: 3 credits (25 clinical hours)

Designed to attend to a prospective classroom teacher the opportunity to develop individual musical skills in creativity, performance and listening as means of enhancing teaching through use of music.

370 NURSERY CENTER LABORATORY: 2 credits

Prerequisites: 5100:250, 5200:310, 7400:265, 280, 270. Lab accompanies 5200:360 and is an integral practical experience in the University College Nursery Center under the direction of experienced teachers.

395 FIELD EXPERIENCE I: 2 credits

Prerequisites: permission of advisor and department head. Independent field work in area selected by student's advisor based on student's needs.

403 STUDENT TEACHING SEMINAR: 2 credits (15 clinical hours)

Prerequisite: senior standing. In conjunction with Student Teaching. Synthesis of contemporary problems encountered during student teaching experience. Exchange of ideas regarding role of new teacher entering profession.

411/511 CREATIVE TECHNIQUES FOR EXPLORING CHILDREN'S LITERATURE: 2 credits

Prerequisite: 286. Examination of techniques for interpretation of children's literature including storytelling, creative dramatics, reader's theatre and choral speaking.

425 ELEMENTARY FIELD EXPERIENCE III: 2 credits (50 field hours)

Prerequisites: Student must be enrolled in or have completed 336, 337, 347, 338. Student must have completed 325. Planned field experience emphasizing field settings where the teacher education student works with entire classes of children in an elementary or middle school setting.

430 SENIOR HONORS PROJECT: ELEMENTARY: 1-6 credits

May be repeated for a total of six credits. Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality or sustained inquiry.

435/535 ACTIVITIES TO INDIVIDUALIZE SOCIAL STUDIES: 2 credits

Prerequisite: 338. Development of materials and activities (learning games, simulation games, academic learning centers, programmed field trips and map activities) to provide teacher with variety of techniques in order to develop an individualized, student-involved social studies program.

458/558 GEOMETRY AND MEASUREMENT IN ELEMENTARY SCHOOL MATHEMATICS: 3 credits

Prerequisite: 336. Trends in geometry and measurement instruction in elementary school. Preparation for development of important geometric concepts and measurement skills.

472/572 STRUCTURE OF THE NUMBER SYSTEM IN ELEMENTARY SCHOOL MATHEMATICS: 3 credits

Prerequisite: 336. Applied advanced topics in mathematics education in elementary school. Thorough investigation of number system presently being taught in elementary school.

483/583 MATERIALS AND LABORATORY TECHNIQUES IN ELEMENTARY SCHOOL MATHEMATICS: 3 credits

Prerequisite: 336. Application and construction of mathematical models. Procedures for development of important mathematical concepts through the laboratory approach.

490/590 PROPERTIES OF NUMBERS IN ELEMENTARY SCHOOL MATHEMATICS: 3 credits

Prerequisite: 336. Investigation of those number properties that help explain how laws of arithmetic work. Procedures for development of important arithmetic concepts and computational skills.

440/540 CONTEMPORARY ELEMENTARY SCHOOL SCIENCE PROGRAMS: 2 credits

Prerequisite: 333. Contemporary elementary science programs critically analyzed and their procedure developed and implemented in University classroom.

451 ELEMENTARY EDUCATION: 2 credits

Emphasizes the development of recent trends and practices in elementary education. Required for those desiring to enter other certificature.

480 SPECIAL TOPICS: ELEMENTARY EDUCATION: 1-4 credits

May be repeated with a change of topic. Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

490,1,2,3,590,1,2,3 WORKSHOP: 1-3 credits each

Elective workshop for elementary education major who would pursue further refinement of teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.
494/594 EDUCATIONAL INSTITUTES 1-4 credits
Special courses designed as in-service upgrading programs. Frequently provided with the support of national foundations.

495 STUDENT TEACHING 4-8 credits (322 field hours)
Prerequisites: senior standing and 300. Planned teaching experience (in elementary school) supervised by Office of Educational Field Experience.

496 STUDENT TEACHING 1-6 credits
The capstone field experience for elementary education majors. Students will have two classroom experiences—one primary level and one intermediate level.

497 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of advisor and department head. Specific area of curriculum investigation pertinent to elementary education as determined by student's academic needs.

Graduate Courses

620 LITERATURE FOR YOUNG CHILDREN 2 credits
Literature for children ages two through six examined in depth in terms of value and purpose; methods and techniques for presenting it to children; variety of 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.

631 TRENDS IN ELEMENTARY EDUCATION 2 credits
Prerequisites: graduate standing and 630. Investigation of innovative programs, organizational patterns and new curricula currently operational in elementary schools including analysis of use of these innovations in relation to teaching/learning process.

640 THEORY AND PRACTICE IN ELEMENTARY SCHOOL MATHEMATICS 2 credits
Comparative analysis and evaluation of purposes and procedures of mathematics programs for elementary schools with application of findings to instructional methods and materials.

641 DIAGNOSIS AND TREATMENT OF PERFORMANCE DIFFICULTIES IN ELEMENTARY SCHOOL MATHEMATICS 2 credits
Examination of implications of contemporary mathematics learning theory on diagnostic/remedial process.

645 PROBLEMS IN ELEMENTARY SCIENCE EDUCATION 2 credits
Examination of influence of new curricular designs in elementary science. Emphasis on inquiry, investigation and discovery and their impact on total elementary school curriculum.

650 EDUCATION AND THE YOUNG CHILD 2 credits
Content centered on educational settings of young children from birth through five years.

660 INDIVIDUALIZED INSTRUCTION: LEARNING STYLE IDENTIFICATION AND RESOURCE PRESCRIPTION 3 credits
Prerequisites: permission of instructor and 630. Individual learning style characteristics, practical approaches in individualization of instruction, multisensory resource development and prescription.

665,7 FIELD EXPERIENCE: MASTER'S 1-2 credits each
Prerequisite: permission of adviser and department head. On-the-job experience related to student's course of study.

667 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of adviser and department head. Selected areas of independent investigation as determined by adviser and related to student's academic needs.

669 MASTER'S PROBLEM 2-4 credits
Prerequisite: permission of adviser. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills as dealing with a problem in elementary education.

679 THESIS RESEARCH 4-6 credits
Prerequisites: 5100/640 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) Intensive examination of following areas of elementary school instruction: children's literature, curriculum development, language arts, mathematics, reading, social studies, early childhood, critical analysis of children's literature, art, human sexuality, computers and middle school.

781 RESIDENCY SEMINAR 2 credits
One-hour weekly meeting for elementary doctoral student in residence.

799 RESEARCH PROJECTS IN ELEMENTARY EDUCATION 1-2 credits
Prerequisites: permission of adviser and department head. In-depth investigation of specific problem pertinent to elementary education.

805,7 FIELD EXPERIENCE FOR ELEMENTARY DOCTORAL STUDENT 1-2 credits each
Prerequisites: permission of adviser and department head. Designed to help student preparing to teach methods course at college level.

809 INDEPENDENT STUDY 1-3 credits
(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.

809 DISSERTATION 1-20 credits
Prerequisites: permission of adviser and department head. Study and in-depth analysis of a research problem in elementary education.

READING

5250:

341 LABORATORY PRACTICUM IN READING 3 credits
Prerequisite: 5000/339. Laboratory experience with classroom, small groups and individual situations. A student diagnoses, implements procedures and follows prescribed reading improvement practices.

411/511 MATERIALS AND ORGANIZATIONS FOR READING INSTRUCTION 3 credits
Prerequisite: 5200/339. Professional problems of selection and evaluation of reading materials and classroom organizations explored.

440/540 DEVELOPMENTAL READING IN THE CONTENT AREAS — ELEMENTARY 3 credits
Prerequisite: 5200/337 or permission of instructor. Nature of reading skills relating to content subjects. Methods and materials needed to promote reading achievement in content subjects by the elementary classroom teacher.

441/541 LANGUAGE AND ITS RELATIONSHIP TO READING IN THE ELEMENTARY SCHOOL 3 credits
Prerequisite: 5200/337 or permission of the 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.

442/542 TEACHING READING TO CULTURALLY DIFFERENT LEARNERS 3 credits
Prerequisite: 5200/337 or by permission of the instructor. The course is designed to provide a student with knowledge, skills and attitudes which will enable employment of effective methods of teaching reading to culturally different learners, and/or learners whose language patterns are nonstandard.

680 READING TOPICS: ELEMENTARY READING INSTRUCTION 1-4 credits
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

Graduate Courses

680 TRENDS IN READING INSTRUCTION 2 credits
Prerequisite: 5200/335 or 5300/425. Survey course designed to update reading background of student who has not had a reading course in reading.

681 DIAGNOSIS AND CORRECTION OF READING PROBLEMS 5 credits
Prerequisite: 680. Relation of growth to reading development and reasons for retardation. Interpretation of diagnostic and corrective techniques by developing case studies in superseed setting.

682 CLINICAL PRACTICES IN READING 5 credits
Prerequisite: 681. Nature and etiology of reading difficulties experienced by selected children. Supervised practices and independent work with children in conjunction with staff from other disciplines.

683 READING DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS AND SUPPORT PERSONNEL 3 credits
Prerequisite: 5200/330 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.

692 ADVANCED STUDY AND RESEARCH IN READING INSTRUCTION 3 credits
Survey of research comparison and evaluation of programs, design and development of projects in reading through individual study.

693 SUPERVISION AND CURRICULUM DEVELOPMENT IN READING INSTRUCTION 2 credits
Relative 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:

210 PRINCIPLES OF TEACHING IN THE SECONDARY SCHOOL 3 credits (30 clinical hours)
Prerequisite: 5000/330. Corerequisite: 275. Designed to familiarize the prospective teacher with the nature of secondary education and teaching in secondary schools. Microteaching laboratory participation is required.

275 EXPLORATORY EXPERIENCES IN SECONDARY EDUCATION (SOPHOMORE) 1 credit (6 clinical hours, 30 field hours)
Corequisite: 210. Field work with secondary school pupils, teachers and other professional personnel.

296 EXPLORATORY EXPERIENCE IN SECONDARY SCHOOLS/MAINSTREAMING 1-2 credits
Field work for the special education major.

311 INSTRUCTIONAL TECHNIQUES IN SECONDARY EDUCATION 4 credits (30 clinical hours, 20 field hours)
Prerequisites: 210, 325, and 5100/350. Open to student who has completed certification requirements in all content fields. Techniques of planning, instruction and evaluation in various secondary teaching fields.

316 METHODS IN TEACHING ART 2 credits
Prerequisites: completion of required course for art teachers and grade-point average of 2.00 in the field. Study of trends and procedures in teaching and supervision, relation of art to home, school and community; observation in selected schools required.

321 JUNIOR HIGH AND MIDDLE SCHOOL EDUCATION 2 credits
Designed to provide student with knowledge and understanding of junior high and middle school education with ability to interpret it to other educators, parents and pupils.

325 CONTENT READING IN SECONDARY SCHOOLS 3 credits (30 clinical hours)
Corequisite: 375. Instructional principles and practices for teachers of junior high and middle school pupils. Study of significant content and evaluation of teaching reading and study skills.

330 TEACHING OF ADOLESCENT LITERATURE 3 credits
Prerequisite: permission of adviser. Student develops skills for selection of literature that is well suited for secondary student. Student develops, uses and experiences methods for teaching adolescent literature in secondary schools.
376 PRINCIPLES OF SHORTHAND INSTRUCTION 2 credits
Prerequisites: 2540 175 and grade-point average of 2.000 in the field. Methods of presentation in shorthand and transcription. Demonstration and observation required. Theory test in the field must be passed before credit is given for course.

375 EXPLORATORY EXPERIENCE IN SECONDARY EDUCATION 1 credit (6 clinical hours, 30 field hours)
Prerequisite: 210; corequisites: 325. Field work with secondary school pupils, teachers and other school personnel.

95 FIELD EXPERIENCE 1-3 credits
Prerequisite: upper-college standing. Supervised work with young people, individually and in groups in school and/or community settings.

425/425 ADVANCED MICROCOMPUTER APPLICATIONS IN THE SECONDARY SCHOOLS 3 credits (30 clinical hours)
Prerequisite: knowledge of BASIC programming is required. Advanced programming techniques reviewed, applied in program development appropriate for the secondary schools. Hardware, software, computer potential and limitations, languages, program types will be evaluated according to research findings and criteria applicable to secondary schools.

430 SENIOR HONORS PROJECT. SECONDARY (May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission of student's supervisor. Carefully defined individual study demonstrating originality and scholarship.

435/435 CONCEPTS AND CURRICULUM DESIGNS IN ECONOMIC EDUCATION 3 credits
Economic education concepts appropriate for grade levels K-12 and adult education courses. Economic education materials developed to teach the concepts utilized.

445 MINICOMPUTER APPLICATIONS IN SECONDARY CLASSROOMS 1 credit (10 clinical hours)
Prerequisites: 210 and senior status. Provides an orientation to applications of minicomputer in secondary classrooms. A knowledge of BASIC programming is recommended.

445 MICROCOMPUTER LITERACY FOR SECONDARY TEACHERS 2 credits (30 clinical hours)
Prerequisites: 210 and senior status. Provides an orientation to applications of various modes of instruction, word processor, color graphics and printer in BASIC programs appropriate for secondary classrooms.

455 CAREER OPTIONS IN SECONDARY EDUCATION 1 credit (8 clinical hour, 2 field hours)
Prerequisite: 210 and senior status. Helps prospective teacher prepare for searching for employment in education and to find alternative careers for which an education degree would be a suitable background.

476/476 VOCATIONAL COOPERATIVE OFFICE EDUCATION 2 credits
Principles of program construction, organization, implementation, evaluation, improvement and development of program guides in cooperative office education.

477/477 INTENSIVE VOCATIONAL OFFICE EDUCATION 2 credits
Principles of program construction, organization, implementation, evaluation and development of program guides.

480 SPECIAL TOPICS: SECONDARY EDUCATION 14 credits
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

485 CLASSROOM DYNAMICS 2 credits (10 clinical diagnosis, 15 field hours)
Corequisite: 495. Study of issues and behavioral patterns pertinent to successful teacher human relations and classroom management technique.

490,1,2,3/590,1,2,3 WORKSHOP 1-3 credits each
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

494/594 EDUCATIONAL INSTITUTES 1-4 credits
Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

495 STUDENT TEACHING 4-8 credits (322 clinical hours)
Prerequisites: 311 or equivalent and permission of advisor. Directed teaching under supervision of directing teacher and University supervisor.

497 INDEPENDENT STUDY 1-3 credits
Prerequisite: permission of advisor and supervisor of independent study. Area of study determined by student's needs.

Graduate Courses

619 SECONDARY SCHOOL CURRICULUM AND INSTRUCTION 2 credits
Application of findings of recent research to curriculum building and procedures in teaching.

625 READING PROGRAMS IN SECONDARY SCHOOLS 3 credits
For all students teaching teachers both with and without previous study in the teaching of reading. Material class organization 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 coordinator of methods, prepared objectives and evaluation to ensure maximum student competency in subject knowledge and skill.

632 ADVANCED INSTRUCTIONAL TECHNIQUES IN TYPWRITING AND TYPWRITING-RELATED SUBJECTS 3 credits
Intensive examination of teaching-learning strategies for improvement of instruction. Emphasis on teacher coordinator of methods, prepared objectives and evaluation to ensure maximum student competency in subject knowledge and skill.

695 FIELD EXPERIENCE; MASTERS (1-6 credits) Prerequisites: permission of advisor and supervisor of field experience. On-the-job experience related to student's program of study.

697 INDEPENDENT STUDY (1-3 credits) Prerequisites: permission of advisor and supervisor of independent study. Area of study determined by student's needs.

698 MASTER'S PROBLEM (2-4 credits) Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in secondary education.

699 THERESIS RESEARCH 4-6 credits
Prerequisite: permission of advisor. In-depth study of research problem in educational research. Student must be able to demonstrate critical and analytical skills in dealing with a problem in secondary education.

721 SUPERVISION OF INSTRUCTION IN THE SECONDARY SCHOOL 2 credits
Definition of supervisory leadership role in improving instruction at secondary school level and development of practical theory of secondary school supervision.

780 SEMINAR IN SECONDARY EDUCATION 2 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 secondary education doctoral student in residence.

782 RESIDENCY SEMINAR 1 credit
(Must be repeated) One-hour weekly meeting for secondary education doctoral student in residence.

895 FIELD EXPERIENCE: DOCTORAL 1-6 credits
(May be repeated for a total of six credits) Prerequisites: permission of advisor and director of field experience. Intensive job-related experience pertinent to student's needs. Student must be able to demonstrate skills and leadership abilities in an on-the-job situation.

897 INDEPENDENT STUDY 1-3 credits
(May be repeated for a total of six credits) Prerequisites: permission of advisor and director of independent study. Area of study determined by student's needs.

898 RESEARCH PROJECT IN SPECIAL AREAS 1-2 credits
Prerequisite: permission of advisor. Critical and in-depth study of specific problem in secondary education.

899 DISSERTATION 1-2 credits
Prerequisite: permission of advisor. Specific research problem that requires student to apply research skills and techniques pertinent to problem being studied.

TECHNICAL AND VOCATIONAL EDUCATION 5400:

301 OCCUPATIONAL EMPLOYMENT EXPERIENCE AND SEMINAR 1-4 credits
Provides student with knowledge of current industrial or business practice at level minimally commensurate with that associated with employment expectations of graduates of technical programs.

351 CONSUMER HOMEMAKING METHODS 4 credits
Prerequisites: senior standing, enrolled in student teaching. Organization of home economics in secondary schools. Emphasis on methodology, techniques, development of vocational concepts, utilization of audio-visual materials, evaluation procedures.

395 FIELD EXPERIENCE 1-3 credits
Prerequisite: upper-college standing. Supervised work with young people, individually and in groups in educational institutions, training and other community settings.

403 TECHNICAL EDUCATION PRACTICUM SEMINAR 2 credits
Corequisite: 495.

405/505 OCCUPATIONAL EDUCATION FOR YOUTH AND ADULTS 3 credits
History and operations of current vocational education for youth and adults. Includes study of social, economic and political influences that stimulate growth and expansion of vocational education.

410/510 THE TWO-YEAR COLLEGE 3 credits
Designed to introduce student to nature, purpose and philosophy of the two-year college includes exploration of types of institutions offering two-year programs.

415/515 TRAINING IN BUSINESS AND INDUSTRY 3 credits
Examines role and mission of the training function in the modern industrial setting. Provides a foundation for a student planning to become an industrial trainer or training supervisor of technicians and other occupational skill development levels.

421/521 INSTRUCTIONAL TECHNIQUES IN TECHNICAL EDUCATION 4 credits
Selected topics in instructional techniques appropriate to post secondary technical education. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements.

450/550 COURSE CONSTRUCTION IN TECHNICAL EDUCATION 2 credits
Procedure of breaking down an occupation to determine curriculum for laboratory and classroom. Developing this content into an organized sequence of instructional units.

440 LIFE-SPAN AND COMMUNITY EDUCATION 2 credits
Designed for person engaged in providing educational services in the community. Includes examination of community education concepts and roles of various personnel and agencies.

441/541 EDUCATIONAL GERONTOLOGY SEMINAR 3 credits
Designed for person preparing for a specialization in educational gerontology, including person responsible for development and implementation of courses, seminars, occupational training programs and workshops for older people.

451/551 HOME ECONOMICS JOB TRAINING 1-6 credits
Prerequisite: senior standing or permission of instructor. Concept development in vocational home economics. Job training, program development, operational procedures, skill and knowledge identification, training profiles, job description and analysis. Individualized study guides. In school and on the job observations.

480 SPECIAL TOPICS: VOCATIONAL EDUCATION 1-4 credits
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

481 SPECIAL TOPICS: TECHNICAL EDUCATION 1-4 credits
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

490,1,2,3/590,1,2,3 WORKSHOP 1-3 credits each
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.
5550: PHYSICAL EDUCATION

101 FUNDAMENTALS OF ARCHERY/BOWLING 1 credit
Acquisition of performance skills, knowledge of rules and strategy and appreciation of archery and bowling as a means of physical activity in our culture. Two class periods per week.

102 FUNDAMENTALS OF BADMINTON/VOLLEYBALL 1 credit
Acquisition of performance skills, knowledge of rules and appreciation of badminton and volleyball as a means of physical activity in our culture. Two class periods per week.

103 FUNDAMENTALS OF SOCCER/FIELD HOCKEY 1 credit
Acquisition of performance skills, knowledge of rules and appreciation of soccer and field hockey as a means of physical activity. Two class periods per week.

104 FUNDAMENTALS OF TRACK AND FIELD 1 credit
Acquisition of performance skills, knowledge of rules and strategy and appreciation of track and field as a means of physical activity in our culture. Two class periods per week.

105 RECREATIONAL ACTIVITIES 1 credit
Acquisition of skills and knowledge of rules for participation in and organization of community and outdoor recreational activities. For the physical education and educational studies student.

106 RECREATIONAL ACTIVITIES FOR THE HANDICAPPED 1 credit
Acquisition of skills and knowledge of rules for participation in and organization of recreational activities for handicapped. Includes ways of adapting common activities for participation by handicapped.

115 FUNDAMENTALS OF WRESTLING/RUGBY 1 credit
Acquisition of performance skills, knowledge of rules and strategy and appreciation of wrestling and rugby as a means of physical activity. Two class periods per week. (For men only)

120 FUNDAMENTALS OF BASKETBALL 1 credit
Acquisition of performance skills, knowledge of rules and strategy and appreciation of basketball as a means of physical activity. Two class periods per week. Suggested for women only.

130 PHYSICAL EDUCATION ACTIVITIES FOR ELEMENTARY SCHOOL CHILDREN 2 credits
For a physical education major only. Participation in play activities commonly used in elementary physical education programs. One lecture and two laboratory periods per week.

140 PHYSICAL EDUCATION ACTIVITIES I 3 credits
Acquisition of performance skills and knowledge of rules and techniques of gymnastics and tumbling, team sports and conditioning activities. Six class periods per week.

141 PHYSICAL EDUCATION ACTIVITIES II 3 credits
Acquisition of performance skills and knowledge of techniques and development of dance activities, swimming and individual lifetime sports. Six class periods per week.

150 CONCEPTS IN HEALTH AND FITNESS 3 credits
Introduction to basic health and fitness concepts and related topics. Attention will be given to individual exercises emphasizing such topics as aerobic and anaerobic exercises, nutrition, diet, illness, and assessment methods and procedures.

155 ORGANIZATION AND ADMINISTRATION OF RECREATION 2 credits
General administrative procedures common. Analysis, discussion and evaluation of various types of recreational programs.

193 METHODS OF TEACHING PHYSICAL EDUCATION 3 credits
Theories and application of various methods for teaching elementary and secondary physical education. Preparation of lesson and unit plans, observations made in schools. Two lectures and one laboratory per week.

194 SPORTS OFFICATING 2 credits
Knowledge of and rules for interscholastic sports and officiating techniques. Successful completion of course permits taking of state examination for officiating. Two lectures and one laboratory per week.

201 KINESIOLOGY 2 credits
Prerequisites: 3100, 207. Application of principles of anatomy to movement of human body.

202 PHYSIOLOGY OF EXERCISE 3 credits
Prerequisites: 3100, 207. Study of physiological effects of exercise relative to physical education activities and athletics. Two hours lecture, two hours laboratory.

211 FIRST AID 2 credits
Standard American Red Cross gives instruction and practice in immediate and temporary care of emergencies and sudden illnesses. In addition to standard course, CPR is covered.

235 CONCEPTS OF MOTOR DEVELOPMENT AND LEARNING 2 credits
Analysis of concepts fundamental to learning motor activities.

245 INSTRUCTIONAL TECHNIQUES IN ELEMENTARY PHYSICAL EDUCATION 2 credits
Prerequisites: 135, 140, 192. Supervised teaching of elementary physical education activities to pupils. Four class periods per week.

246 INSTRUCTIONAL TECHNIQUES IN SECONDARY PHYSICAL EDUCATION 2 credits
Prerequisites: 140, 193 and at least one credit of 101 through 120. Supervised teaching of secondary physical education activities to peers. Four class periods per week.

300 PHYSIOLOGY OF EXERCISE FOR THE ADULT AND ELDERLY 2 credits
Analysis of physiological effects of exercise on the elderly. Exercise programs adaptable for use by persons working with elderly.

310 THEORY AND TECHNIQUES OF SOCCER 1 credit
Theory, techniques and organizational procedures for coaching of soccer. Two class periods per week.

311 THEORY AND TECHNIQUES OF TRACK AND FIELD 1 credit
Theory, techniques and organizational procedures for coaching of track and field. Two class periods per week.

312 THEORY AND TECHNIQUES OF BASKETBALL 1 credit
Theory, techniques and organizational procedures for coaching of basketball. Two class periods per week.

313 THEORY AND TECHNIQUES OF BASEBALL/SOFTBALL 1 credit
Theory, techniques and organizational procedures for coaching of baseball and softball. Two class periods per week.

314 THEORY AND TECHNIQUES OF SWIMMING 1 credit
Theory, techniques and organizational procedures for coaching of swimming. One hour lecture, two hours laboratory.

315 THEORY AND TECHNIQUES OF TUMBLING AND GYMNASTICS 1 credit
Theory, techniques and organizational procedures for coaching of tumbling and gymnastics. Two class periods per week.

320 THEORY AND TECHNIQUES OF VOLLEYBALL 1 credit
Theory, techniques and organizational procedures for coaching of volleyball. Two class periods per week.

325 THEORY AND TECHNIQUES OF FOOTBALL 1 credit
Theory, techniques and organizational procedures for coaching of football. Two class periods per week.

326 THEORY AND TECHNIQUES OF WRESTLING 1 credit
Theory, techniques and organizational procedures for coaching of wrestling. Two class periods per week.

334 GAMES AND RHYTHMS: ELEMENTARY GRADES 2 credits
(20 clinic hours)
Not open to a physical education major. Physical education activities which may be used by elementary school teachers. Theory of ineb development. One hour lecture, two hours laboratory.

350 MOVEMENT EXPERIENCES FOR THE ELEMENTARY GRADES 2 credits
Analysis, theory, practical application of basic movement experiences for children. One hour lecture, two hours laboratory.

336 PHYSICAL EDUCATION ACTIVITIES FOR PRESCHOOL CHILDREN 2 credits
Investigation of play activities for positive growth and development of preschool child. Organization of motor activities in nursery school and kindergarten curriculum. One hour lecture, two hours laboratory.

340 CARE AND PREVENTION OF ATHLETIC INJURIES 3 credits
Discussion of prevention, immediate care and rehabilitation of common athletic injuries. Practical application of wrapping and taping procedures for injury prevention and post-injury support.

345 ADAPTED PHYSICAL EDUCATION 2 credits
Prerequisites: 3100, 207. Current theories and practices relating to needs of physically handicapped children. Emphasis given to underlying philosophy, purpose and administration.

350 ORGANIZATION AND ADMINISTRATION OF HEALTH AND PHYSICAL EDUCATION 3 credits
Investigation of necessary procedures for conduct of health education and physical education programs in schools. Includes organizational considerations, cumulative patterns and equipment and supplies.

351 ORGANIZATION AND ADMINISTRATION OF INTRAMURAL AND ATHLETICS 3 credits
Organizational patterns unique to conduct of intramurals, school and interscholastic athletics. Includes considerations of tournament designs, supplies and equipment and administration. Two hours lecture, two hours laboratory.

403 STUDENT TEACHING SEMINAR 1 credit
Prerequisite: senior status. In conjunction with Student Teaching, Synthesis of contemporary problems encountered during the student teaching experience. Exchange of ideas regarding role of new teacher entering profession.
OUTDOOR EDUCATION

5560:

430 SENIOR HONORS PROJECT: OUTDOOR EDUCATION 16 credits
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

450/550 APPLICATION OF OUTDOOR EDUCATION TO THE SCHOOL CURRICULUM 4 credits
Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.

452/552 METHODS, MATERIALS AND RESOURCES FOR TEACHING OUTDOOR EDUCATION 3 credits
Methods unique to outdoor education which incorporate a multisensory approach to learning. Instructional materials and resources which permit expansion of curriculum beyond the school building.

454 RESIDENT OUTDOOR EDUCATION 2 credits
Emphasizes skills, program considerations and organizational techniques unique to an extended, resident outdoor education program. Location for at least five days and four nights.

458/556 OUTDOOR PURSUITS 4 credits
Investigation and participation in practical experiences in outdoor pursuits.

460 OUTDOOR EDUCATION PRACTICUM 2 credits
Prerequisites: 452, 454. Closely supervised practical experience in conjunction with regularly scheduled classroom meetings. Laboratory experience consists of active participation with an established outdoor education program.

190/590 WORKSHOP: OUTDOOR EDUCATION 1-3 credits
Practical application of contemporary ideas, methodologies, knowledge relevant to outdoor education. Emphasis participant involvement in educational practices utilizing the natural environment.

494/594 EDUCATIONAL INSTITUTES: OUTDOOR EDUCATION 1-4 credits
Practical experience with current research or curricular practices involving expert resource persons in outdoor education.

497 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of adviser and instructor. Independent study demonstrating original scholarship in a discipline related to outdoor education programs.

Graduate Courses

500 OUTDOOR EDUCATION: RURAL INFLUENCES 3 credits
Prerequisites: 550 or 552. Utilization of resources of rural area as a learning/teaching environment. Content and methodology appropriate for teaching school-age children in rural settings.

505 OUTDOOR EDUCATION: SPECIAL TOPICS 2-4 credits
May be repeated once. Prerequisites: permission of instructor. Group study of special topics of contemporary concern in outdoor education.

590 PRACTICUM IN OUTDOOR EDUCATION 2-4 credits
Prerequisites: 550, 552 and permission of adviser. Supervised practical experience in existing outdoor education programs. In conjunction with practical work, student meets regularly with adviser.

595 FIELD EXPERIENCE: MASTER'S 2 credits
Prerequisites: permission of adviser. Participation and documentation of practical professional experience related to outdoor education.

597 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of adviser. In-depth analysis of current practices or problems related to outdoor education. Documentation of study required.

598 MASTER'S PROBLEM 2 credits
Prerequisites: permission of adviser. Intensive research study related to problem in outdoor education or related discipline.

599 MASTER'S THESIS 4-6 credits
An original composition demonstrating independent scholarship in a discipline related to outdoor education.

HEALTH EDUCATION

5570:

101 PERSONAL HEALTH 2 credits (10 clinical hours)
Application of current principles and facts pertaining to healthful, effective living. Personal health problems and needs of a student.

200 CURRENT TOPICS IN HEALTH EDUCATION 3 credits
Designed to give the teacher of health education the knowledge base necessary to deal factually and comfortably with selected topics in school and community health.

201 CONSUMER HEALTH, WEIGHT CONTROL AND EXERCISE 3 credits
Students will investigate current consumer health problems as they relate to making decisions about the purchase and use of health products and health services available in today's society. Understanding of the maintenance of body weight and how it is affected by a person's knowledge of nutrition and exercise will be included.

202 STRESS, LIFE STYLE AND YOUR HEALTH 3 credits
Overview of the behavior associated with wellness and disease.

320 COMMUNITY HYGIENE 2 credits
Study of current major public health problems. Organization and administration of official and voluntary agencies and their role in solution of community health problems.
EDUCATIONAL GUIDANCE AND COUNSELING

5600:

110 CAREER PLANNING 2 credits
Skills necessary to make effective educational and career decisions. Emphasis upon self-understanding, career exploration, career planning, decision-making.

410 PERSONNEL SERVICES IN SCHOOLS 2 credits
Prerequisite: senior standing. Production to background, role and function, techniques, community agencies and issues in personnel field. For student counselors and personnel field staff.

426/526 CAREER EDUCATION 2 credits
Prerequisite: junior, senior or graduate standing. Examination of current career education models and programs. Emphasis on validation of career education activities into elementary and secondary curricula.

436 HELPING SKILLS FOR RESIDENT ASSISTANTS 2 credits
Prerequisite: 430. Open to resident assistants in University Housing. A course designed to help student personnel workers become more effective in professional role.

450/550 COUNSELING PROBLEMS RELATED TO LIFE-ThREATENING ILLNESS AND DEATH 3 credits
Prerequisite: permission. Consideration of the global issues, current research, coping behavior, support systems and family and individual needs in regard to life-threatening situations.

480 SPECIAL TOPICS: EDUCATIONAL GUIDANCE AND COUNSELING 1-4 credits
(To be repeated with change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

490, 590, 690, 790, 890 WORKSHOP 1-3 credits each
Special instruction designed as service and/or upgrading individuals on current issues and problems in counseling.

493/593 WORKSHOP 1-4 credits
Special instruction designed as service and upgrading individuals on current issues and problems in counseling.

494/594 COUNSELING INSTITUTE 1-4 credits
In-service programs for student workers and other helping professionals.

Graduate Courses

600 SEMINAR IN COUNSELING 1 credit
Prerequisite: counseling majors must have 5501 or 6501 and 50 credits. Structured group experience designed to help a student assess selection of counseling as a profession.

602 INTRODUCTION TO COUNSELING 2 credits
Understanding guidance and counseling principles including organization, operation and evaluation of guidance programs (designated for non-counseling majors).

610 COUNSELING SKILLS FOR TEACHERS 3 credits
Prerequisite: 301 or 653. Open to educational counselors and support staff. The study and practice of selected counseling techniques that can be applied by teachers in working with students, parents and colleagues.

629 TOPICAL SEMINAR 1-4 credits
Prerequisite: permission of instructor. Seminar on a topic of current interest in the profession. Staging will be determined by department and other professionals in counseling and related fields. A minimum of eight credits must be applied to a degree.

631 ELEMENTARY SCHOOL GUIDANCE 3 credits
Introduction to counseling: exercising guidance and counseling practices.

632 SECONDARY SCHOOL GUIDANCE 3 credits
Introduction to counseling: exercising guidance and counseling practices.

633 COMMUNITY COUNSELING 3 credits
Overview of community and college counseling services: their evaluation, philosophy and administration.

643 COUNSELING: THEORY & PRACTICE 3 credits

645 GROUP THERAPY IN COUNSELING 3 credits
Overview of group therapy: the process and procedures in counseling. Application of knowledge and skills acquired in counseling practice. Emphasis on client-centered, behaviorally oriented theories and techniques.

647 CAREER DEVELOPMENT AND COUNSELING ACROSS THE LIFE SPAN 3 credits
Overview of career development and choice over the lifespan. Personal, family, societal and developmental factors that affect career choices and implementation are discussed.

649 COUNSELING AND PERSONNEL SERVICES IN HIGHER EDUCATION 3 credits
Prerequisite: counseling majors. Selection of counselor services as related to psychological needs and problems of the college student.

651 TECHNIQUES OF COUNSELING 2 credits
Prerequisite: 655 or permission. Study of selected counseling techniques and skills with emphasis on structuring, learning, teaching and evaluating a counseling session.

653 GROUP COUNSELING 4 credits
Prerequisite: 650 or 651 or 350 or 370. Designed to help the student understand and develop counseling skills.

655 MARRIAGE AND FAMILY THERAPY 3 credits
An overview of the theory and techniques of marital and family therapy, including the role of the therapist, terminology and contributions of significant persons in the field.

657 CONSULTANT 3 credits
Prerequisite: 651 or permission. Examination of consultation models with focus on process and product.

659 ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES 3 credits
Prerequisites: 651 or 653. Development of a comprehensive guidance and counseling program.

661 SEMINAR IN GUIDANCE 3 credits
Prerequisite: 650 or 651 or 653. Seminar in advanced theory and practice for personnel workers in secondary and college counseling. Skill in teaching, learning and assessment in counseling.

663 SEMINAR IN SCHOOL COUNSELING 3 credits
Prerequisite: 655, 645, 653 and 657. Seminar in advanced counseling theory and practice for personnel workers in secondary and college counseling. Skill in teaching, learning and assessment in counseling.

665 SEMINAR: COUNSELING PRACTICE 3 credits
Prerequisites: permission of adviser and approval of department head. Seminar in counseling. Focus on the nature and practice of counseling.

669 SYSTEMS THEORY IN FAMILY THERAPY 3 credits
Prerequisite: 655. Seminar in group counseling theory and practice for personnel workers in secondary and college counseling. Skill in teaching, learning and assessment in counseling.

679 PROFESSIONAL PRACTICE 4 credits
Prerequisite: permission of adviser. Seminar in the major professional issues in counseling. Attention will be given to social, cultural, political, economic, and educational factors in the counseling process.

689 MASTERS PROBLEM 2-4 credits
Prerequisite: permission of adviser. Seminar in the major professional issues in counseling. Attention will be given to social, cultural, political, economic, and educational factors in the counseling process.

697 INDEPENDENT STUDY 1-3 credits
May be repeated for a total of nine credits. Prerequisites: permission of advisor and department head. Independent study in a selected field of counseling.

699 THESIS 4 credits
Prerequisite: permission of adviser and department head. Preparation of the thesis is a requirement.

702 ADVANCED COUNSELING PRACTICUM 4 credits
May be repeated for a total of six credits. Prerequisite: 650 or 651. Seminar in advanced counseling theory and practice for personnel workers in secondary and college counseling. Skill in teaching, learning and assessment in counseling.

708 SUPERVISION IN COUNSELING 1-3 credits each
Prerequisite: doctoral residency permission. Seminar in advanced counseling theory and practice for personnel workers in secondary and college counseling. Skill in teaching, learning and assessment in counseling.

710 THEORIES OF COUNSELING AND PSYCHOTHERAPY 4 credits
Prerequisite: 350 or 653. Emphasis on the major theories and the application of these theories to the counseling process.

711 VOCATIONAL BEHAVIOR 4 credits
Prerequisite: 350 or 653. Emphasis on the major theories and the application of these theories to the counseling process.

712 PSYCHOTHERAPY 4 credits
Prerequisite: 350 or 653. Emphasis on the major theories and the application of these theories to the counseling process.

713 VACATIONAL BEHAVIOR 4 credits
Prerequisite: 350 or 653. Emphasis on the major theories and the application of these theories to the counseling process.

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718 PSYCHOTHERAPY 4 credits
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719 VACATIONAL BEHAVIOR 4 credits
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720 PSYCHOTHERAPY 4 credits
Prerequisite: 350 or 653. Emphasis on the major theories and the application of these theories to the counseling process.

721 VACATIONAL BEHAVIOR 4 credits
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722 PSYCHOTHERAPY 4 credits
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729 VACATIONAL BEHAVIOR 4 credits
Prerequisite: 350 or 653. Emphasis on the major theories and the application of these theories to the counseling process.

730 PSYCHOTHERAPY 4 credits
Prerequisite: 350 or 653. Emphasis on the major theories and the application of these theories to the counseling process.

731 VACATIONAL BEHAVIOR 4 credits
Prerequisite: 350 or 653. Emphasis on the major theories and the application of these theories to the counseling process.
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<td>440/540</td>
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**SPECIAL EDUCATION 5610:**

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<td>402</td>
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**TOTAL CREDITS: 5610**

*For non-special education majors, teaching and administrative personnel in the field. This course focuses on the skills and competencies required by regular education teachers with additional skills in working effectively with emotionally disturbed children.*
SCHOOL PSYCHOLOGY
5620:

490/590 WORKSHOP
Prerequisite: permission of instructor. Offered periodically as needed and/or resources become available.
1-2 credits

491/591.2 WORKSHOP
Prerequisite: permission of instructor. Offered periodically as needed and/or resources become available.
1-2 credits each

494/594 SCHOOL PSYCHOLOGY INSTITUTES
Prerequisite: permission of instructor. Specifically designed learning experience for graduate students focusing on critical topics.
1-4 credits

Graduate Courses

600 SEMINAR: ROLE AND FUNCTION OF THE SCHOOL PSYCHOSOLOGIST
Prerequisite: permission of instructor. Seminar on role and function of school psychologist. The course is tailored to meet individual needs of trainees. It is a consideration of professional standards of school psychology practice.
3 credits

601 PREDICTIVE FUNCTION MODELS FOR PRESCRIPTIVE EDUCATIONAL PLANNING
Prerequisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.
3 credits

602 BEHAVIORAL ASSESSMENT
Prerequisite: permission of instructor. Overview of behavioral theory and its application focusing on the role of the school psychologist as an agent of behavior change.
3 credits

603 CONSULTATION STRATEGIES IN SCHOOL PSYCHOLOGY
Prerequisite: permission of instructor. Consideration of consultant roles in the practice of school psychology related to consultant process and with school and agency personnel, parents, and children.
3 credits

610 EDUCATIONAL DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS
Prerequisite: permission of instructor. Clinical study and application of current assessment approaches applicable to assessment of children's learning problems.
4 credits

611 PRACTICUM IN SCHOOL PSYCHOLOGY
Prerequisite: permission of instructor. Laboratory experience in psycho-educational study of individual children who have learning problems in school.
4 credits

630.1 INTERNSHIP IN SCHOOL PSYCHOLOGY: FALL/SPRING
Prerequisites: permission of instructor. Full-time paid work assignment under supervision of a qualified school psychologist for an academic year structured according to provisions of State Department of Education. Additional requirements.
3 credits each

640 FIELD SEMINARS IN ISSUES AND ASSESSMENTS (FALL)
2 credits

641 FIELD SEMINAR II: CLASSROOM ENVIRONMENT (SPRING)
Prerequisite: permission of instructor. Consideration of pertinent topics in practice of school psychology with emphasis on field-based problems and issues of a practicing school psychologist.
2 credits

694 RESEARCH PROJECT IN SPECIAL AREAS
Prerequisite: permission of advisor. Study, analysis, and reporting of special projects on important problems in school psychology.
1-6 credits

695 FIELD EXPERIENCE: MASTER'S
Prerequisite: permission of instructor. Practical school psychology-related experience in school setting.
1-3 credits

696 FIELD EXPERIENCE: MASTER'S
Prerequisite: permission of instructor. Practical school psychology-related experience in adolescent setting other than a school.
1-3 credits

697 INDEPENDENT STUDY
Prerequisite: permission of advisor. Supervised student research. Investigation of a specified area of investigation. Nature of the inquiry to be determined by student and supervisor.
1-4 credits

698 MASTER'S PROJECT
Prerequisite: permission of advisor. In-depth study of a research problem in education. Study must be able to demonstrate critical and analytical skills in dealing with a problem in school psychology.
2-4 credits

699 THESIS RESEARCH
Prerequisite: permission of advisor. Thorough study and analysis in depth of an educational problem, field projects in special areas, synthesis of existing knowledge in relationship to a specific topic.
4-6 credits

MULTICULTURAL EDUCATION
5630:

480 SPECIAL TOPICS: MULTICULTURAL EDUCATION
Prerequisite: permission of instructor. May be repeated with a change in topic. Selected topics of critical concern in professional education.
1-4 credits

481/581 MULTICULTURAL EDUCATION IN UNITED STATES
Prerequisite: permission of instructor. Multicultural education in the United States and its influence on multicultural dimensions of American education. Comparison of urban, suburban, and rural educational settings with reference to socio-cultural influences.
3 credits

482/582 CHARACTERISTICS OF CULTURALLY DIFFERENT YOUTH
Prerequisite: permission of instructor. Study of characteristics of culturally different youth with focus on youth in low-income areas. Emphasis on cultural, social, emotional, and educational considerations and their implications.
2 credits

483/583 PREPARATION FOR TEACHING CULTURALLY DIFFERENT YOUTH
Prerequisite: permission of instructor. Preparing teachers to teach culturally different youth from low-income backgrounds. Through use of multimedia source materials teachers gain knowledge of background and culture of culturally different learners, determining role of teacher; explore techniques of discipline and classroom management, survey methodological and instructional techniques and examine, prepare and adapt variety of instructional materials for individual, small group and large group instruction.
Graduate Course

684 SEMINAR: EDUCATION OF THE CULTURALLY DIFFERENT 2 credits
Survey of educational considerations for schools populated by low-income culturally different youth. Field experience in form of visitation to agencies serving low-income families required.

EDUCATIONAL ADMINISTRATION 5700:

484/584 PRINCIPLES OF BILINGUAL/MULTICULTURAL EDUCATION 3 credits
An introduction to the theoretical, cultural, sociological bases of bilingual/multicultural education. Legislative, court decisions, program implementation included.

485/585 TEACHING READING AND LANGUAGE ARTS TO BILINGUAL STUDENTS 4 credits
Prerequisite: permission of instructor. Course applies methodologies to teaching early language arts in the bilingual/multicultural classroom. The bilingual student's native language cultural stresses.

486/586 TEACHING MATHEMATICS, SOCIAL STUDIES AND SCIENCE TO BILINGUAL STUDENTS 3 credits
Prerequisite: elementary education majors, 5200:333, 336, 338; for secondary education majors, 5300:311 (science, social studies or mathematics). Course applies methodologies for teaching mathematics, science, social studies in the bilingual/multicultural classroom. The bilingual student's native language cultural stresses.

487/587 TECHNIQUES FOR TEACHING ENGLISH AS A SECOND LANGUAGE IN THE BILINGUAL CLASSROOM 4 credits
Prerequisite: permission of instructor. Course includes teaching language skills to Limited English Proficient students in grades K-12. Administration of language assessment tests, selection and evaluation of materials.

490/590 WORKSHOP: BILINGUAL/MULTICULTURAL EDUCATION 1-3 credits
Emphasizes development of teaching devices and/or curriculum units. Demonstration of teaching techniques, utilization of community resources.

Graduate Courses

601 PRINCIPLES OF EDUCATIONAL ADMINISTRATION 3 credits
A perspective of educational administration and the context in which it operates, with emphasis on the processes, tasks, roles and relationships involved and career opportunities.

602 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.

603 ADMINISTRATION OF EDUCATIONAL PERSONNEL 2 credits
A perspective on human resource management and a practical orientation to the major dimensions of the personnel function.

604 SCHOOL-COMMUNITY RELATIONS 3 credits
An analysis of the principles, practices, and materials that facilitate the adjustment and interaction of schools to their internal and external publics.

606 EVALUATION IN EDUCATIONAL ORGANIZATIONS 3 credits
An examination of the general concepts, models, practical applications and considerations involved in the evaluation of educational organizations including program evaluation, performance appraisal and operational evaluation.

607 SCHOOL LAW 2 credits
An examination of the legal principles underlying education in United States as reflected in statutory provisions, court decisions and administrative orders.

608 SCHOOL FINANCE AND ECONOMICS 3 credits
A study of financial operations of school systems, including taxes, other sources of revenue, expenditures, budgeting, and the effects of economic factors.

609 PRINCIPLES OF CURRICULUM DEVELOPMENT 3 credits
An overview and analysis of educational and instructional programs emphasizing the basic purposes, functions and structures necessary to shape, implement and evaluate them.

610 PRINCIPLES OF EDUCATIONAL SUPERVISION 3 credits
Study of principles, organizations and techniques of supervision with view to improvement of instruction.

611 SUPERVISION OF STUDENT TEACHING 2 credits
Prerequisite: 601. Supervision of student teaching under the guidance of a regular supervising teacher. Topics include: placement of student teachers, techniques for evaluating student teaching, directing teacher and college supervisor relationship, use of the conference, demonstration and observation.

612 ADMINISTRATION OF EDUCATIONAL FACILITIES 2 credits
A comprehensive view of the principles, practices and new dimensions involved in the planning and management of educational facilities.

613 ADMINISTRATION OF PUPIL SERVICES 2 credits
Prerequisite: 601. An overview of pupil services including analysis of the nature and development of each component program and discussion of current issues and trends.

615 COMPUTER APPLICATIONS IN EDUCATIONAL ADMINISTRATION 2 credits
A practical course providing hands-on experience with basic software programs, computer-assisted instruction and word processing for administrators and educational organizations.

620 SECONDARY SCHOOL ADMINISTRATION 3 credits
An orientation to the secondary principal's role and working relationships and a consideration of the principles and strategies involved in successfully administering a secondary school.

631 ELEMENTARY SCHOOL ADMINISTRATION 3 credits
Examination of the elementary school principalship as it relates to the development and maintenance of a school climate most conducive to learning.

684 FIELD EXPERIENCE I: ELEMENTARY ADMINISTRATION 2 credits
A supervised, on-the-job administration experience in an elementary school. Prerequisite: 611.

685 FIELD EXPERIENCE II: ELEMENTARY ADMINISTRATION 2 credits
A supervised, on-the-job administration experience in a middle school.

686 FIELD EXPERIENCE II: SECONDARY ADMINISTRATION 2 credits
A supervised, on-the-job administration experience in a secondary school.

694 FIELD EXPERIENCE III: ELEMENTARY ADMINISTRATION 2 credits
Prerequisite: 694 and permission of instructor. Placement in a preparatory program for the elementary school principalship in which students perform administrative tasks supervised by experienced principals.

695 FIELD EXPERIENCE FOR SUPERVISORS 2 credits
Prerequisite: completion of all course work except research project. Designed to help students develop and understand supervisory roles and skills in supervision. Student participants in selected task areas which reflect supervisory responsibilities.

696 FIELD EXPERIENCE II: SECONDARY ADMINISTRATION 3 credits
A cooperative, field-based experience in a secondary school with emphasis on project performance in the administrative task areas.

697 INDEPENDENT STUDY 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission of advisor and supervisor of the independent study. Area of study determined by student's needs.

698 MASTER'S PROBLEM 2-4 credits
Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in educational administration.

699 THESIS RESEARCH 4-6 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 administration.

704 ADVANCED PRINCIPLES OF EDUCATIONAL ADMINISTRATION 2 credits
Study of organizations and strengths and weaknesses of common methods of administering them. Practical methods by which overcoming bureaucratic weaknesses of bureaucracies are offset or lessened in educational institutions.

705 DECISION MAKING IN EDUCATIONAL ADMINISTRATION 3 credits
Decision making is portrayed as a central function of the educational administrator with a unified presentation of the theory, research and practice of decision making.

706 COLLECTIVE BARGAINING AND EMPLOYEE RELATIONS 2 credits
An overview of collective bargaining in education and a comprehensive look at the mechanics and issues involved in the bargaining process and contract administration.

707 THE SUPERINTENDENCY 3 credits
An orientation to the superintendent's role and an examination of the strategies for dealing with the fiscal, relational and functional aspects of the superintendent.

708 TOPICAL SEMINAR: EDUCATIONAL ADMINISTRATION 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission of instructor. Topics selected in areas of concern to students, practicing administrators in public, private educational institutions, organizations.

734 RESIDENCY SEMINAR 3 credits
Prerequisite: 601. Focus on current educational administration and educational administration theory.

734 RESIDENCY SEMINAR 3 credits
Current administrative problems in educational institutions as perceived by student and practicing school executives. Emphasis on problem management, amelioration or solution. Field visits or resource persons invited to classroom.

735 ORGANIZATIONAL COMMUNICATIONS AND THE SCHOOL ADMINISTRATOR 3 credits
Fundamentals of interpersonal communications. Application of these principles to roles of educational administrators. Skill development in written and spoken communications, with attention to nonverbal communications, situation and role playing.

737 FIELD EXPERIENCE: SCHOOL ADMINISTRATION: PLANNED CHANGE 2 credits
Prerequisites: 601 and 704. Relationship between technological and social change and needed change in education; theories, principles and mechanisms in planned educational change.

740 THEORIES OF EDUCATIONAL SUPERVISION 3 credits
Prerequisites: 610, 5200:732 or 600:721. Examination and evaluation of various theories of supervision, sample models which implement existing theories.

745 PRACTICUM IN EDUCATIONAL ADMINISTRATION: URBAN SETTING 2 credits
Prerequisite: completion of three-fourths of doctoral program courses. Analysis of uniqueness of urban setting, e.g., multicultural and pluralistic urban populations. Stress on administrator's human relations skills.

746 POLITICS, POWER AND THE SCHOOL ADMINISTRATOR 3 credits
Impacts of formal and informal community power structures and influential persons on educational planning and decision making. Administrator as an influence on the power structure for educational benefit.

747 PRACTICUM: COMPETING AND COMPLEMENTARY SOCIAL SYSTEMS 3 credits
Designed to bring educational administrator into direct contact with individuals responsible for other community service delivery systems, e.g., city government, Methods of interagency cooperation to provide client services.

785 INTERNSHIP IN EDUCATIONAL ADMINISTRATION 2 credits each
(May be repeated for a total of six credits) Work under a practising administrator involving experience in optimum number of administrative tasks. Includes seminars and written work.

895 FIELD EXPERIENCE: THE SUPERINTENDENCY 3 credits
Prerequisite: permission of instructor. A cooperative, field-based experience in a central administrative role in a school district in which student performs assignments in administrative task areas.

896 FIELD EXPERIENCE IN SCHOOL PLANT PLANNING 2 credits
Prerequisite: permission of instructor. Selected field experiences. Emphasis on analysis of school enrollments, evaluation of school plants and financial aspects of plant planning.
SPECIAL EDUCATIONAL PROGRAMS

5800:

490/595 WORKSHOP IN ECONOMIC EDUCATION OR IN SOCIAL STUDIES 1-3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources, planning of curriculum units.

491/591 WORKSHOP IN ARITHMETIC OR IN PHYSICAL SCIENCE 1-3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources, planning of curriculum units.

492/592 WORKSHOP IN READING 1-3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources, planning of curriculum units.

493/593 WORKSHOP ON EXCEPTIONAL CHILDREN 1-3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources, planning of curriculum units.

494/594 INTERNATIONAL SCHOOL STUDY 3-6 credits
On-the-scene study of education in foreign countries, usually by concentrating on the study of schools in one restricted geographical area.

EDUCATIONAL TECHNOLOGY

5850:

100 INTRODUCTION: PUPIL PERSONNEL WORK 2 credits
Purposes, needs, scope, character of pupil personnel services.

201 INFORMATIONAL SERVICES IN GUIDANCE AND SPECIAL EDUCATION 2 credits
Emphasis on organization and status of informational services as related to activities of educational technologist.

204 HUMAN RELATIONS IN EDUCATION 3 credits
Study of individual and group relationships in educational setting including development of basic interpersonal skills.

207 MECHANICS OF STUDENT APPRAISAL 3 credits
Introduction to group appraisal with major emphasis on assessing certified personnel in group administration, scoring, organizing and recording test results.

210 ORIENTATION OF THE EDUCATIONAL TECHNICIANS TO THE SECONDARY SCHOOL 2 credits
Designed to provide student preparing for role of educational technician with framework for understanding secondary education.

260 SPECIAL EDUCATION TECHNOLOGY 2 credits
Survey of selected procedures and materials employed in classrooms especially designed and operated for exceptional children.

295 EDUCATION TECHNICIAN FIELD EXPERIENCE 5 credits
(May be repeated once) Supervised field experience in school setting designed for educational technician grosses only.

HIGHER EDUCATION ADMINISTRATION

5900:

700 INTRODUCTORY ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION 1 credit
Introductory examination of issues, trends, topics and activities in institutions of higher education.

715 SEMINAR 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 and major administrative task areas.

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 offer 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 curriculum change process. Broad aspects of higher education program planning shall be examined.

735 INSTRUCTIONAL STRATEGIES AND TECHNIQUES FOR THE COLLEGE INSTRUCTOR 3 credits
Selected topics in instructional theory, techniques and strategies which are appropriate to instructional planning and development of college-level courses. Criterion-reference formatting is emphasized, including student achievement testing and evaluation.

740 INDEPENDENT STUDY IN HIGHER EDUCATION 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission. Selected area of independent investigation in an area of higher education as determined by adviser and student in relation to student's academic needs and career goals.

800 ADVANCED ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION 1 credit
(May be repeated) Prerequisite: permission. Examination of selected perspectives and topics which pose concerns to participating students.

801 INTERNSHIP IN HIGHER EDUCATION 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission; corequisite: 802. Intensive work experience in operations of an institution of higher education. Related to student's own program of studies and professional goals.

802 INTERNSHIP IN HIGHER EDUCATION SEMINAR 1 credit
(May be repeated for a total of three credits) Prerequisite: permission; corequisite: 801. To be taken in conjunction with internship by synthesis of problems encountered in internship experience and to provide the opportunity to share ideas and experiences from various areas of higher education internship placement.
COOPERATIVE EDUCATION

600:

301  COOPERATIVE EDUCATION (May be repeated) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.  0 credits

ACCOUNTANCY

6200:

201  ACCOUNTING I Introduction to accounting, the language of business. Emphasis on basic principles, concepts and terminology of accounting for assets, liabilities and proprietorship.  4 credits

202  ACCOUNTING II Prerequisite: 201. Study of accounting informational needs of management. Emphasis on planning and control, including financial statement analyses, funds flow, budgets, cost-volume-profit analysis and decision-making costs.  4 credits

301  COST ACCOUNTING Prerequisites: 350/570 and grades of not less than "C" in 201, 202. Introduction to product costing, emphasizing analysis of materials, labor and factory overhead. Cost control achieved through use of flexible budgets, standard costs and variance analysis.  3 credits

317  INTERMEDIATE ACCOUNTING I Prerequisites: grades of not less than "C" in 201, 202. Accounting theory and problems of statement preparation: income, cash, working capital, investments, inventories, tangible fixed assets, intangibles and current liabilities.  4 credits

318  INTERMEDIATE ACCOUNTING II Prerequisite: 317. Study of long-term liabilities and investments, capital stock, retained earnings, accounting changes, funds statement, pensions, leases, statement analysis and price-level accounting.  4 credits

355  ACCOUNTING INFORMATION PROCESSING Prerequisite: 202. Introduction to automatic data processing systems in an accounting and management environment. Fundamentals of computer programming presented to student.  3 credits

360  BUDGETING Prerequisite: 301. Study of principles and policies of budgeting. Emphasis on managerial control of expenses, capital expenditures and related activities.  3 credits

401  ACCOUNTING SURVEY Prerequisite: permission of instructor. Introductory course for students with no previous accounting background. Essential accounting concepts, techniques and terminology for business organizations.  3 credits

402  ADVANCED COST ACCOUNTING Prerequisite: 301. Study of standard cost procedures, job-order costing procedures and advanced problems in area of cost accounting.  3 credits

410  TAXATION FOR THE NON-ACCOUNTANT Provides non-accountant basic knowledge of federal tax law as applied to individuals and businesses. Not open to accounting major.  3 credits

420/520  ADVANCED ACCOUNTING I Prerequisite: 318. Examination of accounting theory emphasizing accounting for business combinations, partnerships, foreign operations, nonprofit entities and consolidated statements.  3 credits


430/530  TAXATION I Prerequisite: 301. Application of current federal tax law to individuals and proprietorships. Types of income, deductions and structure of tax return covered.  4 credits

431/531  TAXATION II Prerequisite: 430/530. Application of current federal tax law to partnerships, corporations, trusts, estates and gifts. Social security taxes and Ohio income and sales and personal property taxes discussed.  3 credits

440/540  AUDITING Prerequisites: 301, 318, 355 and 6000:322 must be taken prior to or concurrently, or permission of instructor. Emphasizes auditing standards and procedures used by independent auditor in determining whether a firm has fairly represented its financial position.  4 credits

454  INFORMATION SYSTEMS Prerequisites: 202, 355 or permission of instructor. Focus on development of accounting methods and procedures, installation and improvement of accounting systems and evaluation of automated data processing systems. This course cannot be taken in lieu of 6500:324.  3 credits

460  ADVANCED MANAGERIAL ACCOUNTING Prerequisites: 301 and 6400:371. The use of financial and non-financial information in decision making in both public and private sectors. Problem solving approach is emphasized.  3 credits

Graduate Courses

601  FINANCIAL ACCOUNTING 3 credits Introductory course for student with no accounting background. Examines accounting principles as applied to financial problems of firm.

603  BUSINESS SYSTEMS WITH PROCESSING APPLICATIONS 3 credits Prerequisite: 601. Introduction to basic concepts in computer technology, steps in system development and logic of designing accounting systems by using a business-oriented language or related software.

610  ACCOUNTING MANAGEMENT AND CONTROL 3 credits Prerequisites: 401 or equivalent. Application of accounting in management control areas of production, marketing, internal control and capital budgeting with focus on management planning.

630  TAX RESEARCH AND POLICY 3 credits Prerequisite: 430 or equivalent. Designed to develop research capability in solving complex tax problems involving federal income, estate, trust and gift tax laws.

631  CORPORATE TAXATION I 3 credits Prerequisite: 430. Detailed examination of tax problems of corporations and their shareholders. Formation, distribution, redemption, liquidation and penalty taxes covered.

632  TAXATION OF TRANSACTIONS IN PROPERTY 3 credits Prerequisite: 430. Explores federal tax implications of gains and losses derived from sales, exchanges and other dispositions of property.

633  ESTATE AND GIFT TAXATION 3 credits Prerequisite: 430. Analysis of provisions of federal estate and gift tax laws and tax consequences of testamentary and lifetime transfers.

637  ADVANCED ACCOUNTING THEORY 3 credits Prerequisite: 318. Examination of accounting concepts and standards through critical analysis of articles on current trends in profession, discussion and outside research studies.

640  ADVANCED AUDITING 3 credits Prerequisite: 440/540. Conceptual foundations and current research on professional and internal auditing. Includes government regulation and litigation, statistical, computer systems as well as current and prospective developments in auditing.

641  TAXATION OF PARTNERSHIPS AND S CORPORATIONS 3 credits Prerequisite: 430. Examines intensively provisions of subchapter K and S of Internal Revenue Code and uses of partnerships and subchapter S corporations for tax planning.

642  CORPORATE TAXATION II 3 credits Prerequisite: 631. Continuation of 631. Concludes study of subchapter C of Internal Revenue Code with major focus on corporate reorganization.

643  TAX ACCOUNTING 2 credits Prerequisite: 430. Attention focused on timing of income and expenses for individuals and businesses and its relation to tax planning.

644  INCOME TAXATION OF DECEDENTS, ESTATES AND TRUSTS 2 credits Prerequisite: 633. An in-depth examination of the decedent's last income tax return along with the analysis of income taxation of trusts and estates and their creators, fiduciaries and beneficiaries.

645  ADVANCED INDIVIDUAL TAXATION 3 credits Prerequisite: 430. In-depth study of some of the more involved areas of individual income taxation.

646  CONSOLIDATED TAX RETURNS 2 credits Prerequisite: 430. Intensive study of tax provisions concerning use of consolidated tax returns.

647  DEFERRED COMPENSATION 3 credits Prerequisite: 430. Nature, purpose and operation of various forms of deferred compensation examined with much emphasis on pension and profit-sharing plans.
Prerequisites: 430. In-depth study of corporations. Effects to both the recipient and payer entities are determined and discussed.

Prerequisite: 430 (May be repeated for a total of six credits) Prerequisites. Study of contemporary issues in taxation that are not covered in other courses. Determination of cost data and efficiency of decision making.

Various non-qualified executive compensation items are analyzed. The tax effects to both the recipient and payer entities are determined and discussed.

Focus on policies of insurers. Study of administrative policy determination and decision making within the commercial bank. Analyses of policy making in areas of liquidity, loan and security investment and sources of funds.

Prequisites: 371 or permission of instructor. Focus on special topics of study and research in accounting on an independent basis.

Prequisites: 371 or permission of instructor. Case method utilized. Emphasis on analytical techniques from textual and journal readings to solution of complex problems in financial management.

Prequisites: 371 or permission of instructor. Theory and practice of financial wealth maximization in the international business enterprise.

May be repeated. Group study of special topics. May not be used to meet undergraduate or graduate major requirements in finance. May be used for elective credit only with permission of instructor or department.

Prequisites: 371 or permission of instructor. On-the-job experience with cooperating public and private sector organizations. Individual assignments made by supervising faculty member. Periodic reports and term papers required at departmental discretion.

May be repeated. Group study of special topics. May not be used to meet undergraduate or graduate major requirements in finance. May be used for elective credit only with permission of instructor or department.

May be repeated. Group study of special topics. May not be used to meet undergraduate or graduate major requirements in finance. May be used for elective credit only with permission of instructor or department.

Prequisites: 371, 400, or permission of instructor. Advanced course covering in real estate covering the financing of real property. Included are methods, institutions, instruments, valuation, approval and public policy in real estate management.

Prequisites: 371 and 400, or permission of instructor. Study of the role of the individual in financial decision making, with an emphasis on making informed and responsible decisions.

Graduate Courses

602 MANAGERIAL FINANCE

Prequisites: 620. 201, 202 (or 601) and 3232. 201, 202 (or 600). Emphasis on financial decision making related to goal of firm; specifically, the investment decision the financing decision trade-offs in the balance sheet decision.

633 MANAGEMENT OF DEPOSITORY FINANCIAL INSTITUTIONS

Prequisites: 652. Policy determination, administrative decision making in banks, savings and loans using computer simulation games.

645 INVESTMENT ANALYSIS

Prequisites: 602 or permission of instructor. Study of the economic and market forces that influence security prices. Techniques of analysis used in evaluating limited income and equity securities.
649 PORTFOLIO MANAGEMENT 3 credits
Prerequisite: 645 or permission of instructor. Advanced techniques used by sophisticated individuals, professional managers of large portfolios.

650 ADMINISTERING COSTS AND PRICES 3 credits
Prerequisite: 321. An introduction to computer-based information systems with special emphasis on business administration. Describes management of production costs and profits.

655 GOVERNMENT AND BUSINESS 3 credits
Prerequisite: 321. Basic information systems applications for business and government situations. Emphasizes the role of information systems in modern society.

674 FINANCIAL MANAGEMENT AND POLICY 3 credits
Prerequisite: 602 or equivalent. An introduction to financial management, including the role of financial markets and the management of financial resources.

676 MANAGEMENT OF FINANCIAL STRUCTURE 3 credits
Prerequisite: 674. Emphasizes the role of financial structures in modern business organizations.

678 CAPITAL BUDGETING 3 credits
Prerequisite: 674. Focuses on the role of capital budgeting in modern business organizations.

681 INTERNATIONAL BUSINESS FINANCE 3 credits
Prerequisite: 602 or equivalent. An introduction to international finance, including the role of financial markets and the management of international financial resources.

690 SELECTED TOPICS IN FINANCE 3 credits
Prerequisite: 602 or equivalent. An introduction to international finance, including the role of financial markets and the management of international financial resources.

692 COLLOQUIUM IN BUSINESS 3 credits
Prerequisite: 602 or equivalent. An introduction to international finance, including the role of financial markets and the management of international financial resources.

696 INDEPENDENT STUDY IN BUSINESS LAW 1-3 credits
(May be repeated for a total of three credits) Focus on special topics in business and finance in an independent study.

698 INDEPENDENT STUDY: BUSINESS LAW 1-3 credits
Focus on special topics in business and finance in an independent study.

699 SEMINAR IN FINANCE 3 credits
(May be repeated for a total of six credits) Prerequisite: 674 and a total of 15 Phase II graduate credits. Program of independent research in finance area of student's choice, requiring submission of a finished research report.

MANAGEMENT 6500:

301 MANAGEMENT: PRINCIPLES AND CONCEPTS 3 credits
Prerequisite: Three credits in behavioral science, economics, mathematics, theory, practice in management of human, other economic resources, with extensive coverage of operations systems.

302 INTRODUCTION TO ORGANIZATIONAL BEHAVIOR 3 credits
Prerequisites: 301 and two courses in psychology, sociology, investigation of applications of behavioral science and social sciences as they relate to individual, group behavior in organizations.

321 QUANTITATIVE BUSINESS ANALYSIS I 3 credits
Prerequisite: Completion of basic mathematics requirement. Statistical analysis of business data including coverage of probability theory, probability distributions, sampling, estimation, hypothesis testing.

322 QUANTITATIVE BUSINESS ANALYSIS II 3 credits
Prerequisite: 321. Statistical analysis of business data including analysis of variance, regression, analysis of time series, index numbers, distribution-free statistics, Bayesian decision making.

323 COMPUTER APPLICATIONS FOR BUSINESS 3 credits
Prerequisite: 320. An introduction to the use of computer-based information systems in business and other applications. Includes basic spreadsheet applications.

324 DATA MANAGEMENT FOR INFORMATION SYSTEMS 3 credits
Prerequisite: upper-college standing and proficiency in the BASIC programming language or equivalent instructor. Development of business application systems using BASIC and database management systems software, including sequential and random files, finding and arranging records, and database management systems applications.

325 ANALYSIS AND DESIGN OF INFORMATION SYSTEMS 3 credits
Prerequisite: 323. An introduction to computer-based information systems with special emphasis on analysis design, implementation and maintenance. (Cannot be taken in lieu of 6200:441.)

331 PRODUCTION AND SYSTEMS MANAGEMENT 3 credits
Prerequisite: 301. Emphasis on design, analysis of operating systems, utilizing scientific decision-making methodology. Case exercises, project.

332 PRODUCTION AND OPERATIONS MANAGEMENT 3 credits
Prerequisite: 353, 331, 332. Exposes use of models for production scheduling, materials management, quality control, distribution and project management. Includes linear programming models, simulation models. Cases, exercises, problems, computer analysis.

341 PERSONNEL MANAGEMENT 3 credits
Prerequisite: Two courses in psychology, sociology, and 301. Principles, policies, practices in administering functions of recruiting, selecting, training, compensating, appraising human resources of organizations.

342 LABOR RELATIONS 3 credits
Prerequisite: 341. Analysis of management, union and employee objectives, attitudes and strategy, as they affect conduct of business and economy. Stress placed on group assigned readings and reports.

407 SMALL BUSINESS MANAGEMENT 3 credits
Prerequisite: senior standing. Focuses on problems of organizing and operating a small business. Case studies and field experiences.

408/508 ENTREPRENEURSHIP 3 credits
Prerequisite: upper-college standing or 301 or 600 or equivalent. Emphasizes the behavior and environment for entrepreneurship. Focuses on classic and contemporary entrepreneurs and the importance of personal values and strategies. Case studies. Field projects.

410/510 SELECTED TOPICS IN ENTREPRENEURSHIP 1-3 credits
Prerequisites: upper-college or graduate standing and 301 or 600 or equivalent. Presents a broad range of topics in entrepreneurship, including the role of entrepreneurship in large organizations, or application of student's entrepreneurial skills. Six hour limit.

412/512 DEVELOPMENT OF MANAGEMENT THOUGHT 3 credits
Prerequisites: upper-college or graduate standing and 301, or 600 or equivalent. Review of development of management theories from 5600 BD, to present with consideration of their application to present organizational settings.

421 OPERATIONS RESEARCH 3 credits
Examines the use of operations research techniques in managerial decision-making processes, constrained linear optimization, nonlinear optimization, network analysis, queuing theory, simulation.

425 DECISION SUPPORT SYSTEMS 3 credits
Prerequisite: 324. May not be taken in place of 6200:454. Introduction to decision support systems design including applications in various functional areas. Projects may use BASIC, electronic spreadsheets, database and/or decision support system software.

433 BUSINESS OPERATIONAL PLANNING 3 credits
Prerequisite: 322, 332. Application of quantitative techniques for planning and scheduling of firm. Emphasis given to external-internal factors, which influence short- and long-run economic success of firm.

434 PRODUCTION PLANNING AND CONTROL 3 credits
Prerequisites: 322, 332. Forecasting, materials management, production planning, scheduling, control. Integrates previous courses, provides overall framework including use of computer and quantitative methods. Cases and a project in an operating organization.

435 QUALITY CONTROL 3 credits
Prerequisite: 322. Emphasis on statistical techniques essential to controlling product quality for both manufacturing and service industries. Includes control chart methods and acceptance sampling plans.

436 ADVANCED QUALITY CONTROL APPLICATIONS 3 credits
Prerequisites: 322 and 435. Applications of advanced topics including exponential and column charts, experimental design, out-of-control situations and their impact on process performance. May not be taken concurrently with 6200:635.

437 SPECIAL TOPICS IN QUALITY MANAGEMENT 3 credits
Prerequisites: 322 and 435. Professional development of advanced topics of interest both to the student and professor. May apply to special cases, outside speakers, projects in conjunction with local industries.

438 PRODUCT QUALITY DESIGN TECHNIQUES 3 credits
Prerequisites: 322 and 435. Focus on the design, specification, measurement, and control of product quality. Emphasizes the role of statistical quality control in process improvement and product development.

442 COMPENSATION MANAGEMENT 3 credits
Prerequisite: 341. Focus on the design, implementation, and evaluation of employee compensation programs.

443 ADVANCED PERSONNEL MANAGEMENT 3 credits
Prerequisite: 341. Advanced strategies for handling of current and problems in personnel management. Emphasis given to current literature and research. Activities may include projects, library research, case studies.

455/555 MANAGEMENT OF ARBITRATION: COMMERCIAL, INTERNATIONAL AND HUMAN RESOURCES 3 credits
Prerequisites: upper-college or graduate standing and 301 or 600 or equivalent. A comprehensive study of management strategies for commercial, international and human resource arbitration. Graduate requirement: research paper.

457 INTERNATIONAL MANAGEMENT 3 credits
Prerequisites: upper-college standing and 301 or equivalent. Management practices and techniques of international business organizations. Focus on structure and processes of resource allocation, design of technology, and the impact of culture.

458 SELECTED TOPICS IN MANAGERIAL ARBITRATION, MEDIATION AND CONCILIATION 1-3 credits
Prerequisites: upper-college or graduate standing and 301 or 600 or equivalent. Study of the various methods and mechanisms by which management can understand and deal with internal and external conflict. Six hour limit.

459 SELECTED TOPICS IN INTERNATIONAL MANAGEMENT 1-3 credits
Prerequisites: upper-college standing, 301 or equivalent; and 457, or permission of instructor. Focus on the role of management in international business situations, including international management issues. Includes international simulation game. Six hour limit.

471/571 MANAGEMENT PROBLEMS 3 credits
Prerequisite: 471. Analysis of management, union and employee objectives, attitudes and strategy, as they affect conduct of business and economy. Stress placed on group assigned readings and reports.

472 MANAGEMENT PROBLEMS — PRODUCTION 3 credits
Prerequisite: 472. Case studies of management problems in production. Focuses on the role of management in the production process.

473 MANAGEMENT PROBLEMS — PERSONNEL 3 credits
Prerequisite: 473. Case studies of management problems in personnel management.
482/582 HEALTH SERVICES OPERATIONS MANAGEMENT 2 credits
Prerequisites: undergraduate or graduate standing and 301 or 600 or equivalent.
(Students who have completed 331 are ineligible to take this course for credit). Applications of production and operations management techniques and techniques in health services organizations, including decision making, supervision, communication practices, work group dynamics, and emphasis on managing health-care professional and resources of health-care organizations, and on techniques and tools for effective decision making, planning, organizing, and controlling in health-care settings. For those registered for graduate credit, a major research project is required.

485/585 SPECIAL TOPICS IN HEALTH SERVICES ADMINISTRATION 1-3 credits
Prerequisite: permission of instructor. Topics in health services administration (e.g., personnel management and office and/or technical management), organizational and/or policy strategies, issues related to health-care organizations and health-care systems. Topics may be repeated for a total of six credits. For those registered for graduate credit, a major research project is required.

490 BUSINESS POLICY 4 credits
Prerequisites: senior standing (97 credits) and 301; 6200:202, 6400:301, 6600:300, and corequisites: 322, 6200:205, or 6500:323, and 6400:320 or 321, 322. Integrates the core business disciplines (accounting, economics, finance, management, marketing) through the use of case analyses. Student evaluates objective and strategy formulation from an administrative viewpoint.

491 WORKSHOP IN MANAGEMENT 1-3 credits
(May be repeated with permission of instructor or department) Group studies of special topics in management. May not be used to meet undergraduate major requirements in management. May be used for elective credit only.

495 INTERNSHIP IN MANAGEMENT 1-3 credits
Prerequisite: permission of instructor. On-the-job experience with cooperating private and public sector organizations. Individual assignments made by supervising faculty member. Periodic reports, term papers required as appropriate.

497 HONORS PROJECT 1-3 credits
(To be repeated for a total of six credits) Prerequisite: senior standing in Honors Program. Individual senior honors thesis or creative project relevant to management approved and supervised by member of the department faculty.

499 INDEPENDENT STUDY: MANAGEMENT 1-3 credits
Prerequisites: senior standing and permission of department head. Provides a means for individualized study in management from which student can derive significant advantage.

Graduate Courses

500 MANAGEMENT AND PRODUCTION CONCEPTS 3 credits
Quantitative, behavioral, systems approach to introduction management process, emphasizing productionfunctionlink. Designed students not previously had courses business. May not be repeated for credit.

501 QUANTITATIVE DECISION MAKING 3 credits
Prerequisite: finite mathematics. Applies quantitative techniques to business decision making. Topics include: probability estimation and hypothesis testing, simple and multiple regression and correlation analysis, analysis of variance and non-parametric statistics.

502 COMPUTER TECHNIQUES FOR MANAGEMENT 3 credits
Introduction to the integrated spreadsheet software, database management software and word-processing packages.

504 MANAGEMENT INFORMATION SYSTEMS 3 credits
Prerequisite: 602 or equivalent. An introduction to systems design, management information systems, data bases, and the relationships to problem solving and the management student. Cannot be taken in lieu of 6200:655.

506 APPLIED DATA MANAGEMENT 3 credits
Prerequisite: 602. An in-depth examination of the treatment of data, from collection through organization and storage to data extraction and manipulation, including uses of online databases.

507 SYSTEMS SIMULATION 3 credits
Prerequisite: 601. Data processing in manufacturing or service sectors of society are analyzed and simulated on a computer. Experimental designs, statistical significance of results, model verification and validation will be discussed.

508 EXPERT SYSTEMS IN BUSINESS 3 credits
Prerequisite: 641. Introduction to artificial intelligence in general and expert systems. Course provides hands-on experience in designing systems for business applications using expert systems software.

509 MANAGERIAL DECISION SUPPORT SYSTEMS 3 credits
Prerequisites: 600:641. Examiners decision support systems as an analytical tool in the current business environment. Business problems are analyzed and a DSS is designed and implemented.

510 ADVANCED MANAGEMENT INFORMATION SYSTEMS 3 credits
Prerequisite: 601. A problem-oriented approach to the problems of managing the corporate information system. Exercises in management of systems, general management and IS management. May not be taken in lieu of 600:655.

515 PRODUCTIVITY AND QUALITY OF WORKPLACE ISSUES 3 credits
Prerequisite: 652 or permission of instructor. A comprehensive study of innovations in organizations designed to increase human satisfaction and productivity through changes in human management.

520 ORGANIZATIONAL BEHAVIOR 3 credits
Prerequisite: 600 or equivalent. Study of factors which influence human behavior in organizations. Emphasizes theories in individual and group behavior, motivation, leadership, and communication in organizations.

525 ORGANIZATIONAL THEORY 3 credits
Prerequisite: 602. Lectures in organizational institutional setting, influence these variables, individual group behavior, organizational goal attainment. Analysis leader's role in administrative process.

526 INDUSTRIAL RELATIONS 3 credits
Prerequisite: 600. Study of labor and management in dealing with labor and economic consequences of union and management forces and practices.

555 COMPENSATION ADMINISTRATION AND EMPLOYEE BENEFITS 3 credits
Prerequisite: 641. A comprehensive approach to the identification and resolution of pay and benefit problems facing business organizations in their internal and external labor markets.

556 MANAGEMENT OF INTERNATIONAL OPERATIONS 3 credits
Prerequisite: 652 or equivalent. Deals with institutional environment of international business, participants in international business systems which hold the system together and which individual businesses can neither materially affect.

557 THE LEADERSHIP ROLE IN ORGANIZATIONS 3 credits
Prerequisite: 652. Analysis leadership.

558 STRATEGIC HUMAN RESOURCES MANAGEMENT 3 credits
Prerequisites 600, 654. The formulation, design and implementation of strategic human resource practices and systems for business organizations. Emphasis on competitive cost advantages and productivity gains.

559 OPERATIONS AND STRATEGIC PLANNING 3 credits
Prerequisites: 601, 601, 602 or equivalent. Long-range and short-term planning in organizations and linkage between the two. Planning models are presented of nonprofit and profit organizations.

560 EMPLOYMENT DISCRIMINATION 3 credits
Prerequisite: 652 or equivalent. An overview of discrimination procedures and prohibitions, affirmative action requirements, employer and employee disclosure and their application in human resources management.

562 QUANTITATIVE METHODS - OPERATIONS MANAGEMENT 3 credits
Prerequisite: 603 or equivalent. Survey of techniques of operations research. Applications to functional areas of business with particular emphasis given to production and planning aspects.

563 APPLIED INDUSTRIAL STATISTICS I 3 credits
Prerequisite: 641 or equivalent. Describes survey sample and estimation. Simple linear regression analysis, including indexes, apres of the model and joint confidence intervals.

564 APPLIED INDUSTRIAL STATISTICS II 3 credits
Prerequisite: 663. Applications of multiple regression analysis including "best" set of independent variables, correlation models, analysis of variance models including interaction models. Experimental designs including randomized block and Latin square designs.

567 ADVANCED OPERATIONS RESEARCH 3 credits
Prerequisite: 643. Designed to present in more depth and breadth certain topics presented in 662, with emphasis on application of these techniques to student's own business situations.

569 MANUFACTURING AND OPERATIONS ANALYSIS 3 credits
Prerequisite: 615 or equivalent. Provides an applications forum where skills gained in other manufacturing — quantitative areas of curriculum can be empirically utilized and examined in student's own business situations.

572 QUALITY AND PRODUCTIVITY TECHNIQUES 3 credits
Prerequisite: 601. Introduction to techniques for improving productivity and quality, including statistical process control (SPC), material requirements planning (MRP), just-in-time (JIT) inventory control and management of the program.

574 ADVANCED QUALITY AND PRODUCTIVITY TECHNIQUES 3 credits
Prerequisite: 672. Examines advanced techniques in statistical process control, experimental design, determination of customer quality needs, service, product reliability/availability and management of quality systems.

575 MATERIALS MANAGEMENT 3 credits
Prerequisite: 650. Surveys functions and explores opportunities for profit improvement and cost reduction in those functions integrated under the organizational concept of materials management.

576 MANAGEMENT OF PRODUCTION AND OPERATIONS 3 credits
Prerequisites: 600, 602, 662, 667. Surveys functions of resources required to transform inputs into products or services. Addresses issues related to services, materials and equipment utilized for production.

577 PERSONNEL MANAGEMENT 3 credits
Prerequisite: 610 or equivalent. Provides working knowledge of tools and methods available to project managers including computerized analysis of network models to aid in the planning and control functions.

578 HEALTH SERVICES SYSTEMS MANAGEMENT 3 credits
Prerequisite: 380 or 602 or equivalent. Permission of instructor. Study of health-care organizations, comparative delivery systems, the roles of third-party payers and government in health-care services. Seminar format. Major research paper required.

579 HEALTH SERVICES RESEARCH PROJECT 3 credits
Prerequisites: 610 and/or equivalent or permission of instructor. In-depth needy study in health services administration with applications of research and analysis skills. Course requires review of recent literature and a major research paper.

587 GRADUATE SEMINAR IN HEALTH SERVICES POLICY AND ADMINISTRATION 3 credits
Prerequisite: 610 and/or equivalent or permission of instructor. In-depth study of contemporary issues in health services policy and administration. Includes examination of macro-societal and micro-organizational issues. Major paper required.

588 INDEPENDENT STUDY IN HEALTH SERVICES ADMINISTRATION 1-3 credits
May be repeated for more than three credits. Prerequisite: permission of instructor. Independent study and research of a special topic of interest in health services administration (e.g. management), chosen by the student in consultation with and under the supervision of the instructor.

590 SELECTED TOPICS IN MANAGEMENT 3 credits
Prerequisite: 600. (May be repeated for a total of six credits) Prerequisite: permission of instructor. May be repeated for a total of six credits. Presentation of selected topics in management.

595 BUSINESS STRATEGY AND POLICY: DOMESTIC AND INTERNATIONAL 3 credits
Prerequisite: to be final course in M.B.A. program. A case-oriented course which focuses on formulation of theoretical and practical knowledge acquired in core Business courses. Focuses analysis, evaluation, formulation, organization objectives and strategies within domestic and international environments.

596 INDEPENDENT STUDY IN MANAGEMENT 1-3 credits
May be repeated for a total of six credits. Prerequisite: permission of instructor. May be repeated for a total of three credits. Focus on special topics of study and research in management on an independent basis.

598 GRADUATE SEMINAR IN MANAGEMENT 3 credits
May be repeated for a total of six credits. Prerequisite: Total of 15 Phase II graduate credits. For master's degree candidate in management, independent study and reading. Leads to finished paper which should be completed within one year from time of enrolment in course.
MARKETING

6600:

300 MARKETING PRINCIPLES
Prerequisites: 3250, 201, 202 or permission. Broad course integrating commodity, institutional, functional and managerial concepts of marketing process, total framework of economic activity.
3 credits

310 BUYER BEHAVIOR
Prerequisites: two courses from 3750 or 3850 or permission. Interdisciplinary approach to analysis and interpretation of the nature and dynamics of buying motives, habits and the decision-making processes as they affect and are affected by strategic and tactical decisions of the marketing organization.
3 credits

320 PHYSICAL DISTRIBUTION
Prerequisite: 300. Basic course in source, movement and storage of goods, including emphasis on economics of transportation and requirements of an effective system.
3 credits

340 PRINCIPLES OF RETAILING
Prerequisite: 300. Survey of the basic concepts and principles of retailing in terms of store organization, employee personnel, store facilities, market analysis, lease selection, product mix, retail buying, merchandise handling, inventory planning and control, retail pricing and promotion.
3 credits

350 ADVISING AND MARKETING COMMUNICATIONS
Prerequisite: 300. Full range of marketing communication elements. Emphasis on role of each element and coordination required of marketing manager in developing successful and systematic program of marketing communications.
3 credits

360 BUSINESS MARKETING MANAGEMENT
Examines organization-buyer behavior and the strategic marketing management of firms selling to business organizations, government agencies, or institutions.
3 credits

375 PURCHASING
Prerequisite: 3250, 202. Process and activities associated with cost effective buying, internal management of all materials, equipment needed by manufacturers to produce product or provide a service.
3 credits

375 PROFESSIONAL SELLING
Prerequisite: 300 or permission of instructor. Introductory course covering prospecting, establishing better buyer relationships, understanding customer needs, persuading, overcoming resistance, and closing sales.
3 credits

380 SALES MANAGEMENT
Prerequisites: 350 or 360. Examines the process of organizing, selecting, training, motivating, and controlling sales force.
3 credits

385 INTERNATIONAL MARKETING
Prerequisite: 6800, 325. Provides a basic understanding of the complexities of international marketing. It assumes knowledge of the basic international business course.
3 credits

390 MANAGEMENT OF MARKETING CHANNELS
Prerequisite: 300. An integrative approach to analysis of marketing channels of distribution to complement the more specialized analyses of retailing, wholesaling and physical distribution. Strengths, weaknesses, market-orientation of marketing strategies are examined as a means for coordinating the efforts of the group of institutions that make up a channel of distribution.
3 credits

395 APPLICATIONS IN RETAILING MERCHANDISING
Prerequisite: 300. Practical retail applications in the planning and control of merchandise assortments, merchandise budgets, inventory systems, buying procedures, vendor relationships, and retail service.
3 credits

400 STRATEGIC RETAIL MANAGEMENT
Prerequisites: 300 and 340 or 395. Integration of strategic and tactical retail decisions and issues through the use of case analysis, computer applications, experiential exercises, and field projects.
3 credits

420/520 LOGISTICS SYSTEMS ANALYSIS
Prerequisite: 3250. Stresses application of quantitative techniques in design and operation of individual logistics components as well as integration of total logistics system in the firm. Emphasis on student's evaluation and solving of logistics problems.
3 credits

425 ADVERTISING RESEARCH AND EVALUATION
Prerequisite: 300. The role and methods of research are studied as they relate to the planning of advertising campaigns, with attention to market analysis, competitor analysis, and copy and media planning. Post-campaign measurement of copy, media and marketing effectiveness are also included.
3 credits

430 PROMOTIONAL CAMPAIGNS
Prerequisite: 300. Examination of total communications efforts involved in planning, developing and monitoring promotional campaigns. Stress is placed on understanding the nature and roles of advertising, agency and support services.
3 credits

440/540 PRODUCT PLANNING
Prerequisite: 300. In-depth study of tools and techniques involved in new product development process and management of the product through its life cycle. Emphasis on alternative forms of corporate structures for product development and management, product policies and strategies, and product planning procedures and techniques. Differences between consumer and industrial products.
3 credits

460 MARKETING RESEARCH
Prerequisites: 300, 6500, 321. Through lectures, cases and term projects, a student is taught to detect and evaluate actionable forces in the marketplace. Emphasis on investigation appropriate to economics of situation.
3 credits

465/565 FORECASTING AND QUANTITATIVE METHODS IN MARKETING
Prerequisite: 460. Discusses the most sophisticated quantitative forecasting methods, tools, procedures available to marketing researchers, decision makers, how these are applied to marketing problems.
3 credits

475 INDUSTRIAL AND ORGANIZATIONAL SALES STRATEGY
Prerequisites: 300 and 375, or 350. Advanced study of current issues and problems in selling and sales management within the industrial and organizational market sector.
3 credits

491 WORKSHOP IN MARKETING
Group study in aspects of practical work in marketing. May be used for elective credit with permission of instructor or department.
1-3 credits

495 INTERNSHIP IN MARKETING
Prerequisite: permission of instructor. On-the-job experience with cooperating private or public sector organizations. Individual assignments made by supervising faculty member. Periodic reports and term papers required as appropriate.
1-3 credits

497 HONORS PROJECT
May be repeated for a total of 4 credits. Prerequisite: senior standing in Honors Program. Individual senior honors thesis or creative project relevant to marketing, approved and supervised by member of the department faculty.
1-3 credits

499 INDEPENDENT STUDY: MARKETING
Prerequisite: permission of instructor. Provides a means for individualized in-depth study of a marketing problem or problems from which student can derive significant benefit.
1-3 credits

Graduate Courses

600 MARKETING CONCEPTS
Prerequisite: 600. An assessment of basic marketing principles involved in business and industry. Required of all non-business undergraduates, may not be selected for Phase II credit.
3 credits

620 STRATEGIC MARKETING MANAGEMENT
Prerequisite: 600 or equivalent. Managerial assessment of opportunities, threats are explored as are the development and management of appropriate strategic marketing plans and their tactical implementation.
3 credits

630 INTERNATIONAL MARKETING POLICIES
Prerequisites: 620, 6500, 601, 602. Explores managerial development and maintenance of systematic methods for locating, acquiring, processing, analyzing and utilizing marketing information for marketing decision making.
3 credits

650 CONSUMER BEHAVIOR
Prerequisite: 620. Methods of identifying and analyzing final industrial and institutional markets are explored. Focus is placed upon theoretical models, research tools, appropriate marketing strategies.
3 credits

655 MARKETING COMMUNICATIONS
Prerequisite: 620. Total range of marketing communication tools are examined individually, in the context of the planning, development, and implementation of systematic marketing communication programs.
3 credits

680 MARKETING THEORY
Prerequisite: 620. Designed to apply those theoretical works from areas of economics, psychology, sociology and cultural anthropology which have relevance to a general theory of marketing.
3 credits

690 SEMINAR IN INTERNATIONAL BUSINESS
Prerequisite: a total of 15 Phase II graduate credits. Permits M.B.A. candidate to independently analyze a significant international business problem culminating in a major paper.
3 credits

697 INDEPENDENT STUDY IN MARKETING
(May be repeated for a total of three credits) Focus on special topics of study and research in marketing on an independent basis.
1-3 credits

699 SEMINAR IN MARKETING
(May be repeated for a total of six credits) Prerequisite: a total of 15 Phase II graduate credits. Capstone course permits the A candidate to undertake a carefully delineated program of independent study and research which leads to a finished major paper.
3 credits

INTERNATIONAL BUSINESS

6800:

305 INTERNATIONAL BUSINESS
Prerequisites: 3250, 201, 202. A basic course in international business which can also provide a platform for more specialized international business courses.
3 credits

405 MULTINATIONAL CORPORATIONS
Prerequisite: 305 or permission of instructor. Course provides in-depth understanding of the functions, structure and strategic considerations governing the MNC's through theory and case study analysis.
3 credits

421 INTERNATIONAL BUSINESS PRACTICES
Prerequisites: junior or senior standing. An examination and comparison of contemporary business practices around the world. Develops sensitivity to alternative business practices and policies, and includes a strong component of cross-cultural communications.
3 credits

460 INTERNATIONAL BUSINESS RESEARCH
Prerequisites: 6600, 300, 6800, 305, 6500, 321. Business research concepts applied to international environments. Design of international marketing research: problems in collecting information, multi-country information analysis, development of international information systems.
3 credits

Graduate Courses

605 INTERNATIONAL BUSINESS ENVIRONMENTS
An introductory course designed to develop a broad understanding of global business environments.
3 credits

685 MULTINATIONAL CORPORATIONS
Prerequisite: 405. An advanced course designed to develop an in-depth understanding of global businesses, their functions, structures, and strategic operations.
3 credits

697 INDEPENDENT STUDY IN INTERNATIONAL BUSINESS
Prerequisite: 605. A seminar in special topics of study and research in international business on an independent basis.
1-3 credits
## COOPERATIVE EDUCATION

**7000:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>COOPERATIVE EDUCATION</td>
<td>0</td>
<td>(May be repeated) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.</td>
</tr>
</tbody>
</table>

## ART

**7100:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>SURVEY OF HISTORY OF ART I</td>
<td>4</td>
<td>Archaeological, sculpture, painting and minor arts from primitive sources through Gothic time period in Europe.</td>
</tr>
<tr>
<td>102</td>
<td>SURVEY OF HISTORY OF ART II</td>
<td>4</td>
<td>Prerequisite: 101. Architecture, sculpture, painting and minor arts from Renaissance through 1960, primarily in Western art. Development of photography and its application as art form integrated into artistic styles of 20th Century.</td>
</tr>
<tr>
<td>105</td>
<td>UNDERSTANDING ART</td>
<td>3</td>
<td>Uses different societies have found for art and how social and technological levels of the society have affected the kind of art they make. No credit toward major in art.</td>
</tr>
<tr>
<td>120</td>
<td>FUNDAMENTALS OF SCULPTURE</td>
<td>3</td>
<td>A study of sculpture through lecture and studio work in a variety of media. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.</td>
</tr>
<tr>
<td>121</td>
<td>THREE-DIMENSIONAL DESIGN</td>
<td>3</td>
<td>Introduction to meaning of &quot;design&quot; and act of designing in real space. Study of naturally occurring form, structure and process.</td>
</tr>
<tr>
<td>130</td>
<td>FUNDAMENTALS OF SCREEN PRINTING</td>
<td>3</td>
<td>A study of screen printing through lecture and studio experiences. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.</td>
</tr>
<tr>
<td>131</td>
<td>INTRODUCTION TO DRAWING</td>
<td>3</td>
<td>Freehand drawing experience with an orientation to elements and principles of visual organization. Limited media.</td>
</tr>
<tr>
<td>132</td>
<td>INSTRUMENT DRAWING</td>
<td>3</td>
<td>Creative use of mechanical drawing processes for visually descriptive purposes. Techniques in use of mechanical drawing instruments stressed. Both practical and theoretical drawing styles undertaken.</td>
</tr>
<tr>
<td>134</td>
<td>FUNDAMENTALS OF ACRYLIC PRINTING</td>
<td>3</td>
<td>A study of the acrylic painting medium through lecture, demonstration and studio activity. An exploration and enrichment opportunity for the non-art major. No credit toward a major in art.</td>
</tr>
<tr>
<td>135</td>
<td>TWO-DIMENSIONAL DESIGN</td>
<td>3</td>
<td>An introduction to the theory and practice of visual design as applied to surfaces, including composition, color and personal illusions with lecture and studio experience.</td>
</tr>
<tr>
<td>136</td>
<td>FUNDAMENTALS OF CERAMICS</td>
<td>3</td>
<td>A study of ceramics through lecture and studio experiences. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.</td>
</tr>
<tr>
<td>137</td>
<td>FUNDAMENTALS OF JEWELRY</td>
<td>3</td>
<td>A study of jewelry making through lecture and studio for the non-art major. No credit toward major in art.</td>
</tr>
<tr>
<td>138</td>
<td>FUNDAMENTALS OF PHOTOGRAPHY</td>
<td>3</td>
<td>A study of photography through lecture, demonstration and studio work. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.</td>
</tr>
<tr>
<td>139</td>
<td>FUNDAMENTALS OF GRAPHIC DESIGN</td>
<td>3</td>
<td>Fundamental information about the theory and practice of graphic design as applied to surfaces, including composition, color and personal illusions with lecture and studio experience.</td>
</tr>
<tr>
<td>140</td>
<td>COMPUTER GRAPHICS FOR ART I</td>
<td>3</td>
<td>(May be repeated for a total of six credits) Prerequisite: 131. Studio experience in use of tools and materials of commercial graphic art. Elementary design problems in commercial graphic design.</td>
</tr>
<tr>
<td>141</td>
<td>INTRODUCTION TO GRAPHIC DESIGN</td>
<td>3</td>
<td>A study of graphic design through lecture and studio work in a variety of media. An exploration and enrichment opportunity for the non-art major. No credit toward a major in art.</td>
</tr>
<tr>
<td>142</td>
<td>INTRODUCTION TO GRAPHIC DESIGN</td>
<td>3</td>
<td>Prerequisite: 131. Studio experience in use of tools and materials of commercial graphic art. Elementary design problems in commercial graphic design.</td>
</tr>
<tr>
<td>143</td>
<td>INTRODUCTION TO LITHOGRAPHY</td>
<td>3</td>
<td>Prerequisite: 131. Use of lithographic stone and metal plate as printmaking media. Stone and plate preparation, lithographic drawing materials and techniques, printer registration and printing press covered. Emphasis on aesthetic theory, technique and related history.</td>
</tr>
<tr>
<td>144</td>
<td>INTRODUCTION TO SCREEN PRINTING</td>
<td>3</td>
<td>Prerequisites: 131, 144 or 231. Silk screen printmaking. Theory and use of stencil grater, positive and negative block-out techniques, photo stencils, registration and printing procedures. Emphasis on aesthetic theory, technique and related history.</td>
</tr>
<tr>
<td>145</td>
<td>INTRODUCTION TO RELIEF PRINTING</td>
<td>3</td>
<td>Prerequisites: 131, 144 or 231. Printmaking using found objects, synthetic materials, as well as traditional woodcut and linocut engraving. Emphasis on aesthetic theory, technique and related history.</td>
</tr>
<tr>
<td>146</td>
<td>INTRODUCTION TO INTAGLIO PRINTING</td>
<td>3</td>
<td>Prerequisites: 131 and 231. Intaglio printmaking using drypoint engraving, aquatint and soft-ground techniques. Emphasis on aesthetic theory, technique and related history.</td>
</tr>
<tr>
<td>147</td>
<td>INTRODUCTION TO SCULPTURE</td>
<td>3</td>
<td>Prerequisite: 121. Exploration of aesthetic factors influencing sculptural statements. Development of proficiency in the use of tools, materials and techniques.</td>
</tr>
<tr>
<td>148</td>
<td>INTRODUCTION TO DRAWING</td>
<td>3</td>
<td>Prerequisite: 131. Continuation of 131. In-depth exploration of wide range of techniques and media. Attention to controlled descriptive drawing and space illusion and their aesthetic applications.</td>
</tr>
<tr>
<td>149</td>
<td>INTRODUCTION TO WATERCOLOR PAINTING</td>
<td>3</td>
<td>Prerequisites: 121. Study of watercolor through lecture and studio work in a variety of media. Study of traditional transparent watercolor methods, and experimentation with less conventional approaches to aqueous media.</td>
</tr>
<tr>
<td>150</td>
<td>INTRODUCTION TO OIL PAINTING</td>
<td>3</td>
<td>Prerequisites: 131, 144. Study of technical and aesthetic problems involved in oil painting. A painterly orientation toward plasticity of form as mediated by color.</td>
</tr>
<tr>
<td>151</td>
<td>INTRODUCTION TO AIRBRUSH PAINTING</td>
<td>3</td>
<td>Prerequisites: 131, 144. Study of technical and aesthetic problems involved in airbrush painting. A painterly orientation toward plasticity of form as mediated by color.</td>
</tr>
<tr>
<td>152</td>
<td>INTRODUCTION TO SCREEN PRINTING</td>
<td>3</td>
<td>Prerequisites: 131, 144 and 251. Study of the screen printing process through lecture and studio work in a variety of media. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.</td>
</tr>
<tr>
<td>153</td>
<td>INTRODUCTION TO METALSMITH</td>
<td>3</td>
<td>Prerequisites: 121, 144, or for graphic design majors, 286. An beginning studio course in the airbrushing medium concerned with design, observation and critical analysis of art.</td>
</tr>
<tr>
<td>154</td>
<td>INTRODUCTION TO CERAMICS</td>
<td>3</td>
<td>Studio/studio course exploring potentials of hand-building techniques in both sculptural and functional forms. Clay processing, glaze application and practical kiln firing.</td>
</tr>
<tr>
<td>155</td>
<td>INTRODUCTION TO METALSMITH</td>
<td>3</td>
<td>Prerequisites: 121, 144, or for graphic design majors, 286. Studio/studio course exploring potentials of hand-building techniques in both sculptural and functional forms. Clay processing, glaze application and practical kiln firing.</td>
</tr>
<tr>
<td>156</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
</tr>
<tr>
<td>157</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Prerequisites: 121, 132, or for graphic design majors, 286. Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
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<td>158</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Prerequisites: 121, 132, or for graphic design majors, 286. Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
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<td>159</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Prerequisites: 121, 132, or for graphic design majors, 286. Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
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<tr>
<td>160</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Prerequisites: 121, 132, or for graphic design majors, 286. Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
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<tr>
<td>161</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Prerequisites: 121, 132, or for graphic design majors, 286. Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
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<tr>
<td>162</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Prerequisites: 121, 132, or for graphic design majors, 286. Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
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<tr>
<td>163</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Prerequisites: 121, 132, or for graphic design majors, 286. Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
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<tr>
<td>164</td>
<td>INTRODUCTION TO FIBER ART</td>
<td>3</td>
<td>Prerequisites: 121, 132, or for graphic design majors, 286. Studio/studio course exploring traditional and nontraditional fiber form, on-loom and off-loom techniques, with emphasis on aesthetics and history of fibers.</td>
</tr>
</tbody>
</table>
ART FROM 1900 TO 1945
Prerequisite: 101 or permission of instructor. Study of significant developments in visual arts from approximately 1900 to 1945.
3 credits

PRINTMAKING II
(May be repeated for a total of 12 credits with a different process) Prerequisites: 233. Demonstrations and experiments on 212 or 215 or 216 in the intermediate medium. Continuation of studio work in printmaking with concentration in a printmaking process designated by letter as follows: A. Lithography, B. Serigraphy. C. Relief, D. Intaglio.
3 credits

FIGURATIVE SCULPTURE
Prerequisite: 233. Lectures and course exploring the use of the human figure as a sculptural subject. Individual interpretation of the figure using various media and techniques.
3 credits

SCULPTURE II
(May be repeated for a total of nine credits) Prerequisite: 222 or permission. Continuation of 222. Focuses on more advanced techniques. May include fabrication, casting, carving, or assembly.
3 credits

DRAWING III
Prerequisites: 144, 231, 233. Continues concerns of visual organization and technical proficiency with materials beyond 212 and 231, but places more emphasis on use of imagination and development of ideas in drawing.
3 credits

ADVANCED LIFE DRAWING
(May be repeated for a total of six credits) Prerequisites: 233, 231. Studio course in drawing from human figure, individual interpretation of human figure using numerous media and drawing techniques. Emphasis on aesthetic structure and formal realization of personal intention.
3 credits

PAINTING II
(May be repeated for a total of nine credits, but limited to a maximum of three credits in a given medium) Prerequisites: 245, 246 or 247 in the appropriate medium. Continuation of painting with concentration in one medium designated by letter as follows: A. Polymer Acrylic, B. Watercolor, C. Oil, D. Digital.
3 credits

CERAMICS II
Prerequisite: 254. Wheel throwing of both functional and sculptural form. Experiments in glaze chemistry and firing experience with both gas and electric kilns. Emphasis on technique, studio procedures and critical evaluation of each student's progress.
3 credits

METALSMITHING II
(May be repeated for a total of six credits) Prerequisite: 256. Continuation of experiences presented in 256 with further development of skills and expansion of technical proficiency.
3 credits

COLOR IN METALS II
(May be repeated for a total of nine credits) Prerequisite: 256. Continuation of 256. Advanced projects designed to develop the student's aesthetic values in color in metals. Emphasis on individual approach and experimentation.
3 credits

PHOTOGRAPHY II
Prerequisite: 275. Projects utilizing photographic media and tools designed to expand student's awareness of visual qualities and content, both in the subject and photographic image. Student must own or have use of camera with flexible shutter, lens, diaphragm, focus and exposure meter.
3 credits

PHOTOGRAPHIC ARTS
Prerequisite: 375. Photographic media and equipment used experimentally to produce line conversions, high contrast images, tone separations, shadow reversals and other photographic effects.
3 credits

GRAPHIC VIDEO
Prerequisite: Junior standing in graphic design or mass media communication and permission of instructor. Study of applied video technologies as related to visual design principles and visual communication concepts in the design and use of graphic imagery.
3 credits

COMPUTER GRAPHICS FOR ART III
Prerequisites: 285, 121. Advanced computer imaging course with emphasis in three-dimensional modeling and animation. Can be repeated for a total of 9 credits.
3 credits

PACKAGING DESIGN
Prerequisite: 387 or permission of instructor. Synthesis of two- and three-dimensional visual thinking. Research in materials applicable to packaging of various products. Assignment of projects based on student's interest and creative potential. Emphasis on creative and experimental package design.
3 credits

ADVERTISING LAYOUT DESIGN
Prerequisites: 275, 288. Creative exploration of problems in visual merchandising. Projects in development from concept through final comprehensive presentation.
3 credits

ADVERTISING PRODUCTION AND DESIGN
Prerequisites: 387 and either 2240-223 or 375. Continuation of 387. More complex projects with emphasis given to mechanical preparation of finished art for various printing processes.
3 credits

WEAVING II
(May be repeated for a total of nine credits) Prerequisite: 233. Continuation of 233. Development of the techniques of spinning and twill weaving. Emphasis upon other aesthetic considerations or commercial preparation techniques. Depending upon the student's intended application.
3 credits

ART IN THE UNITED STATES BEFORE WORLD WAR II
Prerequisite: 101 or permission of instructor. Consideration of development of art in the United States from the earliest evidence to approximately World War II.
3 credits

SPECIAL TOPICS IN HISTORY OF ART
(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisites: 100, 101 or permission of instructor. Lecture course in which subject is specified each time course is offered. Focuses upon an art movement, time period, the production of a single artist or a specific art medium.
1-3 credits

HISTORY OF ART SYMPOSIUM
(May be repeated for credit when a different subject is indicated) Prerequisite: one art history course beyond 1001 or permission of instructor. Lecture, individual research and evaluation. Group discussion related to a specific time period or to an artistic problem.
3 credits

ADVANCED PRINTMAKING
(May be repeated for a total of 12 credits) Prerequisites: 171, either 245 or 246 or 247, 317 in the appropriate processes, and 375. Lectures, demonstrations and experiments with more sophisticated printmaking processes and concepts. Concentrations in one process designated by letter as follows: A. Lithography, B. Serigraphy. C. Relief, D. Intaglio.
3 credits

ADvanced Sculpture
(May be repeated for a total of nine credits) Prerequisite: 322. Development of individual points of view and sculptural statements.
3 credits

DRAWING IV
(May be repeated for a total of nine credits) Prerequisites: 121, 120, 331. In-depth study of drawing for advanced art student. Emphasis on interpretive and inventive drawing using widest possible range of media and techniques.
3 credits

ADVANCED PAINTING
(May be repeated for a total of nine credits) Prerequisites: 121, 231, 233, 348 in the appropriate medium. Advanced-level painting course. Opportunity to explore polymer acrylic, oil or water-color painting techniques, and experiment with aesthetics of form and style. Concentration in one medium designated by letter as follows: A. Polymer Acrylic, B. Watercolor, C. Oil.
3 credits

ADVANCED CERAMICS
(May be repeated for a total of 15 credits) Prerequisite: 354. Emphasis on refinement of technical proficiency. Concentration in specific medium designated by letter as follows: A. Polymer Acrylic, B. Watercolor, C. Oil.
3 credits

CLAY AND METAL SEMINAR
Prerequisite: permission of instructor. Open formal seminar designed to explore ideas in clay and metal art through reading, discussion and production.
2 credits

ADVANCED METALSMITHING
(May be repeated for a total of 12 credits) Prerequisites: 233, 376 and 3650:137. Photographic media, light and photographic equipment manipulated experimentally to produce creative imagery and metallic sculptures. Student works under guidance of instructor on advanced individual projects.
3 credits

ADVANCED GRAPHIC DESIGN
(May be repeated for a total of nine credits) Prerequisite: 388 or permission of instructor. Study of advanced level design projects under supervision of instructor.
3 credits

IDENTITY AND GRAPHIC SYSTEMS
Prerequisites: 388. Advanced projects in corporate identity, graphic systems design. Problem solving for these specific areas of graphic design within mechanical limitations of production.
3 credits

ILLUSTRATION
Prerequisite: 283 or permission of instructor. Application of painting and drawing skills and aesthetic sensitivity to specific commercial illustration and editing assignments.
3 credits

ADVANCED ILLUSTRATION
(May be repeated for a total of nine credits) Prerequisite: 484 or permission of instructor. Advanced projects designed to tune student's personal aesthetics to communicative imagery.
3 credits

PHOTOCopying
Prerequisite: 432. Advanced research, design, promotional brochures, annual reports and other multimedia communication projects. Emphasis on total design from concept to camera-ready art. Individual approach to communicative graphics stressed. Portfolio development.
4 credits

SPECIAL TOPICS IN STUDIO ART
(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisite: advanced standing and permission of instructor. Group investigation of a particular phase of art not offered by other courses.
3 credits

WORKSHOP IN ARCHITECTURAL PRESENTATIONS A
(May be repeated for credit when a different subject or level of investigation is indicated—490 to maximum of eight credits. 590 to maximum of 12 credits) Prerequisite: advanced standing in art or permission of instructor. Group investigation of a particular phase of art not offered by other courses. In addition to courses in curriculum.
3 credits

ARCHITECTURAL PRESENTATIONS I
Prerequisites: Junior level or permission. Studio practice in architectural design and presentation methods in residential and commercial interiors.
3 credits

ARCHITECTURAL PRESENTATIONS II
Prerequisites: 491/591. Continuation of concepts covered in Architectural Presentations I with increased emphasis on computer aided design and presentation methods in residential and commercial interiors.
3 credits

ART INTERNSHIP/PROFESSIONAL EXPERIENCE
1-2 credits

ART HISTORY INTERNSHIP/PROFESSIONAL EXPERIENCE
(Repeatable for credit. No more than 12 credits of internship may apply toward the elective requirement for completion of any art department major.) Prerequisite: junior level in major program and permission of internship Director. Internship experience serving among the intern on-the-job experience in selected areas of specialization.
1-2 credits

INDEPENDENT STUDIES
(May be repeated for credit when a different subject is indicated) Prerequisites: for art majors: advanced standing in area chosen and permission of instructor. For non-art majors: permission of instructor. Investigation in depth of aesthetic and technical problems within a studio-selected area of specialization. Students present in writing a proposed study plan and time schedule for instructional projects.
1-3 credits

SPECIAL PROBLEMS IN HISTORY OF ART
(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisites: 25 credits in art history and permission of instructor and department head. 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 10 credits will apply toward major.
3 credits

HONORS IN ART
(May be repeated for a total of nine credits) Prerequisites: senior standing in the Honors Program and approval of honors project by faculty preceptor. To be used for research in the Honors Program established by student and his/her adviser(s).
3 credits

HOME ECONOMICS AND FAMILY ECOLOGY

7400:

TEXTILES
Studies of natural and man-made fibers. Emphasis on physical properties, selection and care. Attention given to design and manufacture of textiles.
3 credits

CLOTHING CONSTRUCTION
Studies in theory and methods of garment construction including experience with pattern alterations, diverse textiles and special construction techniques. Two hours lecture, four hours laboratory.
3 credits
424/524 NUTRITION IN THE LIFE CYCLE
Prerequisite: 316 or permission of instructor. Study of the physiological basis for nutritional requirements; interrelating factors which affect growth, development, maturation and nutritional status from conception through the elderly years.
3 credits

426 THERAPEUTIC NUTRITION
Prerequisite: 316, 3190 or 3190S, 3150 or permission. Application of principles of normal and abnormal nutrition to diet in disease. Effects of pathological conditions on planning of modified diets to meet nutrition needs. Procedures for therapeutic diets and interviewing hospitalized patients; limited experience in specialized clinics.
4 credits

428 NUTRITION IN MEDICAL SCIENCE II
Prerequisite: 326. Emphasizing nutritional implications of more complex metabolic and pathological conditions as well as nutrition support strategies on current issues or in selected areas. A study of the sociocultural factors that shaped their stylistic and technical development.
5 credits

429 NUTRITION IN MEDICAL SCIENCE II — CLINICAL
Prerequisites: 326. CUP students only; corequisite: 428 Clinical experience in hospitals; application of principles of nutritional care learned in 428.
3 credits (credithon/credit)

430 COMPUTER-ASSISTED FOOD SERVICE MANAGEMENT
Use of computer programs in application of management concepts for food service systems.
3 credits

431/531 HISTORY OF TEXTILES AND FURNISHINGS
Prerequisites: 7400/121, 126. Survey of textiles and furnishings from antiquity through the 20th Century with emphasis on the sociocultural factors that shaped their stylistic and technical development.
3 credits

432/532 INTERIOR TEXTILES AND PRODUCT ANALYSIS
Prerequisites: 158, 339. Examination, evaluation, and analysis of products for interiors with emphasis on trade classifications, selection criteria, economic factors, and legislative concerns.
3 credits

433/533 RESIDENCE DESIGN
Prerequisites: 158, 7100/262. A study of interior design as applied to residential aspects with emphasis on conceptual, analytical, and graphic skills.
3 credits

434/534 COMMERCIAL DESIGN
Prerequisite: 158, 7100/262. A study of interior design as applied to commercial aspects with emphasis on conceptual, analytical, and graphic skills.
3 credits

435/535 PRINCIPLES AND PRACTICES OF INTERIOR DESIGN
Prerequisite: 158 and 423 or 434. Study of the business aspect of interior design: business procedures, manufacturing of home furnishings and principles and psychology of marketing home furnishings.
3 credits

436/536 TEXTILE CONSERVATION
Prerequisites: 121, 123, 317. Principles and practices of textile conservation with emphasis on procedures appropriate for collectors and small historical agencies.
3 credits

437/537 FASHION ANALYSIS
Prerequisite: 339. In-depth study of resources and processes for the analysis and forecasting of fashion trends. Emphasizes fashion theory, its application in fashion forecasting, and influence design patterns.
3 credits

440/540 FAMILY CRISS
Study of family stress and crisis including internal and external variables and their influence on degrees of desorganization, coping and recovery. Includes theory, research and application dimensions.
3 credits

442/542 HUMAN SEXUALITY
Prerequisite: 201 or permission of instructor. Introduction to problems and values. Emphasis is on the role of values in intimate relationships, the diverse dimensions of sexual responsibility.
3 credits

445/545 PUBLIC POLICY AND THE AMERICAN FAMILY
How legislation in such areas as housing, clothing, consumer affairs, family formation and dissolution, resource conservation, child development and health care affects and in some cases, determines the nature, structure and quality of the family as a social institution.
3 credits

446/546 CULTURE, ETHNICITY AND THE FAMILY
Study of the role of culture and ethnicity in adaptation of the family system to environment. Program applications considered.
3 credits

447 SENIOR SEMINAR: CRITICAL ISSUES IN PROFESSIONAL DEVELOPMENT
1 credit
Prerequisites: 147 and senior standing. Consideration of home economics as a profession and its impact on the quality of life for individuals, families and their environments. Analysis of challenges facing the profession and all home economists.
1 credit

448/548 BEFORE AND AFTER SCHOOL CHILD CARE
Study of the development, implementation and evaluation of school-age child-care programs before and after school and vacation periods.
2 credits

449 FLAT PATTERN DESIGN
Prerequisite: 123. Theory and experience in clothing design using flat pattern techniques.
3 credits

450 DEMONSTRATION TECHNIQUES
Prerequisite: 268. Major role: practical experience in organization and presentation of demonstrations. Emphasis on competences in coordination of materials, motion and speech in presentation.
2 credits

451/551 CHILD IN THE HOSPITAL
Prerequisite: 268, comparable course or permission of instructor. Seminar dealing with special needs and problems of hospitalized child and family. Literature related to effects, separation, and developmental and emotional needs of hospital; role of family. Emphasis on role of family in extending the food supply. Clinical and physical and biological effects of processing and storage, on-site tours of processing plants.
4 credits

455/555 PRACTICUM: ESTABLISHING AND SUPERVISING A CHILD-LIFE PROGRAM
Prerequisite: 450/551. Explores procedures for implementing and setting up child-life programs. Critical analysis of currently functioning program.
3 credits

459 MACHINE STITCHERY
Understanding the utilization of the sewing machine as a creative tool. Emphasis on developing the artistic and technical skills necessary for doing embroidery, applique, drawing, quilting, patchwork, cutwork and other related textile arts by machine.
3 credits

460/560 ORGANIZATION AND SUPERVISION OF CHILDREN'S CENTERS
Theory principles and procedures involved in establishing and operating centers for infants, toddlers, preschool and school-age children.
3 credits

470/570 THE FOOD INDUSTRY: ANALYSIS AND FIELD STUDY
Prerequisite: 245. Role of technology in extending the food supply. Chemical, biological and physical and biological effects of processing and storage, on-site tours of processing plants.
3 credits

474/574 CULTURAL DIMENSIONS OF FOOD
3 credits

Graduate Courses

600 EVALUATION OF HOME ECONOMICS LITERATURE
A study of selected literature with emphasis upon evaluation and interpretation techniques.
3 credits

601 FAMILY IN TRANSITION
Overview of family in historical perspective. Effects of social change upon family and emerging family patterns.
2 credits

602 FAMILY IN LIFE-SPAN PERSPECTIVE
Study of individual and family development across the life span. Emphasis on management of available resources, adjustment problems and interpersonal competence. Implications for education, therapy, research and social policy.
3 credits

603 FAMILY: MIDDLE AND LATER YEARS
Study of family patterns and problems during middle and later years of life with emphasis on psychosocial and biological changes and economic and social adequacy. Research and trends in gerontology.
2 credits

605 DEVELOPMENTAL PARENT-CHILD INTERACTIONS
Parent-child interactions. Study of reciprocal interactions formed between parent and child from birth to adulthood. Consideration of cross-cultural studies, historical and social influences and varying family characteristics and structures.
3 credits

607 FAMILY DYNAMICS
Development of techniques in home economics programs utilizing role theory, exchange theory and systems theory as understood through the study of the family across the life cycle.
3 credits

610 CHILD DEVELOPMENT THEORIES
A comparative study of development theories of the child within the family context. Application of the theories to child rearing in the family will be emphasized.
3 credits

616 INFANT AND CHILD NUTRITION
Emphasizes current research trends in physiology of infant and young child in relation to nutritional requirements and feeding practices.
2 credits

624 ADVANCED HUMAN NUTRITION I
Prerequisite: 316 or equivalent. In-depth study of human nutrition emphasizing metabolism, physiological functions, and interrelationships of carbohydrate, protein and lipids and the determinants of human energy requirements.
3 credits

625 ADVANCED HUMAN NUTRITION II
Prerequisite: 324 or equivalent. In-depth study of human nutrition with an emphasis in the utilization, physiological functions and interrelationships of vitamins and minerals.
3 credits
631 PROBLEMS IN DESIGN 1-3 credits
(May be repeated; but no more than 6 credits will apply to M.A.) Prerequisite: written proposal approved by faculty advisor. Individual solution of a specific design problem within the student's area of clothing, textiles, and interior specialization.

632 AMERICAN COSTUME AND TEXTILE HERITAGE 3 credits
Prerequisite: 317. Analysis of American costumes and textiles with emphasis on the cultural events that shaped their unique development.

640 NUTRITION IN DIMINISHED HEALTH 3 credits
An examination of concepts related to nutritional intervention associated with selected pathophysiological and debilitating conditions throughout the life cycle. Emphasis on current literature.

651 FAMILY AND CONSUMER LAW 2 credits
Study of laws which control and protect individuals within family. Emphasis on current trends, legal rulings. Course taught by attorney.

652 PROFESSIONAL PRESENTATION IN HOME ECONOMICS 3 credits
Developing effective home economics professional presentations. Emphasis on visual display, demonstrations, public relations materials, user manuals, conference management, portfolio development, and learning styles.

660 PROGRAMMING FOR CHILD-CARE CENTERS 2 credits
Principles, procedures involved in program development for child-care centers. Examination of current programs available for preschool children. Implications, literary analysis, application, evaluation strength, and direction.

665 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD 3 credits
Analysis of research and theoretical frameworks regarding infant and child development from conception through age five. Implications for guidance and education.

675 SOCIAL PSYCHOLOGY OF DRESS AND THE NEAR ENVIRONMENT 3 credits
The ecosystem will be used as a model for viewing the family as a unit and the relation between familial groups and the environment.

677 INDIVIDUAL INVESTIGATION IN THE HOME ECONOMIES AND FAMILY ECOLOGY 3 credits
Prerequisite: permission of advisor. Individual investigation and analysis of a specific topic in student's area of specialization of interest under direction of a faculty advisor.

695 INTERNSHIP IN HOME ECONOMICS AND FAMILY ECOLOGY 3 credits
Prerequisite: permission of advisor. Community-based experience designed to supplement classroom studies. A student works with agency personnel and clientele in programs designed to meet needs of children and/or families.

696 INDIVIDUAL INVESTIGATION IN HOME ECONOMICS AND FAMILY ECOLOGY 1-3 credits
Prerequisite: permission of advisor. Individual investigation and analysis of a specific topic in student's area of specialization of interest under direction of a faculty advisor.

697 INDIVIDUAL INVESTIGATION IN FAMILY DEVELOPMENT 1-3 credits
Prerequisite: permission of graduate advisor only. Individual pursuit and analysis in specific area of student's interest and design under direction of faculty advisor.

698 INDIVIDUAL INVESTIGATION OF CHILD DEVELOPMENT 1-3 credits
Prerequisite: permission of graduate advisor only. Individual pursuit and analysis in specific area of student's interest and design under direction of faculty advisor.

699 THESIS 5 credits
Prerequisite: permission of advisor. Preparation of thesis pertaining to a selected research project in area of family or child development.

100 FUNDAMENTALS OF MUSIC 2 credits
Introduction to basic notation and development of functional music reading and keyboard skills. Conducted in electronic keyboard laboratory with computer-assisted instruction available. Not for music majors only, with little or no previous musical training.

101 INTRODUCTION TO MUSIC THEORY 2 credits
Designed to correct deficiencies in theory background as determined through department placement testing. Includes classroom instruction and computer-assisted instruction in basic notation, scales, meters, key signatures, ear training, and basic familiarity with the keyboard. Credit not applicable toward music degree.

103 TRENDS IN JAZZ 2 credits
An overview of the first 100 years of jazz music with emphasis on major figures and styles central to the development of jazz. The course is specifically designed for the non-music major.

104 CLASS PIANO I 2 credits
Prerequisite: 101 or permission of instructor. Designed for student with no previous keyboard experience to learn rudimentary keyboard skills such as playing scales, chords, arpeggios and harmonic, and melodic patterns as well as simple music.

105 CLASS PIANO II 2 credits
Prerequisite: 104 or permission of instructor: continuation of work begun in 104.

106 CLASS VOICE I 2 credits
Prerequisite: 101 or permission of instructor. Minimum memorization and solo singing requirement; seven songs. Voice literature emphasis: folk songs, ballads, spirituals, sacred songs and easy art songs in English.

107 CLASS VOICE II 2 credits
Prerequisite: 107. Minimum memorization and solo singing requirement: eight songs. Vocal literature emphasis: old Italian and English songs, art songs in English or foreign language if student is conversant with the language.

110 CLASS GUITAR FOR NON-MUSIC MAJORS 1 credit
Prerequisite: permission of instructor. Introduction to the guitar, its repertoire and techniques. Basic classical techniques and music reading, strumming, finger-picking, accompaniment patterns, and chordal and harmonic styles will be covered.

151.2 THEORY I, II 3 credits each
Sequences: Prerequisite: 101 or permission of instructor. Study and creative use of elements of music: investigation of music of major composers of classic, and romantic eras, introduction to earlier musical practices and contemporary music.
351,2 MUSIC HISTORY I, II 3 credits each
Sequential. Prerequisites: 152, 155. Development of music from ancient to modern times; scores, recordings and live performances as illustrative material.

353 ELECTRONIC MUSIC (May be repeated for a total of six credits) Prerequisite: 232. Theory of electronically-generated sound and practice of electronic music composition. Emphasis is on developing practical understanding of the components of the voltage-controlled studio.

356 MUSIC IN THE TEACHING OF RETARDED AND HANDICAPPED PEOPLE 2 credits
Prerequisite: permission of instructor. Study of application of music to needs of the special person in public/ private school, clinical settings.

358 FUNCTIONAL CLASS GUITAR 2 credits
Prerequisite: knowledge of music rudiments and permission of instructor. Provides student in music education with basic rudiments of guitar playing as related to use in classroom.

361 CONDUCTING Prerequisite: 152. Study and practice of conducting techniques, beat patterns, fermata, tempo and dynamic changes, attacks and release, score reading.

363 CHORAL ARRANGING Prerequisite: 252. Techniques for the analysis of musical scores from the 20th Century. Required of a theory-composition major.

365 SONG LITERATURE Prerequisite: 252 or permission. Exposes student systematically to vocal literature, aiding in their ability to distinguish between various periods and styles of music through recordings and class participation.

368 GUITAR STYLES 2 credits
Prerequisite: 200. Performance level or permission of instructor. Techniques involved in performing musical styles other than those in classical guitar. Included are stylistic qualities such as bluegrass, country rock, and rock, as well as flamenco, folk, popular and jazz.

371 ANALYTICAL TECHNIQUES Prerequisite: 252. Techniques for analysis of musical score from all eras of Western music history, with major emphasis on works of Baroque, Classical and Romantic periods.


407 JAZZ ARRANGING AND SCORING 2 credits
Prerequisite. 454 or permission of instructor. Study of jazz instrumentation from small groups to large ensembles.

451/511 INTRODUCTION TO MUSICOLOGY 2 credits
Prerequisite: 352. Comparative musicology: acoustics, psychology and physiology of music; music history; theory of music theory, historical musicology.

452 COMPOSITION 2 credits
Prerequisite: 252 or permission of instructor. Study and creative use of major styles and idioms of musical composition; emphasis on 20th-Century techniques.

453/553 MUSIC SOFTWARE SURVEY AND USE Prerequisite: 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 chương program.

454 ORCHESTRA 2 credits
Prerequisite: 252. Theory of instrumentation ranging from small ensembles to large orchestra.

455/555 ADVANCED CONDUCTING: INSTRUMENTAL 2 credits
Prerequisites: 352 and 454. Baton techniques and problems relating to practice, reading and preparation of scores; organization of orchestra and band, problems in programming and practice conducting large instrumental ensembles.

456/556 ADVANCED CONDUCTING: CHORAL Prerequisite: 351.1 or equivalent. Adaptation of basic conducting techniques to the choral ensemble, including leadership, error detection, tonal development, stylistic accuracy and analysis.

457/557 REPertoire AND PEDAGOGY: ORGAN Prerequisite: permission of instructor. Survey of organ literature of all eras and styles, and of methods of teaching organ, applying principles to literature.

458/558 REPertoire AND PEDAGOGY: STRING INSTRUMENTS Prerequisite: permission of instructor. Study of the four bowed string instruments and their teaching and close relationship. Despite obvious difference in physical application of cella and bass from viola and viola, methods of bowing, sound production and bowing are closely related. Application of the instruments to solo, chamber and orchestral playing.

457/567 GUITAR PEDAGOGY 2 credits
Prerequisite: permission of instructor. A systematic analysis of prevailing schools of guitar pedagogy. Sound production physiology; methods and books and special problems in teaching addressed.

468/568 GUITAR ARRANGING 2 credits
Prerequisite: permission of instructor. After comparative analyses of selected examples, students make their own solo guitar arrangements of works written for other solo instruments and ensembles.

469/569 HISTORY AND LITERATURE OF THE GUITAR AND LUTE 2 credits
Prerequisite: permission of instructor. Study of plucked, fretted, string instruments from the 14th Century to the present: construction, notation, literature and performance practices. Modern editions and recordings evaluated.

471 COUNTERPOINT Prerequisite: permission of instructor. Designed to give student of theory-composition necessary knowledge and skills for understanding contrapuntal practices and procedures; emphasis on principle of combined series.

472 ADVANCED ORCHESTRA 2 credits
Prerequisite: 454. Study of techniques of orchestral style as found in major works from classical orchestra of Haydn and Mozart through modern orchestra of Stravinsky, Bartok, Berg and Schoenberg.

490/590 WORKSHOP IN MUSIC 1-3 credits
Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate students must fulfill all additional requirements.

491 SPECIAL TOPICS IN MUSIC (May be repeated for a total of four credits) Group project related to a specific phase of music; experimental course topics designed and implemented according to student interest. For elective credit only.

492 SENIOR SEMINAR 1 credit
Restricted to students enrolled in Student Teaching in Music. For music education majors: certification, contracts, benefits, job market prospects and student teaching experience sharing.

497 INDEPENDENT STUDY IN MUSIC 2 credits
May be repeated for a total of four credits. Prerequisites: seniors and permission of department head. Music major only. Independent study under supervision of specially selected faculty members in subject area bearing on student's own goals.

498 SENIOR HONORS PROJECT MUSIC 1-3 credits
May be repeated for a total of six credits. Individually designed project demonstrating scholarship, analysis, advanced musicianship, research and/or creativity according to student interest. Restricted to University honors music student.

Graduate Courses

526 GRADUATE MUSIC THEORY REVIEW 2 credits
Prerequisite: Undergraduate music theory equivalent to four semesters Review of basic music theory concepts. Coverage includes the chromatic harmony vocabulary of the 18th, 19th, and 20th centuries.

627 GRADUATE MUSIC HISTORY REVIEW 2 credits
Prerequisite: Graduate 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.

601 CHORAL LITERATURE 2 credits
Prerequisite: permission of instructor. Study in depth of style, structure, technical demands, and performance practices of major works found in masterworks by great choral composers of all centuries.

604 DEVELOPMENT OF OPERA 2 credits
Prerequisite: permission of instructor. Growth and development of opera from 1600 to present. Includes detailed examination of stylistic and structural changes as well as performance practices.

605 SEMINAR 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 areas of special interest.

606 PEDAGOGY OF JAZZ IMPROVISATION 3 credits
A study of the methods and materials as they relate to the teaching of jazz improvisation.

611 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION 3 credits
Prerequisite: permission of instructor. Study of basic philosophical, historical, sociological and psychological concepts around which public school music programs function.

612 PRACTICES AND TRENDS IN MUSIC EDUCATION 3 credits
Prerequisite: permission of instructor. In-depth exploration of innovative practices and trends in music education, studies on research and practice related to prevailing situations in public school programs.

613 INSTRUCTIONAL PROGRAMMING IN MUSIC FOR THE MICROCOMPUTER 3 credits
Prerequisite: CS/53. 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 2 credits
Prerequisite: permission of instructor. Study and application of principles of music evaluation achievement and content evaluation. Elementary statistics for music test interpretation presented.

615 MUSICAL STYLES AND ANALYSIS I 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from Gregorian chant through music of Palestrina, Gesualdo and others of late Renaissance.

616 MUSICAL STYLES AND ANALYSIS II 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from early Beethoven to Monn/ever through early Beethoven.

617 MUSICAL STYLES AND ANALYSIS III 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of late Beethoven through Mahler and Strauss.

618 MUSICAL STYLES AND ANALYSIS IV 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music in 20th Century.

619 THEORY AND PEDAGOGY 2 credits
Prerequisite: permission of instructor. Methodology of theory teaching in 20th Century focuses on differing philosophies of approach to theory instruction as noted from texts on subject. Recent innovations and techniques of teaching, such as programmed materials, computer-assisted instruction studied.

620 COMPUTER ANALYSIS IN MUSIC 2 credits
Prerequisite: minimum of one course in the 615-616 series. A systematic study of analytic techniques, how music which makes up the computer. Hands-on experiences with music encoding, card manipulation, interactive systems and program writing as related to music analysis.

621 MUSIC HISTORY SURVEY: MIDDLE AGES AND RENAISSANCE 2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis at all aspects of music of Middle Ages and Renaissance. Research and writing in areas of special interest.

622 MUSIC HISTORY SURVEY: BAROQUE 2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of Baroque music; study in depth of specific examples, from recordings, scores, and live performances, composition and synthesis of approaches normal to study of music history; selected readings related to student's particular fields of interest; project papers.

623 MUSIC HISTORY SURVEY: CLASSIC AND ROMANTIC 2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of classical and romantic music; study in depth of specific examples, through recordings, scores and live performances, composition 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: 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, composition and synthesis of approaches normal to study of music history; selected readings and project papers.
### MUSICAL ORGANIZATIONS

**7510:**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Description</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>625</td>
<td>GRADUATE BIBLIOGRAPHY AND RESEARCH IN MUSIC</td>
<td>2 credits</td>
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<tr>
<td>630</td>
<td>TEACHING AND LITERATURE: BRASS INSTRUMENTS</td>
<td>2 credits</td>
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<tr>
<td>631</td>
<td>TEACHING AND LITERATURE: WOODWIND INSTRUMENTS</td>
<td>2 credits</td>
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<tr>
<td>632</td>
<td>TEACHING AND LITERATURE: PERCUSSION INSTRUMENTS</td>
<td>2 credits</td>
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<tr>
<td>633</td>
<td>TEACHING AND LITERATURE: PIANO AND HARPSCORD</td>
<td>2 credits</td>
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<tr>
<td>647</td>
<td>MASTER'S CHAMBER RECITAL</td>
<td>1 credit</td>
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<tr>
<td>666</td>
<td>ADVANCED SONG LITERATURE</td>
<td>3 credits</td>
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<tr>
<td>697</td>
<td>ADVANCED PROBLEMS IN MUSIC</td>
<td>1.5 credits</td>
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<td>698</td>
<td>GRADUATE RECITAL</td>
<td>1 credit</td>
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<tr>
<td>699</td>
<td>THESIS RESEARCH/RECITAL DOCUMENT</td>
<td>4 credits</td>
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**Graduate Courses**

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<tbody>
<tr>
<td>602</td>
<td>AKRON SYMPHONY CHORUS</td>
<td>Open to University and community members by audition. Prospective members should contact the School of Music two weeks before semester begins. Performs with Akron Symphony Orchestra.</td>
<td>1 credit</td>
</tr>
<tr>
<td>603</td>
<td>UNIVERSITY SYMPHONY ORCHESTRA</td>
<td>Membership by audition. Organization devoted to study of orchestral literature. Full-length concerts as well as Special University appearances. Major conducted ensemble.</td>
<td>1 credit</td>
</tr>
<tr>
<td>604</td>
<td>UNIVERSITY BAND</td>
<td>Includes Symphony Band/Wind Ensemble and Concert Band as major conducted ensembles. Marching Band (fall semester only) and Varsity Band. Full-length concert as well as University appearances. Major conducted ensemble.</td>
<td>1 credit</td>
</tr>
<tr>
<td>605</td>
<td>VOCAL CHAMBER ENSEMBLE</td>
<td>Open to those enrolled in applied voice study. Coaching and rehearsal of solo and ensemble literature for voices from operatic, oratorio and lieder repertories.</td>
<td>1 credit</td>
</tr>
<tr>
<td>606</td>
<td>BRASS ENSEMBLE</td>
<td>Involves three hours a week of concentrated study. Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>607</td>
<td>STRING ENSEMBLE</td>
<td>Involves three hours a week of concentrated study. Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>608</td>
<td>OPERA WORKSHOP</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
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<tr>
<td>609</td>
<td>PERCUSSION ENSEMBLE</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
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<tr>
<td>610</td>
<td>WOODWIND ENSEMBLE</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
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<tr>
<td>611</td>
<td>CHAMBER ORCHESTRA</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
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<tr>
<td>612</td>
<td>JAZZ ENSEMBLE</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
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<tr>
<td>613</td>
<td>GUITAR ENSEMBLE</td>
<td>Membership by audition. Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
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**Required Courses**

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<tr>
<td>116</td>
<td>GUITAR ENSEMBLE</td>
<td>Membership by audition. Provides experience in conducted ensemble performance for guitarists. Major conducted ensemble.</td>
<td>1 credit</td>
</tr>
<tr>
<td>117</td>
<td>COLLEGIUM MUSICUM</td>
<td>Membership by audition. Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>118</td>
<td>SMALL ENSEMBLE — MIXED</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>119</td>
<td>UNIVERSITY CHORAL UNION</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>120</td>
<td>CONCERT CHOIR</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>121</td>
<td>UNIVERSITY SINGERS</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>122</td>
<td>FRESHMAN CHOIR</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>123</td>
<td>MADRIGAL SINGERS</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
<tr>
<td>124</td>
<td>OPERA CHORUS</td>
<td>Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
<td>1 credit</td>
</tr>
</tbody>
</table>
APPLIED MUSIC

7520:

A student must contact the School of Music and consult with the applied music instructor before registering for applied music.

A music major must perform annually before an applied music jury on each instrument studied privately for credit. The non-music major studying applied music will appear before a jury at the discretion of the private teacher.

Credit is earned on the basis of two credits per semester for one 30-minute lesson per week and 90 minutes practice per day. Enrollment may be repeated each semester for credit.

021-021 APPLIED MUSIC FOR NONMAJORS 2-4 credits each

For a student below minimum level of performance skills expected for credit at 100 level or above. Designed for those with limited background in applied study who wish to take lessons for their own pleasure, satisfaction and/or elective credit in non-music programs. Not to be counted for credit in any music major programs of study.

021 PERCUSSION
022 CLASSICAL GUITAR
023 HARP
024 VOICE
025 PIANO
026 ORGAN
027 VIOLIN
028 VIOLA
029 CELLO
030 STRING BASS
031 TRUMPET/CORNET
032 FRENCH HORN
033 TROMBONE
034 BARITONE
035 Tuba
036 FLUTE/PICCOLO
037 OBOE/ENGLISH HORN
038 CLARINET OR BASS CLARINET
039 BASSOON/CONTRABASSOON
040 SAXOPHONE
041 HARP/CHORD
042 COMPOSITION
043 JAZZ PERCUSSION
044 JAZZ GUITAR
045 JAZZ ELECTRIC BASS
046 JAZZ PIANO
047 JAZZ TRUMPET
048 JAZZ TROMBONE
049 JAZZ SAXOPHONE
050 JAZZ COMPOSITION
051 JAZZ VOCAL STYLES

Graduate Courses

052-056 GRADUATE STUDY IN APPLIED MUSIC

(1-8 credits each) May be repeated. Prerequisites: 7500:522 and permission of instructor. 7500:452 recommended. Private instruction in composition, primarily for student whose major is theory-composition.

161-261-361-461 JAZZ PERCUSSION
162-262-362-462 JAZZ GUITAR
163-263-363-463 JAZZ ELECTRIC BASS
164-264-364-464 JAZZ PIANO
165-265-365-465 JAZZ TRUMPET
166-266-366-466 JAZZ TROMBONE
167-267-367-467 JAZZ SAXOPHONE
168-268-368-468 JAZZ COMPOSITION
169-269-369-469/569 JAZZ VOCAL STYLES
639 BASSOON OR CONTRABASSOON
640 SAXOPHONE
641 HARPSCORD
642 APPLIED COMPOSITION
661 JAZZ PERCUSSION
662 JAZZ GUITAR 2-4 credits
(May be repeated)普erequisite: undergraduate degree with a major in music. Private instruction in composition offered primarily for a student mapping in composition. Another student may be approved by composition faculty.

**COMMUNICATION**

<table>
<thead>
<tr>
<th>7600:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>102 SURVEY OF MASS COMMUNICATION</strong> 3 credits</td>
</tr>
<tr>
<td>Considers written field of contemporary American mass communication. Presents and explains functions of agencies through which news, views and entertainment reach the general public.</td>
</tr>
<tr>
<td><strong>115 SURVEY OF COMMUNICATION THEORY</strong> 3 credits</td>
</tr>
<tr>
<td>Presents models of major forms of speech communication and discusses elements of models, their interaction and their function in the human communication system.</td>
</tr>
<tr>
<td><strong>200 CAREERS IN COMMUNICATION</strong> 1 credit (credit/no credit)</td>
</tr>
<tr>
<td>A survey of career opportunities in the communication field. Outside speakers; field trips.</td>
</tr>
<tr>
<td><strong>201 NEWS WRITING</strong> 3 credits</td>
</tr>
<tr>
<td>Preerequisite: Ability to type. Writing of news stories; applying theory through discussions, illustrative material, actual writing for publication.</td>
</tr>
<tr>
<td><strong>204 EDITING</strong> 3 credits</td>
</tr>
<tr>
<td>Preerequisite: 201. Copyreading, headline writing, proofreading, makeup, type and typography, printing machines and processes, newspaper methods and systems.</td>
</tr>
<tr>
<td><strong>205 FEATURE WRITING</strong> 3 credits</td>
</tr>
<tr>
<td>Prequisite: 201. Short newspaper and magazine articles, preparation of articles for publication, human interest situations, extensive writing with class discussion.</td>
</tr>
<tr>
<td><strong>225 LISTENING</strong> 1 credit</td>
</tr>
<tr>
<td>Techniques and approaches involved in understanding the listening process and practice of listening improvement techniques.</td>
</tr>
<tr>
<td><strong>228 INTERVIEWING</strong> 1 credit</td>
</tr>
<tr>
<td>A concentrated study of the principles of interviewing and application of those principles of varied settings (especially those crucial to media study).</td>
</tr>
<tr>
<td><strong>227 NONVERBAL COMMUNICATION</strong> 1 credit</td>
</tr>
<tr>
<td>Focused study of the principal aspects of nonverbal communication in public, group and interpersonal settings.</td>
</tr>
<tr>
<td><strong>230 WZIP-FM</strong> 1 credit</td>
</tr>
<tr>
<td><strong>231 FORENSICS</strong> 1 credit</td>
</tr>
<tr>
<td><strong>233 BUCHETELITE</strong> 1 credit</td>
</tr>
<tr>
<td><strong>233 TEL-BUCH</strong> 1 credit</td>
</tr>
<tr>
<td><strong>235 INTERPERSONAL COMMUNICATION</strong> 3 credits</td>
</tr>
<tr>
<td>Theory and practice in interpersonal communication concepts and principles. Special topics in communication apprehension, assertive communication, communication dyads and triads, and transactional communication.</td>
</tr>
<tr>
<td><strong>245 ARGUMENTATION</strong> 3 credits</td>
</tr>
<tr>
<td>Study of process of developing, presenting and defending inferences and arguments in oral communication setting. Includes study and practice of evidence, reasoning, case construction, refutation and rebuttal.</td>
</tr>
<tr>
<td><strong>255 PERSUASION</strong> 3 credits</td>
</tr>
<tr>
<td>Emphasis on understanding persuasion theory and practice. Includes information analysis of motivational appeals and introduction to propaganda analysis.</td>
</tr>
<tr>
<td><strong>270 VOICE TRAINING FOR MEDIA</strong> 2 credits</td>
</tr>
<tr>
<td>Safe and effective uses of the vocal instrument in its specific application to radio, television and films.</td>
</tr>
<tr>
<td><strong>280 MEDIA PRODUCTION TECHNIQUES</strong> 3 credits</td>
</tr>
<tr>
<td>Introduction to production techniques used in the mass communication covers sound, image, lighting, fundamentals of conveying messages on slide, film and video.</td>
</tr>
<tr>
<td><strong>282 RADIO PRODUCTION</strong> 3 credits</td>
</tr>
<tr>
<td>Study of radio production techniques and the functional operation of AM and FM radio stations; includes practical production experience in studio.</td>
</tr>
<tr>
<td><strong>283 TELEVISION PRODUCTION</strong> 3 credits</td>
</tr>
<tr>
<td>Prerequisite: 280. Function, structure and influence of television as communication medium with practical production experience in studio.</td>
</tr>
<tr>
<td><strong>288 FILM PRODUCTION</strong> 3 credits</td>
</tr>
<tr>
<td>Prerequisite: 280. Techniques, limitations and potentials of film production. A student learns script writing, directing, lighting and make-up; practical production experience in studios and on location.</td>
</tr>
<tr>
<td><strong>301 ADVANCED NEWS WRITING</strong> 2 credits</td>
</tr>
<tr>
<td>Prequisite: 201. Acquaints student with the functions of public relations in our society and explains basic theories and principles involved in publicity writing and placement.</td>
</tr>
</tbody>
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*Total repeats not to exceed eight credits.
(Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)

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**309 PUBLICATIONS PRODUCTION** 3 credits
Prerequisite: 201. Fundamental course for person engaged in production of publications. Consideration of variety of processes for reproducing printed work including photoengraving, lithography, letterpress, linotype, mimeographing.

**325 INTERCULTURAL COMMUNICATION** 3 credits
Study of effect on oral communication process of existence of cultural barriers. Includes study of verbal and nonverbal communication in transracial, informal international and diplomatic communicative settings.

**335 ORGANIZATIONAL COMMUNICATION** 3 credits
Study of large organizational communication principles and practices. Group projects related to several communication problems inherent to organizations inside communication flow, communication breakdown, incoming information to organization.

**344 PUBLIC DECISION MAKING** 3 credits
Discussion of basic considerations, approaches and techniques involved in understanding and participating in the communication processes essential to public decision making.

**345 BUSINESS AND PROFESSIONAL SPEAKING** 3 credits
Prerequisite: 1100 or 106. Practical improvement in speaking skills used in business settings.

**355 FREEDOM OF SPEECH** 3 credits
Discussion and analysis of the Constitution's free speech guarantee; contemporary issues in freedom of communication, role of the media in free speech issues.

**361 AUDIO RECORDING TECHNIQUES** 3 credits
Prerequisite: 280. Principles of electronic recording; studio and field camera operation; studio and field location lighting practice.

**383 ADVANCED TELEVISION PRODUCTION** 3 credits
Prerequisites: 280 and permission. Television production operations in a studio environment. Practice producing and directing. Studio equipment operation. Lab fee.

**384 COMMUNICATION RESEARCH** 3 credits
Prerequisites: 102, 115. Fundamental concepts and methods of survey research, and the application and interpretation of survey data in communication and in media operations.

**385 AMERICAN FILM HISTORY: THE BEGINNING TO 1945** 3 credits
Acquaints undergraduate student with historical developments of film and film concepts; ends with films of 1945.

**386 AMERICAN FILM HISTORY: 1945 TO THE PRESENT** 3 credits
Continuation of student's survey of film history and film concepts begun in 385.

**387 RADIO AND TV WRITING** 3 credits
Practical application of script writing principles and techniques used in writing scripts for commercials, announcements, comedy and documentaries.

**388 HISTORY AND STRUCTURE OF BROADCASTING** 3 credits
Growth of broadcasting in America; historical evolution of approaches to programming, news and financing of broadcasting operations.

**395 RADIO STATION PROGRAMMING AND OPERATIONS** 3 credits
History and development of radio programming from early formation to present, nature, structure and function of educational and commercial radio broadcasting.

**396 TELEVISION STATION PROGRAMMING AND OPERATIONS** 3 credits
Examines the operations and programming processes of a broadcast station; programming philosophies, broadcast schedules, feature and syndication acquisition, local productions, issues of staffing and funding, laboratory exercises.

**400/500 HISTORY OF JOURNALISM IN AMERICA** 3 credits
A review and analysis of the historical evolution of journalism in America, focusing primarily on newspapers, magazines, radio, television.

**403 COMMUNICATION IN PUBLICATIONS** 3 credits
Prerequisite: 309. Selected communication theories used to analyze and implement effective public relations programs with emphasis placed upon research, planning, promotional messages and evaluation of program.

**405 MEDIA COPYWRITING** 3 credits
Prerequisite: 309. Selected communication theories and research techniques used to plan, write and analyze commercial messages. Emphasis will be placed on selection of audience, medium, appeal, writing style and evaluation of efforts.

**650 INDEPENDENT STUDY** 1-12 credits
(May be repeated for a total of 12 credits) Prerequisite: permission of faculty. Directed independent readings, research, projects and productions. Written proposal must be submitted before permission is granted. Appropriate documentation of work required.

**450 SPECIAL TOPICS IN COMMUNICATION** 3 credits
(May be repeated for a total of nine credits) Special interest topics in mass communication, journalism, or communication, supplementing courses listed in University Bulletin. See department for current listing of offerings.

**454/654 THEORY OF GROUP PROCESSES** 3 credits
Group communication theory and conference leadership as applied to individual projects and seminar reports.

**463/563 CORPORATE VIDEO DESIGN** 3 credits
Prerequisites: 201, 202. Client contact, analysis of production problems, design and writing of scripts for promotion, training, and news in corporate and health service settings.

**464/564 CORPORATE VIDEO MANAGEMENT** 3 credits
Prerequisite: 463. Budgeting for individual productions and production facilities, scheduling, supervising, crew management, corporate and health service media facilities.

**466/566 AUDIO AND VIDEO EDITING** 3 credits
Prerequisite: 280. Theory and practice of editing and video for broadcast and corporate applications.

**467/567 DIRECTING VIDEO PRODUCTIONS** 3 credits
Prerequisite: 280 and permission. Script analysis, casting, principles of directing, directing nonprofessional talent. Laboratory exercises.

**470 ANALYSIS OF PUBLIC DISCOURSE** 3 credits
Identifies principal textual and contextual elements of public discourse and presents various theories and models to be applied in studying rhetorical acts.
COMMUNICATIVE DISORDERS
7700:

100 MANUAL COMMUNICATION
Prerequisites: 271 and 2210/104 or permission of instructor. Study of different communication systems employed by the deaf, characteristics, similarities and differences. Introduction to American as a language.

110 INTRODUCTION TO DISORDERS OF COMMUNICATION
Overview of various types of speech disorders, their incidence, etiology and characteristics. Basic concepts and principles underlying speech pathology.

111 INTRODUCTION TO PHONOLOGY
Introduction to international phonetic alphabet, and overview of articulatory phonetics.

120 INTRODUCTION TO AUDIOLOGY/AURAL REHABILITATION
(Not open to communicative disorders major) Introduction to field of audiology including physics of sound, anatomy and physiology of auditory system, measurement of hearing impairment, nature and causes of hearing disorders and habilitation of persons with hearing impairment.

121 PSYCHOLOGICAL ASPECTS OF DEAFNESS
Prerequisite: 120. The effects of deafness on the emotional, social, motor and intellectual development of the individual, the effects of deafness on interpersonal relationships.

130 BASES AND STRUCTURE OF LANGUAGES
Introduction to linguistic bases of speech and language: phonological, morphological, syntactic and semantic. Social and psychological variables in communicative process as applied to therapeutic environment presented.

140 INTRODUCTION TO HEARING SCIENCE

150 MANUAL COMMUNICATION II
Prerequisite: 100. Further study of American as a language. Practice in modifications which influence sign formation; more meaningful units and constructions; further similarities and differences among other signing systems.

7800: 600 COMMUNICATION STUDIES
Prerequisite: 140. Introduction to psychoacoustic principles which underlie aural rehabilitation. Role of speech, hearing and deaf children. Principles and techniques in language assessment and instruction will be covered.

223 SPEECH AND LANGUAGE OF THE DEAF CHILD AND ADULT
4 credits (Not open to communicative disorders major) Prerequisite: 222. Introduction to acquisition of speech and language hearing and prelingually deaf children. Principles and techniques in language assessment and instruction will be covered.

230 SPEECH AND LANGUAGE DEVELOPMENT
Prerequisite: 130 or permission. Study of language development including acquisition of comprehension and production of phonology, syntax and semantics. Approaches to use of language in learning and thinking.

240 AURAL REHABILITATION
1 credit Prerequisite: 140. Introduction to philosophical and method of aural rehabilitation for the deaf and hearing impaired. Methods of speech reading, auditory training, speech comprehension, hearing aid and combined visual and auditory approaches.

241 PRINCIPLES OF AUDIOMETRY
3 credits Prerequisite: 140. Introduction to psychoacoustic principles which underlie basic audiological test; principles of speech audiology, masking and impedance audiometry.

250 OBSERVATION AND CLINICAL METHODS
3 credits Concepts 240 or 220. Introduction to clinical procedures, observation and structure necessary for successful therapy; observation of therapy in different settings.

271 LANGUAGE OF SIGNS I
1 credit Introduction and receptive skills in manual communication; introduction to various sign systems; philosophy of total communication and orientation to aspects of deafness; conversational sign language and developing speed and comprehension of fingerspelling skills. Laboratory.
**321 COMMUNICATIVE DISORDERS I**
- Prerequisites: 101, 201.
- Study of disorders of articulation, voice and stuttering including etiology, symptomatology, evaluation and therapeutic procedures.

**322 COMMUNICATIVE DISORDERS II**
- Prerequisites: 101, 310/310A, 290, 500.
- Study of organically based speech disorders: cleft palate, cerebral palsy, aphasia and dysarthria including etiology, symptomatology, evaluation and therapeutic procedures.

**330 LANGUAGE DISORDERS**
- 4 credits
- Prerequisite: 230. Study of phonologic, developmental, and concomitant rehabilitation of speech disorders.

**340 AUDILOGIC EVALUATION**
- 2 credits
- Prerequisite: 241. "Test battery" approach to audition explored; techniques of case finding and handling of difficult-to-test cases; competency with all the battery required.

**350 CLINICAL PRACTICUM: ARTICULATION/PHONETICS**
- 1 credit
- Prerequisite: 240 or permission. Supervised clinical practicum in articulation/phonetics. Emphasizes therapy techniques, diagnostic techniques, and report preparation.

**351 CLINICAL PRACTICUM: LANGUAGE**
- 1 credit

**352 CLINICAL PRACTICUM: AURAL REHABILITATION**
- 1 credit
- Prerequisite: 240. Supervised clinical practicum in hearing rehabilitation. Emphasizes therapy procedures, diagnostic techniques, and report preparation.

**370 LANGUAGE OF SIGNS II**
- 1 credit
- Prerequisite: 271 or permission of instructor. Advanced work in signs and finger-spelling with emphasis on additional sign vocabulary acquisition and development of expressive and receptive skills. Stress on contactual skill building in conversing with deaf adults.

**430/530 ASPECTS OF NORMAL LANGUAGE DEVELOPMENT**
- 3 credits
- Prerequisite: 271 or permission of instructor. Introduction to differential of communicative disorders. Emphasizes taking case histories, and administration and interpretation of clinical procedures and report preparation.

**451 CLINICAL PRACTICUM: DIAGNOSTIC ACOUSTOLOGY**
- 1 credit
- Prerequisite: 270 or permission of instructor. Supervised clinical practicum in hearing diagnostics. Emphasizes diagnostic procedures and report preparation.

**460/560 SPEECH-LANGUAGE AND HEARING DISORDERS IN THE PUBLIC SCHOOLS**
- 2 credits
- Prerequisite: 271 or permission of instructor. A study of the diagnosis and remediation of speech disorders in public school systems.

**461/561 ORGANIZATION AND ADMINISTRATION: PUBLIC SCHOOL SPEECH-LANGUAGE AND HEARING PROGRAMS**
- 2 credits
- Prerequisite: 271 or permission of instructor. An analysis of the organization and administration of the speech-language and hearing programs in public schools.

**480 SEMINAR IN COMMUNICATIVE DISORDERS**
- 2 credits
- Prerequisite: senior standing. Provides a vehicle for detailed study of discussion of various communicative disorders.

**481 SPECIAL PROJECTS: COMMUNICATIVE DISORDERS**
- 1-3 credits
- Prerequisite: 300. May be repeated for a total of six credits. Prerequisite: permission of instructor. Individual or group projects related to any of the problems of communicative disorders.

**483/583 COMMUNICATION DISORDERS: GERIATRIC POPULATION**
- 3 credits
- Prerequisite: 271 or permission of instructor. Examination of communicative disorders that exist in geriatric population. Focus on etiology, symptomatology and concomitant rehabilitative procedures. Designed for a student interested in the aging population.

**485/585 COMMUNICATION DISORDERS IN THE DEVELOPMENTALLY DISABLED**
- 4 credits
- Prerequisite: permission of instructor. Examination of communicative disorders in intellectually and/or neurologically delayed children.

**490/590 WORKSHOP: COMMUNICATIVE DISORDERS**
- 1-3 credits
- Prerequisite: 271 or permission of instructor. Group investigation of particular phase of speech pathology and/or audiology not offered by other courses.

**495 INTERNSHIP: SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY**
- 3-6 credits
- Prerequisite: permission of instructor. An experience in speech-language pathology and audiology.

**496 SENIOR HONORS PROJECT: SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY**
- 1-3 credits
- Prerequisite: enrollment in the Honors Program. Senior standing and major in communicative disorders.

### Graduate Courses

**801 ADMINISTRATION AND SUPERVISION IN SPEECH AND HEARING PROGRAMS**
- 4 credits
- Prerequisite: permission of instructor. Organization and management of speech and hearing programs in voluntary and official agencies. Philosophy and methodology in supervision of services.

**810 INSTRUMENTATION IN SPEECH PATHOLOGY AND AUDIOLOGY**
- 2 credits
- Principles and use of clinical and research instrumentation in speech and hearing.

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**601 RESEARCH METHODS IN COMMUNICATIVE DISORDERS I**
- 3 credits
- Introduction to experimental design in field of communicative disorders.

**602 RESEARCH METHODS IN COMMUNICATIVE DISORDERS II**
- 2 credits
- Advanced experimental methods; development of a research study.

**619 COMMUNICATION DISORDERS: ADULT DYSPHONIA AND APHASIA**
- 2 credits
- Development, symptoms, diagnosis and treatment of adult dysphonia and aphasia.

**620 ARTICULATION**
- 2 credits
- Historical background, current theories and research related to articulation and phonology disorders.

**621 COMMUNICATIVE DISORDERS IN CLEFT PALATE**
- 2 credits
- Historical background, current theories and research related to diagnosis and treatment of cleft palate.

**624 APHASIA**
- 2 credits
- Historical background, current theories and research related to etiology, diagnosis and treatment of adult aphasia.

**625 LANGUAGE DEVELOPMENT: NORMAL AND DISORDERED**
- 3 credits
- Survey of research in normal and disordered development of language skills.

**626 VOICE PATHOLOGY**
- 3 credits
- Prerequisite: permission of the instructor. Background and current research related to normal vocal function as well as the etiology, diagnosis and therapy of various disorders of voice.

**627 STUTTERING: THEORIES AND THERAPIES**
- 3 credits
- Reading and discussion of selected theories and therapies.

**628 TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS**
- 2 credits
- (May be repeated for a total of four credits) Prerequisite: permission of director of Speech and Hearing Center.

**629 TOPICS: SPEECH PATHOLOGY AND AUDIOLOGY**
- 2 credits
- Prerequisite: permission of instructor. Selected current topics in clinical and/or experimental area of speech pathology, audiology and language. Emphasis on review of current and historical literature.

**630 LANGUAGE SKILLS IN CHILDREN: ASSESSMENT AND INTERVENTION**
- 3 credits
- Prerequisite: 625 or permission of instructor. Theoretical and applied study of child-language assessment and intervention strategies.

**631 COMMUNICATION DISORDERS: CLOSED HEAD INJURY**
- 3 credits
- Prerequisite: permission of instructor. Components of rehabilitation of those with closed head injuries.

**638 SEMINAR IN LANGUAGE AND SPEECH OF THE HEARING IMPAIRED**
- 2 credits

**639 ADVANCED CLINICAL TESTING**
- 4 credits
- Theoretical basis for pure tone speech tests, masking and acoustic impairment measurements. Review of clinical and current literature relative to above tests.

**640 SPECIAL TESTS/MEDICAL AUDIOLOGY**
- 4 credits
- Prerequisite: 639 or permission of instructor. Underlying psychoacoustic principles of administration and interpretation of audiometric tests. Relationship between otology and audiology; development of clinical audiology in medical environment.

**641 AMPLIFICATION**
- 3 credits
- Prerequisite: 639 or permission of instructor. Components of amplification systems; methods of evaluating hearing aid performance.

**642 REHABILITATION AUDIOLOGY**
- 2 credits
- Prerequisite: 639 or permission of instructor. Clinical techniques of hearing loss in children, techniques for testing preschool children and school-age children and other difficult-to-test clients.

**643 INDUSTRIAL AUDIOLOGY**
- 2 credits
- Prerequisite: 639 or permission of instructor. Theoretical principles of noise measurement and monitoring, and audiologic evaluation of noise-induced hearing loss and acoustic trauma, industrial hearing conservation programs. Occupational Safety and Health Act (OSHA) regulations.

**644 AUDITORY REHABILITATION**
- 4 credits
- Prerequisite: permission of instructor. Review of current methodologies employed in auditory rehabilitation of children and adults, as well as current and potential areas of research.

**645 EVOKE POTENTIALS**
- 2 credits
- Prerequisite: permission of instructor. A study of auditory, visual and somatosensory evoked potentials and their clinical applications in audiology and neuro-otology.

**647 EXPERIMENTAL AUDIOLOGY**
- 2 credits
- Prerequisite: graduate audiology credit or permission of instructor. Principles of psychoacoustics. Review of instrumentation and research techniques. Study of significant literature in the field.

**649 ELECTROHYSTAGMOGRAPHY**
- 2 credits
- Prerequisite: permission of instructor. Study of the anatomy and physiology of the vestibular system; nystagmus; electrophystagmographic (ENG) recording procedures; ENG protocols; interpretation of ENG results.

**650 ADVANCED CLINICAL PRACTICUM: DIFFERENTIAL DIAGNOSIS**
- 1 credit
- Prerequisite: Permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in diagnostic procedures. Includes preparation of reports.

**651 ADVANCED CLINICAL PRACTICUM: VOICE**
- 1 credit
- Prerequisite: 639 or permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in treatment of voice disorders. Includes diagnosis/therapy procedures and preparation of reports.

**652 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/therapy procedures and preparation of reports.

**654 ADVANCED CLINICAL PRACTICUM: DIAGNOSTIC AUDIOLOGY**
- 1 credit
- Prerequisite: Permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in treatment of hearing disorders. Includes diagnosis/therapy procedures and preparation of reports.

**655 ADVANCED CLINICAL PRACTICUM: ARTICULATION**
- 1 credit
- Prerequisite: 321 or permission. (May be repeated for a maximum of six credits.) Supervised clinical practicum in treatment of articulation disorders. Includes diagnosis/therapy procedures and preparation of reports.
SOCIAL WORK

7750:

270 POVERTY IN THE UNITED STATES
Survey of social and personal dimensions of life in the inner city and other areas of poverty in the United States. For person wishing to develop an in-depth understanding and/or intending to work in such areas.

276 INTRODUCTION TO SOCIAL WELFARE
Survey of field of social work, placement of social work profession within human service organizations of United States. Introduction of basic concepts relating to social welfare institutions and social work to society.

401/501 SOCIAL WORK PRACTICE I
Prerequisite: 276 or permission. Development of understanding and practice methods of social work practice. Particularly relating to understanding and working with individuals and families.

402/502 SOCIAL WORK PRACTICE II
Prerequisite: 401 or permission. Development of understanding and practice methods of social work practice. Particularly relating to understanding and working with groups in various settings in our society.

403/503 SOCIAL WORK PRACTICE III
Prerequisite: 402 or permission. Advanced professional social work practice. Principles for the stage, improvisation and basic scene study. Preparation for use of supervision, staff development and program implementation of professional social work practice.

410/510 MINORITY ISSUES IN SOCIAL WORK PRACTICE
Prerequisite: 276 or permission. Analysis of current social work and social welfare theory and policy, setting, issues, developments and programs in society.

411/511 WOMEN'S ISSUES IN SOCIAL WORK PRACTICE
Prerequisite: 276 or permission. Social work practice, knowledge and skills, social welfare institutions and social policy in relation to women's issues and concerns in the United States.

421 FIELD EXPERIENCE SEMINAR
Prerequisite: 401 or permission. Careful examination and integration of academic understanding and professional methodologies from different social work programs.

423/525 SOCIAL WORK ETHICS
Prerequisite: 276 or permission. Social Work Code of Ethics as applied to tasks, problems and issues in social work.

427/527 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT FOR SOCIAL WORKERS
Prerequisite: 427 or permission. Social work perspective on human development across the life cycle. Human diversity approach combined with the needs of total social work students for practice.

430/530 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT FOR SOCIAL WORKERS II
Prerequisite: 427 or permission. Social work perspective on human development across the life cycle. Human diversity approach combined with the needs of total social work students for practice.

440/540 SOCIAL WORK RESEARCH I
Prerequisites for 440 or permission. Social work practitioners role in utilization of scientific method in the conduct of practice and utilization of social work research as found in social work and social science literature for improvement and advancement of social work practice.

441/541 SOCIAL WORK RESEARCH II
Prerequisite for 441 or permission of instructor. Evaluation of social work research methods, in terms of validity of individual, group and community. Proceeding with interpreting data and determining the need for additional research.

445/545 SOCIAL POLICY ANALYSIS FOR SOCIAL WORKERS
Prerequisite for 445 or permission of instructor. Social work perspective on human development and social welfare policies. Social work and social work policy process. Social work and social work policy implementation.

450/550 SOCIAL NEEDS AND SERVICES FOR LATER ADULTHOOD AND AGING
Prerequisite: 276 or permission. Application of knowledge and principles of social work practice to understanding, development and provision of social services to meet needs of aging and later maturity individuals, families and communities and institutions serving them and their relatives.

451/551 SOCIAL WORK IN CHILD WELFARE
Prerequisite: 276 or permission. Application of structure and function of social services designed to help children, and of practice of social work in child welfare settings. Consideration of supportive, supplementary and substitutive services.

452/552 SOCIAL WORK IN MENTAL HEALTH
Prerequisite: 276 or permission. Issues, organization, development and methodologies of current professional social work practice in mental health settings.

453/553 SOCIAL WORK WITH FAMILIES
Prerequisite: 276 or permission. Developmental principles of social work practice with families in social services. Focus on family systems, assessment of family functioning, and development of social workers in helping families.

454/554 SOCIAL WORK IN JUVENILE JUSTICE
Prerequisite: 276 or permission. Development of understanding and social work practice in juvenile justice systems of the United States. Focus on juvenile justice systems and social work practice.

455/555 THE BLACK FAMILY
Prerequisite: 276 or permission. Contemporary problems facing black families, male-female relationships, single parent households, black teens and elderly, public policy, theoretical models, explaining development of the black family.

456/556 SOCIAL WORK IN HEALTH SERVICES
Prerequisites: 276 or permission. Focus on health services, programs and practice of health care settings. Focus on family, limited, intermediate and long-term hospitals, outpatient services, emergency services, clinics, visiting nurse services, nursing homes, pediatric services, self-help organizations.

457/557 ADVANCED PRACTICE WITH INDIVIDUALS
Prerequisite: 451 or permission (undergraduate); undergraduate social work degree or permission (graduate). Advanced professional development of direct and indirect strategies and techniques of intervention to aid individuals in improving psychosocial functioning.

458/558 ADULT DAY CARE
Prerequisite for 458 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.

459/559 ADMINISTRATION AND SUPERVISION IN SOCIAL WORK
Prerequisite: 451 or permission. Preparation for use of supervision, staff development and program planning in a social work agency. Refers to the social work agency and its community as it affects its organizational goals and program implementation.

470/570 LAW FOR SOCIAL WORKERS
Prerequisite: 276 or permission. Basic terminology, theories, principles, organization and procedures of the law will be supplemented with contemporary developments and comparisons of the theoretical bases of the two professions.

480/580 SPECIAL TOPICS IN SOCIAL WORK AND SOCIAL WELFARE
Prerequisites: 401 or permission. Analysis of current social work and social welfare theory and policy, setting, issues, developments and programs in society.

490/590 SOCIAL WORK WORKSHOP
Prerequisite: 401 or permission. Preparation for use of supervision, staff development and program planning in a social work agency. Refers to the social work agency and its community as it affects its organizational goals and program implementation.

493/593 FIELD EXPERIENCE IN SOCIAL AGENCY
Prerequisite: 401 or permission. Careful examination and integration of academic understanding and professional methodologies from different social work programs.

495/595 FIELD EXPERIENCE IN SOCIAL AGENCY
Prerequisite: 401 or permission. Careful examination and integration of academic understanding and professional methodologies from different social work programs.

497/597 INDIVIDUAL INVESTIGATIONS IN SOCIAL WORK
Prerequisite: 401 or permission. Analysis of current social work and social welfare theory and policy, setting, issues, developments and programs in society.

499 SENIOR HONORS PROJECT IN SOCIAL WORK
Prerequisite: 401 or permission. Senior standing in honors program, approval and written statement in department. Open to social work major enrolled in honors program. Independent study leading to completion of honors thesis or other original work resulting in writing of research paper in proper scholarly form, supervised by student's honors project adviser within the department.

Graduate Course

673 CONTEMPORARY SOCIAL WORK APPLICATIONS
Prerequisite: 276 or permission. Social work concepts and methods compared and applied in various social welfare community, organizational and institutional settings. Particularly useful for professionals from related fields and for advanced practitioners.

THEATRE

7800:

100 EXPERIENCING THEATRE
Experience the theatre as a live, dynamic art form through an exposure to and participation in the process of production and performance.

102 INTRODUCTION TO TECHNICAL THEATRE
Introduction to technical theatre, including the elements of technical production, personnel, organization, scheduling, design, and implementation of technical production principles. Laboratory required.

106 INTRODUCTION TO STAGE DESIGN
Introduction to design and implementation of stage design principles involving floor plans, elevations and renderings for the design of stage scenery. Laboratory.

151 VOICE FOR THE STAGE
Preparation for voice as it applies to the stage. This course is concerned with the elements of voice and the practical techniques and principles of voice production in their practical application to stage performance.

172 ACTING I
An introduction to the fundamentals of acting through the investigation of the body as an instrument for the stage, improvisation and stage movement.
### Graduate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>465</td>
<td>STAGE LIGHTING DESIGN</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Prerequisite: 484. The art and technique of stage lighting; light plotting, color theory and optical effects.</td>
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</tr>
<tr>
<td>487/497</td>
<td>CONTEMPORARY THEATRE STYLES</td>
<td>3</td>
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<tr>
<td></td>
<td>Study of contemporary theatre from emergence of modern drama in 19th Century through a reading list of representative plays, with special emphasis on developments from 20th Century.</td>
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</tr>
<tr>
<td>466/568</td>
<td>CHILDREN'S THEATRE</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of theatre for children: selection, set design and construction, acting, direction. A full-length play for children produced by the class may culminate the course.</td>
<td></td>
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<tr>
<td>488</td>
<td>PROBLEMS IN LIGHTING DESIGN</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Prerequisite: 465. Advanced study of practical application to problems confronting lighting designer and technician.</td>
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<tr>
<td>700</td>
<td>PRACTICUM IN PRODUCTION DESIGN/TECHNOLOGY</td>
<td>1-3</td>
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<tr>
<td></td>
<td>May be repeated to a total of 12 credits. Prerequisite: permission of instructor. Practice in selected production design/technology or plats as they apply to projects in major departmental productions.</td>
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</tr>
<tr>
<td>747</td>
<td>ACTING FOR THE MUSICAL THEATRE</td>
<td>2</td>
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<tr>
<td></td>
<td>Prerequisite: 373. 7520:124. A scene study course in analyzing and forming roles in musicals. Emphasis will be on coordinating the many aspects of the role for the purpose of fully developing characterization.</td>
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</tr>
<tr>
<td>490/491/492</td>
<td>WORKSHOP IN THEATER ARTS</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>(May be repeated for a total of six credits) Prerequisite: Advanced standing or permission. Group study or project investigating particular phase of theatre arts not covered by other courses in curriculum.</td>
<td></td>
</tr>
</tbody>
</table>

### 262 STAGE MAKEUP

Theory and practice in the application of the stage makeup from juvenile to character role. Lecture 3 credits.

### 263 SCENE PAINTING

The development of skills and knowledge of stage scenic painting required for the theatre designer. Lecture 3 credits.

### 265 BASIC STAGECRAFT I

Basic stagecraft including equipment, construction and handling of two-dimensional scenery and theatrical hardware. Laboratory required. Lecture 3 credits.

### 266 BASIC STAGECRAFT II

Prerequisite: 265. Aspects of stagecraft including the construction and handling of three-dimensional scenery and the rigging of scenic units. Laboratory required. Lecture 3 credits.

### 271 DIRECTING I

Emphasis on fundamentals of play directing, including responsibilities of director, stage nomenclature, play selection, character analysis and rehearsals. One act form emphasized. 3 credits.

### 328 PERIOD MOVEMENT AND DANCE

Medieval and Early Renaissance style and manners. Studio and lecture. 2 credits.

### 334 STAGE COSTUME CONSTRUCTION I

Study and practice of stage costume construction techniques. 3 credits.

### 335 INTRODUCTION TO STAGE COSTUME HISTORY AND DESIGN

Study of historical and theatrical dress. Costumes designed for each historical period in class. Period patterns drafted and constructed during designated laboratory hours. 3 credits.

### 336 HISTORY AND CONSTRUCTION OF PERIOD FURNISHINGS

Study of historic furniture and hand prop styles, with emphasis on practical stage applications. Study of prop construction materials and techniques: wood, steel, foams and plastics, basic woodworking, upholstery, joinery, finishing methods. 3 credits.

### 350 ADVANCED VOICE FOR THE STAGE I

Prerequisite: 151. Vocal training through interpretation and analysis of various theatrical styles. 3 credits.

### 351 ADVANCED VOICE FOR THE STAGE II

Prerequisite: 350. Continuation of 350. 3 credits.

### 362 ADVANCED STAGECRAFT

Prerequisite: 265. Aspects of advanced stagecraft: flying scenery, properties, and rigging, scenic and textual materials. Laboratory required. 3 credits.

### 366 HISTORY OF THEATRE I: GREEK-RENAISSANCE

Prerequisite: 100 or permission. Development of theatre in Greece and Rome, Medieval period and Renaissance, with emphasis on culture of each period, dramatists, plays, stage conventions and architectural aspects of the theatre. 4 credits.

### 369 HISTORY OF THEATRE II: RESTORATION TO PRESENT

Prerequisite: 100 or permission. Development of theatre from English Restoration. 18th and 19th Century, to modern period with emphasis on culture of each period, dramatists, stage conventions, set designs and theatre architecture. 4 credits.

### 370 THE AMERICAN THEATRE: PLAYS, PLAYWRIGHTS AND PLAYMakERS

Study of American theatre, from its beginning in 17th Century to present, with emphasis on achievements in 20th Century. 3 credits.

### 371 DIRECTING III

Prerequisites: 271 and permission. Advanced course in practical techniques of staging plays from major theatrical periods as well as principles of working with the actor. 3 credits.

### 373 ACTING II

Prerequisite: 172. Continuation of 172. Further emphasis on the psychology of the actor and development of performing techniques through scene study. 3 credits.

### 375 ACTING III

Prerequisite: 273. Further in-depth actor training with emphasis on the language and interpretation of Shakespeare through scene study. 3 credits.

### 376 THEATRE ORGANIZATION AND MANAGEMENT

Prerequisite: 100. Study of business organization and management of nonprofessional theatre operation. 2 credits.

### 385 SPEcial TOPICS IN THEATRE ARTS

(May be repeated as different subject areas are covered, but no more than 10 credits may be applied toward B.A. degree). Special topics in theatre arts, supplemented by course listings in this General Bulletin. 1-4 credits.

### 421 MUSICAL THEATRE PRODUCTION

Designed to make the musical theatre performer aware of the total creative process involved in mounting a stage musical. May be taught in conjunction with the production of a musical or a special departmental music project. 3 credits.

### 435 STAGE COSTUME DESIGN

Prerequisite: 334. Texts of fashion and figure drawing, stage costume rendering and theatrical design assignments. 3 credits.

### 436 STYLES OF SCENIC DESIGN

Prerequisite: 365. Theatrical styles and periods in scenic design and scenography. 3 credits.

### 453 STYLES OF STAGE COSTUME DESIGN

Prerequisites: 452. The art and technique of costume design for the stage and the many processes involved to produce the stage costume for theatrical effects. 3 credits.

### 454 MOVEMENT FOR ACTORS I

Prerequisite: 172. Specialized physical training for the actor. 3 credits.

### 456 MOVEMENT FOR ACTORS II

Prerequisite 444. Specialized training, integrating the actor's physical and vocal instrument. 3 credits.

### 450/550 PERFORMANCE PROJECTS

(May be repeated for a total of 12 credits) Prerequisite: 121 or equivalent experience. Prerequisite of instructor. Preparation and presentation of programs and projects for the public schools, hospitals, nursing homes and other community and campus organizations. 3 credits.

### 462/562 PLAYWRITING

Prerequisite: 444. Specialized form, techniques of dramatic construction learned through analysis of playwright's art, as well as through writing of individual dramatic compositions. 2 credits.

### 464 STAGE LIGHTING

Outlines theory, technique and practices of stage lighting. Among areas discussed are colored light and color theory, electricity and electrical safety, dimming control systems, other aspects of craft of effective stage lighting. 3 credits.
224 FUNDAMENTAL BALLET TECHNIQUE
(May be repeated for a total of six credits) Prerequisite: permission. Continuation of 124. Emphasis on barre and developing strength.

7820:

232 JAZZ DANCE TECHNIQUE I
Emphasizes basic jazz techniques and styles, including East Indian, Afro-Cuban, Early American, hoe-down and folkloric styles. Also, soft-shoe, charleston and early balletic.

234 TAP TECHNIQUE I
Emphasizes basic tap combinations and routines; tap terminology and methods for recording combinations. Special clothing/shoes required.

377 JAZZ DANCE TECHNIQUE II
Prerequisite: 323. The use of more complex jazz technique combinations.

378 TAP TECHNIQUE II
Prerequisites: 124, 125, 324. A study of more complex routines and combinations, including syncopation, classical tap and style (Austine, Kelly, Vereen, Draper, Rodgers). Special clothing/shoes.

403 SPECIAL TOPICS IN DANCE
May be repeated as different subject areas are covered, but no more than 10 credits may be applied toward B.A. degree. Prerequisite: permission. Traditional and nontraditional topics in dance, supplementing courses listed in General Bulletin.

490-590 WORKSHOP IN DANCE
(May be repeated for a total of eight credits) Prerequisite: advanced standing or permission. Group study or group projects investigating particular phases of dance not covered by other courses in curriculum.

DANCE ORGANIZATIONS

7910:

101 CLASSICAL BALLET ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of classical ballet repertoire.

102 CHARACTER BALLET ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of character ballet repertoire.

103 CONTEMPORARY DANCE ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of contemporary dance repertoire.

104 JAZZ DANCE ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of jazz dance repertoire.

105 MUSICAL COMEDY ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of musical comedy.

106 OPERA DANCE ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of opera dance sequences in an opera.

107 EXPERIMENTAL DANCE ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of avant-garde dances.

108 CHOREOGRAPHER’S WORKSHOP
By audition only. Participation in rehearsal and preparation for public performance of student dances.

109 ETHNIC DANCE ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of ethnic dance repertoire.

110 PERIOD DANCE ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of dances from specific historical periods such as the Renaissance or Baroque eras.

111 TOURING ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of any dances prepared for touring purposes.

116 PHYSICAL ANALYSIS FOR DANCE I
2 credits
Required for all dance majors. Recommended to be taken in first two years. Lectures/laboratories. Skeletal and muscular analysis for dance technique.

117 PHYSICAL ANALYSIS FOR DANCE II
2 credits
Prerequisite: 115. Support systems, conditioning injury prevention, rehabilitation, nutrition for dancers.

122 BALLET TECHNIQUE I
5 credits
(May be repeated for a total of ten credits) Prerequisite: permission. Fundamental theory, vocabulary, structure, placement.

224 BALLET TECHNIQUE II
5 credits
(May be repeated for a total of five credits) Prerequisite: permission. Continuation of 122. Expanding the basic contemporary technique.

229 CONTEMPORARY TECHNIQUE I
3 credits
(May be repeated for a total of 12 credits) Prerequisite: permission. Expanding the basic contemporary dance techniques.

*In 7910 course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

DANCE ORGANIZATIONS

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By audition only. Participation in rehearsal and preparation for public performance of classical ballet repertoire.

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By audition only. Participation in rehearsal and preparation for public performance of character ballet repertoire.

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By audition only. Participation in rehearsal and preparation for public performance of contemporary dance repertoire.

104 JAZZ DANCE ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of jazz dance repertoire.

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By audition only. Participation in rehearsal and preparation for public performance of musical comedy.

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By audition only. Participation in rehearsal and preparation for public performance of opera dance sequences in an opera.

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By audition only. Participation in rehearsal and preparation for public performance of avant-garde dances.

108 CHOREOGRAPHER’S WORKSHOP
By audition only. Participation in rehearsal and preparation for public performance of student dances.

109 ETHNIC DANCE ENSEMBLE
By audition only. Participation in rehearsal and preparation for public performance of ethnic dance repertoire.

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By audition only. Participation in rehearsal and preparation for public performance of dances from specific historical periods such as the Renaissance or Baroque eras.

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Prerequisite: 115. Support systems, conditioning injury prevention, rehabilitation, nutrition for dancers.

122 BALLET TECHNIQUE I
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(May be repeated for a total of ten credits) Prerequisite: permission. Fundamental theory, vocabulary, structure, placement.

224 BALLET TECHNIQUE II
5 credits
(May be repeated for a total of five credits) Prerequisite: permission. Continuation of 122. Expanding the basic contemporary technique.

229 CONTEMPORARY TECHNIQUE I
3 credits
(May be repeated for a total of 12 credits) Prerequisite: permission. Expanding the basic contemporary dance techniques.

*In 7910 course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.
316 CHOREOGRAPHY I  
Prerequisite: Permission of the instructor. Theoretical and practical introduction to principles of choreography: space, time, energy.  
2 credits

317 CHOREOGRAPHY II  
Prerequisite: 316 and permission. Continuation of 316. Emphasis on musical choices and finding movement specific to the individual choreographer.  
2 credits

320 DANCE NOTATION  
Beginning study of Labanotation method of recording movement, and preparation for beginners' examination of the Notation Bureau.  
2 credits

322 BALLET TECHNIQUE III  
Prerequisite: permission. Continuation of 222. Emphasis on technique, style and line.  
5 credits

329 CONTEMPORARY TECHNIQUE II  
Prerequisite: permission. Continuation of 229. Expanded development of contemporary techniques.  
3 credits

403 SPECIAL TOPICS IN DANCE  
Prerequisite: Permission. No more than 10 credits may be applied toward the B.F.A. or B.A. Traditional and nontraditional topics in dance.  
1-4 credits

416 CHOREOGRAPHY IV  
Prerequisite: 416 and permission. Continuation of 416. Expanding into group choreography and longer works.  
2 credits

422 BALLET TECHNIQUE IV  
Prerequisite: permission. Continuation of 322. Professional level of technique.  
5 credits

426 TECHNIQUES OF TEACHING DANCE I  
Prerequisite: Permission. For dance majors and minors. Development of elementary dance teaching skills for use in the public school and/or community setting.  
2 credits

427 TECHNIQUES OF TEACHING DANCE II  
Prerequisite: 426 or permission. Continuation of 426. Supervised observations, participation and practical experience in teaching elementary dance.  
2 credits

431 DANCE HISTORY: PREHISTORY TO 1661  
Prerequisite: 115 or permission. Study of important developments from prehistory through the Renaissance to the founding of the French Academy of Dance.  
2 credits

432 DANCE HISTORY: 1661 THROUGH DIAGHILEV ERA  
Prerequisite: 115 or permission. Development of dance beginning with the establishment of the French Academy through the Romantic and Diaghilev Eras and their influence on current dance.  
2 credits

433 DANCE HISTORY: 20th CENTURY  
Prerequisite: 115 or permission. Development of modern dance as an art form and the further evolution of ballet and concert dance.  
2 credits

490/590 WORKSHOP IN DANCE  
Prerequisite: Advanced standing or permission. (May be repeated for a total of eight credits.) Group study/project investigating a particular field of dance not covered by other courses.  
1-3 credits
COOPERATIVE EDUCATION

NURSING

100 INTRODUCTION TO NURSING
Designed to introduce student to nursing. Emphasis on historical perspective as basis for modern trend in profession of nursing.

101 INTRODUCTION TO BACCALAUREATE NURSING FOR THE R.N.

200 NURSING THEORIES AND CONCEPTS
Prerequisite: 100. Emphasis on relationship of relevant concepts and theories from various sciences with man's interaction with ecosystem. Relates these theories and concepts to practice of nursing in health-care system utilizing scientific research approach.

300 NURSING: HEALTH
Prerequisites: 100, 200. Healthy man's adaptation through the life cycle. Emphasis on interactions within an ecosystem approach. Nursing process used to view this approach as holistic man's adaptation.

305 NURSING THEORIES, CONCEPTS AND RESEARCH
Prerequisite: 101. Admission to college. The specific focus is to relate concepts, theories and research projects to the practice of nursing in a health-care system utilizing the nursing process.

315 PATHOPHYSIOLOGY FOR NURSES
Prerequisites: 3150, 3160, 3190, 3200, and 330 or permission of instructor. Develop an understanding of the basic concepts related to the pathophysiological mechanisms and functions as applied to nursing. An emphasis on pertinent application to nursing will be done via the nursing process.

320 NURSING: DIMINISHED HEALTH I
Prerequisite: 100, 200, 300. Man's maladjustment through the life cycle. Emphasis on his interactions within an ecosystem approach. Nursing process used to view this approach as holistic man's adaptation.

330 FUNDAMENTALS OF PHARMACOLOGY
Prerequisite: 300 or concurrent registration. Emphasis on fundamental concepts of pharmacology as applied to major drug classes, actions, and effects. Application of nursing process to the practice of nursing in health-care system utilizing the nursing process.

346 CREATIVITY AND INNOVATION IN NURSING RESEARCH
Prerequisite: Junior standing. The emphasis is on nursing research proposal, nursing research report, and methods of communicating nursing research are presented in a creative and innovative environment.

400 NURSING: DIMINISHED HEALTH II
Prerequisites: 100, 200, 300, 320. Assists student in applying knowledge and skills for an integrated approach to nursing process in various settings and to develop roles of leadership and change-agent using teaching/learning process.

405 HEALTH MAINTENANCE NURSING
Prerequisites: 101, 305. Emphasis on healthy man through the life cycle. Theory and practice focus on healthy man's nutritional interaction with ecological variables.

415 DIMINISHED HEALTH C
Prerequisites: 101, 305. Theoretical and clinical components emphasize alternative behaviors for the client and the nurse. Within the framework of the nursing process, to assist individuals and families experiencing diminished health to maintain and regain optimal levels of functioning.

420 NURSING: SYNTHESIS
Prerequisites: 100, 200, 300, 320. Provides student with independent practice opportunity. Emphasis on providing care to patient in an area of his/her choice. Guidance and direction provided to student as necessary by preceptor.

425 BASIC ASSESSMENT
Prerequisite: Senior standing. Emphasis on collection of complete health histories, also performance of systematic physical assessments across life span. Health care deficits, assets, and future planning are included.

430/530 HEALTH-CARE (CURRENT YEAR): ISSUES AND NURSING
Prerequisite: Acceptance into the college and commitment to explore the state of health-care delivery in the United States today and their ramifications and implications for nursing.

435 BASIC RESEARCH
Prerequisite: Senior standing. This course presents an overview of the research process and its relationship to practice of nursing. The importance of research research is discussed.

450 CONCEPTS AND THEORIES OF PROFESSIONAL NURSING
Prerequisite: Acceptance into the R.N.-M.S.N. Program. Selected concepts and theories relevant to professional nursing are studied and related to nursing practice. Critical thinking strategies are utilized to examine nursing theories and concepts.

Graduate Courses

503 THEORETICAL BASIS FOR FAMILY HEALTH NURSING
Prerequisite: acceptance in the Family Health Nursing Graduate Program. Analysis of concepts and theories applicable to nursing. Special emphasis is given to critique and utilization of nursing theoretical models.

513 NURSING INQUIRY
Prerequisites: 620 and 3470. Theories and concepts, and ethical aspects relating to scientific inquiry are explored. Students participate in critical analysis of nursing research. Emphasis on the identification of researchable problems.

519 FAMILY HEALTH APPRAISAL
Prerequisite: 623. Advanced nursing course focusing on assessment of families. Seminar and practicum experiences are utilized.

522 FAMILY HEALTH NURSING I
Prerequisites: 630 and 619. Theory and practice of family health nursing focusing on concepts, theories and practice relevant to families within the environment.

523 FAMILY HEALTH NURSING II
Prerequisites: 630, 619 and 622. Continuation of 522.

524 NURSING OF FAMILIES WITH CHILDREN
Prerequisite: Advanced nursing care of families with growing children experiencing varying states of health.

525 TEACHING STRATEGIES IN NURSING EDUCATION
Prerequisite: Development of increased knowledge for the selection of learning opportunities in health care and classroom settings.

526 NURSING OF FAMILIES WITH ADULT MEMBERS
Prerequisite: Advanced nursing care of families with adult members experiencing varying states of health.

528 HEALTH PERSPECTIVE OF THE EXPANDING FAMILY
Focus on advanced nursing care of expanding families experiencing varying states of health.

529 FINANCIAL MANAGEMENT FOR NURSING ADMINISTRATION
Prerequisite: acceptance in the Family Health Nursing Program or by faculty permission. Emphasis is on financial management for nursing administration. Focuses on health care economics and fiscal accountability with consideration of nursing standards.

530 HUMAN RESOURCES IN NURSING SETTINGS
Prerequisite: Acceptance in the Family Health Nursing Graduate Program or instructor's permission. Identifies and examines major issues related to human resources in nursing settings.

535 ORGANIZATIONAL BEHAVIOR IN NURSING SETTING
Prerequisite: Acceptance in the Family Health Nursing Graduate Program or instructor permission. Examines nursing organizational behavior in nursing settings.

670 SPECIAL TOPICS
Prerequisite: Completion of all required first-year courses. Group study of selected topics and areas of interest in advanced nursing.

672 INDEPENDENT STUDY
Prerequisite: Opportunity for the advanced graduate nursing student in a selected area of specialization.

673 NURSING OF FAMILIES WITH OLDER MEMBERS
Prerequisite: Graduate status. Explores factors that influence advanced nursing care of families with older members experiencing varying states of health.

674 CULTURE, ETHNICITY AND HEALTH CARE
Focus on cultural sensitivity through examination of diverse health values, beliefs, and patterns of selected ethnic groups with emphasis on factors affecting health care choices.

680 LEADERSHIP SEMINAR: CLINICAL NURSE SPECIALIZATION
Prerequisites: 623, 613, 622, 623. Examines family nursing to identify and explore practice issues and goals.

681 LEADERSHIP PRACTICUM: CLINICAL NURSE SPECIALIZATION
Prerequisite: 680. Guided study and practice in the leadership role of clinical nurse specialists in the care of families and individuals.
686 LEADERSHIP PRACTICUM: EDUCATION  3 credits
Prerequisites: 623, 685; corequisite: 669. Guided study and practice in the leadership role of a nurse educator. Students present lectures and supervise students at nursing educational institutions and clinical settings.

687 LEADERSHIP SEMINAR: ADMINISTRATION  3 credits
Prerequisite or corequisite: 623. Prerequisite: 622. Leadership and management theories are utilized to develop and identify nursing administrative goals, strategies, and to expand the leadership role of the nurse administrator.

688 LEADERSHIP PRACTICUM: ADMINISTRATION  3 credits
Prerequisite: 687. Guided study and practice in the leadership role of a nurse administrator.

689 COLLOQUIUM  1 credit
Corequisites: 681, 686, 688. Similarities and differences of the family nurse leadership roles in education, administration, and clinical specialization with families are examined in light of selected contemporary issues/concerns in nursing.

699 THESIS RESEARCH  1-4 credits
Prerequisites: 613, 623; corequisite: 623. Supervised research in a specific area of advanced nursing, or supervised advanced project/practice/study experience.
LAW

9200:

601 CIVIL PROCEDURE I
Survey of civil procedure in state and federal courts. Jurisdiction; pleading, motions, proof of parties and causes of action; judgments; trial and appellate practice. 3 credits

602 CIVIL PROCEDURE II
Prerequisite: 601. Continuation of 601. 3 credits

603 CONSTITUTIONAL LAW I
Governmental authority and its distribution under Constitution. Introduction to individual rights and liberties. 3 credits

604 CONSTITUTIONAL LAW II
Prerequisite: 603. Continuation of 603. Rights, privileges and immunities under the Constitution. 3 credits

605 CONTRACTS I
Nature and purpose of contract law. Formation, consideration, contractual alternatives, validity of contract; capacity, Statute of Frauds. 3 credits

606 CONTRACTS II
Prerequisite: 605. Construction, Breach and associated remedies. Resolution of disputes. 3 credits

607 CRIMINAL LAW
Nature and source of criminal liability studied in light of modern developments. The act; Mental conditions requisite to criminal responsibility. Specific crimes and defenses thereto. 2 credits

608 EVIDENCE
Course covers basic evidence law with emphasis on the Federal Rules of Evidence and state rules patterned thereon. 3 credits

610 GENERAL WRITING REQUIREMENT
0 credits (credit/no credit). (May be repeated to fulfill the school's General Writing Requirement as set forth in the faculty handbook). Degree-seeking students are required to register for the 610 noncredit course at the same time as registering for a credit course that qualifies as fulfilling the school's writing requirement. 0 credits

612 LEGAL PROFESSION
Legal profession as an institution. Responsibilities of lawyers; duties and privileges, professional qualifications. 2 credits

614 PROPERTY I
Possession, means by which title may be obtained: fixtures, emblements; estates in land; concurrent ownership; the deed; the mortgage, the land contract. 3 credits

615 PROPERTY II
History of land law. Statute of Frauds; recording, title registration, covenants for title; adverse possession, landlord-tenant relationship; landlord-tenant statutes; easements; licenses, private restrictions; water rights. 3 credits

616 Torts I
Survey of basic tort law and its function; impact of insurance and notions of allocating cost of unintentionally caused harm or tort theories in negligence. 2 credits

617 Torts II
Prerequisite: 616. Continuation of 616. 3 credits

619 LEGAL RESEARCH
Familiarization with basic legal publications and computer-assisted legal research necessary to perform legal research. 1 credit

620 BASIC LEGAL COMMUNICATIONS
Introduction to basic skills in written exposition and analysis in a legal context through preparation of research memoranda and other written assignments. 2 credits

620 INTERMEDIATE LEGAL COMMUNICATIONS
Enhancement of legal writing skills through preparation of an argumentative brief and other writings; development of oral advocacy skills through presentation of an argument based on a brief. 1 credit

621 ACCOUNTING FOR LAWYERS
A study of the underlying assumptions and principles of financial information prepared in accordance with generally accepted accounting principles and the evaluation of such information in terms of its significance to users of such information. Optional for grade of credit/no credit or a letter grade. 3 credits

622 ADMINISTRATION OF CRIMINAL JUSTICE
Administration of criminal justice relating processes discretionary law to objectives of criminal correction. Effects of federal constitutional provisions or criminal procedure. 3 credits

623 ADMINISTRATIVE PROCESS
Traditional public-legal theories of separation of powers and the administrative process; procedure for rule-making and adjudication; conclusiveness of administrative determination. 3 credits

624 AIR LAW
Law of modern air transportation in international and domestic flight and emerging area of outer space. 3 credits

625 ANTITRUST LAW
Fundamentals of antitrust; questions of evidence in price fixing and boycotts under the Sherman Act; resale restrictions and terms; scope of antitrust law and certain exemptions. 3 credits

626 BASIC BUSINESS ASSOCIATIONS
Basic types: partnership, corporation, limited liability company. 2 credits

627 COMMERCIAL LAW I
The law of sales and negotiable instruments under Articles 2, 3 and 4 of the Uniform Commercial Code. May be taken independently of 628. 3 credits

628 COMMERCIAL LAW II
Examination of the law of secured transactions under Article 9 of the Uniform Commercial Code; selected provisions of the Bankruptcy Code, the Federal Tax lien Act and the Uniform Fraudulent Conveyance Act. May be taken independently of 627. 3 credits

630 ADMIRALTY
History and jurisdiction of admiralty; commerce of goods by water and combined transport; collision, salvage and uninsured claims for personal injury and death; maritime liens. 3 credits

631 CONFLICTS OF LAWS
Problems of application of private law in jural relations containing one or more foreign law elements: Jurisdiction and enforcement. 3 credits

632 CORPORATIONS
An introduction to the topics of the civil law relating the to major American business enterprises. Topics emphasized on financing, control, and regulation of corporations, both publicly owned and closely held. 4 credits

635 BANKRUPTCY LAW
Recommended 629. Provisional remedies and enforcement of judgments. Chapter 13, 11, and 7; assignments for benefit of creditors. Creditors' agreements. Bankruptcy. 3 credits

636 ENGLISH LEGAL SYSTEMS
An introduction to the development of Common Law and Equity in the early English courts through to the current sources of English Law. Examines the major legal institutions of English law today and the roles and functions of the personnel of the English legal system. 3 credits

637 EQUAL OPPORTUNITY LAW
Legal developments, primarily federal, affecting discrimination in employment, housing, and public accommodations. The major emphasis of the course will be on equal employment opportunity law. 3 credits

638 FAMILY LAW
Minor areas of family law, theories that have influenced its development. Functions performed by various agencies which seek to effect a non-judicial settlement of domestic problems. Adoption. 3 credits

639 ESTATE AND GIFT TAXATION
Federal estate and gift taxation. Relation between federal income tax and federal taxes on property transfers. Place of federal taxes in estate planning. 3 credits

640 INDIVIDUAL TAXATION
Survey of federal income tax law applicable to individuals. 3 credits

641 CORPORATE TAXATION I
Prerequisite: 640. Survey of federal income tax law applicable to corporations. May be taken independently of 642. 3 credits

642 CORPORATE TAXATION II
Prerequisite: 641 or concurrent enrollment with permission of instructor. 3 credits

643 FEDERAL JURISDICTION AND PROCEDURE
Prerequisites: 662. Congress, the federal courts, and the Constitution, appellate and collateral review, federal question, diversity and admiralty cases, sovereign immunity, abstention and enforcing split actions, choice of law, separate common law. 3 credits

644 FINANCING STATE AND LOCAL GOVERNMENT
Planning, programming and budgeting; state and federal programs; local taxes: use of public authority and special districts, property tax limits, debt limits, state supervision of local finance and controls. 2 credits

645 BUSINESS REORGANIZATION UNDER THE BANKRUPTCY CODE
Prerequisite: 635. This course covers the six stages of a Chapter 11 (Rehabilitation Under the Bankruptcy Law) proceeding: (1) commencement of a case; (2) operation of the business; (3) preparation of the plan; (4) creditors' acceptance of the plan; (5) judicial confirmation of the plan; and (6) post-confirmation concerns. 3 credits

646 JUVENILE LAW
Study of laws relating to juveniles (neglect, dependency, delinquency). 3 credits

647 INSURANCE LAW
Prerequisite: 656. Law and practice of insurance of person and property, including insurable interest, measure of recovery, and comparison of insurance and other contracts. 3 credits

648 INTERNATIONAL LAW
Nature and breadth of international law, sources and subjects; relations to municipal law, individuals and international organizations. 3 credits

650 LAND-USE PLANNING
Prerequisites: open only to members of the Faculty. 3 credits

652 REAL PROPERTY LAW
Prerequisite: 652. School's introduction to real property law. 3 credits

655 BANKRUPTCY LAW
Recommended 654. Provisional remedies and enforcement of judgments. Chapter 13, 11, and 7; assignments for benefit of creditors. Creditors' agreements. Bankruptcy. 3 credits

656 LAW AND PRACTICE OF ARCHITECTURE
Prerequisite: 656. Preparation of comment or article of professional interest. 1 credit

657 LAW REVIEW STAFF
Prerequisite: 656. Participation: preparation of manuscript for publication in the student-edited journal of the University of the Pacific. 1 credit
658 LAW REVIEW EDITORIAL BOARD 1 credit (credit/noncredit)
Prerequisite: 657 and election to Editorial Board. One credit per term for service on Aaron Law Review Editorial Board. Total credits for 656 and 67 not to exceed four.

659 LAWYER AS NEGOTIATOR 2 credits
Prerequisite: 602. Planning negotiations and determination of strategies to effect object, weighing legal, economic, behavioral, ethical and social factors that condition outcomes.

660 SEMINAR IN WORKERS' COMPENSATION 3 credits
Jurisdictional and procedural issues, scope of employer liability, defenses, specific remedies

661 LEGAL CONTROL OF THE ENVIRONMENT 3 credits
Substantive and procedural problems in legal control of air and water pollution. Common law precedents, federal and state regulatory law, federal administrative agencies. Civil liberties, constitutional consideration, federal law incentives

662 MEDIA LAW 3 credits
Prerequisite: 604. Constitutional, delamination and commercial problems involved in the written and/or oral publication of news and entertainment features.

663 LEGISLATION 2 credits
Process in context of legislative organization, policy formulation, drafting, statutory construction, constitutional limitations on subject matter and form and judicial interpretation, illustrative drafting problems.

664 LOCAL GOVERNMENT LAW 3 credits

665 TAXATION OF PARTNERSHIP AND CORPORATION 3 credits
Prerequisites: 641. Covers Subchapter K and Subchapter S of the Internal Revenue Code and focuses on the tax consequences of business enterprises organized as either general or limited partnerships and corporations electing to be taxed as partnerships. An original research paper on some facet of the course materials is required.

666 Moot Court 1 credit (credit/noncredit)
(May be repeated once). Credit for participation by brief writing or written argumentation in intramural National Moot Court, Jessup International or other approved moot court competitions open not to first-year student. Total credits for courses designated Moot Court (666, 694 and 5) not to exceed four.

667 PATENT, TRADEMARK AND COPYRIGHT LAW 2 credits
Federal protection of patents, trademarks and copyrights. Registration procedures. Infringement from administrative actions, right of-stayers, trademark owners and copyright holders. Grants of licenses and assignments. Infringement, plagiarism and unfair competition.

668 REMEDIES 3 credits
Equitable remedies. Unjust enrichment and restitution, remedies for injuries to tangible property, and economic, dignitary and personal interests including wrongful death. Disaffirmance and remedies for deception, duress, undue influence, hardship, usurious interest, mistake, breach of contract and nominally unenforceable transactions.

669 SEMINAR IN CRIMINAL PROCESS 3 credits
Prerequisite: 627. Study of criminal process including decision to prosecute, grand jury, preliminary hearing, joinder and severance, discovery, plea bargaining, plea trials and double jeopardy.

670 SECURITIES REGULATION 3 credits
State and federal law and rules of Securities and Exchange Commission in issuance and trading of securities; legal and self-regulatory aspects of securities industry.

671 SEMINAR IN BUSINESS PLANNING 3 credits
Prerequisite: 633 or permission of instructor. Advanced course using the problem approach in planning business transactions in light of applicable corporate, tax and securities law.

672 SEMINAR IN COMPARATIVE LEGAL SYSTEMS 3 credits
Study of contemporary foreign legal systems by discussion of basic problems in specific areas on Comparative basis.

673 CURRENT PROBLEMS IN TAXATION 3 credits
Prerequisites: 640 and 641. Research and analysis of practical application of tax laws and their effects on business. Tax-exempt status and exempted tax practices.

674 SPECIAL PROGRAMS IN ESTATE PLANNING 3 credits
Prerequisite: 641, 696, or permission of instructor. Recent and non-tax problems in planning of estates and examination of disposable devices in accomplishing objectives of estate planning.

675 SEMINAR IN INTERNATIONAL TRANSACTIONS AND RELATIONS 3 credits
Legal problems in doing business abroad. Trade, treaties, property, economic activity and choice of contractual form, restrictive practices currency and exchange. Euromarkets. Developments and developing countries.

676 SEMINAR IN JURISPRUDENCE 3 credits
Examination and evaluation of principal theories of legal philosophy. Theories are frequently connected in order to discuss problems and are evaluated in light of various goals.

677 SEMINAR IN LABOR LAW 3 credits
Prerequisite: 650. Selective issues in two areas of growing importance in the field of labor and employment law: (1) public sector labor law with emphasis on state and local (as opposed to federal) labor relations, and (2) employee rights, with emphasis on common law remedies but with some consideration given to new rights of employees created by statute and collective bargaining agreements.

680 QUALIFIED PENSION AND PROFIT SHARING PLANS 3 credits

681 SEMINAR IN LEGAL PROBLEMS OF THE DISADVANTAGED 2 credits
Selected legal problems of persons disadvantaged by such factors as age, illness, mental incompetence and poverty.

682 SEMINAR IN POLITICAL AND CIVIL RIGHTS 2 credits
Prerequisite: 604. Study of some basic problems in relationship of individual to government and in protection of rights of minority groups.

683 SEMINAR IN PRODUCT LIABILITY 3 credits
Prerequisite: 617. Liability for defective products and developing legal theories and remedies. Examination of government regulation of dangerous and defective products.

684 SEMINAR IN SELECTED LEGAL PROBLEMS 1-3 credits
May be repeated. Analysis of special or current legal problems offering opportunities for legal research, effective integration of legal and relevant non-legal materials, and exposure to legal writing.

685 WILLS, TRUSTS AND ESTATES I 3 credits
Intermediate succession, execution, revocation and restoration of wills; creation and termination of trusts; gifts to charity; will substitutes; future interests; powers of appointment; class gifts.

686 WILLS, TRUSTS AND ESTATES II 3 credits
Prerequisite: 690. Continuation of 685.

687 SEMINAR IN SELECTED PROBLEMS IN EVIDENCE 3 credits
Prerequisite: 608. Designed to give the student extensive practice in dealing with difficult evidence problems in order to supplement the instructions given in the Basic Evidence course.

688 ADVANCED LEGAL COMMUNICATIONS 1 credit
Prerequisites: 619, 620. Refinement of skills in written legal analysis through performance of drafting assignments, including preparation of a written expositor on a proposed solution to a drafting problem. Required course for all students.

689 APPALATE ADVOCACY 1 credit
Prerequisites: 619, 620, 688. Development of skills in written and oral advocacy through handling an appellate case from receipt of trial record through oral argument.

690 TRIAL ADVOCACY I 3 credits
Prerequisite: 608. Fundamentals of trial preparation, direct examination, cross-examination, introduction of exhibits, objections, opening statements and closing arguments.

691 SELECTED PROBLEMS, INTERNATIONAL LAW 2 credits
Prerequisite: 641. Practical international problems and use of inter-national law research materials in dealing with concrete international legal problems; analysis and preparation of short legal papers.

692 TRIAL ADVOCACY II 3 credits
Prerequisite: 690. Preparation and actual trial of two civil cases and two criminal cases; jury selection, ethical and practical considerations of trial advocacy.

693 PROBATE PRACTICE 2 credits
Prerequisites: 663, 666. Interstate and testamentary administration, including the probate of wills, presentation of claims, the inventory, settlement and distribution and will contests. The Ohio Probate Code will be the model.

694 REGIONAL Moot COURT 1 credit (credit/noncredit)
Prerequisite: open only to members of the National Moot Court Team competing or alternates in the National Appellate Advocacy Competition (NAAC) Spring Regional Competition. Each person enrolled for credit will be required to: do substantial research on the brief problem; prepare and preliminary drafts of arguments; participate in practice rounds for oral presentations. Total credits for courses designated Moot Court (666, 694, 5) not to exceed four.

695 NATIONAL Moot COURT 2 credits (credit/noncredit)
Prerequisite: open only to National Moot Court Team members or alternates in the National Moot Court Competition. Each person enrolled for credit will be required to: do substantial research on the brief problem; prepare and preliminary drafts of arguments; participate in practice rounds for oral presentations. Total credits for courses designated Moot Court (666, 694, 5) not to exceed four.

696 CLINICAL SEMINAR I 2 credits (credit/noncredit)
Prerequisites: Successful completion of 28 credit hours and permission of clinical director. Application of legal knowledge to practical problems in supervised public law office contexts. May be taken independently of 697. Credit for 696, 697 not to exceed 8 credits.

697 CLINICAL SEMINAR II 2 credits (credit/noncredit)
Prerequisite: 696. Continuation of 696.

698 INDIVIDUAL STUDIES AND RESEARCH 2-3 credits (credit/noncredit)
(May be repeated to a total of 12 credits). With permission of dean, special problems, projects or research may be taken for credit under supervision of a member of the law faculty. When the course is taken to satisfy the school's general writing requirement, the project or research must result in the writing of a research paper of high quality. The paper must have a minimum length of 24 pages if the course is taken for two credits and a minimum length of 26 pages if the course is taken for three credits.

699 COMPUTER-BASED DRAFTING 1 credit
This course studies a technique of drafting which was first developed for computer use but which has been found to be of great value for drafting generally.
POLYMER ENGINEERING 9841:

450 MECHANICAL ENGINEERING PROPERTIES AND PROCESSING OF POLYMERS
Prequisites: 4600,315,336 and 380 or permission. Introductory course to engineering properties and processing of polymers. Analysis of mechanical tests of polymers in the glassy, rubbery, and fluid states. Product design. Concepts of rheology, mechanics, and polymer processing. 3 credits

Graduate Courses

601 POLYMER ENGINEERING SEMINAR
1 credit
Presentations of recent research on topics in polymer engineering by internal and external speakers.

611 STRUCTURAL CHARACTERIZATION OF POLYMERS WITH ELECTROMAGNETIC RADIATION
2 credits
Characterization of orientation, morphology, structure in polymers using x-ray, light scattering, infra-red, ultraviolet, nuclear magnetic resonance, ultrasonic, and electron microscopy.

621 RHEOLOGY AND POLYMER PROCESSING
3 credits

622 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS
3 credits
Prerequisite: 621. Mathematical modeling and engineering design analysis of polymer processing operations including extruder screws, injection molds, dies, fibers, film formation.

623 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS II
3 credits
Prerequisite: permission of instructor. Basic studies of non-isothermal phenomena in polymer engineering emphasizing crystallization, verification, frozen-in orientation and residual stresses. Applications, including fiber spinning and film formation.

631 ENGINEERING PROPERTIES OF SOLID POLYMERS
2 credits
Transitions as a function of polymer structure, optical characteristics, mechanical, including ultimate properties, viscoelastic behavior of elastomers and plastics, large strain behavior, emphasis on experimental methods.

635 MECHANICAL STRENGTH OF POLYMERIC SOLIDS
2 credits
Extended chain crystal and theoretical strength of crystalline polymers. Impact and high speed testing of materials. Fracture, environmental stress cracking, statistical nature of failure, reinforcement and impact modification of thermoplastics, reinforcement of thermosets, reinforcement of elastomers, stress concentrations.

641 POLYMERIC MATERIALS ENGINEERING SCIENCES
2 credits
Physico-chemical properties of amorphous and crystalline polymers. Glass transition, crystallization, molecular orientation and morphology of important commercial polymers, functionalized products and composite materials.

542 ENGINEERING ASPECTS OF POLYMER COLLOIDS
2 credits
Thermodynamic properties of polymer colloids, sol-gel transformation, rheology of polymer solutions, melts, suspensions and emulsions, phase separation, applications to paints and plastics technology.

651 POLYMER ENGINEERING LABORATORY
2 credits
Laboratory experiments on the rheological characterization of polymer melts fabrication of polymer products, structural investigation of polymer parts.

661 POLYMERIZATION REACTOR ENGINEERING
3 credits
Polymerization kinetics, classical reactor design, comparison of polymerization in batch and continuous stirred tank reactors, flow patterns around agitators, reactor reactors, reactor stability.

699 MASTER'S THESIS
1-6 credits
(May be repeated) Supervised original research in specific area of polymer engineering.

711 ADVANCED ELECTROMAGNETIC AND OPTICAL PROPERTIES AND INVESTIGATIONS OF POLYMERS
2 credits
Maxwell's equations with application to anisotropic dielectrics, birefringence and dichroism and representation of crystals, optical instruments, piezoelectrics, crystal gratings and diffraction of X-rays and light. Microwave scattering, applications.

712 RHEO-OPTICS OF POLYMERS
2 credits
Applications of rheo-optical methods as means of determining stress fields in polymers and fluids during deformation, rheo-optical properties of polymers in glassy, rubbery, and fluid states. Theory of dynamic birefringence and its application to mechanical relaxations of amorphous and semi-crystalline polymers, and recent experimental results.

713 RADIATION SCATTERING AND DIFFRACTION BY POLYMERIC MATERIALS
2 credits
Principles of scattering and diffraction theory as applied to polymer crystals, glasses, and multi-phase systems. Wide angle and small angle x-ray, light and neutron scattering, analysis and determination of crystal structure, mathematical description of orientation distribution of polymer and description of orientation factors by WAXD and other methods.

716 NON-NEWTONIAN FLOW
2 credits

721 RHEOLOGY AND PROCESSING TWO-PHASE POLYMER SYSTEMS
2 credits
Prerequisite: 522 or equivalent. PARTICLES-particle interactions, mixing devices and design, rheoretical hydrodynamics of suspensions of rigid particles, experimental study of rheological behavior, phenomenological theories representing suspension behavior, dispersion of droplets to foams, emulsion, phase morphology development and rheological properties of blends.

722 ADVANCED MODELLING OF POLYMER PROCESSING
2 credits
Prerequisite: permission of instructor. Modeling of processing operations including extrusion molding, fiber and film processing, computer-aided design.

723 RHEOLOGY AND PROCESSING OF ELASTOMERS
2 credits
Interpretation of rheological properties and critical study and analysis of processing operations including behavior in internal mixers, screw extruders, die systems and vulcanization molding.

724 ADVANCED EXTRUSION AND COMPOUNDING
2 credits
Principles of operation and flow in single and twin screw extruders, screw design, characteristics of internal mixers, analysis and simulation of flow.

727 ADVANCED POLYMER RHEOLOGY
2 credits
Prerequisite: 621 or equivalent. Second level course in non-Newtonian constitutive equation for viscoelastic, viscoplastic, visco-elastic plastic polymeric materials. Utility and applicability to polymer processing problems.

741 PHASE TRANSFORMATIONS IN POLYMERIC SCIENCE
2 credits
Prerequisite: 621 or equivalent. Description of phase transformations in polymers. Emphasis in phase transitions, birefringence, dichroism and optical properties, phase transitions, structure-property relationships, processing of polymeric systems.

771 BLOW MOLDING AND THERMOFORMING
2 credits

797 ADVANCED TOPICS IN POLYMER ENGINEERING
2 credits
(May be repeated) Prerequisite: instructor. Advanced special topics intended for Ph.D. students in polymer engineering.

892 PRELIMINARY RESEARCH
1-15 credits
(May be repeated) Prerequisite: completion of candidacy examination of Student Advisory Committee. Preliminary investigation of Ph.D dissertation subject.

899 DOCTORAL DISSERTATION
1-15 credits
(May be repeated) Prerequisite: completion of candidacy examination of Student Advisory Committee. Original research by a Ph.D. candidate.

POLYMER SCIENCE 9871:

301 INTRODUCTION TO ELASTOMERS
3 credits
Prerequisite: one year of organic chemistry or permission. History and preparation of natural rubber. Methods utilized for production of synthetic rubbers outlined. Laboratory experiments include compounding, processing, vulcanization and testing of rubber products.

302 INTRODUCTION TO PLASTICS
3 credits
Prerequisite: 301 or permission. Plastics industry and its manufacturing methods discussed. Polymers compounding for both thermosetting and thermoplastic materials discussed with emphasis on processing and testing as illustrated by laboratory experiments.

303 SPECIAL PROJECTS IN POLYMER SCIENCE
1-2 credits
Research Projects of a limited scope for student desiring experience with a professor working in a specific field. The course would be designed to give the student the processes involved in outlining projects, setting up equipment, collecting and recording research data in a scientific manner.

407 POLYMER SCIENCE
4 credits
Prerequisite: 3100/314 or 3560/301 or permission. Principles of polymerization processes and relationships between molecular structures and physical behavior of polymers. Molecular weight distributions of macromolecules elucidated and methods of determining molecular weights utilized.

411/511 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS I
3 credits
Prerequisite: 3100 or 312 or permission. Interdisciplinary course involving the principles of chemistry and physics are brought to bear on relationships between molecular structure and chemical composition of macromolecules and their physical properties.

412/511 PHYSICAL PROPERTIES OF POLYMERS II
2 credits
Prerequisite: 411 or 511 or permission. Mechanical characterization of polymer materials, the Boltzmann superposition principle, interpretation of experimental techniques involving strain behavior, stress relaxation, creep, forced and free vibrations discussed.

413/513 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS III
2 credits
Prerequisite: 412 or 512 or permission. Deformation of bonded rubber units, the correspondence principle, time-dependent failure, mechanical properties of polymers. Torsion and design considerations discussed.

414 SEMINAR IN POLYMER SCIENCE
1-2 credits
New and unsolved problems of polymer science discussed from interdisciplinary view of material sciences. A student prepares one or more formal technical presentations related to chemical aspects of field.
Graduate Courses

601 POLYMER CONCEPTS
Prerequisites: 3150:264 and 3150:314 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.

602 SYNTHESIS AND CHEMICAL BEHAVIOR OF POLYMERS
Prerequisite: 601 or instructor's permission. Introduction to fundamentals and practical aspects of polymer synthesis and reactions of polymers; general knowledge of laboratory and commercial methods for polymer preparation; practical examples.

604 SPECIAL PROJECTS IN POLYMER SCIENCE
Prerequisite: permission of instructor. Research projects of limited nature designed to study various polymer science problems. Intended to familiarize student with techniques and principles in the field. Group studies on selected topics in polymer science. May be elected for credit only.

605 POLYMER CHEMISTRY LABORATORY
Prerequisites: Basic knowledge of organic chemistry and 602 or equivalent. Preparation and identification of polymers to illustrate different methods of polymerization, such as step polymerization and chain polymerization.

672 POLYMER SCIENCE SEMINAR I AND II
Prerequisite: Limited to first- and second-year resident graduate students. Participation in preparation of 25-minute lecture or seminar in polymer science. Discussion of selected topics in polymer science. May be elected for credit only.

610 INORGANIC POLYMERS
Prerequisite: 3150:472/312 or 344:601 or permission. Survey course designed to broaden outlook of typical graduate student beyond chemistry and physics of carbon chains.

613 POLYMER SCIENCE LABORATORY
Prerequisites or corequisites: 701, 3150:601 or permission of instructor. Laboratory experiments in polymer science involving synthesis, characterization, physical properties and preparation and testing of polymers.

631 PHYSICAL PROPERTIES OF POLYMERS I
Prerequisite: Permission of instructor. Thermodynamic and physical basis of rubber elasticity behavior, time-dependent mechanical properties of polymer materials, melt flow and entanglement, the morphology of crystalline polymer materials, fracture of polymers.

632 PHYSICAL PROPERTIES OF POLYMERS II
Prerequisite: 631 or permission of instructor. Normal-coagulation techniques of molecular weight and its relationship to physical properties of polymer systems, time-temperature superposition, free volume, WLF relation; fracture; glass transition.

649 SYNTHESIS AND TECHNOLOGY OF ELASTOMERS
Prerequisite or corequisite: 701 or permission of instructor. The preparation of both 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 the elastomers described.

674 POLYMER STRUCTURE AND CHARACTERIZATION
Prerequisites: 3150:313 and 3150:314 or permission of instructor. Presentation of statistical description of polymer molecule properties including chain polymerization and degradation, characterization of conformation, molecular weight, local structure, crystal structures and ordering.

675 POLYMER THERMODYNAMICS
Prerequisite: 674 or permission of instructor. Presentation of the theories and experiments concerning polymer solutions, polymer phase equilibria, and polymer phase transitions and applications.

676 POLYMER CHARACTERIZATION LABORATORY
Prerequisite: 675 or permission of instructor. Laboratory analysis of polymers by fractionation, sedimentation, x-ray diffraction, microscopy, thermal analysis, spectrometry and chromatography.

680 POLYMER PROCESSING
Prerequisite: Permission. Study of process engineering in polymer conversion industry, emphasizing analytical treatments of elastic behavior and mechanisms of failure of resins, melts, polymers and materials.

681 DESIGN OF RUBBER COMPONENTS
Prerequisite: 4800:337 or equivalent. Principles of design of elastomeric products, emphasizing analytical treatments of elastic behavior and mechanisms of failure of resins, melts, polymers and materials.

699 MASTER'S RESEARCH
Prerequisite: Permission. For second semester or half-year students. Supervised original research in polymer science under direction of faculty member. Followed by submission of written research. A cumulative GPA of 3.0 or better required.

701 POLYMER TECHNOLOGY I
Prerequisite: Permission. Principles of compounding and testing, processing principles and types of operation, design principles.

702 POLYMER TECHNOLOGY II
Prerequisite: 701 or permission of instructor. Rubber industry, rubber compounding and processing, vulcanization methods, physical testing, plastic preparation and compounding, manufacturing processes, lecture/laboratory.

703 POLYMER TECHNOLOGY III
Prerequisite: 702 or permission of instructor. Flow properties, extrusion, calendaring and making, molding processes, extrusion, calendaring and making.

704 CONDENSATION POLYMERIZATION
Prerequisite: 3150:463/653 or permission of instructor. Survey of the theory and practice of condensation polymerization. Numerical examples are presented with special emphasis being placed on the properties and applications of polymers prepared by this technique. Structure-property relationships are highlighted for several major polymer classes.

706 FREE RADICAL REACTIONS IN POLYMER SCIENCE
Prerequisite: 3150:463/653 or permission of instructor. Covers the kinetics and mechanisms of free radical initiation reactions encountered in polymer science, including polymerization methods, detailed considerations of the initiation, propagation and termination steps in many polymerizations and copolymerizations, preparation of block and graft copolymers by free radical initiated reactions and the mechanisms of free radical induced degradation reactions.

707 KINETICS OF POLYMERIC PROCESSES
Prerequisite: 632 and 675 or permission of instructor. Principles of kinetic theory and statistical mechanics are applied to polymer diffusion, polymerization kinetics, polymer adhesion, membrane transport, polymer phase transformations, gel formation and colloidal destabilization.

708 MACROMOLECULAR CHAIN STRUCTURE
Prerequisites: Either 3150:314, 3650:301, or 4200:305 or permission. Chain-like structure of large molecules, fundamental theories of chemical conformation and statistical mechanical models developed to degree that their applications to polymer problems can be discussed.

709 MACROMOLECULAR CHAIN STRUCTURE
Prerequisite: 708 or permission. Examination of topics in 708 including experimental techniques used in elucidation of chain structure.

711 SPECIAL TOPICS: POLYMER SCIENCE
Prerequisite: Permission. Study of topical subjects of current interest in polymer science, encompassing chemistry, physics or engineering aspects of macromolecular substances and including laboratory work where applicable.

712 SPECIAL TOPICS: POLYMER SCIENCE
Prerequisite: Permission. Topics of current interest in polymer science, encompassing chemistry, physics or engineering aspects of macromolecular science.

713 CHAIN STRUCTURE LABORATORY
Prerequisite or corequisite: 708 or permission of instructor. Designed to apply principles discussed in 708 to laboratory determination of polymer structure.

899 DOCTORAL RESEARCH IN POLYMER SCIENCE
Prerequisite: Open to properly qualified student accepted as candidate for Doctor of Philosophy in Polymer Science. Depending on availability of staff and facilities.
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Full-Time Faculty and Administration*

September 1989


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July 1989

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RANDAL L. PARKINSON, Assistant Professor of Military Science (October 1988) B.S., Western Illinois University, Captain, Infantry.
JAMES M. PLAZO, Assistant Professor of Military Science (November 1988) B.A., The University of Akron, Captain, ANG, Field Artillery.
PETER J. ZIELINSKI, Assistant Professor of Military Science (July 1987) B.B.A., University of Notre Dame, 1979, Captain, Field Artillery.
DONALD L. TRU, Chief Instructor (July 1986) Master Sergeant.
TERRY L. SCAFIE, Principal Civil Instructor (July 1988) Sergeant First Class.
CHARLES W. KING, Supply Sergeant (July 1988) Staff Sergeant.
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