

# General Bulletin

(USPS 620-400)

THE UNIVERSITY OF AKRON 1979-80



# Background

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## History

Established by the Ohio Universalist Convention on May 31, 1870, Buchtel College was built on a hill overlooking Akron, a thriving industrial city of 10,000, situated at the summit of the Ohio Canal. The College was named in honor of John R. Buchtel, a farm machinery manufacturer, whose money and spirit sustained the enterprise in higher education. Support also came from local men who pioneered such important industries as cereals, clay products, matches, farm implements and rubber.

By 1913 it was apparent that Buchtel College had stronger allegiances with the city of Akron than Universalism, and in that year its assets were transferred to the city as the nucleus of The Municipal University of Akron. The Buchtel name was perpetuated in the Buchtel College of Liberal Arts, and on July 1, 1970, in the Buchtel College of Arts and Sciences.

From 1910 to 1920, Akron was America's fastest-growing city, blossoming from 70,000 to 208,000 persons within that decade, and the University grew similarly. In 1914 a College of Engineering was established. Other professional colleges followed: Education (1921), Business Administration (1953), Law (1959), Community and Technical College (1964), Fine and Applied Arts (1967) and Nursing (1967). To make courses available to a broad cross-section of citizens, a comprehensive evening session was established in 1915. Today over 7,800 Evening College students pursue undergraduate and graduate education in every degree program offered by the University.

In undergraduate education, Akron was an early supporter of the free elective idea (1880's) and general education (1935), the latter program being developed into one of the most fully rationalized in the country. Graduate work evolved from awarding of the first master's degree (1882) to the beginning of doctoral work in 1956. Currently, doctoral programs are offered in 14 fields of study.

Since Buchtel College initiated college courses in rubber chemistry (1908), it is appropriate that the University's first Ph.D. program was offered in polymer chemistry. However, UA's first major research effort was the Guggenheim Airship Institute which flourished in the 1930's and 1940's.

University of Akron scientists participated in the critical development of synthetic rubber during World War II, and today the University's Institute of Polymer Science is now a world leader in polymer research and education. Currently the University's research efforts, totaling approximately \$3 million, reach into many phases of research and creative projects.

The 133-acre campus with 47 modern buildings is located in a metropolitan area of 1.5 million persons. The University of Akron now enrolls more than 22,608 day and evening students in credit courses and an additional 6,459 in "informal" noncredit education courses. Its students come from 32 states and 64 foreign countries, and its 48,000 alumni are situated around the globe in positions of responsibility. The University's long-time leadership in continuing adult education and cooperative town and gown activities has been supplemented by the cultural leadership it has provided in the renaissance of artistic endeavor in Akron.

On July 1, 1967, The University of Akron became a state university. Thus, it secured a base that enabled it to extend its influence far beyond local boundaries. Its first century of service has prepared it for a widening role in years to come.



## Mission of the University

Although the scope of interests, academic programs and activities are national and international, The University of Akron has, from the time of its founding, considered one of its special missions to be building service to the community. Accelerating growth and change in our complex society, coupled with myriad changes in the University's program and structure, offer a new challenge, in turn, requiring answers to the questions: What characteristics make a university urban? What do they imply for its special urban mission?

## Distinguishing Characteristics As an Urban University

The distinction of a university as urban goes beyond its geographic location within an urban environment. It is

an integral part of the city. It strives for a cooperative relationship with the urban community. The urban university, wherever appropriate, integrates its own programs with the host of cultural, intellectual and social activities generated by other community institutions. Most importantly, the urban university is looked upon as one of several important community resources.

The distinguishing characteristics of The University of Akron as an urban institution are reflected in its students, faculty, programs and teaching/learning process.



### Students

In comparison to the residential college or university, The University of Akron has a larger proportion of students who are:

- older;
- working full or part time, day and/or evening;
- living at home;
- first generation college students;
- in a closer relationship with the community in which the University is located.

Full-time employees seeking to gain promotion in their companies; advanced professionals wanting to keep current in their own areas of specialization; homemakers released from the responsibilities of preschool children; citizens who simply want to satisfy some special interest find The University of Akron a welcome opportunity within convenient commuting distance. They constitute a significant portion of the student body in credit and noncredit programs — day and evening. The presence of mature, working students in the classroom provides special educational and socialization experiences for the younger, full-time students from throughout the nation who make up the larger part of the student body. The older students have less time for extracurricular involvement. Outside work loads, financial demands and demands of the home and family cause frequent interruptions in their educational programs.

The University of Akron also provides the opportunity for culturally and economically disadvantaged persons with underdeveloped talents to become a significant part of the student body and to receive appropriate assistance toward meeting educational goals.

### Faculty

The basic academic programming is provided by full-time faculty. Broader, more flexible offerings are made possible by using professional and talented individuals from the community through part-time or adjunct appointments. These special faculty bring an air of immediacy about current problems in their professions into university classrooms.

Conversely, faculty involvement in the urban laboratory helps to translate theory into realistic perspectives. This continuous flow back and forth between the community and the University helps the faculty to achieve quality in all its efforts.

### Program and Teaching/Learning Process

Throughout the complete spectrum of educational offerings, ranging from certificate programs through two-year associate, baccalaureate, professional and graduate programs leading to the doctorate, the University seeks to become ever more deeply involved in the urban milieu which surrounds the campus. Through cooperative programs, internships, workshops, fellowships, research grants and special government agency projects, the curriculum is enriched in almost every academic discipline. The interaction between faculty and students in the teaching/learning process is enhanced by having available the resources of local hospitals; schools (both public and private); municipal, county and state government agencies; industry; businesses and offices.

The curricular pattern not only involves overt interaction between the University community and the greater metropolitan area, but far more significantly, includes the in-depth study of the traditional academic disciplines in order to focus the technical skills and theoretical constructs of each discipline toward the solution of urban problems. In this fashion, students inevitably will be better prepared to face the constantly fluctuating mosaic of problems which the urban landscape now is — and will be in the future.

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## The Urban Mission of The University of Akron

Modern American society is irretrievably urban. As the focus of University activities is brought closer to the community, urban society becomes more involved in the learning process of students, thus providing them with an intimacy of urban understanding that will be useful throughout a lifetime.

Thus, those characteristics which distinguish The University of Akron's students, faculty and programs all point to its distinct mission as an urban institution. The University has a responsibility to serve directly the larger "community of learning" through teaching, research, creative endeavors and public service. Within this responsibility there is a special relationship to the urban complex. Wherever and whenever possible, as plans are made and programs implemented, a deep concern about the urban process is demonstrated. The full learning opportunities of the campus to the city — and of the city to the campus is identified and continuously strengthened.



## Goals and Purposes of The University of Akron

The commitment of The University of Akron has been and continues to be the dissemination and pursuit of knowledge; the nurturing of intellectual curiosity; the search for truth; and a conscious effort to serve the community of which it is a part. This outline of goals and purposes provides a further definition of this commitment and serves as a basis upon which the individual colleges, departments and service units of the University establish realistic program objectives with specificity, practicality and accountability.

### Goal 1

The University will plan, develop, implement and measure all of its efforts in light of its primary purpose to provide optimum learning opportunities for students of a variety of ages, backgrounds and needs.

#### Some Policies and Procedures to Achieve Goal

A policy of open admission and selective retention for graduates of accredited high schools will be continued. While giving particular attention to serving students

from northeastern Ohio, the University will also endeavor to attract more students from the rest of Ohio, other states and foreign countries. Program offerings, both credit and non-credit, as well as course accessibility and scheduling will recognize that the University's constituency includes:

- recent high school graduates;
- persons transferring from other institutions;
- older persons with lifelong learning commitments or with specific learning or self-enrichment needs;
- persons who can attend only part-time;
- persons who must interrupt their attendance from time to time;
- persons who can attend only at night.

The University will utilize its urban environment in providing learning opportunities for its students. Program counseling for students will take into consideration their desires and interests as well as their aptitudes and academic potential. Both student *need* and *academic achievement* will be considered when granting financial assistance. Assistance will be provided to students in locating employment commensurate with their competence and interests.

### Goal 2

The University will continue to develop its faculty resources by emphasizing improvements in teaching and professional growth through research, publication and creative activities; by providing opportunities for them to increase leadership within their academic disciplines; and by encouraging the integration of community services and appropriate faculty activities.

#### Some Policies and Procedures to Achieve Goal

The University will continue its preeminence as a teaching institution by employing only well qualified faculty and by expanding opportunities for them to become more effective. The University will encourage and assist faculty members to secure outside support for research and creative activities related both to their teaching and to the advancement of knowledge. Faculty members will be encouraged to publish in professional journals, to take editorial responsibility for the publication of national journals and to demonstrate their creative work in shows and performances.

Resources will be made available for the library, Computer Center and media services to secure the materials, information and services necessary to support teaching, research and scholarly activity. Teaching, research, creative activities and community involvement will be considered when faculty performance is evaluated.

### Goal 3

University programs and the teaching/learning process will be designed to fulfill the students' varied academic needs, to emphasize quality and to reflect the comprehensive role of the urban university in modern society.

**Some Policies and Procedures to Achieve Goal**

- The University will encourage a continuous search for improved ways and means of conducting the teaching/learning process.
- Current programs and curricula will be evaluated continuously in relationship to this goal.
- New programs at all levels will be developed on a selective basis to meet changing technological, social and cultural needs within the resources available.
- All undergraduate programs will contain a general education experience, including courses in the social sciences, the humanities and the natural sciences.
- An honors program will be provided for those with outstanding intellectual capability and motivation.
- Priority for new doctoral and master's degree programs will be based on demonstrated needs of contemporary society and the academic disciplines, the need to maintain quality, the resources available and the enrollment potential.
- Inter-institutional cooperation in offering academic programs, both undergraduate and graduate, will be encouraged where appropriate.

**Goal 4**

The University will maintain an eminent position of service to the urban community through its programs, faculty and students.

**Some Policies and Procedures to Achieve Goal**

- Evening scheduling of degree programs as well as continuing education programs will continue to increase.
- The University will continue to encourage faculty to conduct research related to urban problems and to utilize their expertise in public service activities in the community.

- Selective programming in the visual and performing arts will contribute to Akron's cultural renaissance.
- The University's urban setting will be utilized as a "laboratory" for students to gain a variety of experiences related to their course work, to develop their cultural awareness and to acquire those skills necessary to learning in a complex society.

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## Accreditation

Accreditation assures students that their 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 our school. For students taking pre-professional courses in order to eventually study advanced fields such as medicine, dentistry, law and theology, there is an assurance of sound preparation for acceptance at other graduate and professional schools. Students also have the security of knowing that credits earned at The University of Akron have transfer value to comparable institutions just as incoming transfer students will find the University honoring most of their credits earned at a similarly accredited college or university. Those students planning to obtain a bachelor's or associate degree and then enter their chosen vocation or profession will find their degree respected whenever they present their credentials to a prospective employer.

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

American Assembly of Collegiate Schools of Business

American Chemical Society

American Dietetic Association

American Speech and Hearing Association

Engineer's Council for Professional Development

National Accrediting Agency for Clinical Laboratory Sciences

National Association of Schools of Music

National Council for Accreditation of Teacher Education

National League for Nursing

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 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

North Central Conference on Summer Schools

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 educational spectrum academically. Programs are available leading to the associate (2-year), bachelor's (4-year), master's (graduate) and doctoral (graduate or professional) degrees. Students can 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, General College, School of Law or College of Nursing.



## Associate Programs

In this fast-paced age of technological development, a need has grown for persons trained specifically for work in the semi-professional, technical and highly-skilled professions. Most critically needed are lab technicians, health technicians, engineering assistants, sales people, supervisors, secretaries and management assistants. The following is a list of our associate degree programs:

- Community and Technical College
  - Arts
  - Business Management Technology
    - Banking Option
  - Chemical Technology
    - Industrial
    - Rubber and Plastics
  - Geology
  - Environmental
  - Forensic
  - Commercial Art

- Community Service Technology
  - Alcoholism Service
- Criminal Justice Technology
  - Corrections
- Cytotechnology
- Data Processing
- Educational Technology
  - Child Development Aide
  - Elementary Aide
  - Library Aide
- Electronic Technology
- Fire Science Technology
- Food Service Management
- Industrial Technology
- Instrumentation Technology
- Labor Studies Technology
- Mechanical Technology
- Office Services Technology
- Radiologic Technology
- Real Estate
- Respiratory Therapy
- Sales and Merchandising
  - Retailing
  - Industrial
  - Fashion
- Secretarial Science
  - Executive
  - International
  - Legal
  - Medical
- Surgical Assisting
- Surveying and Construction Technology
  - Construction
  - Surveying
- Transportation
  - Commercial Aviation

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## Baccalaureate Programs

The University of Akron believes that all college students should master basic courses in the humanities, social sciences and physical sciences and thus supports the idea of the General College concept. Students seeking a baccalaureate degree and who have attained less than 30 college semester credits, study in the General College before transferring to a degree-granting college. The General College develops the ability to understand and express ideas effectively and to comprehend the processes involved in accurate thinking. After completing the general studies phase, students enter a degree granting college to concentrate their studies in



their academic area of interest. The following is a list of our baccalaureate programs:

Community and Technical College

Electronic Technology

Mechanical Technology

Buchtel College of Arts and Sciences

Biology

Botany

Ecology

Medical Technology

Microbiology

Physiology and Pre-Professional

Zoology

Chemistry

Classics

Greek

Latin

Economics

Labor Economics

English

Geography

Geology

Geophysics

History

Humanities

Mathematical Sciences

Applied Mathematics

Computer Science

Statistics

Modern Languages

Natural Sciences

Philosophy

Physics

Applied Physics/Engineering Physics

Biophysics

Chemical Physics

Computer Physics

Geophysics

Polymer Physics

Physics/Astrophysics/Astronomy

Political Science

Criminal Justice

Psychology

Sociology

Anthropology

BS/MD

College of Engineering

Chemical Engineering

Civil Engineering

Construction

Design

Construction Technology

Electrical Engineering

Mechanical Engineering

Interdisciplinary BSE

College of Education

Elementary

Dual Certification

Foreign Language

Kindergarten — Primary

Music

Nursery School

Retraining

Physical Education K-12

Outdoor Education

Secondary/All Fields

Special Education

ER and OH

ER and MSPR

LD and ER

Technical Education

College of Business Administration

Accounting

Finance

Industrial Accounting

Management

Production

Personnel

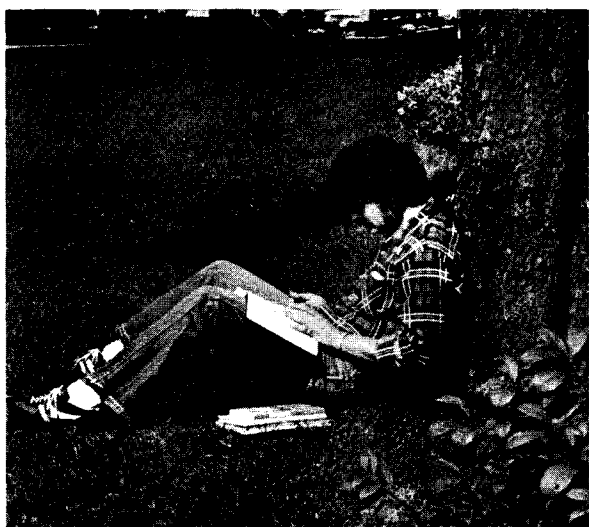
Marketing

College of Fine and Applied Arts

Art



Art History  
 Ceramics  
 Drawing  
 Graphic Design  
 Metalsmithing  
 Painting  
 Photography  
 Printmaking  
 Sculpture  
 Studio Art  
 Home Economics and Family Ecology  
   Child Development  
   Dietetics  
   Family and Child Development  
   Foods and Nutrition  
   Home Economics Education  
   Textiles and Clothing  
 Music  
   Composition  
   Jazz Studies  
   Music Education  
   Performance  
   Theory-Composition  
 Speech Pathology and Audiology  
   Social Work  
 Mass Media-Communication  
   Communication and Rhetoric  
   Mass Media-Communication  
   Speech (General)  
 Theatre Arts and Dance  
   Ballet  
   Theatre Arts  
 College of Nursing  
   Nursing




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## University Honors Program

The University of Akron's Honors Program has been designed to recognize and to support highly motivated and achievement-oriented students in any major program. Emphasizing close student faculty relationships, honors work offers unique learning experiences which should help participants to discover their own potential, capabilities and sense of direction.

Participants are eligible for substantial honors scholarships. Honors students complete all requirements for a departmental or divisional major. They also attend interdisciplinary colloquia in the humanities, the social sciences and the natural sciences which focus on the interrelations of academic studies while exploring significant issues of our contemporary society. Honors students are expected to complete a senior honors project which reflects their area of interest in the major field.

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## Certificate Programs

In order to add to the dimensions of the traditional disciplines, the University has established twelve interdisciplinary and interdepartmental programs of study. In addition to their majors, students may elect to pursue one of these programs which will add a dimension of depth through concentrated work focusing on one of the following areas:

- Afro-American Study
- Cartographic Specialization
- Computer Science
- Environmental Study
- Latin American Study
- Life Span Development: Adulthood and Aging
- Mid Careers in Urban Studies
- Peace Studies
- Planning
- Public Policy
- Real Estate
- Soviet Area Studies

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## Graduate School

The Graduate School exists to serve students who wish to further their education beyond the baccalaureate degree. The following is a list of our graduate master's degree programs:

- Buchtel College of Arts and Sciences
  - Biology
  - Chemistry
  - Economics
  - Labor and Industrial Relations

English  
Geography  
Geology  
History  
Mathematical Sciences  
    Mathematics  
    Statistics  
    Applied Mathematics  
Modern Languages  
    French  
    Spanish  
Philosophy  
Physics  
Political Science  
Psychology  
Polymer Science  
Sociology  
Urban Studies  
    Public Administration  
    Urban Planning  
College of Engineering  
    Chemical Engineering  
    Civil Engineering  
    Electrical Engineering  
    Engineering  
    Mechanical Engineering  
College of Education  
    Elementary  
        Reading Specialist or Consultant  
    Guidance and Counseling  
    Physical Education 1-12  
        Outdoor Education  
    School Administration and Supervision  
    School Psychology  
    Secondary/All Fields  
        Teach. Culturally Disadvantaged  
    Special Education  
    Technical and Vocational Education  
College of Business Administration  
    Accounting  
    Finance  
    International Business  
    Management  
    Marketing  
    Taxation  
College of Fine and Applied Arts  
    Family Ecology  
        Child Development  
        Family and Child Development

Music  
    Composition  
    Music Education  
    Music History and Literature  
Speech Pathology and Audiology  
Mass Media-Communication  
    Communication and Rhetoric  
    Mass Media-Communication  
    Speech (General)  
Theatre Arts and Dance  
    Theatre Arts

College of Nursing  
    Nursing

The following is a list of our graduate doctoral degree programs:

Buchtel College of Arts and Sciences

    Chemistry  
    History  
    Psychology  
    Polymer Science  
    Sociology

College of Engineering

    Chemical Engineering  
    Civil Engineering  
    Electrical Engineering  
    Mechanical Engineering

College of Education

    Elementary  
    Guidance and Counseling  
    School Administration and Supervision  
    Secondary/All Fields



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## School of Law

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

toward additional or advanced degrees as well as renew certification during their summer vacation. Transient students from other schools often attend and transfer their credits back to their home institution.

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## Evening College

The Evening College is a year-long, round-the-clock educational endeavor at The University of Akron. It provides educational opportunities for those who are employed during the day. The courses offered in the Evening College are fully accredited, and many faculty teach both day and evening courses. The Evening College enrollment includes more than 7,500 students working toward associate, baccalaureate and advanced degrees or attending for additional education in their chosen profession.

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## 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 of Akron has offered special institutes, workshops and courses to professional groups through the academic departments, Institute for Civic Education, Department of Special Programs and Developmental Programs.

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## Summer Sessions

The University's Summer Sessions have existed for more than 40 years, serving both day and evening students. The Summer Sessions operate so that University students can accelerate their academic progress, or high school graduates can enter college immediately after graduation. In addition to this, teachers can work

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## Wayne General and Technical College

In order to better meet the needs of citizens in Wayne, Holmes and Medina counties, the Wayne General and Technical College opened its doors in 1972 as a branch campus of The University of Akron. Six 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 in Applied Science in business management technology, electronic technology, mechanical technology, retail management technology, secretarial science or social services technology.



## The Buildings

Most of the buildings on campus carry the names of prominent persons from the area who are recognized for their contributions in administration, business, science or University service.

**Admissions Building:** (166 Fir Hill) This office is located at the corner of Fir Hill and East Buchtel Avenue. Located on the ground floor, the Office of Admissions can assist you with applications, requirements and procedures whether you are an undergraduate, post-baccalaureate, graduate, professional, transient, transfer, auditing or special student. The Institute for Futures Studies and Research, the Team Leadership Development Office and data analysis are located on the second floor.

**Alumni Relations Office:** (105 Fir Hill) Located on the second floor of The University Club of Akron, the Alumni Relations staff coordinates the University-related activities of the more than 45,000 alumni living throughout the world.

**Auburn Science and Engineering Center:** Named for Norman P. Auburn, 10th president of the University, this complex is one of the largest academic buildings under one roof in the State of Ohio. 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, as well as the Testing and Counseling Bureau.

**Bierce Library:** Named for Gen. Lucius V. Bierce, a former Akron mayor, lawyer, historian, state senator, philosopher, investor, philanthropist and soldier, it was constructed at a cost of \$8 million. Opened in spring, 1973, the University Library has total holdings here and at several other locations of 1,079,394. The facility also houses the University Archives, an audio-visual center, a microfilm department, a map room, the Archives of the History of American Psychology and the American History Research Center.

**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 last remaining link with its predecessor, Buchtel College. It provides office space for numerous administrative officials of the University.

**Carroll Hall:** Adjacent to the Gardner Student Center, Carroll Hall houses classrooms, laboratories and offices for the Center for Economic Education, the Depart-

ments of Counseling and Special Education, Developmental Programs and Computer Based Education as well as the University's Planning Department, audio-visual services, electronic systems engineering and the Learning Resources Center.

**Crouse Hall:** Crouse Hall houses the Department of Geology, classrooms and some offices for the College of Education.

**Davis Gallery:** Named in honor of Professor Emeritus of Art Emily H. Davis, the gallery opened in November, 1974, at 181 East Exchange Street, to provide cultural programs in the visual arts, a showcase for the artistic achievements of students and faculty and the finest exhibitions available of professional art work.

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

**Firestone Conservatory:** Located on the first floor of Guzzetta Hall, this facility provides classrooms, practice rooms and offices for ballet.

**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 space for bowling alleys, music rooms, lounges, student activity and publication offices and work rooms, game and billiard room, University Book Store, and cafeteria and dining facilities. Also located in the complex are the student teaching office and the University Placement Office.

**Gladwin Hall:** Housing the College of Nursing, allied health and biology laboratories, this newly constructed building was named in honor of distinguished alumna Mary E. Gladwin (1887), who rendered unparalleled service as a war nurse. A \$10 million complex opened in 1979, adjacent to Knight Chemical Laboratory, the facility includes a multi-purpose nursing laboratory and simulated six-bed hospital containing surgical-labor delivery suite and nursery suite.

**Guzzetta Hall:** Complementing the Edwin J. Thomas Performing Arts Hall, this facility was constructed directly across from Thomas Hall on Hill Street. The \$4.5 million structure dedicated in October, 1976, houses the dean of the College of Fine and Applied Arts, and the Departments of Mass Media-Communication, Music, and Theatre Arts and Dance. In addition to providing more than 40 student practice rooms, the complex houses an impressive multi-media center, a small experimental theatre and a 300-seat recital hall.

**Hower House:** Located on Fir Hill, the 103-year-old mansion houses the Institute for Civic Education. It has been designated as an 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 1908. Opened in 1979, the building features numerous innovative laboratories with the latest, most sophisticated, safety equipment along with classrooms and administrative offices.

**Kolbe Hall:** Recognized 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, instructional media offices and studios as well as classrooms and offices for the Departments of Geography and Geology.

**Leigh Hall** (formerly the Business Administration Building): Named in honor of Warren W. Leigh, first dean of the College of Business Administration, the facility located on East Buchtel Avenue houses the entire 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 entire School of Law. Opened in 1973 at a cost of \$2.5 million, it provides space for the 130,000-volume law library, classrooms, moot court room, seminar rooms and faculty offices. The center is located at the corner of East Center Street and Grant Street.

**Memorial Hall:** Dedicated to the memory of Summit County men and women who died in World War II, this is the center of men's and women's physical education activities. It contains offices of the Departments of Athletics and Physical Education, ticket sales office, two large gymnasiums, a swimming pool, Sports Information Office and related training rooms and classrooms.

**North Hall:** Located on South Forge Street, this facility houses the following administrative service departments: duplicating services, mailing services, news service, publications, purchasing, radio and television information and staff personnel.

**Olin Hall** (named in honor of Professor Oscar E. Olin and Mr. Charles Olin): Completed in May, 1975, the hall houses the dean of Buchtel College of Arts and Sciences, and the following departments and institutes: classics, economics, English, general studies, history, modern languages, philosophy, sociology and the Center for Peace Studies, Afro-American studies, English Language Institute and Institute for Technological Assistance. The complex is located at the corner of East Buchtel Avenue and South Union Street.

**Edwin J. Thomas Performing Arts Hall:** The hall was named for Edwin J. Thomas, prominent industrialist and dedicated member of the University Board of Trustees from 1952 to 1975. Costing more than \$13.9 million, this unique cultural center was formally opened during 1973. Designed to accommodate concerts, opera, ballet and theatre productions, the hall is a masterpiece

in terms of architecture, acoustics and creative mechanisms. It is located at the corner of East Center and Hill Streets.

**Schrank Hall:** Named for Harry P. Schrank, long-time member and chairman of the 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 Bld. provides offices, classroom space and career placement service for the Community and Technical College. Schrank Hall South Bld. contains facilities for Home Economics and Family Ecology, the Department of Art and the Army and Air Force ROTC units.

**Simmons Hall:** Named for Hezzelton Simmons, University president from 1933 to 1951, this hall houses the Department of Psychology, the Division of Sciences and Engineering Technology offices and laboratories and the University's Computer Center. The Institute for Life-Span Development and Gerontology and the History of American Psychology Archives also occupy a portion of the building.

**South Hall:** This facility provides additional studios for the Department of Art.

**Spicer Hall:** This major student contact building had renovations completed in mid-June, 1975. It houses the registrar, student services, Division of Counseling and Advising, the Financial Aids Office, General College, the Evening College and Summer Sessions, the Department of Continuing Education, the University auditor, controller, cashier, accounts payable and receivable, parking systems office and the state examiner.

**University Club:** (105 Fir Hill) Property of The University of Akron's Development Foundation, The University Club is operated by a private corporation for the use of its members and guests. Two dining rooms and four meeting rooms make the club an ideal location for social, cultural and intellectual activities. The Alumni Relations Office and the Development Department are located on the second floor of the building.

**West Hall:** Located at the corner of East Buchtel Avenue and Grant Street, this renovated structure houses the Center for Urban Studies, the Department of Urban Studies, the Department of Speech Pathology and Audiology and the outpatient Speech and Hearing Clinic.

**Whitby Hall:** Named for G. Stafford Whitby, a pioneer in the development of polymer science, this long-awaited addition to the Institute of Polymer Science (IPS) was opened in fall, 1975. Housing the academic portion of IPS, 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** (formerly the Education Building): Named to honor George F. Zook, president of the University from 1925 to 1933, he later became US commissioner of Education and president of the American Council of Education. This Buchtel Avenue facility houses the

College of Education and provides a lecture room that seats 260, nineteen general classrooms, a handicrafts room, a teaching demonstration classroom, an auxiliary closed circuit television studio and a language laboratory.

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## Facilities, Laboratories and Equipment

While the give-and-take relationships established through personal contact between teacher and student will always remain the keystone of the educational process, numerous studies have established the fact that imparting knowledge through the use of modern technological teaching aids makes most learning situations more effective and efficient.




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## The Applied Arts

The Speech and Hearing Clinic, of the Department of Speech Pathology and Audiology, functions as both a service and a practicum training component of the traditional academic mission of teaching-service-research. The clients served in the clinic provide the practicum experience needed by student clinicians in training, while receiving critically needed therapeutic service for themselves. The clinic also provides comprehensive case-finding, diagnostic and treatment programs outside the University, i.e., in the community for persons of all ages who may experience communicative disorders resulting from problems in the areas of speech, hearing and/or language. These valuable therapeutic services are rendered using the latest and most modern techniques and equipment. Professionally certi-

fied supervisors and teachers from the department staff are used to oversee the student clinicians performing the services. The clinic program is coordinated with other complementary community services in hospitals, rehabilitation centers and community service agencies.

The Department of Home Economics and Family Ecology has food and nutrition labs, a commercial food preparation and hospitality center and textiles and clothing labs. The Human Resource Center, within the department, is a multi-purpose lecture/laboratory area designed for demonstration and study in the areas of home management, home nursing, consumer education, housing, furnishings and community involvement.

The Department of Modern Language's two most important resources are the language laboratory and its library holdings. The language laboratory schedules working sessions for all beginning and some advanced language courses as an integral part of the course, as well as individual and voluntary student study time. The department is currently enlarging its undergraduate holdings in the library to ensure the acquisition of a minimum list of basic bibliographical material requisite for degree programs.

The Department of Geography houses a modern cartographic drawing laboratory, with adjoining darkroom and major equipment rooms, an urban analysis laboratory, a physical geography laboratory and a selected map, air photo and periodicals research collection. Major equipment includes stereo and digital plotters, electronic calculators, ERTS satellite transferscope, overhead map enlarger, field plotters, three-dimensional Perspektomat, headliner and varityper, industrial camera, vacuum frame and map scale changer. A laboratory for cartographic and spatial analysis equipped with a remote computer terminal operates as a part of the department.

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## The Fine Arts

The Department of Art provides a variety of studio environments to study assorted art forms. These include easels and drawing boards, a ceramics studio with pottery wheels and kilns, a metals laboratory, photographic lights, tools and darkroom facilities, a weaving loom, 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 Emily Davis Art Gallery houses continuous visual displays.

Guzzetta Hall, part of a \$20 million complex for the performing arts, houses the departments of Music, Mass Media-Communication and Theatre Arts. Located adjacent to the Edwin J. Thomas Performing Arts Hall, it provides all of the vital programs and modern equipment for fine arts students.

The Department of Mass Media-Communication features color television equipment which is used in the instructional curriculum. The classroom/studio is equip-

ped with color cameras, lights, monitoring and control boards, slide and film chain, audio studio and video tape recorders. Radio facilities are located within the walls of WAUP-FM, which includes audio control boards, turntables, studios and a newsroom, all for student use.

Audio mixing and recording facilities are located adjacent to the recital hall and are used in conjunction with the Department of Music. Audio and video recording equipment is also easily transported to the experimental theatre for experience in conjunction with the Department of Theatre Arts and Dance.

The Department of Music utilizes the recital hall which houses a 45-stop Mohler pipe organ, suitable for both teaching and concert performances. The University has available for student use a number of wind, string and percussion instruments. In addition, some \$30,000 worth of equipment is available to complement instrumentation for the marching and symphony bands. The department also owns a Neupert harpsichord, a harp, a nine-stop tracker organ, a Mohler practice organ, electrophonic piano laboratory and eleven Baldwin concert grand pianos for the recital hall, classrooms and teaching studios. Twenty-nine practice rooms (acoustical sound modules) are available for students enrolled in music courses and organizations.

The Department of Theatre Arts and Dance finds a teaching and performing center in the experimental theatre complete with support facilities. Kolbe Hall houses a 260-seat auditorium for theatre productions and dance recitals. Theatre students gain technical experience in lighting, stage design, make-up and sound by assisting in actual productions. The Firestone Conservatory houses the dance studios for the ballet program.

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## Education

The program of study in special education is supported by a new \$300,000 counseling and special education complex located in Carroll Hall. This facility contains eight clinic rooms with provisions for observation and a demonstration classroom. The establishment of this facility now makes possible the combining of training experiences of special teachers, school psychologists, speech and hearing therapists and school counselors. A high degree of public school involvement exists with the diagnostic clinic and demonstration classroom.

The Department of Counseling and Special Education operates a well-equipped instructional resource center which is directed by a full-time faculty member. This facility is affiliated with the National Media Center for the Handicapped. The primary objectives of the instructional materials center are to provide faculty support in teaching; help familiarize students with materials; evaluate existing instructional materials; and serve as a catalyst for the development of new materials.

The Department of Health and Physical Education makes use of Memorial Hall and Lee Jackson Field.

These facilities provide locker rooms, two gymnasiums, a swimming pool, weight room, physiology stress-testing laboratory, trainer's room, baseball and softball diamonds, soccer field, track, tennis courts and outdoor basketball courts.

The Microteaching Laboratory facilitates a program designed to give students a taste of teaching before they enter the field. It is part of a total program in secondary education which helps ease students into the teaching field without the abrupt change in the role from student to educator. Students are required to teach on four separate occasions in the microteaching laboratory located in the College of Education. They teach students from area high schools. After the ten-minute presentation, the video tape is played back and the teacher's performance is evaluated by the students and a supervisor. Then, in the light of this criticism and evaluation, the teacher reteaches the lesson to the students. The program is being used in various teacher education programs all over the country but in no other place is it used on such a wide scale as at The University of Akron.




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## Engineering and Science Technologies

The College of Engineering maintains some of the most recent equipment and finest facilities available for research and instruction in engineering.

The Department of Chemical Engineering not only features the usual assortment of sophisticated analytical instruments, but also a Weissenberg Rheogoniometer, analog computers and a high pressure pilot plant that complements the all-glass distillation absorption unit which is about 30 feet tall. The laboratory is also equipped to investigate basic rubber and plastic processes.

The Department of Civil Engineering staffs four major laboratories. In the environmental engineering laboratory, students learn to analyze water and wastewater and assess the water quality. Laboratory equipment includes pH meters, incubators, analytical balances, distillation and reflux equipment, spectrophotometers, conductivity units, flotation units, carbon absorption columns, refrigerators, autoclaves and settling, thickening tanks.

In the hydraulics laboratory, students observe the fundamental and practical aspects of fluid mechanics with several sophisticated pieces of equipment; tilting flume enables students to visualize water flow in streams and rivers. Models of bridges and dams can be studied; the wave tank enables students to study the effect of waves on lakeshore erosion, harbors, marinas, breakwaters and off-shore structures; the mobile bed tank is used to demonstrate erosion and sediment deposition patterns around bridges, piers and culvert and storm drain outlets; with the flow visualization tank, students can observe velocity profiles within the channels and around models by observing the hydrogen bubbles generated by the system.

In the soil mechanics and foundation engineering laboratory, students learn how to make various soil analyses by using a variety of tests and machines. These include triaxial cells, direct shear machines and compression machines to determine shear strength characteristics, a nuclear moisture-density device which is used in quality control during embankment construction and seismic and electrical resistivity equipment for geophysical exploration of natural soil and rock deposits.

In the structural materials laboratory, students have the opportunity to observe experimental verifications of their earlier training on the behavior of structural members subjected to tension, compression, bending and torsion. This is accomplished with the use of two universal testing machines, an MTS closed-loop system which has a loading capacity to 300,000 pounds and a CGS dynamic testing machine which can be used in either uniaxial or torsional loading. The latter two machines are used to study fatigue and crack propagation characteristics of various engineering materials. The laboratory also features a strong room which has a specially stiffened floor which is used for conducting bending tests of large steel and reinforced concrete beams as well as large size wall panels used in prefabricated construction. Students also have the opportunity to utilize modern instruments which include multi-channel strain indicators, oscilloscopes, x-y plotters and magnetic amplifier systems.

Facilities for electrical engineering students include: laboratories and equipment for the study of propagation, lasers, antennas, microwaves, digital and analog controls, basic electronics and electrical machinery.

The Department of Mechanical Engineering laboratories feature: a stress analysis laboratory equipped with polariscopes, strain gauges, instrumentation for dyna-

mic and static strain measurement and photographic darkroom facilities; a vibration and acoustics laboratory equipped with sound pressure level meters, dynamic shakers, frequency analyzers and an anechoic chamber; a system and control laboratory equipped with fluidic control systems and various other instrument simulation and control devices; a heat transfer laboratory equipped with a Scott Thermal Conduction System, radiation and temperature measurement system and various heat exchangers; a thermal and fluid sciences laboratory equipped with subsonic and supersonic wind tunnels, internal combustion engines, compressors, gas turbine engine and various other devices.

Equipment within the department includes: a two channel constant temperature anemometer (Thermo Systems), a SAICOR correlation and probability analyzer, a high speed movie camera, a nitrogen laser, an Ampex FM tape recorder, several chart recorders and two EAI analog computers.



## Natural 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 physiographs; vehicles and boats are available for field work. Advanced equipment is available for use by undergraduates working on research topics.

The Department of Chemistry is located in the recently opened Knight Chemical Laboratories, one of the safest facilities of its kind for instructional and research laboratory work.

The department is blessed with outstanding instrumentation which is used both in the undergraduate and



graduate programs. Undergraduate students will utilize modern and sophisticated instruments such as nuclear magnetic resonances 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 2,500 items including chemicals, glassware and apparatus.

The Department of Geology has rock saws and thin section equipment, a small darkroom, a Phillips Norelco x-ray diffraction unit, a small geo-chemistry laboratory with a Perkin-Elmer atomic absorption spectrophotometer, two nine-passenger, four-wheel drive field vehicles, research microscopes and auxiliary equipment and geophysical equipment including Worden gravimeter, Scintrex magnetometer, seismic recording truck, phones, instrumentation and playback console.

The Department of Physics offers excellent research instrumentation for studies involving both high-resolution and broadline nuclear magnetic resonance spectroscopy. The laboratories include experimental facilities for low-temperature solid state physics research. Some notable studies currently in progress include those concerned with quantum size effects, the Shubnikov-deHaas effect and electron tunneling at metal-semimetal junctions. Other research investigations employ nuclear quadrupole resonance, Mossbauer effect and magnetic susceptibility measurements. Studies of the physical properties of polymeric materials utilize the extensive facilities of the Department of Polymer Science.

## Social Sciences

The Department of Psychology facilities include animal housing and research laboratories. Research



laboratories include undergraduate and statistics laboratories and laboratories for the study of human detection, auto driving and other motor skills, motion sickness, attention, concept formation, perceptual style and memory. Animal laboratories study observational behavior by primates and small animals. The department carries an inventory of psychology equipment and apparatus worth \$130,000 including a mini-computer and a Beckman physiograph. The department also houses the Institute for Life Span Development and Gerontology devoted to the study and assistance of the aged.

The Department of Sociology features a large statistics laboratory with electronic calculators and adjoining classroom, a five-room small groups research laboratory for both instructional and research undertakings and an anthropology laboratory for both the storing and the study of archaeological artifacts and materials. These facilities enable the student to learn while doing.

## The Computer Center

The Computer Center at The University of Akron 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 facilities of the center are available to all students enrolled in credit (and certain non-credit) courses at the University on an "as required" basis; they are also available to faculty, staff and administrative officers of the institution. Centrally located on campus, the Computer Center is open seven days a week — day and evenings — while school is in session.

The academic systems section assists students and faculty in making effective use of the Computer Center. It provides consultation and help in preparing usable computer programs, in analysis and solution of problems where the use of the computer is indicated, and will also acquire and install prepackaged programs for specific departments. For students who encounter problems in using the computer, assistance is available all week, night or day.

The center is equipped with an IBM 370 model 158 computer with magnetic tapes, disks, remote terminals and a wide variety of peripheral equipment. An Op-Scan optical mark scanner that prepares computer-readable tapes from specially marked forms provides fast and reliable data entry for test scoring services and surveys. The Center has available all the widely used computer languages, e.g. FORTRAN, COBOL PL/1, RPG, BAL, BASIC, SPSS, GPSS, APL, as well as some lesser known, e.g. SNOBOL, FORMAC, WATFIV, ASSIST, XPL, ALGOL, COURSE WRITER, SINSRIPT, etc. An extensive library of computer programs covers a wide range of disciplines for research and instructional support. Digital plotting can be provided by high-speed printer or by line drawings from a thirty-inch Cal Comp

plotting machine. The "open shop" area includes a Digital Equipment Corporation PDP 11/40 minicomputer for "hands-on" programming used in the instructional support of computer programming. Key punches, sorters and various off-line equipment are available for general use by qualified faculty and students.

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## Instructional Media

Concern for student learning resulted in the establishment of the Office of Instructional Media — a major step toward the creation of The University of Akron's Learning Resource Center. The Office of Instructional Media incorporates the departments of Audio-Visual Services, Electronic Systems Engineering and the Instructional Television Center.

Audio-Visual Services contains a centralized collection of instructional materials (filmstrips, slides, etc.) for the purposes of supplementing University professors' lectures. An extensive collection of moveable media-hardware and mediated-software is housed in the audio-visual area for faculty and student use.

Audio-Visual Services also has a Materials Production Division which prepares original artwork and

photographic materials used by instructors for reinforcement of classroom learning principles.

Electronic Systems Engineering is to complement the degree of sophistication required by the Audio-Visual Services and the Instructional Television Center in the area of facilities planning, installation of satellite learning resource areas and the maintenance of electronics equipment.

The Instructional Television Center functions as an effective teaching tool through continuous production of lectures originating from the University's Instructional Television Center. These are transmitted via 24 video channels and 15 audio channels to most classroom buildings on the University campus from the Instructional Media Distribution Center. This has proved to be a successful means of presenting educational material to an expanding number of students while maintaining the values of traditional professor-student relationships as well as adding new values to the teaching process. Annually, an estimated 7,000 students receive part of their instruction by television.

The University of Akron, together with Kent State University and Youngstown State University, programs and produces learning and information material for Northeastern Educational Television of Ohio, Inc. (NETO) via Channels 45 and 49.



# Student Services

The Office of Student Services is a major division of the University, the purpose of which is to provide the help needed for students to develop academically, personally and socially. Special services are also available to the non-traditional adult student who wishes to continue studies in higher education. There are several facilities which help to accomplish this objective.

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## Counseling and Advising

This office is responsible for the academic counseling and advising of all freshman and sophomore level students. The advisers are professionally-trained counselors and are prepared to help the students through academic and personal counseling on an appointment or walk-in basis.

Academic counseling helps students adjust to the requirements of the curriculum and utilize course offerings that will better prepare them for the future. Sensible course loads, proper choice of subjects, scholastic achievement, study habits, outside work loads and other circumstances have an effect on successful work and can all be matters for concern in this kind of counseling.

Personal counseling is that which aids students when problems of a personal nature are obstructing their academic careers or personal lives.



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## Financial Aids

The Student Financial Aid Office, a part of the Division of Student Services, provides assistance to persons who, without financial aid, might not be able to attend The University of Akron. Six professional staff members are available to provide such assistance.

A detailed statement regarding all the programs of financial assistance can be found in Section 3 of this *Bulletin*.

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## Placement Office

Career placement assistance is available to students in the Placement Office in business, industry, government, private agencies and education. The office is located on the ground floor of the Gardner Student Center.

For graduating students, opportunities are provided for interviews with on-campus representatives of prominent businesses, industries and branches of government, including the military services and education at the primary, elementary and secondary levels. Information on careers in both administration or teaching at the college and university level is available.

The facilities and services of the Placement Office are for students from associate through graduate and professional degree levels as well as alumni.

More than 400 interviewers come to the University each fall and spring to interview degree candidates.

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## Student Health Service

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 of Akron assumes no responsibility for student accidents incurred while attending or participating in classroom, gymnasium or laboratory work.

Increased numbers of University students have brought about the expanded health service facilities immediately adjacent to the residence halls. First aid services are available in the health services, and an infirmary area is provided for 12 in-patients, with facilities for residence hall students not requiring hospital treatment.

Complete physical records of the men and women on campus are kept in the Student Health Service Center offices. A physician and a registered nurse are on duty regularly.

Residence hall students receive bed care for up to 72 hours, without charge. Those students receiving

bed care for a greater period of time will be charged the daily rate which is currently charged by local hospitals for similar 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. Whoever is present should call Security or an ambulance immediately in this kind of an emergency situation. The University assumes no legal responsibility or obligation for the expenses of such transportation or for medical services at the hospital.

Student health and accident insurance designed specifically for students 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 may purchase this insurance at the annual individual rate of \$68.00. The student insurance provides coverage for such items as hospitalization, surgical benefits and in-hospital medical benefits.

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## Student Legal Programs

This office represents an innovative and unique approach to providing necessary, but limited, legal assistance to students. While not providing the type of legal counseling that may be considered to be the practice of law, this office does provide assistance, guidance and referral to students with respect to private rights which they may believe they have.

In addition to limited legal counseling with students, this office offers programs and activities which expose students and others to legal concepts which specifically affect students and which affect citizens generally.

Reports of student misconduct are directed to this office and in all cases of alleged student misconduct this office attempts to guarantee to the student the elements of procedural and substantive due process of law, thereby affording a fair and equitable procedure by which to determine the validity of misconduct charges.

This office also coordinates reference inquiries about students for purposes of employment, transfer to another university or for other reasons. Since the collection, maintenance, use and dissemination of information concerning students is a task which must balance the individual's "right to privacy" with the University's and the community's "right to know," this office is sensitive to the concept of confidentiality and the rights of students with regard to their records.

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## Testing and Counseling Bureau

The Testing and Counseling Bureau provides psychological testing and professional counseling, without

charge, to all students enrolled for credit at The University of Akron.

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## Counseling Service

The bureau's counseling service offers assistance in identifying one's interests, aptitudes and needs for consideration in the choice of an educational or vocational goal; in dealing with personal or social problems which deter one from deriving the maximum benefit from the university experience; and in strengthening one's reading and study skills.

The counseling service maintains a career information library for use by students. In addition, information about Fulbright and Danforth Fellowships is available.

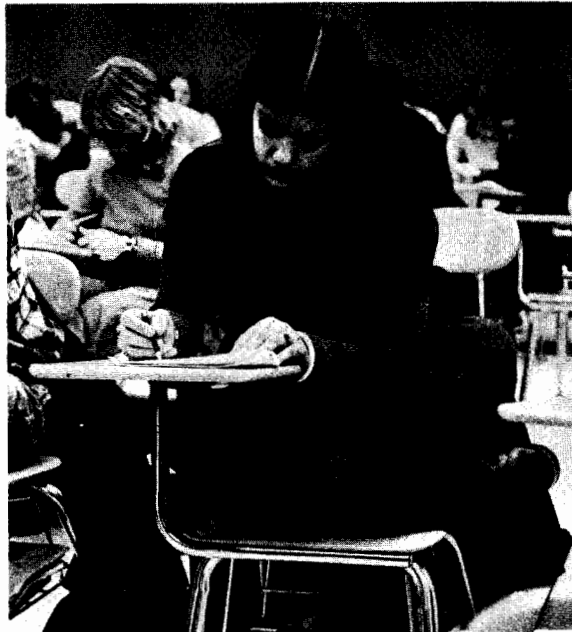
Counseling service, individually or in groups, is available by appointment or immediately, when necessary.

Consulting is available for student organizations and other groups, in such areas as human relations, leadership training, communication skills, etc.

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## Testing Service

The bureau's testing service offers a variety of testing programs such as: American College Testing, Scholastic Aptitude Test, The University of Akron foreign language and mathematics placement, Graduate Record Examination, Miller Analogies Test, Law School Admissions Test and the College Level Examination Program. (Successful completion of CLEP tests can be substituted for certain course requirements of the General College.)



## Residence Halls

The Office of Residence Halls has the responsibility for providing comfortable, safe and healthy living accommodations for non-commuting students. The residence hall program is committed to providing a living experience which contributes significantly to the educational, social and personal development of each resident student.

The University of Akron residence hall program is administered from the Office of Residence Halls located on the first floor of Bulger Residence Hall. Presently the dorm system includes 14 facilities housing approximately 1,850 students from 17 states and several foreign countries.

Living in each residence hall is a trained head resident and selected returning students who serve as resident assistants. Most of the halls are fully air-conditioned and feature semi-private 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. The rooms are furnished with beds, desks, chairs, bookshelves, closets, storage space, lamps, wastebaskets, drapes and pillows. Students **are not permitted** to bring refrigerators or pets.

The dormitories have coin-operated washers and dryers as well as lounge and study areas. Dormitory residents can have cars on campus but must purchase and display a student parking permit. There are open parking lots adjacent to the dorms as well as a deck below the Robertson Dining Hall.



## Robertson Dining Hall

All students who live in the residence halls must participate in the board plan. Residence hall occupants receive a meal ticket which entitles them to 20 meals per week in Robertson Dining Hall. All meals are served cafeteria style with an "unlimited seconds" policy. The meals are planned under the supervision of a professional dietician.

### Cost: Room and Board

The current rate for housing accommodations and food service is \$1,730 per year (\$865 per semester).

To the extent that any surplus space should ever become available in University residence halls or housing, the University shall enforce a rule requiring occupancy of such facilities by students attending the University.

### Resident Hall Program Board

The Residence Hall Program Board (RHPB) provides a series of activities designed to allow development and expansion of student social, cultural and educational interests. The RHPB consists of nine committees concerned with the following areas: movies, outings, technical, publicity, photography, nightclubs, coffeehouses, media and special interests.

The chairman of each committee solicits the participation of interested students so that involvement is increased. More information on dormitory activities is included later in this section.

### Residence Hall Student Government

The Residence Hall Council (RHC) functions as a governing body for dormitory residents. It acts as a medium of communication and policy implementation between the director of residence halls and students living in the halls. RHC maintains its own radio station, WRHA (990 AM). Each residence hall elects its own officers who are responsible for the group activities of that hall. The executive committee, the central legislative body of RHC, is the campus-wide voice of the residence hall students and is represented on campus committees by various officers.

### Dormitories

	Number of Residents
Alpha Gamma Delta House (women) 464 E. Carroll Street	51
Batrick Hall (women) 421 E. Carroll Street	24
Bulger Hall (men) Buchtel Avenue Complex	490

	Number of Residents
Grant Residence Center	450
Highrise (women) 151 Wheeler Street	
Townhouses (men) Sherman and Grant Streets	
James Street (women) 277 E. James Street	12
Mitchell Hall (women) 419 E. Carroll Street	18
Orr Hall (women) Buchtel Avenue Complex	123
Ritchie Hall (women) Buchtel Avenue Complex	96
Sisler McFawn (women) Buchtel Avenue Complex	125
Spanton Hall (women) Buchtel Avenue Complex	315
Sumner Hall (men) 430 Sumner Street	43
Thompson Hall (women) 261 Spicer Street	39
Torrey Hall (men) 282 Torrey Street	64

thropological differences among people. Children must be between the ages of two and one half through six years, and tuition is \$.85-\$1.15 per hour. Registration is handled on a per semester basis for all parents and space is allotted hourly on a "first come" basis.

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## Ecumenical Campus Ministry

A significant number of people in the University community need the Gospel made real by human interaction. The campus ministry team tries to provide a loving response to every person who approaches them, by being supportive as well as by giving personal counseling.

The campus ministers see the Church as assisting the University in shaping values and in creating awareness of self-identity. The campus ministry team sponsors Bible study, lectures, workshops, discussions, weekend retreats and social action projects.

Both Protestant and Catholic campus ministers are available at the Ecumenical Campus Ministry located at the Newman Center at 143 South Union Street.

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 South Union Street.

There are synagogues in the city for students of the 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*.

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## Hourly Pre-School

The University of Akron Hourly Pre-School is open to children of students or faculty while they are in class or studying. The curriculum covers a wide range of planned, spontaneous and facilitated experiences for children and is supervised by six 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 around the campus and community provide real-life experiences. Resource people from the community are invited to the school to share their talents and vocations with the children. The program emphasizes positive self-image, racial awareness and an-



# Extracurricular Activities

Students today are concerned about their environment — in the University, in the community and in the world. Through participation in selected extracurricular activities, a student can extend classroom experiences into relevant programs which will provide intimate contact with the community. A voice in the governance and direction of the University environment can be expressed through such groups as Associated Student Government, Residence Hall Council, Associated Women Students, Black United Students, Interfraternity and Panhellenic Councils as well as the Graduate Student Council. A student might choose to contribute through the communications media of the *Buchtelite* or *Nite Life* (student newspapers), the *Telbuch* (University yearbook) and the television and radio networks.

Students can get involved. Nearly all student groups, including sororities and fraternities, participate in local projects which benefit some segment of our community. Because the University is located in a large metropolitan area, there are many opportunities to volunteer services in areas of need. The Akron Tutorial Project is an example of channeling the University student resources for the younger students in the educational system of our community. The Center for Concern is a campus volunteer program to match the community human service needs with the skills and interests of the students.

Currently the extracurricular activities subcommittee of the student affairs committee, made up of faculty, students and administrators, serves to make recommendations regarding the allocation of monies from the extracurricular activities fund. This fund is made up of a portion of the general service fee which the University has made available to those campus groups which program activities for the total campus community. As a result, students who show ID cards, may attend athletic, musical, ballet and theatrical events, hear nationally known speakers and receive campus publications with little or no additional charge.

Students interested in forming a group must prepare a constitution and charter to be considered for registration as a University organization. Each student group has a faculty adviser who is recommended by the student members and appointed by the president of the University.

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## Student Publications

*The Buchtelite* is a student newspaper issued bi-weekly during the regular academic year. This is the campus "voice" with news, columns and photographs

describing campus events. It is published on regular newsprint, and is distributed to students free of charge at newsstands located in various spots on campus. A staff of about 50 students works on this publication.

*Tel-Buch* is a yearbook with a comprehensive editorial and photographic coverage of student life at the University. This is an impressive publication of about 300 pages. Its staff usually numbers about 25 students.

*Nite-Life* is a monthly publication with news of interest to students in the Evening College. Each year there are 10 issues distributed free to students at campus newsstands.

*Akros* is a literary magazine, published semiannually by student editors who seek expression through creative writing and art work.

*Arete* is made up of journals and newsletters which are 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. More details scholarly articles are published in the *Akron Law Review*.




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## Performing Arts

University students have ample opportunities to develop their abilities to face the public through live-audience performances such as plays, discussions, debates, recitals and the dance as well as through unseen audience productions in the areas of radio, television and film.

The Edwin J. Thomas Performing Arts Hall, complemented by Guzzetta Hall, provides students with the most architecturally stimulating and functional facilities in which students progress from the early learning stages to the final professional presentation of the arts. Stu-

dents have opportunities to perform regularly on campus and to tour in state, national and international activities.

University students interested in music may audition for membership in the famous 250-piece Marching Band, the Concert Choir, the Jazz Pops Vocal Ensemble, the award-winning Jazz Ensemble, the University Orchestra, the select Student/Faculty Chamber Orchestra, the Symphony Band, Men's and Women's Glee Clubs, Brass Choir, Percussion Ensemble, Woodwind Quintets, Brass Quintets, the outstanding Opera Theatre, the Evening Chorus, which performs regularly with the Akron Symphony Orchestra, as well as many small student ensembles.

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

Those interested in mass media-communication will find that Guzzetta Hall contains the most fully-equipped television studios of its kind in Ohio. Students participate in the Radio-Television Workshop and broadcast regularly over WAUP-FM. WRHA broadcasts directly to the residence halls and through Akron Cablevision to the community. Students participate, too, in the University's television studio, where closed circuit television lectures originate. Forensic and debate teams provide local and national competition.

The newest of the University's performing arts concentrations is the academic program in ballet. This has resulted in the organization of the Experimental Dance Ensemble as well as the professional debut of the Ohio Ballet, a company which takes unique pride in its distinctive American style.




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## Sports Activities

The University aims to provide a broad and diversified program in intercollegiate, club and intramural sports. All students, regardless of their athletic success or experience, are encouraged to take part.

A wide variety of intramurals ranging from flag football to tennis are offered. On the intercollegiate level, the University participates in 13 intercollegiate sports during the three major athletic seasons. Fall: football, soccer, cross country and women's volleyball. Winter: men's and women's basketball, swimming, wrestling and riflery. Spring: track, baseball, golf, men's and women's tennis and women's softball.

Lee R. Jackson Field covers a 23-acre site adjacent to the main campus. Included are football and soccer fields, softball and hardball diamonds, an all-weather track, tennis courts and outdoor basketball courts. Memorial Hall, home of the Zip cagers, has two gymnasiums, as well as a swimming pool, wrestling room and other training areas. The Akron Rubber Bowl, acquired and refurbished by the University, is located in the southeast section of the city. The horseshoe-shaped stadium has an official capacity of 35,482; artificial turf was installed in 1973. On the drawing board for 1980 is a new physical education center with a tentative 7,500-seat basketball arena.

All varsity athletic sports are under the control of the director of athletics (offices in Memorial Hall) and the faculty committee on athletics. This group sets the rules for awards, honors and appointments. Students desiring information about eligibility for varsity athletics should consult the registrar.

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## Social Organizations

While in college, students learn much about themselves as individuals. One of the best ways to learn this is through group membership. There are 12 national sororities, 11 national fraternities and one local fraternity on the University campus. Although these are University-supervised, the selection of membership and government of each organization is the responsibility of each individual group in accordance with the rules of the Panhellenic Council, the Interfraternity Council and the University.

The Greeks contribute much to the quality of our student body. They provide sound leadership on our campus and assist in the students' development of scholarship and service.

Most sororities and fraternities have residence facilities in their houses. Appointment of a housemother is made by the organization itself.

Fraternal organizations also add color to the campus,



through various activities such as "Greek Week" and competitive events such as the Interfraternity-Panhellenic Songfest. Greeks support many community service agencies with their time and talent.

Many students find the social programs of the residence halls and the student center as their channel for involvement. The Residence Hall Program Board and Student Center Program Board offer activities such as outings to local points of interest like Stan Hywet Hall, Geauga Lake, the Pro Football Hall of Fame and trips to football and basketball games. In addition, these groups sponsor movies, crafts, programs, dances, coffee houses, hayrides, tournaments, megalomania, concerts, road rallies, canoeing, picnics, contests, bicycling and camping. Educational experiences have been afforded by a series of speakers and discussions on topics of concern.

The academic year is culminated with Dorm Week, Homecoming Week, and May Week where an entire week of social entertainment, dances, concerts, a carnival and inter-group competition takes place.

Black United Students (BUS) have organized a group of students who assist in the recruitment, orientation and adjustment of black students. BUS, in cooperation with the Black Cultural Center, present Black History Week and other cultural programs for the benefit of all University students.

The A-Book lists the recognized student groups which cover all facets of extracurricular activities, including the honor societies, professional fraternities, departmental organizations and military groups. The University is proud of having chapters of the national freshman honor societies, Alpha Lambda Delta and Phi Eta Sigma, as well as the national senior honor societies, Omicron Delta Kappa and Mortar Board.



# Admissions

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

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## Recommended High School Courses

All applicants, in order to increase their possibilities for success, are strongly urged to complete the following preparatory courses while in high school:

- 4 units of English
- 1 unit of mathematics
- 2 units of Social Studies (including American History)
- 1 unit of natural science
- 2 additional units from any of these

Additional subjects are recommended for students planning to major in engineering, science and pre-professional:

- 1½ units of high school algebra
- 1 unit of geometry
- ½ unit of trigonometry
- 1 unit of physics or chemistry

It is strongly recommended that applicants in engineering and nursing present additional credits in mathematics and physical science.




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## Classification of Students

With an enrollment of 22,608, The University of Akron has several classifications of students seeking an education according to their own needs and abilities. Classifications include:

- **Undergraduates** — Students who have not earned a baccalaureate degree and are eligible to enroll in undergraduate level credit courses.
- **Postbaccalaureate** — Students who hold a baccalaureate degree from an accredited institution, who are eligible to enroll in credit courses on the undergraduate level and who have not been admitted to the Graduate School. Postbaccalaureate students apply for admission to the college (Arts and Sciences, Education, etc.) in which they wish to earn undergraduate credit.
- **Graduates** — Students who hold a baccalaureate degree from an accredited institution, have been admitted to the Graduate School and are eligible to enroll in graduate level credit courses.
- **Professionals** — Students who hold a baccalaureate degree from an accredited institution and have been admitted to the School of Law.
- **Special Students** — Those students who do not meet the admissions requirements but are admitted by petitioning the dean concerned for permission to take courses for which they are qualified by certain abilities or maturity.
- **Auditors** — Those students who wish to enroll in a course without obtaining a quality point value grade (A-F) or a grade of noncredit or credit. Students must indicate that they are auditors 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.
- **Transients** — (from other institutions) Those students who are regularly enrolled and eligible to continue at another institution, and who desire to enroll at The University of Akron for specified courses. (from The University of Akron) — Students enrolled at The University of Akron must obtain written permission from the dean of their college before enrolling (transient student status) for credit work at any other institution. Credit for such work may be granted at the discretion of the dean of their academic college.

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## Admission Procedure

The University of Akron operates under a policy of rolling admissions which means applicants receive a letter of admission as soon as all of their credentials are received. There is no set date for notification of admis-

sion; it is an ongoing process. However, it is advisable for prospective students to submit all of their 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 graduates, adult students, transfer students, postbaccalaureate students, special students, transient students and international students. (For information on admission to Graduate School, see Section 5 of the *Bulletin*.)

## Recent High School Graduates

Recent high school graduates should apply for admission as follows:

- Obtain an application form from the Admissions Office. If your request is by mail, use this address: Admissions Office, The University of Akron, Akron, OH 44325. Fill it out and return it as soon as possible with the non-refundable 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 payment is being made.
- At the time of your application, ask an official of your high school to send your transcript to the Admissions Office. This record of your secondary school standing must be received and evaluated before any admission action can be taken by the University.
- Take entrance tests. You can make arrangements through your local high school to take the ACT or SAT. (The University of Akron's Testing and Counseling Bureau serves as a testing center for both of these nationally recognized tests, also.) These test scores are needed before an applicant is formally admitted to the University.
- A health record will be sent from the Admissions Office after you have been admitted. Take the form to your family physician and return it to the University.
- In your letter of admission to the University, you will receive directions as to academic counseling. All new freshmen receive academic advisement through the Counseling and Advising Division of the Office of Student Services. Evening students at the same level will be advised by the Evening College.

44325. Fill it out and return it as soon as possible with the non-refundable 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 payment is being made.

- **If you are under 25** years of age you must request a transcript from your high school. This official record must be received and evaluated before admission action can be taken.
- **If you are under 21** years of age you must submit results of either the ACT or SAT. (The University of Akron's Testing and Counseling Bureau serves as a testing center for both of these nationally recognized tests.) These test scores are needed before an applicant is formally admitted to the University.
- A health record will be sent from the Admissions Office after you have been admitted. Take the form to your family physician and return it to the University.
- In your letter of admission to the University, you will receive directions as to academic counseling. All new freshmen receive academic advisement through the Counseling and Advising Division of the Office of Student Services. Evening students at the same level will be advised by the Evening College.



## Transfer Students

Students applying for admission who have formerly attended other institutions of higher learning are eligible to transfer to the University if they present satisfactory scholastic records as judged by The University of Akron officials and if the students are eligible to re-enter the institution from which they desire to transfer.

Transfer students should apply as follows:

- Obtain an application form from the Admissions Office. If your request is by mail, use this address: Admissions Office, The University of Akron, Akron, OH

## Adult Students

An adult student who has graduated from a regionally accredited Ohio secondary school or completes the G.E.D. test is eligible to enroll.

The following application procedures should be followed:

44325. Fill it out and return it as soon as possible with the non-refundable 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 payment is being made.

- If you are a transfer applicant, you must request official transcripts from the records office of all institutions previously attended. The transcripts should be mailed to the Admissions Office.
- If you are under 25 years of age and present fewer than 12 credits of accredited transfer work, you must submit a high school transcript or G.E.D. scores along with the college transcript(s). If you are under 21 years of age and have fewer than 12 transfer credits you must submit results from the ACT or SAT test in addition to a high school transcript or G.E.D. scores. If it appears necessary to validate the transfer credits of students with more than 12 credits, the appropriate admitting officer may require the ACT battery for these persons also. These documents must be received and evaluated before any admission action can be taken by the University.
- A health record will be sent from the Admissions Office after you have been admitted. Take the form to your family physician and return it to the University.
- In your letter of admission to the University, you will receive directions as to academic counseling. General College freshmen and some sophomore day students receive academic advisement through the Counseling and Advising Division of the Office of Student Services. Evening students at the same level will be advised by the Evening College. Students in the Community and Technical College or a degree granting college will be advised by a faculty member in the appropriate department.

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## Postbaccalaureate Students

Students who hold a baccalaureate degree from an accredited college and wish to further their education but have not been admitted to the Graduate School should apply as postbaccalaureate students through the Admissions Office.

This procedure should be followed:

- Obtain an application form from the Admissions Office. If your request is by mail, use this address: Admissions Office, The University of Akron, Akron, OH 44325. Fill it out and return it as soon as possible with the non-refundable 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 payment is being made.
- If you are a postbaccalaureate, you must request the registrar of the institution(s) from which you graduated or which you have since attended to send an official and complete transcript. These documents

must be received and evaluated before any admission action can be taken by the University.

- A health record will be sent from the Admissions Office after you have been admitted. Take the form to your family physician and return it to the University.
- In your letter of admission, you will receive information on registration and instructions for academic counseling by a faculty member in the appropriate department.

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## Special Students and the High School/College Program

Special students are those who do not qualify for regular admission to the University or those who are participating in a special short-term academic program.

Special students may not take more than 15 credits unless they gain official status as regular students.

If you wish to enroll as a special student:

- Obtain a special student application from the Admissions Office, The University of Akron, Akron, OH 44325.
- **If you are still in high school**, you must also submit written permission from either your high school principal or guidance counselor to participate in the program.
- You will receive information regarding registration for classes and academic advisement in your letter of admission to the special student program.

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## Transient Students

Undergraduate transient students apply directly to the Admissions Office. Graduate students apply through the Office of the Dean of the Graduate School.



Transient students may not, as a general rule, attempt more than 16 credits in any semester or session and are subject to all rules and regulations of The University of Akron.

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

- Obtain a transient student application from the Admissions Office, The University of Akron, Akron, OH 44325. Complete it and return it with the non-refundable application fee (a one time charge).
- It is highly recommended that you receive written approval by your home institution of the coursework for which you plan to enroll.
- After you are admitted, you will receive information regarding registration. The admissions officers act as transient student counselors, and one day of open registration is set apart for transient students to register for classes.

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## International Student Program

The University of Akron welcomes qualified students from other lands and seeks to make their educational experiences pleasant and meaningful. During the 1978-79 academic year, approximately 300 students with citizenship other than the United States attended the University. These students represent 52 countries and are pursuing studies in a number of major fields.

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## Admission Procedures

Applicants from abroad can only be admitted to the University in September, the beginning of the academic year. All admission requirements should therefore be completed by July 1 preceding the September in which the student desires to enroll.

In addition to those records mentioned under *Admission Procedures — Adult Students*, two additional documents are required of the international student:

- Proof of English language proficiency. The University of Akron requires all students for whom English is not the native language to participate in the Test of English as a Foreign Language (TOEFL). This test is administered throughout the world in major cities. Applications may be obtained from bi-national agencies, U.S.I.S. offices or by applying directly to Educational Testing Service, Princeton, NJ 08540. Because it normally takes four to six weeks for the University to receive the results of the TOEFL, students are encouraged to take the examination in October or January. The University cannot guarantee students who take the examination in March that their records will be processed completely before the July 1 deadline.

- Proof of adequate financial support. International students are requested to transmit a letter from an appropriate governmental or bank official showing that they have sufficient funds to cover the cost of their education while attending The University of Akron and that these funds will be available to them in our country. It is estimated that international students will need a minimum of \$4,500 per year for undergraduate and graduate study for their tuition and living expenses while attending The University of Akron. Immigration regulations prevent students from earning any substantial portion of this amount. There are virtually no scholarships available to undergraduates from abroad, although graduate students may request and often receive financial aid through fellowships and graduate assistantships. Graduate students who are interested in applying for this aid should request the necessary forms at the time they apply for admission to the Graduate School.

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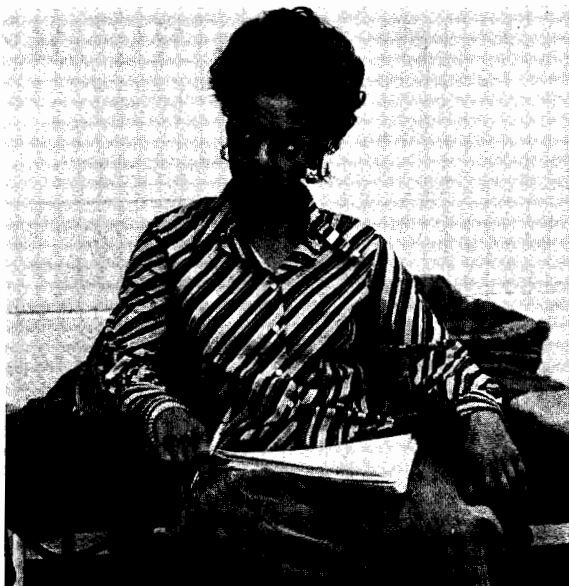
## Orientation

International students are required to attend a special orientation program which begins two weeks before classes. During the orientation, international students are given an English language placement examination. This is in addition to the proficiency examination overseas. Students may be required to participate in non-credit English classes if it is felt the results of this placement examination warrant such action.

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## English Language Institute

The University of Akron offers an intensive English Language Institute for international students whose command of the English Language has not reached a



level of proficiency to enable them to begin full-time coursework. The English Language Institute operates on a schedule of two 15-week semesters and a summer session. Applicants are required to pass a language proficiency test before they can be admitted as degree seeking university students for full-time coursework.

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### Special Note

The University of Akron has a director of International Studies, a full-time international student adviser and instructors of *English as a Second Language*. If international applicants have questions about housing, climate

or immigration regulations, they are encouraged to contact the international student adviser directly.

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

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### Special International Education Programs

The University of Akron sends students to different parts of the world as part of its continuing program — *Classrooms Around the World*. This program, offered for graduate or undergraduate credit, was started in 1960.



# Procedures and Requirements

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## Orientation

The first major contact a new student has with the University after having been admitted comes during an orientation period held prior to the beginning of each semester. During orientation, new students learn a great deal about the University and about what it expects from students. They meet many of the University's administrative officers and faculty members and discuss their problems and questions with upper college students. In this way, new students have an opportunity to become acquainted with their chosen University and clear up many of the questions which arise when embarking on a new enterprise.

## Counseling

During orientation, and each term thereafter, all students meet with counselors individually to discuss their progress to date and the next logical step in the progression of their academic program. During that session, the counselor and student together review the areas of success as well as the problems which have been encountered in previous terms in order to determine what courses the student's academic record calls for in future terms. During that session the two then plan a schedule of courses to be taken during the next term.




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## Registration

Each term it is necessary for students to select specific courses, complete the necessary forms and pay the appropriate fees. This formal process is called registration.

The student may elect to register by mail or in person. Details relative to each of these options is described in the *Schedule of Classes* published every academic period and available upon request from the student's advising agency: Office of Counseling and Advising, Evening College, or degree-granting college. A non-refundable late registration fee is assessed registrants enrolling after the official open registration period.

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## Class Attendance

Students are expected to attend all class meetings for which they are registered. Students may be dropped from a course by their dean if they are repeatedly absent and the instructor recommends this action; students can gain readmission only with permission of the dean and the instructor.

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## Student Schedules

### Modification of Student Schedules

Students must register for a course before the end of the first week of the term. Students may alter the schedule of courses for which they are registered only with the permission of their dean or the dean's designate.

Day students in the General College and first term students in the Community and Technical College should make all changes through their advisers in the Counseling and Advising Office, Spicer Hall; evening students in these colleges should contact the Evening College Office, Spicer Hall.

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## Withdrawal

Students may withdraw from a course for any reason up to the midpoint of a semester or summer session (the end of the eighth week of a semester and the equivalent point of a summer session) with the signature of their adviser.

After midpoint of a semester or a summer session, students must have the written approval of both their instructor and adviser to withdraw. Such approval must be

dated and signed by the instructor prior to the last week of classes. Should either refuse to sign the withdrawal form, students may appeal to the dean of their college who shall make the final decision. This requirement need not be met when students are requesting complete withdrawal from the University.

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.

Students may be dropped from a course by their dean if they are repeatedly absent and the instructor recommends this action. A dismissed student may gain readmission only with the permission of the instructor and the dean. Students dropped from a course receive an "F" which counts as work attempted whenever quality-point ratio calculations are made.



## Transfer Credit

Coursework taken at an institution of higher education in the United States of America which is fully accredited by an appropriate regional accrediting association; or is not fully accredited by an appropriate regional accrediting association but which has a "G", "L", "P", or "I" listing in the *Transfer to Credit Practices of Selected Educational Institutions*, the American Association of Collegiate Registrars and Admissions Officers (AACRAO); will be listed on The University of Akron official academic record. Each course will reflect the course number, title, grade and credit value; no quality point value will appear on the record and no grade-point average will be calculated for the coursework listed. In addition, the name of the institution will be listed on The

University of Akron official academic record as well as the time period during which the courses were taken.

For courses which have been taken at an institution of higher education of the types listed above, the dean of the college in which the student intends to obtain the degree will specify which courses listed, other than general studies, will apply toward the degree requirements at The University of Akron. This specification will be made at the time the student enters the degree granting college. The dean of the General College will specify which courses listed will apply toward the general studies requirements when the student enters the University.

For courses which have been taken at an institution which as a "G", "L", or "P" listing in the AACRAO *Transfer of Credit Practices*, the specification will be made by the student's dean on a provisional basis and must be validated by successful completion of credit work at The University of Akron. The validation will normally consist of completing 16 credits of designated coursework at The University of Akron with a grade-point average of 2.0 or better.

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## Transient Student

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

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## Credit by Examination

Students interested in earning credits by special examination may do so with the permission of the dean of their college and the dean of the college in which a particular course is offered and through payment of the special examination fee. The grade obtained in such an examination is recorded on the student's permanent academic record. Credit by examination is not permitted in the term before graduation.



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## Grade Policies

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### Credit/Noncredit Option (Undergraduate and postbaccalaureate only)

- Students who take a course on a "credit" or "non-credit" (CR/NC) basis, and who earn a grade equivalent to "A" through "C-", shall receive (CR) for the course and have the grade, CR, placed on their permanent record; a grade equivalent to "D+" through "F" will be recorded with the noncredit grade, NC.
- Students who have completed 50 percent of the number of credits required for a degree with a G.P.A. of at least 2.3, shall be allowed, with the consent of their adviser, to take one free-elective\* 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 G.P.A.
- No more than 16 credits of non-language 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).
- The election to take a course on a CR/NC basis can be made *only* at the time of registration for that course. Students who elect 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 those 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 official academic record.
- A student may repeat a course for credit (CR), or a quality point 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.
- Students taking the course on a noncredit basis are expected to meet the full requirements of the course as required by the instructor.

\*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.



### Re-Examination

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

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### Repeating Courses

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

- In order to secure a quality point value grade (A-F) or a grade of NC, CR or AUDIT, students may repeat a course in which they previously received the grade of "D+", "D", "D-", "F", AUD or NC. Registrations under the CR/NC option are subject to the restrictions in the CR/NC policy.
- The student must repeat the same course within 12 months of the completion of the prior attempt unless given special permission by the student's dean to extend this period or substitute another course if the previous course is no longer offered. Such course 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 the student's class standing.
- For purposes of this section, credit for this course or its equivalent will apply only once toward meeting degree requirements.

## Academic Reassessment

Undergraduate students who have not attended an institution of higher education\* for at least three calendar years; enroll at The University of Akron; and maintain a grade-point average of 2.5 or better for their first 24 credits may petition their dean to delete from the grade-point average the grades of their previous enrollment at The University of Akron. If the student qualifies, all previous grades will be deleted from the grade-point average up to the maximum allowed.

The number of credits deleted from the grade-point average shall not exceed 30 percent of the hours required for the degree objective of the student. If the number of credits earned before the three year interval exceeds 30 percent of the student's degree requirements, the 30 percent factor will apply to the first credits earned.

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

In the determination of graduation with honors and in the determination of the student's class standing, all grades obtained at The University of Akron 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.



\* Which is fully accredited by an appropriate regional accrediting association or which has a "G" listing in the *Transfer Credit Practices of Selected Educational Institutions*, the American Association of Collegiate Registrars and Admissions Officers.

## Grades and the Grading System

Students at the University receive grades on various types of classroom performance during the process of most courses and a final grade at the end of the term. At the end of the term, the Registrar's Office mails grade reports to students' home addresses; summer grade reports are mailed for both summer sessions at the end of the second summer session.

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

This method of recording grades is explained as follows:

Grade	Quality Points Per Credit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0
AUD (Audit)	0.0
CR (Credit)	0.0
NC (Non-Credit)	0.0

The following grades may also appear on the term grade reports or on the official academic record: there are no quality points associated with these grades.

I — Incomplete: Means 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: Means 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: The student's instructor and the instructor's dean may for special reason authorize 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 present issue of the record, no grade had been reported by the instructor.

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

\*\* If instructors wish to extend the "I" grade beyond the following term for which the student is registered, prior to the end of the term they must notify the Registrar's Office 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 Registrar's Office in writing.

**Importance of Grades**

- Students become either eligible or ineligible to remain at the University, according to the quality point value of each grade for each course which they have completed.
- Students who maintain specified levels of scholastic achievement receive privileges to participate in extra-curricular activities.
- On the basis of grades, students receive opportunities to take additional courses in order to accelerate their academic progress.
- Students must maintain a quality point average of at least 2.0 (C) and complete approximately 30 credits to be eligible to transfer to a degree-granting college from the General College. Their acceptance is dependent on the approval of the dean of the college which they have chosen to enter and on their academic performance to date.
- To receive a degree, each student must have attained a quality point average of at least 2.0 for all work taken at The University of Akron.
- High grades are essential for persons who intend to go on to graduate work.



**Probation-Dismissal**

Students who fail to maintain a quality point average of 2.0 (C) are placed on academic probation and may be subject to a change of courses, suspension or some other form of discipline. Academic discipline is determined by the dean of the college in which the student is enrolled. Reinstatement of students is determined by the dean of the college from which they were dismissed.

Students who have been dismissed from the University are not eligible to register for credit courses until readmitted.

**Graduation with Honors**

For a student who is being awarded an initial baccalaureate degree and who has completed 60 or more credits at The University of Akron, the degree

will be designated	if the overall quality point average is
Summa Cum Laude .....	3.75 or higher
Magna Cum Laude .....	between 3.50 and 3.74
Cum Laude .....	between 3.25 and 3.49

For a student who is being awarded an initial associate degree and who has completed 30 or more credits at The University of Akron, the degree

will be designated	if the overall quality point average is
With Distinction .....	3.25 or higher

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**Graduation**

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**Requirements for Baccalaureate and Associate Degrees**

A candidate for the baccalaureate or the associate degree must:

- File an application for graduation with the registrar. If you plan to complete degree requirements at the end of fall semester, submit an application by or before March 15. If you plan to complete degree requirements at the end of spring semester, submit an application by or before September 15.
- Earn a minimum 2.0 grade-point average as computed by the registrar for work attempted at The University of Akron consistent with the *Repeating Courses* policy. The G.P.A. achieved at the time of completion of requirements for a degree will be used to calculate rank in class and honors.
- Meet all degree requirements which are in force at the time a transfer is made to a degree-granting college. If the student should transfer to another major, then the requirements should be those in effect at the time of the transfer. For a student enrolled in an associate degree program in the Community and Technical College, the requirements shall be those in effect upon entrance into the program.
- Be approved for graduation by the appropriate college faculty, University Council and Board of Trustees.
- Complete the requirements for a degree in not more than five calendar years from the date of transfer, as defined below. In the event the student fails to complete the degree requirements within five calendar years from the date of transfer, the University re-

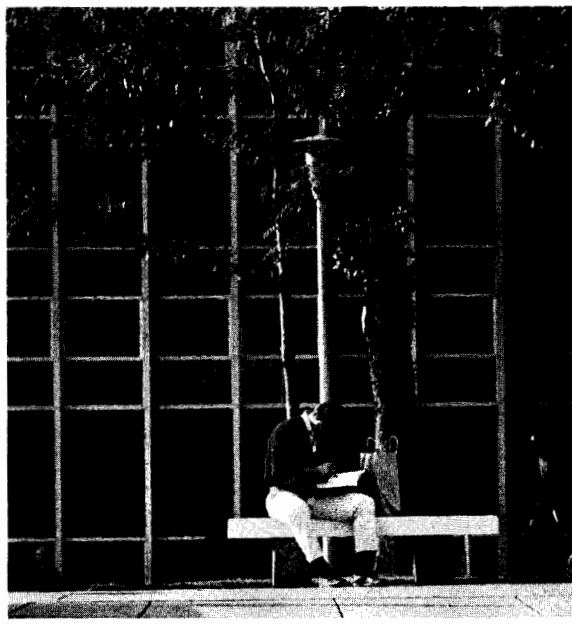
serves the right to make changes in the number of credits and/or courses required for a degree.

The date of transfer for a student in a baccalaureate program will be the date that the student is accepted by the degree-granting college. For a student enrolled in an associate degree program in the Community and Technical College, the date of transfer refers to the date of entrance into the program.

- Earn the last 32 credits in the baccalaureate degree total or 16 credits in the associate degree total in residence at The University of Akron unless excused in writing by the dean of the college in which the student is enrolled.
- If students who have transferred from their institutions wish to present for their major, fewer than 14 credits earned at The University of Akron, they must have the written permission of both their dean and head of the department concerned.
- Discharge all other obligations at The University of Akron.

- Deleting courses.
- Amending courses by increasing or decreasing the credits of specific courses, or by varying the content of specific courses.
- Offering substitute courses in the same or in cognate fields.

The dean of the college, in consultation with the department or division head of the student's major field of study, may grant waivers in writing, in the event a change in rules affecting degree requirements operates with undue hardship upon a student enrolled before the change was effective. The action of the dean of the college in granting or refusing a waiver must be reviewed by the vice president and provost on his own motion, or at the request of the dean of the college of the student affected or at the request of the student affected.



### Requirements for Additional Baccalaureate and Associate Degrees

- Meet all the requirements given in Section 3, *Requirements for Baccalaureate and Associate Degrees*.
- Earn a minimum of 32 credits which have not counted toward the first baccalaureate degree or 16 credits which have not counted toward the first associate degree.
- Earn the above credits in residence at the University.

### Change of Requirements

To better accomplish its objectives, the University reserves the right to alter, amend or revoke any rule or regulation. The policy of the University is to give advance notice of such change, whenever feasible.

Unless the change in a rule or regulation specifies otherwise, it shall become effective immediately with respect to students who subsequently enter the University, whatever the date of their matriculation.

Without limiting the generality of its power to alter, amend or revoke rules and regulations, the University reserves the right to make changes in degree requirements of students enrolled prior to the change by:

- Altering the number of credits and/or courses required in a major field of study.

### Credit and Quality Point Requirements for Graduation Listed by College and Degrees Granted

	Min. Cr.	Min. Qual. Pt. Avg. Req.
<b>Arts and Sciences</b>		
Bachelor of Science in Labor Economics	128	2.0
Bachelor of Science in Political Science/Criminal Justice	132	2.0
Bachelor of Arts	128	2.0
Bachelor of Science	128	2.0
Bachelor of Science in Medical Technology	128	2.0

	Min. Cr.	Min. Qual. Pt. Avg. Req.
<b>Engineering</b>		
Bachelor of Science in Engineering	136	2.0
Bachelor of Science in Chemical Engineering	136	2.0
Bachelor of Science in Civil Engineering	136	2.0
Bachelor of Science in Electrical Engineering	136	2.0
Bachelor of Science in Mechanical Engineering	136	2.0
Bachelor of Construction Technology	136	2.0
<b>*Education</b>		
Bachelor of Arts in Education	128	2.0
Bachelor of Science in Education	128	2.0
Bachelor of Science in Technical Education	128	2.0
<b>Business Administration</b>		
Bachelor of Science in Business Administration	128	2.0
Bachelor of Science in Industrial Management	128	2.0
Bachelor of Science in Accounting	128	2.0
<b>Fine and Applied Arts</b>		
Bachelor of Arts	128	2.0
Bachelor of Arts in Dietetics	128	2.0
Bachelor of Arts in Foods and Nutrition	128	2.0
Bachelor of Arts in Clothing and Textiles	128	2.0
Bachelor of Arts in Family and Child Development	128	2.0
Bachelor of Arts in Speech Pathology and Audiology	128	2.0
Bachelor of Arts in General Speech	128	2.0
Bachelor of Arts in Theatre Arts	128	2.0
Bachelor of Arts in Mass Media-Communication	128	2.0
Bachelor of Arts in Communication/Rhetoric	128	2.0
Bachelor of Arts in Ballet	128	2.0
Bachelor of Music	128	2.0
Bachelor of Fine Arts	128	2.0
<b>Nursing</b>		
Bachelor of Science in Nursing	131	2.0
<b>Community and Technical</b>		
Associate Degree in Arts	64	2.0
Associate Degree in Applied Science in:		
Business Management Technology	66	2.0
Chemical Technology	64	2.0
Commercial Art	64	2.0
Community Services Technology	64	2.0
Criminal Justice Technology	64	2.0
Cytotechnology	64	2.0
Data Processing	64	2.0
Educational Technology	64	2.0
Electronic Technology	68	2.0
Fire Science Technology	64	2.0
Food Service Management	64	2.0

	Min. Cr.	Min. Qual. Pt. Avg. Req.
Industrial Technology	64	2.0
Instrumentation Technology	68	2.0
Labor Studies Technology	64	2.0
Mechanical Technology	68	2.0
Medical Assisting Technology	64	2.0
Office Services Technology	64	2.0
Radiologic Technology	64	2.0
Real Estate	64	2.0
Respiratory Therapy Technology	70	2.0
Sales and Merchandising	64	2.0
Secretarial Science	64	2.0
Surgical Assisting Technology	64	2.0
Surveying and Construction Technology	68	2.0
Transportation	64	2.0
Bachelor of Technology Degree in Mechanical Technology	135	2.0
Bachelor of Science in Electronic Technology	135	2.0
<b>Wayne General and Technical</b>		
Associate Degree in Applied Science in:		
Business Management Technology	64	2.0
Electronic Technology	68	2.0
Mechanical Technology	68	2.0
Retail Management Technology	64	2.0
Secretarial Science	64	2.0
Social Services Technology	64	2.0

## 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:

100-199	First year level courses
200-299	Second year level courses
300-399	Third year level courses
400-499	Fourth year level courses
500-699	Master's level courses
600-799	J.D. level courses
700-899	Doctoral level courses

When approved, 400-level undergraduate courses are taken for graduate credit, they become 500-level courses. Students must apply for and be admitted to the Graduate School to receive graduate credit for any course.

\*Quality point average of 2.5 in major field is required

# Fees and Expenses

**Fees are subject to change without notice.**

Despite the willingness of taxpayers and generous friends of the University to help support higher education, some portion of this 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:

	<i>Commuting Residents of Ohio</i>	<i>Residents of Ohio Living in Dorms</i>	<i>Non-Ohio Residents</i>
Undergraduate Fee for regular load	\$ 720	\$ 720	\$1,712
General Service Fee	176	176	176
Books (average)	200	200	200
Food and Housing in Residence Halls	—	1,730	1,730
	<u>\$1,096</u>	<u>\$2,826</u>	<u>\$3,818</u>

Following are comprehensively outlined fees for students at the University who are studying for credit and noncredit in all areas of instruction. Included also are the additional expenses required for special academic services available to students 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. Students who are in doubt about their 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 later audited by the University auditor, and appropriate additional 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	
1-14 credits	\$25 per credit
14½-16 credits	\$360 per semester
16½ credits and over	\$360 + \$25 per credit over 16
Graduate and Professional (Law)	
1 or more credits	\$39 per credit

- **\*\*Tuition Surcharge**

(Nonresidents of Ohio pay the surcharge in addition to the instructional fee)

Undergraduate	
1 or more credits	\$31 per credit
Graduate and Professional (Law)	
1 or more credits	\$16 per credit

- **General Fee**

Undergraduate	\$9.50 per credit to a maximum of \$88 per semester
	(Maximum general fee for two combined summer sessions is \$88.)
Graduate and Professional (Law)	
1-12 credits	\$2.00 per credit
13 credits and over	\$25 per semester

- **Admission Application Fee**

(non-refundable)	
Undergraduate and postbaccalaureate	\$20
Entering graduate student	20
Entering School of Law student	20
Transient student	20

- **Special Fees**

Late Registration Fee	
Charged to students who have not completed registration and paid fees by the end of open registration	\$20

- **\*\* Music Fees**

Private lessons in band instrument, organ, piano, violin and voice (in addition to normal instructional fees)	
One hour lesson per week (undergraduate)	\$84
One hour lesson per week (graduate)	84

\* Does not include special or miscellaneous fees, i.e., music, late registration, etc. Zero credit courses are charged on the basis of the number of hours of class per week.

\*\* These fees in addition to the instruction credit fee.

One 45 minute lesson per week (undergraduate)	63
One 45 minute lesson per week (graduate)	63
One ½ hour lesson per week (undergraduate)	42
One ½ hour lesson per week (graduate)	42
<b>Thesis and Binding Fees</b>	
Binding (per volume)	7
Microfilming (for Ph.D. degrees only)	31
<b>Graduation Fees</b>	
Each degree	12
In Absentia, per degree (add'l)	2
<b>Department of Special Programs &amp; ICE</b>	
Course charge based on number of Continuing Education Units. One CEU (13.5 contact hours)	24

• **Miscellaneous Fees**

A.C.T. Test	\$8.50
Education Administration Battery	6
Miller Analogies Test	8
Transcripts	
(If more than one copy is ordered at the same time, the fee is \$.50 for each additional copy.)	2
I.D., late or lost	5
Credit by Examination	
(undergraduate and postbaccalaureate), per credit	13
Student teaching fee	25
Locker fee (\$2.00 refundable September-May)	6
Locker fee, physical education and Schrank Hall (\$2.00 refundable) per semester	5
Change of course registration (add/drop)	4
Laboratory breakage and late service deposit (refundable)	10
"Insufficient Funds" or returned check charge	5
Co-op course fee	25

• **Parking Fees**

Students enrolled for 9 or more credits per semester	\$30
Students enrolled for 8½ or fewer credits per semester	15
Summer session students, per session	10
Workshop participants	up to 8
Department of Special Programs	5 per course
Off-Campus Instruction Students	up to 10
Temporary Permit (per week)	2
Day Care (per hour according to student's ability to pay)	.90-1.30
Nursery School	
per term (3 mornings)	107
per term (4 afternoons)	142
Dance Institute	
per 1.5 class period	4
English Language Institute	
tuition fee	680
(Summer Sessions I and II)	460

**Room and Board**

Residence hall facilities are available for the housing of a limited number of undergraduate students. The current cost of housing accommodations and food service is \$865 per semester or \$1,730 per year. All students who live in the residence halls must participate in the provided 20 meals per week board plan.

Students living off campus may participate in the residence hall board program, the current rate being \$425 per semester.

**Veterans' Expenses**

Disabled veterans who are eligible for admission to the University may register for courses without payment of fees if they have been authorized for training by the V.A. If they have 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.

Non-disabled veterans must pay their fees at the time they register. They will receive direct payment from the V.A. after their enrollment has been certified under the provision of USC Title 38.

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

Dependents of veterans covered under other provisions of USC Title 38 must pay their fees at the time of registration. The V.A. will make direct payment to the eligible 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 students 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 day students carrying nine or more credits, graduate students carrying six or more credits may purchase this insurance, at the same annual individual rate, through the Health Services Office.

## The University of Akron Residency Requirements

Payment of non-resident 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



### Intent and Authority

- 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 while insuring that the same benefit is conferred on all bona fide domiciliaries of this state whose permanent residence and legal citizenship is in Ohio, and whose actual source of financial support is subject to Ohio taxation.
- 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.

### Definitions

For purposes of this rule:

- A "Resident of Ohio for all other legal purposes;" shall mean any person who maintains a twelve-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 liabili-

ty under section 5747.02 of the revised code; provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.

- "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.
- 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.

### General 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:

- Dependent students, at least one of whose parents or legal guardian has been a resident of the state of Ohio for all other legal purposes for twelve consecutive months or more immediately preceding the enrollment of such student in an institution of higher education.
- Persons who have resided in Ohio for all other legal purposes for at least twelve consecutive months immediately preceding their enrollment in an institution of higher education and who are not receiving, and have not directly or indirectly received in the preceding twelve consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.
- Persons who are living and are gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who are pursuing a part-time program of instruction at an institution of higher education.

### Specific Exceptions and Circumstances

- 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.
- 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.



- Any alien holding an immigration visa or classified refugee shall be considered a resident of the state of Ohio for state subsidy and tuition surcharge purposes in the same manner as any other student.
- No persons holding a student or other temporary visa shall be eligible for Ohio residency for these purposes.
- A dependent person classified as a resident of Ohio for these purposes shall continue to be considered a resident during continuous full-time enrollment and until his or her completion of any one academic degree program.
- In determining residency of a dependent student, removal of the student's parents or legal guardian from Ohio shall not, during a period of twelve months following such removal, constitute relinquishment of Ohio residency status otherwise established under item (C) (1) of this rule.
- Any person once classified as a non-resident, upon the completion of twelve consecutive months of residency in Ohio for all other legal purposes, must apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes if such person in fact wants to be reclassified as a resident. Should such person present clear and convincing proof that no part of his or her financial support is or in the preceding twelve 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 information regarding the sources of a student's actual financial support to that end.
- Any reclassification of a person who was once classified as a non-resident for these purposes shall have prospective application only from the date of such reclassification.
- A person who is transferred by his employer beyond the territorial limits of the 50 states of the United States and the District of Columbia while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile.
- A person who has been employed as a migrant worker in the state of Ohio and his or her dependents shall be considered a resident for these purposes provided such person has worked in Ohio at least four months during each of the three years preceding the proposed enrollment.

## Procedures

Institutions 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 their Ohio residency for purposes of this rule. Such 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.



## Note

The registrar shall classify a student as a bona fide resident or non-resident student at the time of registration for each semester or session. The registrar may in advance of his determination seek the advice of the Committee on Resident Status. The Committee on Residence Status means a committee comprised of the director of Institutional Research and Systems Development who shall act as chairman, the University registrar, the dean of the School of Law and the University auditor.

A student may appeal to the committee on residence status from a classification by the registrar that he does not qualify as a bona fide resident, by executing and filing with the registrar a form entitled "Application for Residence Status." The registrar may transmit this form to the chairman of the committee who shall conduct a hearing on the merits of the application. The student may request on this form to appear personally before the committee on residence status. The student may thereafter appear and may employ counsel at his expense. The decision of the committee shall be final.

A student has the burden of persuasion by clear and convincing proof that he qualifies as a bona fide resident. The Committee of Residence Status may require the student to submit evidence in support of the statements made on his "Application for Residence Status." The committee shall not be bound by the usual common law or statutory rules of evidence nor by any technical or formal rules of procedure. The committee may admit any relevant evidence in support of the student's claim or in opposition to it, and may exclude evidence that is irrelevant, cumulative, or is lacking in substantial probative effect. The Committee on Residence Status may make rules of procedure consistent with this regulation.

If a student's proper status is that of a non-resident, he shall pay non-resident tuition and interest at the rate of 6 percent per annum on the unpaid balance. A student who knowingly submits a false claim or knowingly gives false evidence in support of a claim commits an offense against The University of Akron and may be subject to disciplinary procedures.

**For purposes of residency determination only, enrollment of 12 credit hours or more will be considered full-time. Eff. 6-11-79**

### Regulations Regarding 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.
- Special programs (informal courses).
- Parking (only if permit is returned).
- Student teaching.
- Laboratory breakage and late service deposit.
- Residence hall fees (Note: These fees subject to special refund policy).

### 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. Students who enlist voluntarily for active duty, see "in part" below.
- In full less \$3 per enrolled credit to a maximum of \$320 if the student requests in writing official withdrawal from all credit courses on or before the first day of the enrolled term.
- In full less \$3 if the student requests in writing official withdrawal from Department of Special Programs courses on or before the first day of the enrolled term.



- In part if the student requests in writing official withdrawal after the first day of the fall or spring semesters, the following refund percentages apply:

	College Credit Courses	Department of Special Programs
2 through 8 calendar days	70%	70%
9 through 15 calendar days	50%	50%
16 through 22 calendar days	30%	30%
Thereafter	0%	0%

If the student requests in writing official withdrawal after the first day of any summer session, the following refund percentages apply:

	College Credit Courses	Department of Special Programs
2 through 7 calendar days	60%	60%
8 through 15 calendar days	40%	40%
Thereafter	0%	0%

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 by the University for disciplinary reasons.

## 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 (except the advance \$50 rental payment) 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;
- in the event mandatory or recommended participation in academic programs of The University of Akron require the student to commute regularly beyond the Akron metropolitan area (i.e., student teaching or co-op engineering assignments).

A partial refund of prepaid fees will be made (except the advance \$50 rental payment) according to the refund schedule below, and release of financial liability for subsequent terms 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 damages.

A partial refund of prepaid fees will be made (except the advance \$50 rental payment) in accordance with the refund schedule below:

- in the event the University, in its sole discretion, terminates the contract for reasons related to the or-

derly operation of the residence halls, or for reasons relating to health, physical or emotional safety and well-being of the student, or for reasons relating to the health, safety and well-being of the person or property of other students, faculty, staff or University property. In such instances, the student shall not be liable for damages and shall be released of further financial liability beyond the date of termination.

- in the event the student breaches the contract prior to the end of the term thereof but continues to be enrolled as a student at The University of Akron. In addition, if the student has contracted for subsequent terms beyond that term in which the contract is terminated, the student shall pay as damages for breach of the term of the contract an additional amount of \$100.
- in the event that the student is dismissed or suspended from The University of Akron for disciplinary reasons in accordance with law 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.

Refund Inclusive Dates	Applicable
1-12 calendar days	70%
13-24 calendar days	50%
25-36 calendar days	30%
THEREAFTER	-0-

### 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 co-signed by the student's parent or legal guardian.

# Financial Aid

Financial aid programs were developed by the federal and state governments as well as by institutions of higher education to assist students from families with limited resources to meet their educational expenses. The primary purpose of financial aid is to insure that no one is denied the opportunity of a college education because of economic background.

When you apply for financial aid at The University of Akron, the Financial Aid Office determines a budget that best suits your needs. The budget includes direct costs that you must pay to the University (tuition, general service fee, room and board in the residence halls) and variable expenses such as transportation and personal expenses.

Generally, financial aid is provided in three forms: gift assistance, loan assistance and work assistance. It is not unusual for a student to have all three forms of assistance. 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 pay for college.



## Sources of Financial Aid

In order to meet the needs of financial aid applicants, 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 special application(s) for these programs can be obtained at the University Student Financial Aid Office.

## Federal Programs

### Basic Educational Opportunity Grant

The basic grant (BEOG) is the foundation of student financial aid. It is a grant which you do not have to repay. The grant is awarded to you by the federal government. After you apply for the grant, you will receive a Student Eligibility Report (S.E.R.) which you take to the school which you will attend. The Financial Aid Office will then calculate the amount of the grant that you will receive. Your grant amount is based on the costs of the school that you attend.

### Supplemental Education Opportunity Grant

The supplemental grant (SEOG) is a federal grant that is awarded to you by the school that you attend. It is awarded to students with exceptional financial need who would not be financially able to attend college without it. The supplemental grant is always matched with an equal amount of other aid. The amount of the grant is determined by the school that you attend, and is based on your need and the costs at your school. Entering freshmen must have attained at least a 1.75 G.P.A. to be eligible for the grant and continuing students must have at least a 1.75 G.P.A. to be eligible for the grant.

### College Work-Study Program

The College Work-Study Program (CWSP) is a jobs program that provides eligible students with a job on the campus or in a non-profit off-campus agency. Eligibility for CWSP is determined on the basis of need. The Financial Aid Office determines the amount of money that you can earn, and places you in a suitable job. You and your job supervisor adapt your working hours to your class schedule.

### National Direct Student Loan

The National Direct Student Loan (NDSL) Program offers low interest, long-term loans to eligible students. Eligibility and loan amounts are determined by the Financial Aid Office on the basis of need. This loan must be paid back, beginning nine months after you cease to be at least a half-time student. Interest at 3% is calculated at the time you begin repaying the loan. If you teach in certain fields or locations after graduation, you may be eligible for cancellation of all or part of the amount that you borrowed. Entering freshmen must have attained at least a 1.75 G.P.A. from high school to be eligible, and continuing students must have at least a 1.75 G.P.A. to be eligible for the loan.

### Guaranteed Student Loan/Federally Insured Student Loan

This program offers low-interest, long-term loans to eligible students. In Ohio, it is called the Ohio Student Loan. You apply for the loan at your bank, savings and loan or credit union. This loan must be paid back to the lender beginning nine months after you cease to be at least a half-time student. The interest on the loan is sev-

en percent, and it is paid for you by the federal government while you are in school.

### **Nursing Student Loan/Scholarship**

Loans and grants are available to eligible students who are pursuing the Bachelor of Science Degree in Nursing. The loans and grants are based on need, and the amounts are determined by the Financial Aid Office. Cancellation of a portion of the nursing loan is made for employment in the nursing profession.

### **Law Enforcement Education Program**

The Law Enforcement Education Program (LEEP) offers grants to students who are currently employed full time in a public criminal justice agency. The grant covers the amount of tuition and fees. You must continue employment in a criminal justice agency for two years after completion of the courses in order to have the grant cancelled.

### **Bureau of Indian Affairs**

Grants are available to students who are Native-American Indians. For information contact your Regional Tribal Office.

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## **State Programs**

### **Ohio Instructional Grant**

The Ohio Instructional Grant (OIG) is available to eligible students who are Ohio residents and are attending college in Ohio or Pennsylvania. Eligibility is based on family income. The grant is awarded to you by the Ohio Board of Regents. If eligible, you will receive an award certificate which you take to the school that you will attend.



### **Ohio Academic Scholarship**

The state of Ohio each year awards scholarships to a graduating senior from each high school in Ohio. The scholarship must be used at a college in Ohio. The amount is \$1,000 and is renewable for four years.

### **Ohio National Guard Scholarship**

Scholarships are available to students who enlist in the Ohio National Guard. Contact your local recruiter for information.

### **Ohio War Orphans Scholarship**

Scholarships are available to students whose father or mother was disabled or killed in a war. For information contact the Ohio Board of Regents.

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## **University Programs**

### **Scholarships**

The University of Akron offers scholarships to students with high academic achievement. Academic scholarships are awarded to continuing students as well as outstanding high school students who plan to enroll at the University. These academic scholarships are renewable each year based on continued high academic performance. A University scholarship financial aid application must be submitted, but a need analysis form is not required. The awards for the 1979/80 academic year ranged from \$150 to \$400.

The **Presidential Scholarship Program** was initiated for the 1975/76 academic year. At the present time, 20 scholarships are awarded each year to new freshmen. For the 1979/80 school year, the scholarship amount was \$800. The Presidential Scholarship is considered to be our most prestigious scholarship.

The **Honors Program** at The University of Akron awards a number of scholarships each year to new freshmen. In 1979/80, 20 students were awarded \$700 Honors Scholarships and 65 students received \$400 Honors Scholarships. This combination scholarship/academic program is also considered to be a most prestigious program.

### **Loans**

The University offers short-term loans to students who need temporary help in paying their tuition. These loans must be repaid in full before the end of the term for which the money was borrowed. Information and applications are available at the Cashier's Office.

Special long-term loans are available to selected students in certain fields who need partial help in paying their tuition.

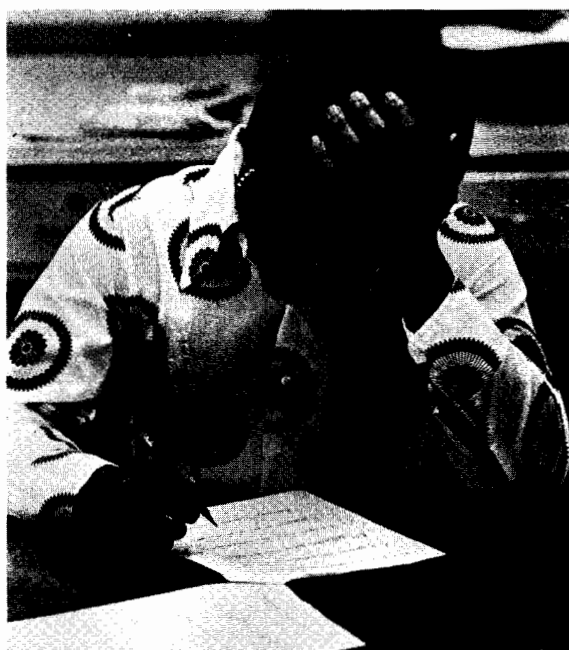
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## Application for Financial Aid

- To apply for the Basic Educational Opportunity Grant, National Direct Student Loan, Nursing Student Loan, College Work-Study Program and Ohio Instructional Grant, you must complete and submit the Financial Aid Form (FAF) to the College Scholarship Service. Also, submit the Ohio Instructional Grant form to the Ohio Board of Regents. Both forms are available in the Financial Aid Office.

The University of Akron's general aid/scholarship application is available from and should be returned to the Financial Aid Office.

- The Guaranteed Student Loan application is secured through lending institutions such as your local bank, savings and loan associations or credit unions.
- The information you send to the College Scholarship Service through the Financial Aid Form is used to determine your eligibility for: Basic Educational Opportunity Grant, National Direct Student Loan, Nursing Student Loan, Supplemental Education Opportunity Grant, Nursing Scholarship Grant and College Work-Study Program.



- Have not received nor will receive financial assistance of more than \$600, including room and board, from one or both of your parents or adoptive parent(s) in the calendar year in which aid is received as well as the prior calendar year.

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## Computation of Financial Aid

The College of Scholarship Service determines 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:

- Family Income
- Family Assets
- Family Size
- Number 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 Financial Aid Office attempts to cover through various financial aid programs to assist students in meeting their educational costs.

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## Independent Students

You are an independent student if you:

- Have not been or will not be claimed as an exemption for federal income tax purposes by either of your parents or adoptive parent(s) for the school year in which aid is received as well as the prior calendar year.

The University of Akron requires that, as an independent student, you (and your spouse) complete the student's section of the Financial Aid Form (FAF). In addition to completing the FAF, if you are an independent student, twenty-four years of age or under, your parents must complete a Non-Support Statement to document your self-supporting status. If you are over the age of twenty-four years, you may complete this form yourself. Non-Support Statements may be obtained through the Financial Aid Office. This form must be completed each year for which aid is desired.

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## Notification of Award

You will be notified of your aid package by a Financial Aid Proposal which will be mailed to your home. If you accept the proposal, you must have it signed and notarized. It should be returned to the Financial Aid Office as soon as possible.

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

If you are denied aid, (the family contribution exceeds the cost of education), you will be informed by mail. You will also be advised of alternatives to you such as the Guaranteed Student Loan and/or short-term loans.



## Distribution of Aid

Financial aid is disbursed by vouchers. The vouchers are based on full-time enrollment (12 hours). If you are not taking at least 12 hours, contact the Financial Aid Office so your financial aid may be adjusted. A voucher is produced for each program the student is receiving.

The student is awarded aid for the entire academic year; however, the aid is disbursed proportionately each semester. Students receive their financial aid for fall semester by mail during July. For spring semester, students must pick up their aid in the Financial Aid Office after mid-November. Once again, the aid will be issued through vouchers.

The voucher(s) are used to assist you in paying for your invoice for instructional fees; if your aid is substantial, you can apply it toward your residence hall bill (assuming you are a residence hall student).

If the student's aid exceeds the direct costs, the difference is refunded to the student at various time periods during the semester to assist with such other educational expenses as transportation, housing, etc.

Students may request a book store voucher to assist them in purchasing textbooks. This voucher is an advance on their expense check. It is available one week before classes begin.

The remainder of the expense money is issued to students during the third and eighth week of the semester. The expense check is picked up in the Financial Aid Office. Students must maintain satisfactory enrollment status to be eligible for the expense check.

## Revision of Awards

After you have received your financial aid award, situations may arise which may necessitate a revision in your aid package. A revision may result from:

- Receipt of an outside scholarship
- A dramatic change in the family income such as unemployment of a parent or a divorce, etc.

If family circumstances have changed, contact the Financial Aid Office so your aid package can be reviewed.

## Eligibility for Aid As It Applies to Certain Classifications of Students

### Transfer Students

Students transferring to The University of Akron at the beginning of fall semester, should:

- Have their previous college complete a financial aid transcript and send it to our Financial Aid Office.
- If students transferring to The University of Akron during the academic year had received BEOG and/or OIG the previous session, they should have a duplicate Student Eligibility Report mailed to them to give the Financial Aid Office. We must have this Student Eligibility Report before any funds can be dispersed to the student. Instructions for receiving a duplicate Student Eligibility Report are found on the back of your current Student Eligibility Report.
- Have your Financial Aid Office provide you with a transfer of remaining funds request to have your remaining OIG transferred to The University of Akron.
- National Direct Student Loans, College Work-Study Programs, Supplemental Education Opportunity Grants and scholarships do not automatically transfer. You must reapply for these programs at The University of Akron.

### Graduate Students, Law Students and Post-Baccalaureate Students

Students who have already received their bachelor's degree are eligible for National Direct Student Loans and/or College Work-Study Programs. They may not receive the Basic Educational Opportunity Grants, Ohio Instructional Grants or Supplemental Education Opportunity Grants.

Graduate assistantships may be available through the various graduate departments. Graduate fellowships and other graduate awards are distributed by the Graduate School and, therefore, a separate application is required.

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## Transient Students

Transient students are not eligible for financial aid because they are not pursuing their degrees at The University of Akron.

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## International Students

International students are not eligible for federal funds or for the Ohio Instructional Grant. They may be eligible for short-term loans or for regular student jobs (not the College Work-Study Program).

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## Veterans

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

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## Students Rights and Responsibilities

A financial aid recipient has various rights and responsibilities. You have the right to expect confidentiality regarding your financial aid as well as a response

in a reasonable amount of time after submitting financial aid applications.

You have the responsibility of reporting any outside scholarships you may receive.

A National Direct Student Loan and Nursing Student Loan recipient has the responsibility of informing the Financial Aid Office of changes of address, graduation plans, etc.

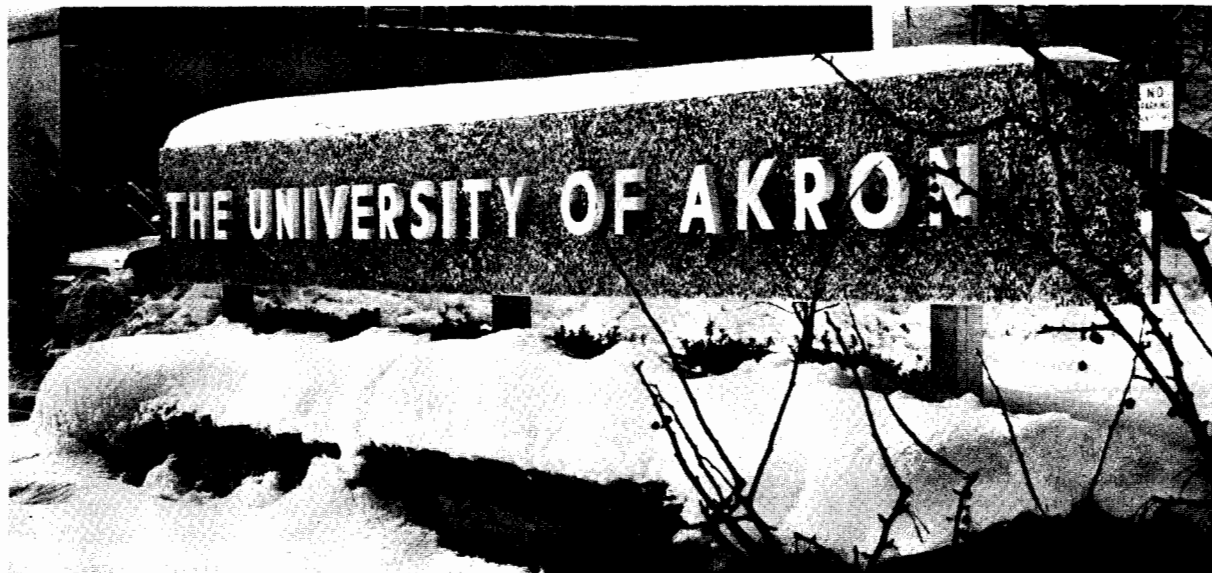
Probably the most important responsibility the student has is to meet the requirements of the "standards of progress." The "standards of progress" states that students must make satisfactory progress toward their degree. To make satisfactory progress, students must maintain full-time status if their aid was based on full-time status; if the student's aid was based on half-time status, the student must maintain half-time status to meet the "standards of progress."

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## Inquiries

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

**Financial Aid Office  
Spicer Hall, Room 115  
The University of Akron  
Akron, OH 44325  
Phone: (216) 375-7032**





# The Community and Technical College

Robert C. Weyrick, M.S., *Dean*  
 David T. Dolan, Ph.D., *Assistant Dean*  
 Frederick J. Sturm, Ed.D., *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:

- Consistent with the philosophy of learning as a life-long experience, the college provides educational opportunities for students of a variety of ages, backgrounds and needs; full time or part time, day or evening.
- The college provides for industry, business, government agencies, health-care establishments and human service occupations the pre-service and in-service manpower training for entry-level positions or advancement in employment.
- The college serves students by providing the means to examine academic and career opportunities considering interests, abilities and achievements.
- 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 their 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 the Evening College where employed persons may pursue the same degrees while working full time.

## 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 qualified engineering technology students to continue their education to the baccalaureate degree. During their first and second years, students follow 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, broadened 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 graduates 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 Electronic Technology degree or the Bachelor of Technology in Mechanical Technology degree are:

- 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 including associate degree program, general studies courses, and the following course requirements.

### Bachelor of Science in Electronic Technology

(an ECPD accredited engineering technology curriculum)

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

#### Third- and Fourth-Year Requirements:

		<i>Credits</i>
1100:106	Effective Oral Communication	3
1100:111	English Composition	4
1100:112	English Composition	4
1100:320	Western Cultural Traditions	4
1100:321	Western Cultural Traditions	4
1100:33-	Eastern Civilizations	2
1100:33-	Eastern Civilizations	2
2020:334	Math for Technical Applications	3
2840:101	Introductory Chemistry	3
2860:350	Advanced Circuits	3
2860:351	Indust. Electrical Systems	3
2860:352	Digital Systems	3
2860:353	Control Systems	3
2860:400	Data Analysis	3
2860:402	Inspection Trips	1
2860:406	Communications Systems	3
2860:410	Technology Project	1
2920:310	Economics of Technology	3

		Credits
3470:251	Descr. Stat. & Prob.	1
3470:252	Distributions	1
4450:206	Fortran (Science and Engineering)	2
6500:301	Management Princ. & Concepts	3
6500:331	Production & Systems Mgmt.	3
	Technical Electives	5
	Total	67
	(including associate degree program)	135

**Bachelor of Technology  
In Mechanical Technology**

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

**Third- and Fourth-Year Requirements:**

1100:111	English Composition	4
1100:112	English Composition	4
1100:320	Western Cultural Traditions	4
1100:321	Western Cultural Traditions	4
1100:33-	Eastern Civilizations	2
1100:33-	Eastern Civilizations	2
2020:247	Survey of Basic Economics	3
2020:334	Math for Tech. Applications	3
2840:101	Introductory Chemistry I	3
2840:102	Introductory Chemistry II	3
2860:270	Survey of Electronics I	3
2860:271	Survey of Electronics II	2
2860:410	Technology Project	1
2880:241	Quality Control Procedures	3
2900:231	Control Principles	4
2920:310	Economics of Technology	3
2920:346	Mechanical Design II	3
2920:347	Production Machines and Processes	3
2920:401	Inspection Trips	1
4450:206	Fortran (Science and Engineering)	2
6500:301	Management Principles and Concepts	3
6500:321	Quantitative Business Analysis I	3
	Technical Electives	4
	Total	67
	(including associate degree program)	135

**Associate Degrees**

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

- Business and Office Technology
- Engineering and Science Technology
- Public Service Technology
- Allied Health Technology

These programs lead to the Associate in Applied Science degree (carrying a designation of the specific program). In addition, a program in liberal arts leading to the Associate of Arts degree is offered in the Associate Studies Division.

**Requirements for Graduation**

Candidates for the associate degree must:

- Complete the required courses listed in the program.
- Complete as a minimum, the number of credits listed for each program.

- Complete at least 16 credits in the associate studies or general education areas. These courses shall be based on a broad interpretation of the liberal arts concept and will include courses in such areas as written and oral communications, humanities and social and physical sciences.
- Earn a minimum grade-point average of 2.0 in all work taken at The University of Akron.
- Be recommended by the faculty.
- Spend the last semester in residence (earning a minimum of 16 credits) at the University unless excused by the dean of the college.
- Complete the other University requirements set forth 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.

**Programs of Instruction**

**2020: Arts**

This program of general education is intended to produce a socially intelligent individual, one who understands effective social values as well as scientific facts.

		Credits
1100:	Physical Education	1
1100:111	English Composition	4
1100:112	English Composition	4
1100:105	Introduction to Public Speaking	
	or	
1100:106	Effective Oral Communication	3
*1100:22-	Science Requirement	6
3450:	Modern University Mathematics	3
1100:33-	Eastern Civilization	2
1100:33-	Eastern Civilization	2
1100:320	Western Cultural Traditions	4
1100:321	Western Cultural Traditions	4
**2020:240	Human Relations	3
**2020:242	American Urban Society	3
**2020:247	Survey of Basic Economics	3
	Electives	22
	Total	64

**2200: Educational Technology**

This program prepares individuals for employment in any one of three options: elementary aide, assists the professional teacher; library aide, assists the professional librarian; child development, works in a variety of staff positions, either in a day care center or a nursery school.

\* Two of the following are required 1100:221, 222, 223, 224.

\*\* See "The General College," Section 4 of this *Bulletin* for alternate course options.

**Core Program**

		Credits			Credits
1100:	Physical Education	1	† 1100:	Physical Education	1
1100:106	Effective Oral Communication	3	1100:106	Effective Oral Communication	3
*3450:	Modern University Mathematics	3	2020:121	English	4
2020:121	English	4	2020:131	Math. Analysis I	4
2020:240	Human Relations	3	2020:222	Technical Report Writing	3
2020:242	American Urban Society	3	2200:100	Introduction to Criminal Justice	3
2540:150	Beginning Typewriting	3	2220:102	Criminal Law for Police	3
3750:100	Introduction to Psychology	3	2220:104	Evidence & Criminal Legal Process	3
5100:150	Introduction to Professional Education	3	2220:106	Juvenile Justice Process	2
5100:250	Human Development and Learning	3	2220:110	Social Values and Criminal Justice	3
5100:410	Audio-Visual Education	2	2220:150	Criminal Justice Administration and Supervision	3
5550:211	First Aid	2	2220:200	Criminal Justice Theory and Practice	3
5850:295	Education Technician Field Experience	5	2220:240	Dynamics of Vice Crime and Substance Abuse	3
2200:297	Independent Study (may be repeated to 6 credits)	1-3	2220:250	Criminal Case Management	6
	Option Requirements	23-26	2840:100	Basic Chemistry	3
	Total	64	3750:100	Introduction to Psychology	3
			3850:100	Introduction to Sociology	4
				General Electives	5
				Technical Electives	4
				Total	64

**Options****\*\*Elementary Aide**

5200:335	Teaching Language Arts	5
5850:207	Mechanics of Student Appraisal Electives	3 18

**\*\* Library Aide**

2200:100	Introduction to Library Technology	3
2200:201	Processing, Cataloging & Classifying Materials	3
2200:202	Organizing and Operating Library Media Centers	3
2200:203	Materials Selection	2
2200:204	Reference Procedures	3
2200:205	Information Retrieval Systems in Library Tech.	3
	Electives	9

**\*\*\*Child Development**

5200:360	Nursery School Laboratory	3
7400:132	Early Childhood Nutrition	2
7400:275	Play and Creative Expression	4
7400:290	Administration of Child Care Centers	3
7400:485	Seminar: Parent-Child Relations	2
7400:265	Child Development	3
2200:245	Infant/Toddler Day Care Program	3
2200:250	Observing and Recording Children's Behavior	3

**2220: Criminal Justice Technology**

This program prepares young people seeking careers in criminal justice and provides additional education to those employed in criminal justice areas. The curriculum includes the technical functions of criminal justice and courses to develop a better understanding of our rapidly changing society.

Certain courses in the criminal justice technology program require permission of the instructor. Consequently each criminal justice technology student must meet with an adviser at the start of the program of study at The University of Akron.

\* Child Development Option students may substitute 2420:170, *Business Math*, 2 credits.

\*\* Must complete required courses before doing *Education Technician Field Experience*.

\*\*\* Must complete 7400:265, 275, and 5200:360 before doing *Education Technician Field Experience*; 7400:290 can be taken concurrently.

Students with a particular interest in corrections may vary their program of study by making the following substitutions: 3850:330, *Criminology* (3 credits); 3850:432, *Probation and Parole* (3 credits); and 3850:431, *Corrections* (3 credits), for courses: 2220:250, *Criminal Case Management*, (6 credits); 2220:200, *Criminal Justice Theory and Practice* (3 credits); and 2220:240, *Dynamics of Vice Crime and Substance Abuse*, (3 credits). Students electing this pattern of courses will need three more elective credits since their total program will still require a total of 64 credits.

**2230: Fire Science Technology**

This program is designed for the student interested in a career in fire fighting as well as other areas related to fire protection and prevention. It also helps active firemen upgrade themselves within the fire service.

1100:	Physical Education	1
1100:105	Introduction to Public Speaking	3
2020:121	English	4
2020:131	Math. Analysis I	4
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2020:242	American Urban Society	3
2230:100	Introduction to Fire Science	2
2230:102	Fire Prevention & Building Construction	2
2230:104	Fire Investigation Methods	2
2230:200	Fire Detection & Suppression Systems	2
2230:202	Fire Fighting Tactics & Strategy	2
2230:204	Fire Prevention Practices	2
2230:240	Fire Department Administration & Supervision	2
2230:250	Hazardous Materials	2
2230:252	Fire Hydraulics & Equipment	2
2230:254	Legal Aspects of Fire Protection	2
2230:256	Fire Safety Codes (OSHA Standards)	2
2420:111	Public Relations	2
2840:100	Basic Chemistry	3
2840:151	Basic Physics: Mechanics	3

† The following are recommended: 139, *Life Saving*; 155, *Swimming*; 173, *Self-Defense*; or 174, *Karate*.

		Credits
3750:100	Intro. to Psychology	3
5550:211	First Aid	2
	Technical Electives	<u>8</u>
	Total	64

Credits

**Alcohol Services Emphasis**

2260:260	Alcohol Use and Abuse	3
2260:261	Alcoholism Treatment	3
2260:262	Basic Helping Skills in Alcohol Prob.	4
2260:279	Technical Experience in Community and Social Services	<u>4</u>

**2240: Commercial Art**

This program enables the individual to gain skill as an artist and designer for employment in developing materials of visual advertising and communication for art studios, advertising agencies and industry. The curriculum includes courses in design, drawing, photography, illustration techniques, package design and presentation methods.

1100:	Physical Education	1
2020:121	English	4
2020:131	Math Analysis I	4
2240:124	Design in Commercial Art	3
2240:140	Typography & Lettering	3
2240:222	Advertising Photography	3
2240:242	Advertising Layout Design	3
2240:243	Publication Design	3
2240:245	Designing for Production	3
2240:247	Packaging & Display Design	3
2520:103	Advertising Principles	3
7100:131	Drawing I	3
7100:231	Drawing II	3
7100:232	Instrument Drawing	3
7100:233	Life Drawing	2
7100:275	Photography I	3
	Art Electives	8
	General Electives	<u>6</u>
	Total	64

**2270: Labor Studies**

The purpose of this program is to prepare graduates for positions of responsibility and leadership in labor unions and related organizations.

1100:	Physical Education	1
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2270:101	Intro. to Labor Studies	3
2270:111	Collective Bargaining I	3
2270:121	Labor and the Law	3
2270:212	Collective Bargaining II	3
2270:221	Occupational Health and Safety Standards	3
2270:241	Union Leadership	2
2270:251	Problems in Labor Studies	3
2420:170	Business Mathematics	2
2420:211	Basic Accounting I	4
2880:141	Safety Procedures	3
3700:100	Government and Politics in the U.S.	3
	Electives	<u>15</u>
	Total	64

**2260: Community Services Technology**

This program prepares individuals for general employment in support of social workers or other professional community services personnel. It includes courses in sociology, psychology and various aspects of community services work. In addition, courses are available for specializing in alcoholism services.

1100:	Physical Education	1
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2020:242	American Urban Society	3
2020:251	Work Relationships	2
2020:254	Black American	2
2220:100	Introduction to Criminal Justice	3
2260:260	Alcohol Use & Abuse	3
2260:278	Techniques of Community Work	4
2260:279	Technical Experience: Community & Social Work	4
2540:150	Beginning Typewriting	3
3750:141	Introduction to Psychology	3
3850:100	Introduction to Sociology	4
7750:270	Poverty in the Inner City	3
7750:276	Introduction to Social Welfare	4
	Electives	<u>12</u>
	Total	64

**2280: Food Service Management**

Through this program, training is offered for skilled and mid-management level employees in the large quantity food industry which includes restaurants, food service facilities in schools, industrial and commercial institutions, hospitals and hotels. Instruction is provided in food purchasing, preparation and service.

1100:	Physical Education	1
1100:105	Introduction to Public Speaking or Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2280:121	Fundamentals of Food Preparation	4
2280:135	Food Purchasing	3
2280:233	Quantity Food Service	4
2280:236	Menu Planning and Cost Control	3
2280:237	Food Service Internship	2
2280:240	Food Service Management	3
2280:243	Food Equipment and Plant Operation	3
2420:202	Personnel Practices	3
2420:280	Essentials of Law	3
2420:211	Basic Accounting I	3
2520:103	Principles of Advertising	3
2540:119	Business English	3
2540:263	Business Communications	3

7400:133	Nutrition Fundamentals	Credits	3
	Electives		7
	Total		64

2450:119	Business English	Credits	3
2540:263	Business Communications		3
	Total		64

## 2420: Business Management Technology

This program provides comprehensive training in varied business activities in preparation for a beginning management or supervisory level position in business or industry or as a self-employed manager. A banking option equips graduates to enter the banking and finance industry.

### Options

#### General

1100:	Physical Education	1
1100:105	Introduction to Public Speaking	
	or	
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:101	Elements of Distribution	3
2420:104	Introduction to Business	3
2420:202	Personnel Practices	3
2420:221	Administrative Office Supervision	2
2420:103	Role of Supervision in Management	3
2420:170	Business Math	2
2420:211	Basic Accounting I	3
2420:212	Basic Accounting II	3
2420:243	Survey of Finance	3
2420:280	Essentials of Law	3
2440:120	Introduction to Information Processing	2
2540:119	Business English	3
2540:125	Business Machines	2
2540:263	Business Communications	3
2560:110	Transportation Economic Policy	3
2880:232	Labor Management Relations	3
	Electives	5
	Total	64

#### Banking

1100:	Physical Education	1
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	
	or	
3750:100	Introduction to Psychology	3
2020:247	Survey of Basic Economics	3
2420:101	Elements of Distribution	3
2420:103	Role of Supervision in Management	3
2420:104	Introduction to Business	3
2420:105	Real Estate Principles	2
2420:113	Introduction to Banking	2
2420:123	Federal Regulation of Banking	2
2420:170	Business Mathematics	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:212	Basic Accounting II	3
2420:233	Installment Credit	2
2420:243	Survey in Finance	3
2420:245	Real Estate Finance	2
2420:253	Elements of Bank Management	2
2420:273	Monetary Systems and the Payments Mechanism	3
2420:280	Essentials of Law	3
2440:120	Introduction to Information Processing	2

## 2430: Real Estate

The Purpose of this program is to prepare graduates for entry level positions in sales and management in the Real Estate industry.

1100:	Physical Education	1
1100:105	Introduction to Public Speaking	
	or	
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:104	Introduction to Business	3
2430:105	Real Estate Principles	2
2420:170	Business Math	3
2420:221	Administrative Office Supervision	2
2430:202	Personnel Practices	3
2430:185	Real Estate Law	2
2420:211	Basic Accounting I	3
2420:243	Survey in Finance	3
2430:245	Real Estate Financing	2
2430:255	Valuation of Residential Property	2
2430:265	Real Estate Brokerage	2
2430:275	Real Estate Project	2
2420:280	Essentials of Law	3
2440:120	Introduction to Information Processing	2
2520:212	Principles of Salesmanship	4
2540:119	Business English	3
2540:263	Business Communications	3
	Electives	6
	Total	64

## 2440: Data Processing

This program prepares individuals for careers in electronic data processing operating, programming and systems analysis. It gives a practical understanding of computers in business functions and extensive programming and processing experience is provided through laboratory assignments.

1100:	Physical Education	1
1100:105	Introduction to Public Speaking	
	or	
1100:106	Effective Oral Communication	3
*2020:131	Math Analysis I	4
*2020:135	Math for Data Processing	3
2020:121	English	4
*2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:104	Introduction to Business	3
*2420:211	Basic Accounting I	3
*2420:212	Basic Accounting II	3
2420:243	Survey of Finance	3
2440:120	Intro. to Information Processing	2
2440:131	Intro. to Programming	2
2440:132	Assem. Prog. and JCL	4
2440:133	Cobol Programming	2
2440:234	Adv. Cobol Programming	3
2440:235	Current Prog. Topics	2
2440:239	RPG II Programming	1
2440:241	Data Processing Systems	3
2440:251	Data Processing Projects	5
2540:119	Business English	3
	or	
*2020:222	Technical Report Writing	3

\*Check additional text which follows.

	<i>Credits</i>			<i>Credits</i>
General Electives	4-5	2440:120	Introduction to Information Processing	2
	Total	2520:201	Principles of Wholesaling	2
	64		Technical Elective	1

A program is available for students interested in both an Associate in Applied Science in Data Processing degree and a Bachelor of Science in Business Administration degree. The substitution of the courses noted below for courses marked with an asterisk will meet requirements of both the associate and baccalaureate degree programs. With these substitutions, a total of 69 credits will be completed in meeting the requirements for the associate degree, and the total credits required for the baccalaureate degree will be 128-138 credits depending upon major. Substitute courses in the associate degree program are listed below:

1100:112	English Composition
3850:100	Sociology
3850:	Sociology
6200:201	Accounting Principles
6200:202	Accounting Principles
3250:244	Introduction to Economic Analysis
6400:371	Business Finance
3450:111,2,3,4,5	
121,2,3, 138	MUM

### 2520: Sales and Merchandising

This program equips graduates to fill entry level positions in distributive business fields including retailing, wholesaling and related services. The core curriculum includes courses in advertising, marketing, sales and visual merchandising. The program provides emphasis in retailing, industrial distribution and fashion.

1100:	Physical Education	1
1100:105	Introduction to Public Speaking	3
2020:121	English	4
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:101	Elements of Distribution	3
2420:111	Public Relations	2
2420:170	Business Math	3
2420:280	Essentials of Law	3
2420:211	Basic Accounting	3
2520:103	Principles of Advertising	3
2520:104	Visual Merchandising	3
2520:105	Sales Promotion	3
2520:202	Retailing Fundamentals	4
2520:210	Consumer Service Fundamentals	2
2520:211	Math of Retail Distribution	3
2520:212	Principles of Salesmanship	4
2540:119	Business English	3
	Technical Requirements	11
	Total	64

#### Options

##### Retailing

2420:202	Personnel Practices	3
2420:243	Survey of Finance	3
2440:120	Introduction to Information Processing	2
	Technical Elective	3

##### Industrial

2420:202	Personnel Practices	3
2420:243	Survey of Finance	3

#### Fashion

7400:121	Textiles	3
7400:317	History of Costumes	3
7400:419	Clothing Construction	3
7400:439	Fashion	3

### 2540: Secretarial Science

Students are prepared for the different but often overlapping fields of secretarial, stenographic or clerical work. This program provides thorough training in typing, shorthand and communications; includes courses that prepare graduates for work as executive and legal secretaries and as medical assistants. The international option provides secretarial training for overseas assignments.

#### Core Program

1100:	Physical Education	1
2020:121	English	4
2420:170	Business Mathematics	3
2540:119	Business English	3
2540:125	Business Machines	2
2540:150	Beginning Typewriting	3
2540:151	Intermediate Typewriting	3
2540:171	Shorthand Principles	4
2540:173	Shorthand and Transcription	3
2540:241	Information Management	3
2540:257	Secretarial Machines	3
2540:263	Business Communications	3
2540:274	Advanced Dictation and Transcription	4
	Option requirements	25
	Total	64

#### Options

##### Executive Secretarial Science

1100:105	Introduction to Public Speaking	3
2020:240	Human Relations	3
2420:247	Survey of Basic Economics	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2540:121	Office Problems	3
2540:253	Advanced Typewriting	3
2540:276	Executive Dictation and Transcription	4

##### Legal Secretarial Science

2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:280	Essentials of Law	3
2420:211	Basic Accounting I	3
2540:254	Legal Typewriting	2
2540:277	Legal Dictation and Transcription	4
2540:279	Legal Office Procedures	3
	Technical electives	4

##### International Secretarial Science

2540:121	Office Problems	3
2540:253	Advanced Typewriting	3
2540:276	Executive Dictation and Transcription	4
	or	
2540:277	Legal Dictation and Transcription	4
	Beginning Foreign Language	8
	Intermediate Foreign Language	6
	Elective	1

<b>Medical Assisting</b>		<i>Credits</i>
1100:	Physical Education	1
2020:121	English	4
2020:240	Human Relations	3
1100:105	Introduction to Public Speaking	3
	or	
1100:106	Effective Oral Communication	3
2540:151	Intermediate Typewriting	3
2420:211	Basic Accounting I	3
2540:119	Business English	3
2540:121	Office Problems	3
2540:150	Beginning Typewriting	3
2540:241	Information Management	3
2540:257	Secretarial Machines	3
2540:263	Business Communications	3
2740:240	Medical Machine Transcription	2
2740:120	Medical Terminology	3
2740:130	Office Nursing Techniques I	2
2740:231	Office Nursing Techniques II	2
2740:232	Office Nursing Techniques III	2
2740:250	Medical Assisting Specialties	3
2840:100	Basic Chemistry	3
3100:106	Anatomy and Physiology	3
5550:211	First Aid	2
	Elective	3
	Total	64

## 2550: Office Services Technology

The office services technology career program emphasizes the development of skills for clerical and record-keeping occupations and prepares the student to perform the various services that are a vital part of the modern business office. Studies include operating office machines and systems, records management and personnel supervision.

1100:	Physical Education	1
1100:105	Introduction to Public Speaking	3
2020:121	English	4
2020:240	Human Relations	3
2020:242	American Urban Society	3
2020:247	Survey of Basic Economics	3
2420:101	Elements of Distribution	3
	or	
2420:104	Introduction to Business	3
2420:202	Personnel Practices	3
2420:221	Administrative Office Supervision	2
2420:170	Business Mathematics	3
2420:280	Essentials of Law	3
2420:211	Basic Accounting I	3
2540:119	Business English	3
2540:121	Office Problems	3
2540:125	Business Machines	2
2540:150	Beginning Typewriting	3
2540:151	Intermediate Typewriting	3
2540:241	Information Management	3
2540:253	Advanced Typewriting	3
2540:257	Secretarial Machines	3
2540:263	Business Communications	3
	Electives	3-4
	Total	64

## 2560: Transportation

This program provides qualified personnel for the field of transportation in such areas as sales, traffic and

operations, personnel management and public relations. It includes courses in traffic practices and procedures, rate theory and terminal management and supervision as they pertain to the movement of goods and people by rail, highway, water and air. A commercial aviation option emphasizes the movement of material by the various methods of air transportation.

### Options

#### General

	<i>Credits</i>	
1100:	Physical Education	1
1100:105	Introduction to Public Speaking	3
	or	
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:101	Elements of Distribution	3
2420:202	Personnel Practices	3
2420:104	Introduction to Business	3
2420:170	Business Math.	3
2420:280	Essentials of Law	3
2540:119	Business English	3
2540:263	Business Communications	3
2560:110	Transportation Economic Policy	2
2560:115	Transportation Commercial Motor	3
2560:116	Transportation Commercial Air	2
2560:117	Transportation Commercial Water	2
2560:118	Transportation Freight Rates	3
2560:221	Transportation Terminal Management & Safety	2
2560:221	Transportation Traffic Principles and Practices	3
2560:225	Transportation Interstate Regulations I	3
2560:226	Transportation Interstate Regulations II	3
	Elective	2
	Total	64

#### Commercial Aviation

1100:	Physical Education	1
1100:105	Introduction to Public Speaking	3
	or	
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:101	Elements of Distribution	3
2420:202	Personnel Practices	3
2420:104	Introduction to Business	3
2420:170	Business Math.	3
2420:280	Essentials of Law	3
2420:211	Basic Accounting I	3
2440:120	Introduction to Information Processing	2
2520:212	Principles of Salesmanship	4
2540:119	Business English	3
2540:150	Beginning Typewriting	3
2560:110	Transportation Economic Policy	3
2560:116	Transportation Commercial Air	2
2560:118	Transportation Freight Rates	3
2560:220	Transportation Terminal Management & Safety	2
2560:221	Transportation Traffic Principles & Practices	3
	Electives	7
	Total	64

## 2750: Cytotechnology

A cytotechnologist specializes in screening microscope slides prepared by physicians or other medical personnel. Two years of study in this program includes courses in biology, chemistry and medical technology, followed by twelve months of training in an approved hospital school. The hospital school requires separate admission. These admissions are highly competitive, and the University cannot guarantee placement in them.

		<i>Credits</i>
1100:	Physical Education	1
1100:105	Introduction to Public Speaking	3
2020:121	English	4
2020:131	Math Analysis I	3
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2020:242	American Urban Society	3
2420:211	Basic Accounting I	4
2540:284	Office Nursing Tech. I	2
3100:111	Principles of Biology	4
3100:112	Principles of Biology	4
3100:130	Principles of Microbiology	3
3100:211	General Genetics	3
3100:212	Genetics Lab	1
3100:265	Introduction to Human Physiology	4
3100:365	Histology I	3
3150:121	Inorganic Chemistry I	3
3150:122	Inorganic Chemistry II	3
	Electives	10
	<b>Total</b>	<b>64</b>

## 2760: Radiologic Technology

This program prepares graduates to perform radiological examinations, under a physician's direction, for the diagnosis and treatment of physical diseases and injuries.

3750:100	General Psychology	3
2020:240	Human Relations	3
2020:121	English	4
1100:106	Oral Communications	3
1100:	Physical Education	1
2020:	Mathematics Requirement	3
2760:161	Basic Physical Sci. for Rad. Tech	2
2760:261	Physical Sci. for Rad. Tech. II	3
2760:106	Anatomy for Radiologic Technology I	3
2760:107	Anatomy for Radiologic Technology II	3
2760:165	Radiographic Princ.	3
2760:101	Intro. to Radiologic Technology	2
2760:230	Radilog. Tech. and Control	3
2760:140	Medical and Surgical Diseases	3
2760:170	Radilog. Positioning I	3
2760:171	Radilog. Positioning II	3
2760:272	Radilog. Positioning III	3
2760:273	Radilog. Positioning IV	3
2760:184	Clinical Application I	4
2760:185	Clinical Application II	4
2760:286	Clinical Application III	5
2760:287	Clinical Application IV	4
2760:288	Clinical Application V	4
2760:289	Clinical Application VI	5
	General Electives	2
	<b>Total</b>	<b>64</b>

## 2770: Surgical Assisting Technology

This program prepares graduates to assist with patient care and related services in a hospital operating room as a member of the surgical team.

		<i>Credits</i>
1100:	Physical Education	1
1100:106	Effective Oral Communications	3
2020:	Mathematics requirement	3
2020:121	English	4
2020:240	Human Relations	3
2020:242	American Urban Society	3
2540:283	Medical Terminology	3
2770:100	Intro. to Surgical Assisting Tech.	4
2770:121	Surgical Assisting Procedures I	4
2770:131	Clinical Application I	3
2770:222	Surgical Assisting Procedures II	4
2770:232	Clinical Application II	3
2770:233	Clinical Application III	3
2840:100	Basic Chemistry	3
3100:103	Intro. to Microbiology	3
3100:106	Anatomy and Physiology	3
3100:107	Anatomy and Physiology	3
	General Elective	3
	Technical Electives	8
	<b>Total</b>	<b>64</b>

## 2790: Respiratory Therapy Technology

This program prepares a person who, under the supervision of a physician, administers medical gases and medications and operates equipment in the medical care of patients with respiratory disorders. Completion of this program qualifies the graduate to take either the Certification Examination, Registry Examination or both.

1100:	Physical Education	1
1100:106	Effective Oral Communication	3
2020:	Math. Requirement	3
2020:121	English	4
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2020:242	American Urban Society	3
2790:121	Intro. to Respiratory Therapy	3
2790:122	Patient Care: Respiratory Therapy	3
2790:123	Pulmonary Functions & Ventilation	3
2790:131	Clinical Application I	3
2790:132	Clinical Application II	2
2790:133	Clinical Application III	5
2790:134	Clinical Application IV	5
2790:141	Pharmacology	2
2790:142	Pathology: Respiratory Therapy	2
2790:201	Anat. and Phys: Cardiopulmonary System	3
2790:204	Pulm. Rehab. & Resp. Ther.	2
2790:223	Advanced Respiratory Therapy	3
2840:100	Basic Chemistry	3
3100:103	Intro: Microbiology	3
3100:106	Anatomy & Physiology	3
3100:107	Anatomy & Physiology	3
	General Elective	2
	<b>Total</b>	<b>70</b>

## 2840: Chemical Technology

This program prepares students for technical positions in chemical and chemistry related laboratories and



manufacturing plants. The curriculum includes the fundamentals of chemistry, physics and mathematics and stresses modern instrumental methods. The five areas of emphasis listed below provide additional job opportunities to graduates.

### Core Program

		Credits
1100:	Physical Education	1
2020:121	English	4
2020:131	Math Analysis I	4
2020:222	Technical Report Writing	3
2840:101	Introductory Chemistry	3
2840:102	Introductory and Analytical Chemistry	3
2840:103	Chemical Calculations	2
2840:121	Organic Principles	4
2840:151	Basic Physics: Mechanics	3
2840:152	Basic Physics: Electricity and Magnetism	2
2840:153	Basic Physics: Heat, Light and Sound	2
2840:201	Quantitative Analysis	4
2840:202	Instrumental Methods	4
2840:255	Literature of Science and Technology	1
2840:270	Natural and Synthetic Organic Polymers	4
	General Electives	9
	Requirements	13
	Total	66

### Options

#### Industrial

2020:132	Math Analysis II	3
	Technical Electives	10
	(3940:401 Introduction to Elastomers recommended)	Total 13

#### Rubber and Plastics

2020:132	Math Analysis II	3
	Technical Electives	10
	(3949:401 Introduction to Elastomers and 3940:412 Introduction to Plastics recommended)	Total 13

#### Geology

2020:132	Math Analysis II	3
3370:101	Introductory Physical Geology	4
3370:230	Mineralogy	3
	Technical Elective	3
	Total	13

#### Environmental

3370:200	Environmental Geology	3
3100:130	Principles of Microbiology	3
	Technical Electives	7
	(3100:426 Applied Aquatic Ecology recommended)	Total 13

#### Forensic

2220:100	Introduction to Criminal Justice	3
2220:250	Criminal Case Management	6
	Technical Elective	4
	Total	13

## 2860: Electronic Technology

(an ECPD accredited engineering technology curriculum)

This program prepares individuals for work as technicians in the development, manufacture, installation and maintenance of electronic equipment and systems. Added to basic instruction in mathematics, science and electrical/electronic fundamentals is study of computers, communications systems and industrial applications of electronics.

		Credits
1100:	Physical Education	1
2020:121	English	4
2020:131	Math Analysis I	4
2020:132	Math Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Math Analysis III	3
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2840:151	Basic Physics: Mechanics	3
2840:153	Basic Physics: Heat, Light and Sound	2
2860:120	DC Circuits	4
2860:122	AC Circuits	3
2860:123	Electronics I	4
2860:225	Electronics II	4
2860:237	Digital Circuits I	3
2860:238	Digital Circuits II	3
2860:242	Machinery & Controls	4
2860:251	Communications Circuits	3
2860:255	Elec. Design & Const.	2
2860:260	Electronics Project	2
2900:231	Control Principles	3
	General Electives	4
	Total	68

## 2880: Industrial Technology

This program prepares students for entry level positions in the field of industrial management and engineering. In addition to basic technical subjects, study is concentrated on work measurement, safety procedures, plant layout and quality control.

1100:	Physical Education	1
2020:121	English	4
2020:131	Math Analysis I	4
2020:132	Math Analysis II	3
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2420:211	Basic Accounting I	3
2880:100	Intro. to Manufacturing Management	3
2880:130	Work Measurement Procedures I	2
2880:141	Safety Procedures	3
2880:200	Manufacturing Profitability	3
2880:210	Controlling and Scheduling Production	2
2880:231	Plant Layout	3
2880:232	Labor-Management Relations	3
2880:235	Work Measurement Procedures II	2
2880:241	Quality Control Procedures	3
2920:121	Technical Drawing I	3
2920:247	Shop Methods	3
	Electives	13
	Total	64

## 2900: Instrumentation Technology

This career area offers training with instruments and control devices used in automatic manufacturing and processing, power generation, space exploration and

communications systems. The program develops the principles and technical skills involved in the instrumentation control of processes and operations in modern industry.

		<i>Credits</i>
1100:	Physical Education	1
2020:121	English	4
2020:131	Math, Analysis I	4
2020:132	Math, Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Math Analysis III	3
2020:240	Human Relations	3
2020:242	American Urban Society	3
2020:247	Survey of Basic Economics	3
2840:151	Basic Physics: Mechanics	3
2840:153	Basic Physics: Heat, Light and Sound	2
2860:227	Measurements	3
2860:237	Digital Circuits I	3
2860:242	Machinery and Controls	4
2860:270	Survey of Electronics I	3
2860:271	Survey of Electronics II	2
2900:121	Fundamentals of Instrumentation	4
2900:231	Control Principles	3
2900:232	Process Control	3
2900:239	Pulse Circuit Testing	3
2900:240	Calibration and Standardization	1
2900:241	Instrumentation Project	2
	General Electives	3
	Technical Electives	2
	Total	68

## 2920: Mechanical Technology

(an EPCD accredited engineering technology curriculum)

This program prepares individuals to work at the technician level in the design, development, manufacture, testing and servicing of mechanical equipment. Included in the program is basic instruction in mathematics, science, mechanics, technical drawing and machine design.

1100:	Physical Education	1
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:131	Math Analysis I	4
2020:132	Math Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Math Analysis III	3
2020:240	Human Relations	3
2020:242	American Urban Society	3
2840:151	Basic Physics: Mechanics	3
2840:152	Basic Physics: Electricity and Magnetism	2
2840:153	Basic Physics: Heat, Sound, and Light	2
2920:121	Technical Drawing I	3
2920:122	Technical Drawing II	3
2920:242	Design Materials	3
2920:243	Kinematics	2
2920:244	Dynamics	2
2920:245	Mechanical Design I	5
2920:247	Shop Methods	3
2920:249	Applied Therm. Energy	2
2920:251	Fluid Power	2
2920:252	Thermo-Fluids Lab	1
2980:125	Statics	3
2980:241	Strength of Materials	3
	Technical Elective	2
	Total	68

## 2980: Surveying and Construction Technology

(an EPCD accredited engineering technology curriculum)

This program equips a graduate for work in the construction industry or as a land surveyor. Courses provide study in construction, materials, drafting and surveying.

### Options

#### Construction

		<i>Credits</i>
1100:	Physical Education	1
2020:121	English	4
2020:131	Math, Analysis I	4
2020:132	Math, Analysis II	3
2020:233	Math, Analysis III	3
2020:222	Technical Report Writing	3
2840:	Basic Physics (Elective)	2
2840:151	Basic Physics: Mechanics	3
2920:121	Technical Drawing I	3
2980:122	Basic Surveying	3
* 2980:123	Surveying Field Practice	2
2980:125	Statics	3
2980:233	Construction Administration	2
2980:222	Construction Surveying	3
2980:231	Building Construction	2
2980:232	Construction	3
2980:234	Elements of Structures	3
2980:237	Materials Testing I	2
2980:238	Materials Testing II	2
2980:241	Strength of Materials	3
2980:245	Cost Analysis and Estimating	3
2980:250	Structural Drafting	2
	General Electives	9
	Total	68

#### Surveying

1100:	Physical Education	1
2020:121	English	4
2020:131	Math, Analysis I	4
2020:132	Math, Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Math Analysis III	3
2840:	Basic Physics (Elective)	2
2840:151	Basic Physics: Mechanics	3
2920:121	Technical Drawing I	3
2980:122	Basic Surveying	3
* 2980:123	Surveying Field Practice	2
2980:125	Statics	3
2980:233	Construction Administration	2
2980:202	Construction Surveying	3
2980:224	Land Surveying	3
2980:225	Advanced Surveying	4
2980:226	Subdivision Design	2
2980:232	Construction	3
2980:237	Materials Testing I	2
2980:241	Strength of Materials	3
3350:340	Cartography	3
	General Electives	9
	Total	68

## Diploma Nursing Program

The University of Akron, in cooperation with the hospital schools of nursing at Akron City Hospital, Akron General Medical Center and St. Thomas Hospital in Ak-

\*Faculty may select substitute course for student.

ron, 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 three schools of nursing differ slightly in regard to courses taken and their sequence.

The following courses are offered:

		<i>Credits</i>
3100:130	Microbiology	3
3100:106	Anatomy & Physiology	3
3100:107	Anatomy & Physiology	3
3150:124	Chemistry	3
3750:100	Intro. to Psychology	3
3750:130	Developmental Psychology	4
3850:100	Intro. to Sociology	4
7400:133	Nutrition Fundamentals	3

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## Allied Health Programs

The University of Akron, in cooperation with a number of area hospitals, provides credit instruction for students interested in careers in allied health fields including surgical assisting and radiologic technology.

Students must meet the University entrance requirements and are regularly enrolled for college credit.

Applications for these programs are handled through the hospitals where the clinical instruction is held.

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## Certificate Program in Real Estate

A certificate program is offered in real estate. A full description of this program may be found in "Interdisciplinary and Certificate Programs," Section 4 of this *Bulletin*.



# The Wayne General and Technical College

John G. Hedrick, M.A., *Dean*

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## Philosophy

The Wayne General and Technical College is located on 163 acres of land one mile northwest of Orrville, Ohio. It was founded in 1972, culminating ten years of effort on the part of local citizens to establish a permanent facility for a branch campus of a major university. The Wayne College, allied with The University of Akron for administrative and academic support, provides the first two years of general college education and a variety of technical programs. The college has the following objectives:

- To provide the first and second year of traditional liberal arts and sciences courses.
- To provide collegiate technical education programs enabling students to develop those skills which will lead to employment and advancement in specific fields.
- To provide continuing general education for all members of the community on a need basis. These programs are concerned with the common knowledge, skills and attitudes which may help the non-traditional student be a more effective person, member of a family and citizen in our society.
- To provide both credit and noncredit programs of community service, adult education and cultural activities designed jointly with local community interest groups, labor and business organizations as well as other educational institutions.

Overall, the college endeavors to provide an educational experience charged with excellence and challenge, an experience which demands intellectual awareness and criticism, which encourages growth and which fosters an appetite for life-long learning.

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## Admission

Admission applications are available at the Office of Admissions on campus at The University of Akron or at the Wayne General office in Orrville.

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## Programs of Instruction

Wayne General and Technical College offers programs in two major classifications.

**The college transfer program** is a replication of the liberal arts programs in the first two years of most baccalaureate and college programs. It is designed for the growing number of students who choose to take the first two years of college study near home in a two-year college.

**The two-year technical program** is designed to provide specialized collegiate technical programs in order to develop in individuals higher levels of skills and specialized occupations especially related to the needs of employers in Wayne, Holmes and Medina counties.

These programs lead to the following degrees. Associate of Arts; Associate in Applied Sciences; Associate of Applied Science in mechanical technology and social services technology; and Associate in Applied Business in business management technology, retail management technology and secretarial science. Please see "Community and Technical College," Section 4, of this *Bulletin* for the specific requirements of each of these programs.

Students enrolled at Wayne General and Technical College may also take courses at the main campus of The University of Akron concurrently with those at Wayne. Campus students of The University of Akron also may take courses at Wayne College concurrently with their campus courses.

Wayne General and Technical College is fully accredited at the associate degree level by the North Central Association of Colleges and Schools.

Additional information regarding Wayne College may be secured from their bulletin, *Wayne College, 1979-80*.

# The General College

Marion A. Ruebel, Ph.D., *Dean*  
Thomas Vukovich, M.Ed., *Assistant to the Dean*

## Objectives

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

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

## 1100: The General Studies

The Department of General Studies of the General College provides students 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 students gain knowledge which helps them develop intelligent behavior patterns and gain understanding of themselves and their own individual abilities.

The General Studies program provides a wide foundation of general knowledge to serve as the structural basis for the development of the student's 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 fruit of a half century of planning, revision and developing.

Students, well-grounded in the General Studies, are academically prepared to continue into realms of higher education; this curriculum has proved the most advanta-

geous starting point for a student, no matter his eventual scholastic goal. It is equally valuable to the enrollee who is indecisive about his professional future and to the enrollee who arrives at the University convinced that he knows what he wants to become.

Students who complete 30 semester credits and achieve a quality point average of 2.0 (C) or better are eligible for transfer to a degree-granting college. Students should always check with their advisers to determine specific requirements for transfer to the programs of their choice.

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

## Program of Instruction

The required General Studies courses are:

		<i>Credits</i>
1100:105	Intro. to Public Speaking	3
	or	
1100:106	Effective Oral Communication	3
1100:111-2	English Composition	8
* 1100:115-6	Institutions in the United States	6
1100:120-90	Physical Education	1
1100:320-1	Western Cultural Traditions	8
** 1100:330-5	Eastern Civilizations	4
	Mathematics	3
	*** Natural Science	6
	Total	39

\* The 6 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 totalling at least 6 credits selected from two of the following four sets of course offerings:

- 3250:244, *Introduction to Economic Analysis*, 3 credits. (Students majoring in engineering are advised to take this as one of their selections.)  
or  
3250:201, *Principles of Economics*, 3 credits. (Students majoring in business, economics, etc., are advised to take this as one of their selections. Students doing so should plan to take 3250:202, 3 credits.)  
or  
3250:100, *Introduction to Economics*, 3 credits.
- 3400:201, *U.S. History to Civil War*, 4 credits.  
or  
3400:202, *U.S. History Since Civil War*, 4 credits.
- 3700:100, *Government and Politics in U.S.*, 3 credits.
- 3850:100, *Introduction to Sociology*, 4 credits.  
or  
3870:150, *Cultural Anthropology*, 4 credits.

B. For Community and Technical College majors only, completion of the following three courses (total of 9 credits):

- 2020:240, *Human Relations*, 3 credits.
- 2020:242, *American Urban Society*, 3 credits.
- 2020:247, *Survey of Basic Economics*, 3 credits.

\*\* Engineering students are only required to take 2 credits; all other students must take 4 credits.

\*\*\* Minimum of 6 credits of science. This requirement may be met either by taking courses in the Department of Biology, Chemistry, Geology or Physics, or by any combination of two out of four of the natural science courses, 1100:221, 222, 223, and 224 (3 credits each).

# The Reserve Officers' Training Corps

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## 1500: Aerospace Studies

The Department of Aerospace Studies provides students 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 students to become officers who are dedicated and responsible; critical and creative in their thinking; able to communicate clearly; and skilled in effective management.

Both the four-year program and two-year program are open to full-time male and female students who will have completed at least a baccalaureate degree at commissioning.

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## Programs

### The Four-Year Program

All full-time day 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 Lab* (Leadership Lab) each week and provides 1.5 semester credits.

Credit for portions of the GMC may be given 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 US Armed Forces.

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

### The 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. Two-year program applicants must meet the qualifications described below. Students in the POC receive 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 requisites may be completed in time for summer field training. The POC consists of three hours of classroom work and one hour of *Aerospace Studies Lab* (Leadership Lab) each week, and provides 3 semester credits.

### Field Training

In the summer prior to entering the Professional Officer Course, 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.

Four-year program students spend four weeks at their encampment, while field training for two-year program applicants lasts six weeks. The additional two weeks for the two-year program applicants are used to cover the academic work taken by cadets who 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. In addition, cadets and applicants receive pay at approximately half the rate of a second lieutenant.

### Flight Training

As a pilot qualified student enrolled in the Air Force ROTC Flight Instruction Program (FIP), you can get an important start on your Air Force flying career.

When enrolled in FIP, you will receive up to 25 hours of flight instruction at an FAA approved civilian-operated flying school near the campus. Approximately 18 hours will be dual instruction and the other seven will be solo flying. In addition to the flight training, the student will participate in a ground school covering the rules and regulations pertaining to flying.

The Air Force pays for flight instruction, textbooks, navigational equipment and transportation to and from the flying school.

### 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.

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## 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 26½.
  - 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 student applicant, complete the six-week field training course.
- Receive a satisfactory score on the Air Force Officer Qualifying Test (AFO-QT).
- 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 Officers Course.

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### **Requirements for Commissioning**

- Complete the Professional Officer Course 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 a period of not less than five years of active duty as a flying officer after completion of pilot or navigator training.

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### **Scholarships**

Air Force ROTC college scholarships are available to qualified applicants in both the two- and four-year AFROTC programs covering periods of four, three and two years. Each scholarship provides full tuition, laboratory and incidental fees and full reimbursement for curri-

culum-required textbooks. In addition, all scholarship cadets receive \$100 monthly non-taxable subsistence allowance.

Four-year scholarships are available for applicants in pilot, navigator and scientific/engineering career fields. Applicants will be evaluated on the basis of their:

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

All three- and two-year scholarships are awarded on a competitive basis and applicants are evaluated on their:

- Air Force Officers Qualifying Test.
- Collegiate grade-point averages.
- Extra-curricular and athletic activities.
- Screening and nomination board rating.
- Academic major and potential active duty career field.

Scholarship information may be obtained by contacting the Department of Aerospace Studies.

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### **Financial Allowances**

All cadets enrolled in the Professional Officers Course will receive a non-taxable subsistence allowance of \$100 per month.

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### **Uniforms and Textbooks**

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

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## **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 graduates of this program perpetuate and strengthen the tradition of our nation's citizen soldier concept.

Students enrolled in Army ROTC have an unusual opportunity to study and participate in leadership and management experiences which are unique to the college

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curriculum. Leadership, self discipline, responsibility and physical stamina are stressed as students learn to plan, organize, motivate and lead others. Program goals are to develop decision-making capabilities through detail 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 US Army.

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## Programs

### The Four-Year Program

All full-time students enrolled in The University of Akron or Wayne General and Technical College may enroll in the Army four-year program. Freshmen and sophomores enroll in the basic military course (MS I, MS II) of the four-year program for 1.5 credits per semester. *Military Science I* and *II* are held two hours each week and include: leadership fundamentals, military history, marksmanship, orienteering, national security affairs and Army organization. Books and uniforms (for sophomores) are provided free. ROTC, taken as an elective, offers credit toward graduation and is included in the grade-point average but imposes no obligation on students to complete all semesters of the basic course. The professor of military science may award advance standing for students who have participated in high school ROTC, military schools, the Reserve or National Guard or active military service.

Students who complete the basic military course may apply for enrollment in the advanced course which is described below.

### The Two-Year Program

Students who complete the basic course or attend a six-week basic military skills training program may apply for *Military Science III* and *IV* — the advanced course. Course studies are held four hours a week for three credits. They include: methods of instruction, advanced leadership, application of tactics, branches of the Army, resource management, case studies in military/political relationships, military history and officer responsibility. The course includes a six-week paid summer camp usually between the junior and senior years. Students in this program receive free books and uniforms and are paid \$100 monthly. They are under obligation to complete the course and accept a commission as a Second Lieutenant in the Army. Upon graduation, students will either serve with the active Army or in a Reserve component.

### Cadet Activities

The Department of Military Science offers numerous activities to enrich classroom instruction; provide a bet-

ter understanding of the military and military life; and improve technical skills. These include:

- Military Post Orientation Visits
- Adventure and Survival Training — mountaineering, canoeing, skiing, camping, orienteering, boating
- Precision drill
- Competitive rifle marksmanship
- Military History Club
- Tactics Club

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## Requirements for Admission

### Qualifications for Enrollment

- United States citizenship (alien students may be enrolled under special circumstances).
- Full-time students (advanced course students must be enrolled in baccalaureate degree course).
- Good moral character.
- Age requirements as follows:
  - Be at least 17 for enrollment in the basic course.
  - Be under 28 years of age by the time of commissioning (may be waived for veterans).
  - Scholarship students must be under 25 by commissioning date.
- Be mentally and physically fit.

### Qualifications for Advanced Course

- Basic qualifications for enrollment above.
- Completion of basic course, basic summer camp, veteran, or 90 hours campus seminar.
- Qualify on the Army physical evaluation.
- Permission of the professor of military science.
- Be in good academic standing with the University.

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## Requirements for Commissioning

General requirements for a commission include:

- Completion of a baccalaureate or advanced degree.
- Completion of the advanced Army ROTC course.
- Agreement to incur a maximum active service obligation as follows:

	Active Service
Basic Program (freshmen & sophomore)	None
Advanced Program (junior and senior)	3 years
Scholarship Program	4 years

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## Reserve Components Option

Army ROTC students who have completed the ROTC basic and advanced program may apply for a



position in the Army National Guard or the Army Reserves and have no obligation to serve with the active Army. If accepted to either component the student may be commissioned a 2nd Lieutenant regardless of whether the University requirements for a degree have been completed. The 2nd Lieutenant in a reserve component will attend meetings one weekend per month and be paid over \$100 for each month.

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## Scholarships

In addition to four-year scholarships offered to high school seniors, the Army offers three, two and one year scholarships on a competitive basis to men and women enrolled in the program. These scholarships provide free tuition, fees, text materials and a non-taxable monthly stipend of \$100 for the period of the scholarship. Army scholarship students who qualify as distinguished military graduates may apply for a regular

Army commission. All scholarship students must agree to spend four years on active duty.

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## Uniform and Textbooks

Textbooks for all courses and equipment for enrichment activities are provided free by the Department of Military Science. Uniforms are issued free to *Military Science II* students for retention upon completing the program.

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## Financial Allowances

Advanced course members and all scholarship students are paid a non-taxable subsistence allowance of \$100 per month while in the program. Students attending basic or advanced summer camp are paid travel, meals, housing and a salary.



# The Buchtel College of Arts and Sciences

Claibourne E. Griffin, Ph.D., *Dean*

Paul S. Wingard, Ph.D., *Associate Dean*

Marlene Hathaway, M.A., *Assistant to the Dean*

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## Objectives

The Buchtel College of Arts and Sciences serves the objectives of The University of Akron, which exist that learning may be procured, preserved and enlarged. More particularly, the Buchtel 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 potentialities. 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 insure 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 nurture of civility — those actions whereby virtue, the advancement of society and wise and humane government are encouraged.
  - The advancement of learning — that substantive knowledge discovered and cultivated by critical curiosity, tested by experimentation, propagated by instruction and capable of affecting 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 life.

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

The Buchtel College of Arts and Sciences is one of eight degree-granting colleges at The University of Akron. Its name truthfully implies that its traditions date back farther than those of the other undergraduate col-

leges, since the University itself is an outgrowth of Buchtel College, a liberal arts institution founded in 1870.

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

The college is composed of three administrative divisions. They are as follows:

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## 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.

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## 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, geology, mathematics or physics.

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## Social Sciences Division

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

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## College Requirements

### Requirements for Admission

To be admitted to the Buchtel College of Arts and Sciences 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.

*Social Sciences Division:* Bachelor of Arts, Bachelor of Science in Labor Economics, Bachelor of Science in Political Science/Criminal Justice.

*Natural Science Division:* Bachelor of Arts, Bachelor of Science, Bachelor of Science in Medical Technology.

## Requirements for Baccalaureate Degrees

A student transferring into the Buchtel College of Arts and Sciences must have completed the equivalent of, or taken 1100:111-112 *English Composition*, three credits of *Modern University Mathematics* or a higher level mathematics or statistics course and the remainder of the lower division General Studies program.

The requirements for the bachelor's degree must include:

- Complete the General Studies program.
- A minimum of 47 credits completed consisting of either:
  - 300/400 level courses both in and outside the student's major.
  - Any other courses outside the 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).
- Demonstrate ability to use two languages.
  - If the candidate is a native-born speaker of English, this ability will be shown by the completion of a second year of an approved foreign language on the University level.
  - If the candidate is not a native-born speaker of English, this ability will be shown by the completion of the General Studies sequence of *English Composition* 1100:111-112.
- Complete requirements in a major field of study (see Programs of Instruction) and the recommendation of the student's major department.
- Attain a minimum grade point average of 2.0 in all work in the major field.
- Fulfill the general 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 course work in addition to the 128 credits necessary for the first degree; 16 of these credits must be 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 Student Services.

Ordinarily a student will select a department in which to major. The exact requirements for each such 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 becomes the academic adviser.

Students who desire a broader education than the departmental major offers may elect a divisional major and qualify in the general area of the humanities or the natural 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

Students interested in a teaching career 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 128 credits necessary for graduation. Such a program is particularly recommended for students who, as a part of their preparation for teaching, plan to go to graduate school and earn an advanced degree through specialization in their field of major interest.

The number of credits in a teaching field required for certification may 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.

	<i>Credits</i>
3750:100	Introduction to Psychology 3
5100:150	Introduction to Professional Education 3
5100:250	Human Development and Learning 3

		Credits
5300:295	Exploratory Experience in Secondary Schools	1
5300:310	Principles of Secondary Education	3
5300:311	Instructional Techniques in Secondary Education	3
5100:350	Educational Measurement and Evaluation	2
5100:450	Problems in Education	2
5300:403	Student Teaching Seminar	1
5300:495	Student Teaching	8
	Total	29

## Programs of Instruction

### 3100: Biology

#### Bachelor of Science and Bachelor of Science in Medical Technology

- The General Studies and the second year of a foreign language.
- Core Requirements

3100:111-112	Principles of Biology	8
3100:211	General Genetics	3
3100:214	Organic Evolution	3
3100:217	General Ecology	3
3100:311	Cell Biology	3
3100:384	Techniques and Instrumentation Lab	1
* 3150:132-133	Principles of Chemistry	7
** 3150:134	Qualitative Analysis	2
3150:201-202	Organic Chemistry and Biochemistry I & II	6
	or	
3150:263-4-5-6	Organic Chemistry	10
3450:147-148	Elementary Functions I & II	8
	or	
3450:111-2-3	Modern University Mathematics	3
3450:121-2-3	Mathematics	3
3470:251-2-3	Statistics	3

- Students 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

3100:444	Biology of Thallophytes	4
3100:445	Plant Morphology	4
3100:447	Plant Physiology	3
3100:449	Plant Biosystematics	2
	Electives:	
3100:341-342	Flora and Taxonomy I & II	6
3100:441	Plant Development	4
3100:442	Plant Anatomy	3

Advisers: H. Dollwet, J. Frola, L.W. Macior, D. Ott, W. Stoutamire

\* Second year of foreign language and *Eastern Civilizations* not required for Bachelor of Science in medical technology.

\*\* Or with permission, 3150:121, 122 *Inorganic Chemistry*.

##### Ecology

		Credits
3100:422	Conservation of Biological Resources	4
3100:424	Limnology	3
3100:464	General and Comparative Physiology	4
3300:275	Specialized Writing	3
3350:495	Soil and Water Field Studies	3
3370:101	Introductory Physical Geology	4
3450:221-222	Analytic Geometry-Calculus I & II	8
3470:251-256	Statistics	6
4450:206	Fortran Programming and/either	
3100:331	Microbiology	4
3100:426	Applied Aquatic Ecology	3
3100:444	Biology of Thallophytes	4
3150:423-424	Analytical Chemistry or one course from each group below	6
3100:351	Invertebrate Zoology and	4
3100:353	General Entomology	4
3100:358	Ornithology and	3
3100:458	Vertebrate Zoology	4
3100:341	Flora and Taxonomy and	3
3100:342	Flora and Taxonomy	3

Advisers: J.H. Olive, F.S. Orcutt, W.A. Sheppe

##### Microbiology

3100:331-332	Microbiology	8
3100:437	Immunology	4
3100:431	Bacterial Physiology or	3
3100:435	Virology	4
	Electives:	
3100:433	Pathogenic Bacteriology	4
3100:461-462	Human Physiology	8
3150:401-402	Biochemistry	6
3100:444	Biology of Thallophytes	4
3100:355	Parasitology	4

Advisers: E. Flaumenhaft, N. Lekinko, D. Nunn, L.W. Watson

##### Physiology and Pre-Professional

(including pre-medical, pre-dental, pre-veterinary and pre-pharmacy students)

3100:466-467	Developmental Anatomy	8
3100:461-462	Human Physiology	8
3650:261-262	Physics for Life Sciences I & II	8
	Electives:	
3100:365	Histology I	3
3100:480	Radiation Biology	3
3450:221-2-3	Analytical Geometry-Calculus I, II, III	12
3650:267-268	Life Sciences Physics Computations I & II	2
3150:423-424	Analytical Chemistry	6
3150:425-426	Analytical Chemistry Lab	4

Advisers: D. Ely, J. Gwinn, R. Keller, R. Mostardi, R. Nokes, S. Schmidt

##### Zoology

A minimum of 13 credits from the following:

3100:351	Invertebrate Zoology	4
3100:428	Biology of Behavior	2
3100:458	Vertebrate Zoology	4
3100:464	General and Comparative Physiology	4
3100:466-467	Developmental Anatomy	8

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

3100:341	Flora and Taxonomy I	3
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		<i>Credits</i>
3100:342	Flora and Taxonomy II	3
3100:444	Biology of Thalophytes	4
3100:445	Plant Morphology	4
Electives:		
3100:353	General Entomology	4
3100:355	Parasitology	4
3100:358	Ornithology	3
3100:365-366	Histology	6
3100:422	Conservation of Biological Resources	4
3100:485	Laboratory Animal Management	3

Advisers: D. Jackson, S. Orcutt, W. Sheppe

#### High School Teaching

For state certification requirements, see The College of Education and the Buchtel College of Arts and Sciences "Preparation for High School Teaching," Section 4.

3100:265	Introductory Human Physiology	4
3100:341	Flora and Taxonomy I	3
3100:351	Invertebrate Zoology	4
3100:383	Lab Techniques and Instrumentation	2
3100:458	Vertebrate Zoology	4
Electives:		
3100:331	Microbiology	4
3100:342	Flora and Taxonomy II	3
3100:426	Applied Aquatic Ecology	3
3100:428	Biology of Behavior	2
3100:444	Biology of Thalophytes	4
3100:445	Plant Morphology	4
3100:464	General and Comparative Physiology	4
3100:485	Laboratory Animal Management	3

Advisers: L.W. Macior, R. Nokes, J.H. Olive

#### Medical Technology

A foreign language and *Eastern Civilizations* are not required.

3100:331-332	Microbiology	8
3100:355	Parasitology	4
3100:361-362	Human Anatomy and Physiology	6
3100:383	Lab Techniques and Instrumentation	2
3100:437	Immunology	4
3150:335-336	Analytical Chemistry for Lab Technicians	8

The student will have the option of:

3100:214	Organic Evolution and/or	3
3100:217	General Ecology	3

Also optional:

3100:212	Genetics Lab	1
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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 students selected for the clinical experience portion of the BSMT program in a CAHEA approved hospital school; normal tuition will be charged. The University is affiliated with the following hospital schools: Akron City Hospital, Akron General Medical Center, Barberton Citizens Hospital, Canton Aultman Hospital, Cleveland Metropolitan General Hospital, Mt. Sinai Hospital in Cleveland, St. Alexis Hospital (Cleveland), St. Thomas Hospital and the Children's Hospital Medical Center of Akron. The student must apply to a hospital school for separate admission. The University cannot guarantee placement. Students 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.

Advisers: L. Higbie, D. Jackson, D. Nunn

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 degree in biology take the sequence of courses listed above which will provide an understanding of the fundamentals of modern biology. During the first year, students intending to major in biology should consult a member of the biology faculty.

#### 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:

		<i>Credits</i>
3400:477	Western Science & Technology to 1800	4
3400:478	Western Science & Technology 1800-	4
3600:464	Philosophy of Science	3

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

3100:111-112	Principles of Biology	8
3100:211	General Genetics	3
3100:214	Organic Evolution	3
3100:217	General Ecology	3
3100:311	Cell Biology	3
	or (with permission)	
3100:130	Principles of Microbiology	3

- At least one year of chemistry, including, preferably, some biological chemistry (3150:129-130 *General Chemistry* is suggested).

Adviser: D. Jackson

## 3150: Chemistry

### Bachelor of Science

- \*The General Studies and the second year of German.
- At least 45 credits in the department which must include:

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
3150:266	Organic Chemistry Laboratory II	2
3150:313	Physical Chemistry Lecture I	3
3150:314	Physical Chemistry Lecture II	3

\*Certain other languages may be substituted with the approval of the chemistry faculty. Approval should be sought prior to the completion of 60 credits.

		<i>Credits</i>
3150:315	Physical Chemistry Laboratory I	2
3150:316	Physical Chemistry Laboratory II	2
3150:423	Analytical Chemistry Lecture I	3
3150:424	Analytical Chemistry Lecture II	3
3150:425	Analytical Chemistry Laboratory I	2
3150:426	Analytical Chemistry Laboratory II	2
3150:463	Advanced Organic Chemistry	3
3150:472	Advanced Inorganic Chemistry	3
• <b>Mathematics:</b>		
3450:235	Differential Equations	3
• <b>Physics:</b>		
3650:291-292	Elementary Classical Physics I and II	8

### Bachelor of Arts

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

- **Chemistry:**

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
3150:266	Organic Chemistry Laboratory II	2
3150:423	Analytical Chemistry Lecture I	3
3150:424	Analytical Chemistry Lecture II	3
3150:425	Analytical Chemistry Laboratory I	2
3150:313	Physical Chemistry Lecture I	3
3150:314	Physical Chemistry Lecture II or	3
3150:303	Elementary Physical Chemistry I	3
3150:304	Elementary Physical Chemistry II	3

- At least two courses from the following:

3150:315	Physical Chemistry Laboratory I	2
3150:316	Physical Chemistry Laboratory II	2
3150:401	Biochemistry Lecture I	3
3150:402	Biochemistry Lecture II	3
3150:404	Biochemistry Laboratory I	1
3150:405	Biochemistry Laboratory II	1
3150:415	Chemical Instrumentation	3
3150:416	Instrumental Methods of Analysis	3
3150:421	Qualitative Organic Analysis	4
3150:426	Analytical Chemistry Laboratory II	2
3150:463	Advanced Organic Chemistry	3
3150:472	Advanced Inorganic Chemistry	3
3150:499	Research Problems	2
3940:401	Introduction to Elastomers	2
3940:402	Introduction to Plastics	2
3940:407	Polymer Science	4
3940:411	Molecular Structure and Physical Properties of Polymers I	2
3940:412	Molecular Structure and Physical Properties of Polymers II	2
3940:413	Molecular Structure and Physical Properties of Polymers III	2

- **Physics:**

3650:291-2	Elementary Classical Physics I & II or	8
3650:261-2	Physics for the Life Sciences I & II or	8
3650:231-2	Concepts of Physics I & II	8

- **Mathematics:**

3450:149	Pre-Calculus Mathematics	3
3450:221-2	Analytic Geometry and Calculus I & II (or equivalent)	8

		<i>Credits</i>
<b>Recommended:</b>		
4450:206	Fortran Programming for Scientists and Engineers	2

### 3200: Classics

(3200: Classics; 3210: Greek; 3220: Latin)

#### Bachelor of Arts

- The General Studies.
- At least 24 credits in the department including the following:

3200:161-162	Comparative Literature	6
3200:313-314	Classical Archaeology	6
	Classical Electives	12

- Language courses must be above the 200 level in order to be included in the total of 24 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.
- Students wishing to be certified for public school teaching with Latin as the principal teaching field must complete 26 credits in that language. In addition, they must complete the required credits in a second academic teaching field. See "Teaching Fields," the College of Education, Section 4 of this *Bulletin*.

### 3250: Economics

#### Bachelor of Arts

- The General Studies and the second year of a foreign language.
- At least 30 credits in the department including the following:

3250:201-202	Principles of Economics	6
3250:400	Macro Economic Theory	3
3250:410	Micro Economic Theory	3
	Economics Electives	18

- **Mathematics:**

3450:	Modern University Mathematics	9
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- **Statistics (one of the following):**

6500:321-322	Quantitative Business Analysis I & II or	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 or	1
3470:461	Applied Statistics	4

- **Electives — 30-32 credits.**

**Bachelor of Science in Labor Economics**

- The General Studies.
- At least 30 credits in the department including the following:

		Credits
3250:201-202	Principles of Economics	6
3250:330	Labor Problems	3

## Two of the following:

3250:333	Labor Economics	3
3250:431	Labor and the Government	3
3250:432	The Economics and Practice of Collective Bargaining	3
	Economics Electives	15

- Statistics (one of the following):

6500:321-322	Quantitative Business Analysis I & II or	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 or	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.

**3300: English****Bachelor of Arts**

- The General Studies and the second year of a foreign language.
- At least 32 credits in the department including the following:

3300:316	Shakespeare: The Mature Plays	3
3300:280	Poetry Appreciation	3
3300:219	English Literature	4
3300:220	English Literature	4
	*English Electives	18

- Electives — 43 credits.

**3350: Geography****Bachelor of Arts**

- The General Studies and the second year of a foreign language.
- At least 26 credits in geography including the following:

3350:210	Physical and Environmental Geography	3
3350:220	Economic Geography	3
3350:230	Rural and Urban Settlement	3

\*Of the 18 English elective credits, four courses totaling at least ten credits must be taken on the 400 level. These courses must include two 400-level courses in *English Literature* and one 400-level course in *American Literature*. None of these three courses are to be chosen from 3300:480-481.

3350:240	Maps and Map Reading	3
3350:340	Cartography	3
3350:481	Introduction to Geographic Research	2
3350:483	Introduction to Spatial Analysis	2
3350:496	Field Research Methods	3
	Geography Electives	4

- At least one course from the following:

3350:350	Anglo-America	3
3350:353	Latin America	3
3350:356	Europe	3
3350:358	U.S.S.R.	3
3350:360	Asia	3
3350:363	Africa South of the Sahara	3

- Electives — 49 credits.

**3370: Geology****Bachelor of Science**

- The General Studies and the second year of a foreign language.
- At least 39 credits in the Department of Geology including the following:

3370:101	Introductory Physical Geology	4
3370:102	Introductory Historical Geology	4
3370:210	Geomorphology	3
3370:230	Mineralogy: Crystallography	3
3370:230	Mineralogy: Minerals	3
3370:350	Structural Geology	4
3370:360	Introductory Invertebrate Paleontology	4
3370:395	Field Methods in Geology	2
3370:432	Optical Mineralogy	3
3370:433	Petrography	3
3370:496	Geology Field Camp	6

- Non-geology courses required for majors:

3100:111-112	Principles of Biology	8
3150:132-133	Principles of Chemistry I & II	7
3150:134	Qualitative Analysis	2
3450:221	Analytic Geometry-Calculus I	4
3650:231-232	Concepts of Physics I & II or	8
3650:291-292	Elementary Classical Physics I & II	8

- Electives:

Depending upon a student's major field of interest within the department, additional work in a supporting science will be strongly recommended. During the first year, students intending to major in geology should consult a member of the faculty.

**Bachelor of Science — Geophysics**

- The General Studies and a second year of a foreign language.
- At least 30 credits in the Department of Geology including the following:

3370:101	Introductory Physical Geology	4
3370:102	Introductory Historical Geology	4
3370:350	Structural Geology	4
3370:441	Fundamentals of Geophysics	3
3370:446	Exploration Geophysics	3
3370:496	Geology Field Camp	6
	Geology Electives	6

Recommended geology electives:

3370:230	Mineralogy: Crystallography	3
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## Credits

3370:271	Oceanography	3
3370:404	Astrogeology	3
3370:435	Petroleum Geology	3
3370:437	Economic Geology	3
3370:470	Geochemistry	2

- Non-geology required courses:

3150:132-133	Principles of Chemistry I & II	7
3450:221-2-3	Analytic Geometry-Calculus I, II, III	12
3450:235	Differential Equations	3
3650:291-292	Elementary Classical Physics I & II	8
3650:431	Mechanics	3
3650:436	Electricity and Magnetism	3

- Recommended science electives:

3650:301	Elementary Modern Physics	3
3650:410	Electronics	3
3650:411	Intermediate Laboratory I	2
3650:412	Intermediate Laboratory II	2
3650:445	Theoretical Mechanics	4
3650:481	Methods of Mathematical Physics I	3
3650:482	Methods of Mathematical Physics II	3
4450:206	Fortran (Sci/Engr)	2

## Bachelor of Arts

- The General Studies and the second year of a foreign language.
- At least 38 credits in geology and related courses, plus six credits of *Geology Field Camp* (normally taken in the summer of the junior or senior year).

3370:101	Physical Geology	4
3370:102	Historical Geology	4
3370:350	Structural Geology	4
3370:230	Mineralogy	3
3370:233	Petrology	2
3370:360	Introductory Invertebrate Paleontology	4
3370:413	Geology Field Camp 300/400 level courses	6 8

- Non-geology courses required for majors:

3450:148	Elementary Functions II (or equivalent)	2
3150:132	Principles of Chemistry I	4

- At least seven credits from the following:

3100:111-2	Principles of Biology (or equivalent)	4
3150:133	Principles of Chemistry II (or equivalent)	3
3650:231-2	Concepts of Physics (or equivalent)	4

## 3400: History

### Bachelor of Arts

- The General Studies and the second year of a foreign language (French, German or Russian suggested).
- A minimum of 30 credits in history including the following:

3400:405	Historical Methods	2
	*History electives	28

\* Although up to six credits in cognate fields may be substituted with the adviser's approval.

## Credits

	Of the 28 remaining history credits a student must take some distribution of the courses in American and European history. A suitable pattern would be:	
3400:201-202	U.S. Survey	8
3400:207-208	Modern Europe	8

- Electives — 45 credits.

## 3450: Mathematics

### Mathematics

- The General Studies and the second year of French, German or Russian.
- \*\* At least 40 credits in the department including the following:

3450:221-2-3	Analytic Geometry-Calculus I, II, III	12
3450:235	Differential Equations	3
3450:311	Abstract Algebra	3
3450:312	Linear Algebra	3
3450:445	Introduction to Topology	3
3450:421-2	Advanced Calculus I & II	6
	Mathematics Electives	10

(Elective credits must be in approved 300/400 level courses in the department.)

- For the Bachelor of Science degree; complete 18 credits of coursework outside the department 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 science beyond the General Studies. The 18 credits are to be from more than one department.
- Electives — 17 credits.

### Applied Mathematics

- The General Studies and the second year of French, German or Russian.
- \*\*\* At least 40 credits in the department including the following:

3450:221-2-3	Analytic Geometry-Calculus I, II & III	12
3450:235	Differential Equations	3
3450:312	Linear Algebra	3
3450:421-2	Advanced Calculus I & II	6
3450:427	Numerical Analysis I	3
3450:436	Mathematical Models	3

\*\*The courses 3450:101-139 *Modern University Mathematics*, 147-148 *Elementary Functions*, 149 *Pre-Calculus Mathematics*, 301 *History of Mathematics* do not meet major requirements.

\*\*\*The courses 3450:101-139 *Modern University Mathematics*, 3450:147-148 *Elementary Functions*, 3450:149 *Pre-Calculus Mathematics* and 3450:301 *History of Mathematics* do not meet major requirements.



- |          |   | <i>Credits</i> |
|----------|---|----------------|
| 3450:451 | Theoretical Statistics I  | 3              |
|          | Mathematics Electives   | 7              |
|          | (Elective credits must be in approved<br>300/400 level courses in the depart-<br>ment.) |                |
- For the Bachelor of Science degree: complete 18 credits of coursework outside the department 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 in the humanities and social sciences beyond the General Studies. These 18 credits are to be from more than one department.
- Electives — 17 credits.

## 3460: Computer Science

### Bachelor of Science In Computer Science

- Core Curriculum:
 

3460:201	Introduction to Fortran Programming	3
	or	
4450:206	Fortran Programming for Scientists and Engineering	2
3460:210	Introduction to Computer Concepts	3
4450:306	Assembler Programming	3
- One language from the following:
 

*3460:202	Intro. to Cobol Programming	2
3460:203	Intro. to APL Programming	2
3460:204	Intro. to PL/1 Programming	2
3460:205	Intro. to Algol Programming	2
- Other Required Courses:
 

3460:307	Applied Systems Programming	3
	or	
4450:407	Systems Programming	3
3460:418	Intro. to Data Structures	3
3460:418	Intro. to Discrete Structures	3
3460:420	Structured Programming	3
3460:425	Intro. to Software Systems	3
- Electives — Computer Science — 12 credits.

### Mathematics Option

A total of 21 credits to include:

3450:221	Analytic Geometry — Calculus I	4
3450:222	Analytic Geometry — Calculus II	4
3450:223	Analytic Geometry — Calculus III	4
3450:312	Linear Algebra	3
3450:428	Numerical Analysis II	3
3470:450	Probability	3
	or	
3470:451	Theoretical Statistics I	3

### Systems and Information Science Option

A total of 21 credits to include:

3450:114	Matrices	1
3450:115	Linear Programming	1
3450:121	Analytic Geometry	1
3450:122	Differential Calculus	1
3450:123	Integral Calculus	1
3460:125	Descriptive Computer Science	1
3460:126	Intro. to Basic Prog.	1
3450:327	Intro. to Numerical Methods	3
3470:251	Descriptive Statistics and Probability	1
3470:252	Distributions	1

\*8200:355 may be substituted.

		<i>Credits</i>
3470:253	Hypothesis Testing	1
3470:255	Regression and Correlation	1
3470:256	Experimental Design	1
	Operations Research	3
	**Mathematics/Statistics/Computer Science electives at 300/400 level	3

\*\*\*Business Option

A total of 21 credits to include:

3450:114	Matrices	1
3450:115	Linear Programming	1
3450:121	Analytic Geometry	1
3450:122	Differential Calculus	1
3450:123	Integral Calculus	1
3470:251	Descriptive Statistics and Probability	1
3470:252	Distributions	1
3470:253	Hypothesis Testing	1
3470:255	Regression and Correlation	1
3470:256	Experimental Design	1
6200:201-2	Accounting I and II	8
6400:371	Business Finance	3
6500:301	Management: Principles and Concepts	3
6800:300	Marketing Principles	3

### Computer Science Certificate Program

A Computer Science Certificate program is available for qualified students. See Section 4 for complete details.

## 3470: Statistics

### Bachelor of Arts Bachelor of Science

- The General Studies and the second year of French, German or Russian.
  - † At least 40 credits in the department including:
 

3450:221-2-3	Analytic Geometry-Calculus I, II, III	12
3450:235	Differential Equations	3
3450:312	Linear Algebra	3
3450:421-2	Advanced Calculus I and II	6
3470:451-2	Theoretical Statistics I and II	6
3470:461	Applied Statistics	4
3470:463	Experimental Design	3
	Mathematics Elective	3

(Elective course must be an approved  
300/400 level course in the depart-  
ment.)
  - For the Bachelor of Science degree: complete 18 credits of coursework outside the department 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 College. The 18 credits are to be from more than one department.
- Electives — 17 credits.

\*\* Any 300/400 level course with a 3460 or 4450 number which is not required in the computer science program. Any 300/400 level course in another department may be used if its subject matter is essentially computer science and if the head of the Department of Mathematical Sciences approves.

\*\*\* 3250:202 Economics should be substituted for Institutions.

† The courses 3450:101-139 Modern University Mathematics, 3450:147-8 Elementary Functions, 3450:149 Pre-Calculus Mathematics, 3450:301 History of Mathematics and 3470:251-7 Introduction to Statistics do not meet major requirements.

## 3500: Modern Languages

3500: Chinese, Hebrew, Modern Persian, Polish;  
3520: French; 3530: German; 3550: Italian; 3570:  
Russian, 3580: Spanish.

### Bachelor of Arts

- The General Studies.
- Completion of 24 credits above the second year (200 level): six credits in literature, six credits in culture; and 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 credits in the Department of Philosophy which must include the following:

		<i>Credits</i>
3600:101	Introduction to Philosophy	3
3600:120	Introduction to Ethics	3
3600:170	Introduction to Logic	3
3600:211	History of Ancient Philosophy	3
3600:212	History of Medieval Philosophy	3
3600:313	History of Modern Philosophy	3

(Of the additional credits, six must be earned in 300/400 level courses.)

- Electives in a selected concentration — 12-16 credits.
- Electives — 29-33 credits.

## 3650: Physics

### Bachelor of Science

This degree is intended for persons seeking the most detailed and quantitative preparation in physics available in an undergraduate curriculum. Students preparing for graduate study in physics or another physical science should usually satisfy all the requirements for the degree.

- The General Studies and the second year of a foreign language.
- A minimum of 40 credits in the department which should include:

3650:291-292	Elementary Classical Physics I and II	8
3650:301	Elementary Modern Physics	3
3650:406	Waves	3
3650:407	Quantum Physics	3
3650:410	Electronics	3
3650:411-412	Intermediate Laboratory I and II	4
3650:430	Statistical Physics	3
3650:431	Mechanics	3

3650:436	Electricity and Magnetism	3
3650:451-452	Advanced Laboratory I and II	4
	Electives	3

(Additional physics courses are usually necessary to satisfy the admission requirements of graduate schools for advanced work in physics or certain other physical sciences.)

(Courses 1100:224, 3650:130, 133, 137 and 141 are not applicable toward the required 40 credits of physics courses.)

- Mathematics:

3650:221-2-3	Analytic Geometry-Calculus I, II and III	12
3450:235	Differential Equations	3

- Chemistry:

3150:132-133	Principles of Chemistry I and II	7
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- Computer Science:

4450:206	Fortran (Science/Engineering)	2
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- Electives — 20 credits.

### Bachelor of Arts

This degree is primarily for persons 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.
- At least 24 credits in the department including the following which should normally include:

3650:291-292	Elementary Classical Physics I and II	8
3650:410	Electronics	3
3650:411-412	Intermediate Laboratory I and II	4
	Physics Electives	9

(Courses 1100:224, 2650:130, 133, 137, 138 and 141 are not applicable toward the required 24 credits of physics courses without special permission.)

- Mathematics:

3650:221-2-3	Analytic Geometry-Calculus I, II and III	12
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- 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	2
3650:404	Energy and the Environment	3
3550:421	Applied Physics Laboratory	2
3650:438	Methods of Applied Physics	3
4200:305	Materials Science	2
4300:202	Introduction to Mechanics of Solids	3
4400:231-232	Circuits I and II	6
4400:333-334	Circuits III and IV	6
4600:125	Engineering Graphics	2
4600:310	Fluid Mechanics	3

**Biophysics**

(Bachelor of Science or Bachelor of Arts degree)

A suggested program of 27 credits to include the following:

		<i>Credits</i>
3100:111-112	Principles of Biology	8
3100:211	General Genetics	3
3100:214	Organic Evolution	3
3100:311	Cell Biology	2
3100:480	Radiation Biology	3
3150:263-264	Organic Chemistry	6
3650:421	Applied Physics Laboratory	2

**Chemical Physics**

(Bachelor of Arts or Bachelor of Science degree)

A suggested program of 20 credits to include the following:

3150:263-264	Organic Chemistry	6
3150:313-314	Physical Chemistry Lecture I and II	6
3150:315-316	Physical Chemistry Laboratory I and II	4
3650:421	Applied Physics Laboratory	2
3650:471	NMR Spectroscopy I	2

**Computer Physics**

(Bachelor of Science degree recommended)

A suggested program of 21 credits to include the following:

4400:231-232	Circuits I and II	6
4400:333-334	Circuits III and IV	6
4450:306	Assembler Programming	3
4450:407	Systems Programming	3
4450:410	Computer Methods	3

**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	4
3370:102	Introductory Historical Geology	4
3370:350	Structural Geology	4
3370:441	Fundamentals of Geophysics	3
3370:446	Exploration Geophysics	3

**Polymer Physics**

(Bachelor of Science degree recommended)

A suggested program of 24 credits to include the following:

3150:263-264	Organic Chemistry	6
3150:313-314	Physical Chemistry Lecture I and II	6
3650:421	Applied Physics Laboratory	2
3940:401	Introduction to Elastomers	2
3940:402	Introduction to Plastics	2
3940:411-2-3	Molecular Structure and Physical Properties of Polymers I, II and III	6

**Physics/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	2
3650:331-332	Astrophysics I and II	6
3650:404	Energy and the Environment	3
3650:420	Optics	3
3650:421	Applied Physics Laboratory	2
3650:438	Methods of Applied Physics	3
3650:445	Theoretical Mechanics	4

3650:446	Electromagnetic Theory	4
3650:481-482	Methods of Mathematical Physics I and II	6
3650:399	Undergraduate Research	1-6

The preceding requirements specify the minimum curriculum for the Bachelor of Science and Bachelor of Arts degrees with a major in physics. Students expecting to specialize in a particular professional area should consider utilizing part or all of their elective courses toward one of the important program areas of specialization listed above. These programs are intended to be illustrative only; a considerable degree of flexibility is possible, depending upon the needs and interests of individual students.

Some physics students may consider it important in their bachelor's degree programs to prepare themselves in greater depth in other science areas (besides physics and mathematics) than may usually be possible within the traditional four-year departmental degree curricula. These students may therefore prefer to work toward the Bachelor of Science in natural science degree which in effect allows the substitution of 16 credits of science courses (either in one additional scientific discipline, or equally in two additional scientific disciplines) for the two-year foreign language requirement. For further information, refer to Buchtel College of Arts and Sciences, "Natural Science Division Major," Section 4 of this *Bulletin* or contact the Department of Physics.

**Cooperative Industrial Employment Plan**

For academically qualified undergraduate students majoring in physics, an optional cooperative plan is available which provides a scheduled sequence of professionally-oriented industrial employment (totaling a full calendar year) alternating with periods of on-campus classroom instruction. This co-op 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 for student entry into the co-op plan are on an individual basis, and must be initiated by the student during the second year of undergraduate study. For further information about the co-op plan, contact the Department of Physics.

**3700: Political Science****Bachelor of Arts**

- The General Studies and the second year of foreign language.

- At least 30 credits in the department including:

3700:100	Government and Politics in the U.S.	3
3700:200	Comparative Politics	4
3700:201	Introduction to Political Science	3
3700:303	Introduction to Political Thought	3
3700:310	International Politics and Institutions	4

		Credits
3700:461	The Supreme Court and Constitutional Law	4
	Political Science Electives	9
	(Electives must include at least one 400 level course in political science.)	

- Electives — 45 credits.

### 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 at least 47 credits of 300/400 level courses in addition to the General Studies requirement.
- At least six credits of coursework 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 Political Science. Courses may be chosen from among those offered in any of the following departments: Classics, Modern Languages, History, Political Science, Anthropology and Geography.
- At least 30 credits in political science including the following:

3700:100	Government and Politics in the U.S.	3
3700:210	State & Local Government & Politics	3
3700:341	The American Congress	4
3700:360	Judicial Process	3
3700:370	The American Bureaucracy	4
3700:380	Metropolitan Politics	4
3700:391	Internship in Government & Politics	2-3
3700:461	Supreme Court and Constl. Law	4
3700:480	Urban Policy Problems	3

If the student is unable to take any of the aforementioned courses in political science as a result of problems in scheduling, the head of the Department of Political Science may permit the substitution of appropriate departmental courses.

### Special Curricular Tracks in Political Science

The Department of Political Science offers three special curricular tracks for students 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 of Political Science.

## 3750: Psychology

### Bachelor of Arts

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

- At least 30 credits in the department including:

		Credits
3750:100	Introduction to Psychology	3
3750:110	Quantitative Methods in Psychology	3
3750:120	Intro. to Experimental Psychology	4
	Psychology Electives	20

- Electives — 45 credits.

Students should consult with their faculty advisers to plan a program of psychology electives geared to the student's educational objectives.

## 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	4
3850:301-2	Methods of Social Research I & II	6
3850:403	History of Sociological Thought	3
3850:404	Contemporary Sociological Theories	3
	Sociology Electives	14
	(3870:150 Cultural Anthropology can be counted as part of these credits)	

- Electives — 45 credits.

Students should consult with their departmental adviser about using electives to enhance the specialty area, i.e. academic sociology, deviance and corrections, family, agency and life cycle, urban planning and social research, etc.

### Bachelor of Arts — Sociology/Anthropology

- The General Studies and the second year of a foreign language.
- A minimum of 31 credits in the department including:

3850:100	Introduction to Sociology	4
3850:301-2	Methods of Social Research I & II	6
3850:403	History of Sociological Thought	3
3850:404	Contemporary Sociological Theories	3
3870:150	Cultural Anthropology	4
3870:151	Physical Anthropology	3
3870:356	New World Prehistory	3
3870:461	Language and Culture	3

- A minimum of two additional credits to be selected from the following:

3870:257	Indians of South America	3
3870:258	Indians of North America	3
3870:357	Magic, Myth and Religion	3
3870:455	Culture and Personality	3
3870:463	Types of Kinship and Social Organization	3

- Electives — 44 credits.

## Humanities Division Major

The Humanities Division consists of the Departments of Classics, English, Modern Languages and Philosophy. The divisional major must include the following:

- The General Studies and the second year of a foreign language.
- A minimum of 48 credits in the division, at least 24 credits of which must be in courses at the 300/400 level. The 48 credits must include at least six credits in each of any five of the following: the classics, English, French, German, Greek, Italian, Latin, philosophy, Russian and Spanish.
- History — 6 credits.

## Natural Sciences Division Major

The Natural Sciences Division consists of the Departments of Biology, Chemistry, Geology, Mathematics and Statistics, Physics and Polymer Science. The divisional major must include:

- The General Studies.
- At least 24 credits from one of the departments of the Natural Sciences Division.
- At least 16 credits from another of the following disciplines: biology, chemistry, engineering, geology, mathematics and/or statistics, physics, polymer science.
- At least 16 credits from a third of these disciplines; or alternatively, at least 8 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 eligible for inclusion in the major of these disciplines. For further information, please contact the Office of the Dean, Buchtel College of Arts and Sciences, Akron, OH 44325.

## Bachelor of Science/Doctor of Medicine Degree (BS/MD Program)

### Introduction

The Northeastern Ohio Universities College of Medicine is a consortium composed of The University of Ak-

ron, Kent State University, Youngstown State University and the College of Medicine that will offer a six-year BS/MD degree program.

Each university admits students into Phase I (years one and two) and recommends successful students to Phase II (years three through six) medical study at the College of Medicine at the Rootstown campus. The Phase II students complete the undergraduate degree program during the summer of years three through five.

At The University of Akron, students pursue a B.S. in natural science in the Buchtel College of Arts and Sciences.

### Requirements

- The General Studies.
- The following courses to meet divisional major:

		<i>Credits</i>
3100:111-2	Principles of Biology	8
3100:381	Human Genetics	2
3100:466-7	Developmental Anatomy	8
3150:132-3	Principles of Chemistry I and II	7
3150:134	Qualitative Analysis	2
3150:263-4	Organic Chemistry I and II	6
3150:265	Organic Chemistry Lab	2
3150:266	Organic Chemistry Lab (Optional)	2
3150:401-2	Bio-Chemistry I and II	6
3450:221-2	Analytic Geometry and Calculus I and II	8
3650:261-2	Physics	8
3650:267-8	Physics Lab	2
3750:100	Introduction to Psychology	3
3750:110	Quantitative Methods in Psychology	2

- Additional courses as follows:

3789:290	Special Topics in Allied Health	1
1880:201	Medical Seminar and Practice I	3
1880:301	Medical Seminar and Practice II	3
3100:190	Health Care Delivery Systems (to be repeated four times at one credit each)	2
3100:191	Health Care Delivery Systems (to be repeated two times at one credit each)	2

- Humanities

1880:310	Seminar in Humanities in Medical Education	3
	* Additional study in the humanities from courses specified by the Humanities Committee	16

- Additional courses from the medical program years three through six to make total of 128 credits.

\*Completion of elementary or intermediate courses in one modern language will not satisfy this humanities requirement. For additional information concerning the BS/MD Six-Year Program, see "Northeast Ohio Universities College of Medicine," Section 4 of this *Bulletin*.

# The College of Engineering

Coleman J. Major, Ph.D., *Dean*  
 Joseph A. Edminister, M.S.E., J.D.,  
*Assistant to the Dean*  
 Donald R. Burrowbridge, M.S.,  
*Director Cooperative Program*

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## Objectives

The purpose of the College of Engineering is to further the objectives of The University of Akron by providing a quality program of engineering education with the following aims:

- To offer sound basic instruction in the engineering disciplines.
- To develop in students the ability to apply engineering principles to the economic and technological progress of society.
- To promote in students a high sense of ethics and professional responsibility.
- To foster in students an appreciation of the need to further the role of the engineering profession in society.

The program of study at the undergraduate level is principally the five-year cooperative plan. While this plan is optional, by far the greater number of students elect the co-op method of obtaining their bachelor's degree.

Along with the emphasis on preparation for professional practice within the college, University policy assures that each student obtains a substantial exposure to the humanities.

Graduates are prepared for study on the master's and doctoral level in engineering or for employment in the engineering profession directly upon receipt of the baccalaureate degree.

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## College Requirements

### The 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 students can best apply their individual ability. Students gain an appreciation of the problems of labor and management by first-hand experience. Students develop mature judgment by coping with the everyday problems of the industrial world. The employer of cooperative students has the ability to train and select students whose abilities and aptitudes can be adapted to the needs of technical staff requirements.

While students are at work, they are required to obey all rules and regulations prescribed by the employer. In addition, they are subject to all current labor laws and conditions. The students are considered full-time students by the University while in industrial assignments.

The University does not guarantee employment, but makes every effort to place students to the best financial advantage that is consistent with the acquisition of sound subprofessional experience.

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## Requirements for Admission

In addition to the general requirements for admission to the University, students applying for admission in engineering must present the following secondary school credits:

Algebra 1½ units  
 Plane Geometry 1 unit  
 Solid Geometry or  
 Trigonometry ½ unit  
 Chemistry or Physics 1 unit

Additional credits in mathematics and physical science are strongly recommended.

All beginning students register in the General College. Those admitted to engineering will be eligible for transfer to the College of Engineering after satisfactory completion of 30 credits of work and the approval of the dean.

No undergraduate student shall be eligible to enroll in any 300/400 level course offered by the College of Engineering 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 of Engineering offers curricula leading to the degrees 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.
- Recommendation of the student's department.
- Any junior or senior engineering student with a quality point ratio of 2.500 overall and 2.750 or better in engineering may substitute not more than two approved upper division courses in mathematics, science or engineering for an equal number of selected 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 the ability to apply the principles of transport phenomena, equilibria and kinetics, involving chemical and physical transformations, to the creative resolution of technological problems for the benefit of mankind and his surroundings.

Chemical engineers, like all other engineers, are trained in mechanics, materials and their properties, economics, systems and their controls, etc. Chemical engineers differ from all other engineers because they are 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.

Chemical engineers find satisfying and rewarding careers mainly in the chemical process industries. Usually they become 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 con-

trol, plant operations, sales and management. In addition to the processing industries, chemical engineers are increasingly in demand in such areas of current interest as water and air pollution, biological engineering and energy engineering.

	<i>Credits</i>
<b>General Studies</b>	28
<b>Natural Science</b>	
3150:132,3 Principles of Chemistry I, II	7
3150:134 Qualitative Analysis	2
3450:221,2,3 Analytic Geometry-Calculus I, II, III	12
3450:235 Differential Equations	3
3450: Advanced Mathematics Elective	2
3650:291,2 Elementary Classical Physics I, II	8
	34
<b>Advanced Chemistry Courses</b>	
3150:263,4 Organic Chemistry I, II	6
3150:265 Organic Chemistry Lab	2
3150:313,4 Physical Chemistry I, II	6
	14
<b>Engineering Core Courses</b>	
4200:120 Engineering Fundamentals	1
4200:305 Materials Science	2
4300:201 Statics	3
4400:320 Basic Electrical Engineering	4
4450:206 Fortran (Science and Engineering)	2
4600:125 Engineering Graphics	2
	14
<b>Chemical Engineering Courses</b>	
4200:200 Material and Energy Balances	4
4200:321 Fluid and Thermal Transfer Theory	3
4200:322 Thermal and Mass Transfer Theory	3
4200:325 Equilibrium Thermodynamics	4
4200:351 Fluid and Thermal Operations	3
4200:352 Transport Laboratory	2
4200:353 Mass Transfer Operations	3
4200:354 Operations Laboratory	1
4200:430 Chemical Reaction Engineering	3
4200:435 Process Analysis and Control	3
4200:441 Process Economics and Design	4
4200:442 Plant Design	4
	37
<b>Electives</b>	
Adv. Chemistry or Polymer Science	3
Chemical Engineering Design	3
Free Elective, adviser approved	3
	9
<b>Total</b>	136

### 4300: Civil Engineering

The civil engineer is dedicated to planning, designing and building to make our environment more attractive. Civil engineers work with others to renovate urban areas; to develop new housing systems; to plan community facilities; to build new water storage systems; to design new systems for waste disposal; to expand airport and harbor facilities; to build and maintain local streets and inter-city highways; to design all types of buildings and bridges; to build dams, reservoirs and flood control systems; to build tunnels; and to design foundations.

The civil engineering curriculum at The University of Akron is divided into two options: design and construction. The design option allows specialization in environmental engineering, foundation engineering, hydraulic engineering, structural engineering and transportation engineering. The construction option includes introductory work in the five areas above but specializes in the engineering and financial aspects of construction. Each option contains a group of elective courses.

Civil engineering graduates work for consultants, manufacturers, construction companies, utilities and for government bodies of all levels. Many civil engineers own their own businesses.

		Design Credits	Construction Credits
<b>General Studies</b>		28	28
<b>Natural Science</b>			
3150:132,3	Principles of Chemistry I, II	7	7
3370:101	Introd. Physical Geology	4	4
3450:149	Pre-Calculus Mathematics	3	3
3450:221,2,3	Analytic Geometry-Calculus I, II, III	12	12
3450:235	Differential Equations	3	3
3450:	Mathematics		
3470:	Statistics Elective	3	3
3650:291,2	Elementary Class. Physics I, II	8	8
		40	40

<b>Engineering Core Courses</b>			
4300:130	Introduction to Engineering	1	1
4200:305	Materials Science	2	2
4300:201	Statics	3	3
4300:202	Intro. to Mechanics of Solids	3	3
4450:206	Fortran (Science and Engineering)	2	2
4600:305	Thermal Science	2	—
4600:125	Engineering Graphics	2	2
4600:310	Fluid Mechanics	3	3
4600:322	Dynamics	3	3
4400:320	Basic Electrical Engineering	4	4
		25	23

<b>Civil Engineering Courses</b>			
4300:230	Surveying	4	4
4300:306	Theory of Structures	3	—
4300:311	Geotechnical Engineering	5	5
4300:341	Hydraulics and Hydrology	4	4
4300:323	Water Supply and Wastewater Disposal	3	—
4300:361	Transportation Engineering	3	—
4300:380	Engineering Materials Lab	1	1
4300:401	Steel Design	2	—
4300:403	Reinforced Concrete Design	3	—
4300:424	Water/Wastewater Lab.	1	—
4300:448	Hydraulics Laboratory	1	—
4300:471	Construction Administration	2	2
4300:472	Construction Engineering	—	3
4300:481	Civil Engineering Systems	2	2
		34	21

<b>Business Courses</b>			
6200:201,2	Accounting I, II	—	8
6200:321	Business Law I	—	3
6400:371	Business Finance	—	3
		—	14

		Design Credits	Construction Credits
<b>Construction Tech. Courses</b>			
2980:231	Building Construction	—	2
2980:241	Cost Analysis and Estimating	—	3
4300:306	Theory of Structures	—	3
4300:448	Hydraulics Lab	—	1
	Technical Electives	9	10
	<b>Total</b>	136	136

## 4400: Electrical 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 American economy which has not been influenced by electronics. The high speed digital computer has found its way into virtually all aspects of modern life. Students wishing to specialize in computer science will find a set of appropriate electives available to them.

The wide use of electrical means for measurement, control and computation has resulted in the need for electrical engineers in all types of industries. Students wishing employment upon graduation will find many varied opportunities.

Students wishing to continue their 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.

		Credits
<b>General Studies</b>		28
<b>Natural Science</b>		
3150:132,3	Principles of Chemistry I, II	7
3450:221,2,3	Analytical Geometry-Calculus I,II,III	12
3450:235	Differential Equations	3
3450:	Mathematics Elective	2
3650:291, 2	Elementary Classical Physics I, II	8
3650:301	Elementary Modern Physics	3
		35

<b>Engineering Core Courses</b>		
4400:140	Engineering Design	1
4200:305	Materials Science	2
4300:201	Statics	3
	or	
4300:202	Intro. to Mechanics of Solids	
	or	
4600:322	Dynamics	3
4450:206	Fortran (Science and Engineering)	2
4600:125	Engineering Graphics	2
4600:305	Thermal Science	2
		15

<b>Electrical Engineering Courses</b>		
4400:231,2,3	Circuits I, II, III	9
4400:343	Electrical Measurements	4
4400:353	Electromagnetic Fields I	4
4400:359	Transmission Lines and Networks	3
4400:361	Physics of Electronic Devices	3



		<i>Credits</i>
4400:362	Electronic Circuits	4
4400:363	Switching and Logic	4
4400:371	Control Systems I	3
4400:381,2	Energy Conversion I, II	7
		<hr/> 41
	Technical Electives	15
	Free Electives	2
		<hr/> Total 136

## 4600: Mechanical Engineering

Mechanical engineering is concerned with the design and analysis of 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 major headings are stress analysis, vibrations, compressible and incompressible fluid flow, thermodynamics, energy conversion, environmental control, heat transfer and automatic controls. The typical mechanical engineering design problems may involve any one or possibly all of these areas in the design of a complex system.

Mechanical engineers are employed in a variety of jobs by a large number of companies. The jobs include management, design, analysis, safety, production and plant engineering. The types of companies include automotive, petroleum, power, aerospace, tire, consulting, publishing, insurance and manufacturers in general.

The curriculum is designed to emphasize fundamentals which will place the graduate in a strong position to pursue further education through either formal or informal channels.

		<i>Credits</i>
<b>General Studies</b>		
<b>Natural Science</b>		
3150:132,3	Principles of Chemistry I, II	7
3450:221,2,3	Analytic Geometry-Calculus I, II, III	12
3450:235	Differential Equations	3
3450:	Mathematics Elective	2
3650:291,2	Elementary Classical Physics	8
3650:293,4	Physics Computations I, II	2
		<hr/> 34
<b>Engineering Core Courses</b>		
4600:160	Engineering Design-Mechanical Eng.	1
4600:125	Engineering Graphics	2
4300:201	Statics	3
4300:202	Intro. To Mechanics of Solids	3
4300:380	Engineering Materials Laboratory	1
4400:320	Basic Electrical Engineering	4
		<hr/> 14
<b>Mechanical Engineering Courses</b>		
4600:203	Dynamics	3
4600:300,1	Thermodynamics I, II	7
4600:310	Fluid Mechanics	3
4600:315	Heat Transfer	3
4600:336	Analysis of Mechanical Components	3
4600:360	Engineering Analysis	3

		<i>Credits</i>
4600:380	Mechanical Metallurgy	2
4600:431	Vibrations	3
4600:493	Measurements Laboratory	2
4600:494	Mechanical Engineering Laboratory	1
4600:321	Kinematics of Machines	3
4600:337	Design of Mech. Components	3
4600:400	Thermal System Components	3
4600:401	Design of Energy Systems	2
4600:460	Concepts of Design	3
4600:461	Design of Mechanical Systems	2
4600:440	Control Systems	3
		<hr/> 49
	Technical Electives (includes 3 credits design)	8
	Free Electives, adviser approval	3
		<hr/> Total 136

## 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 positions in field supervision and estimating for the construction industry.

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 complete the associate degree program in surveying and construction technology before entry into this baccalaureate program.\* Transferees who have completed other two-year programs where the course content compares favorably may be admitted to the program.

		<i>Credits</i>
<b>*General Studies</b>		
<b>Required Courses, Technical</b>		
4980:352	Field Management	2
4980:353	Legal Aspects of Construction	2
4980:354	Foundation Construction Methods	3
4980:461	Construction Formwork	3
4980:462	Mechanical Service Systems	3
4980:463	Electrical Service Systems	3
		<hr/> 16
<b>Required Courses, Business</b>		
6200:201,2	Accounting I, II	8
6400:371	Business Finance	3
6500:301	Management Princ. and Concepts	3
		<hr/> 14
<b>Group I, Electives Business and Management</b>		
3250:330	Labor Problems	3
3250:432	Economics and Practice of Collective Bargaining	3
6200:301	Cost Accounting	3

\* When the eight credits of English are met either by transfer credits, courses taken as part of the associate degree program or by examination the credits shall be technical elective credits so that the program total of 68 credits is satisfied.

6400:318	Risk Management and Insurance	Credits	2
6400:321	Business Law I		3
	Group Min.		6

**Group 2, Statistics**

3470:251	Descriptive Statistics & Probability	1
3470:252	Distributions	1
3470:253	Hypothesis Testing Parameters	1
6500:321	Quant. Business Analysis I	3
	Group Min.	3

**Group 3, Economics**

2920:310	Economics of Technology	3
3250:202	Principles of Economics	3
4400:421	Engineering Economy	2
	Group Min.	2

**\* Technical Electives**

4300:311	Geotechnical Engineering	5
4300:414	Design of Earth Structures	3
4300:418	Soil and Rock Exploration	3
4300:450	Urban Planning	3
4300:474	Underground Construction	2
4300:481	Civil Engineering Systems	2
4300:482	Special Projects	1
4980:351	Construction Quality Control	1
3370:101	Introductory Physical Geology	4
3370:210	Geomorphology	3
3370:350	Structural Geology	4
3370:411	Glacial Geology	2
3370:474	Ground Water Hydrology	3
5550:211	First Aid	2
	Total	68

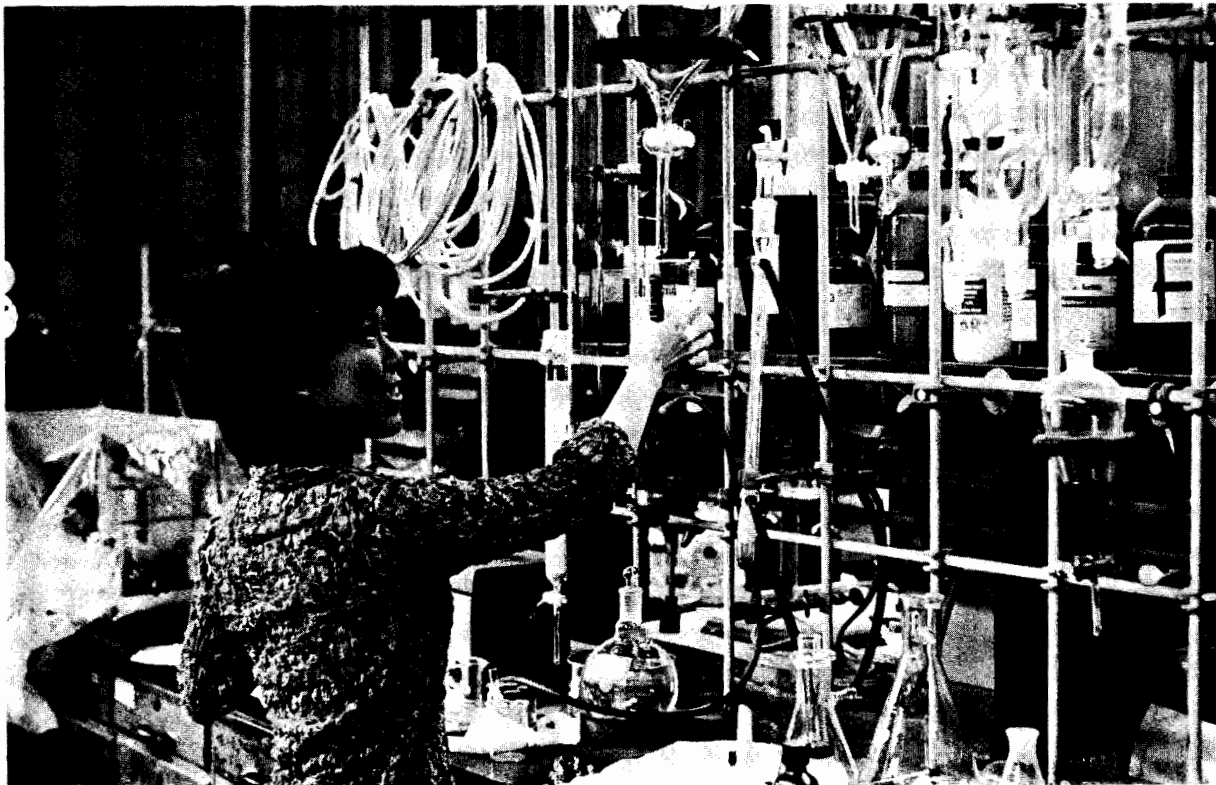
\* When the eight credits of English are met either by transfer credits, courses taken as part of the associate degree program or by examination the credits shall be technical elective credits so that the program total of 68 credits is satisfied.

## Bachelor of Science in Engineering

This degree program was established to introduce flexibility into the College of Engineering. Within the 68 credits of the option portion of the program, students can pursue courses in business administration, industrial management, environmental science, pre-medicine or any other field they may choose along with their engineering studies. 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. Each student's program is designed to meet their announced goals.

Entrance to this program is restricted. Students request admission by letter to the dean of the College of Engineering, outlining in some detail their particular objective and how the BSE program may enable them to prepare for their career goal. The mathematics, physics and chemistry requirements are identical to those of the four departments of the College of Engineering.

	Credits
General Studies and Science Core	60
Program Options - Engineering	40
Program Options	26
Free Electives, adviser approval	10
Total	136



# The College of Education

H. Kenneth Barker, Ph.D., *Dean*  
 Don Birdsell, Ph.D., *Assistant Dean*  
 Walter Yoder, Ed.D., *Assistant to the Dean*

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## Objectives

The purpose of the College of Education is to further the objectives of The University of Akron by providing quality undergraduate and graduate programs for students of education and by helping them attain the following:

- Special experiences, knowledge and skills particularly useful for teaching in urban and inner city schools, 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 instructive 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 colleagues, and the ability to develop relationships in a wide variety of professional and social roles in pluralistic schools and communities.

To accomplish these objectives, this college offers a variety of programs for the preparation of elementary and secondary teachers, counselors, school administrators and other educational personnel. Bachelor of Arts in Education, Bachelor of Science in Education and Bachelor of Science in Technical Education degrees are offered. Graduate degrees include Master of Arts in Education, Master of Science in Education, Master of Science in Technical Education and Ph.D. and Ed.D. degrees.

Programs leading to each degree include a balanced offering of a foundation in general education, an intensive study in depth of the teaching and/or administration area and those professional courses and other learning experiences which attempt to combine theory and practice.

In addition to the regular degree programs, special courses and related services such as institutes and workshops are regularly offered with the planning assistance of public school personnel.

Throughout its history, the College of Education has maintained a close relationship with the Akron Public Schools. Perkins Normal School, which was founded by the Akron Board of Education, became the Teachers College of the University in 1921, expanding into the College of Education in 1935. Today, the public school administration of Akron and surrounding school districts cooperate in advisory capacities with the College of Education. Their schools are used widely for observation and for the assignment of student teachers. Approximately one-half of the teachers in the Akron Public Schools are former students of the University.

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## College Requirements

### Admission

To be admitted to the College of Education, the student must be able to meet the following criteria:

- \*Completion of at least 30 credits with at least a 2.0 quality-point average.
- Demonstration of those qualities of character and personality deemed essential for a professional person in education. This determination is made by instructors conducting the education courses in the General College, by the staff in the Office of Student Services, and if necessary, by measuring performance through standardized evaluation instruments.
- Demonstrated evidence of the ability to attain a 2.5 quality-point average in a choice of major fields.

All students preparing for certification may be evaluated by the College of Education Undergraduate Committee, subject to review by the dean. Such evaluation will occur whenever there is reason to believe the student does not measure up to criteria for professional development established by the faculty of the college. This committee can recommend to the dean of the College of Education any one of the following actions:

- That the student's admission to or retention in the program for certification be confirmed with no other action suggested.

\*Secondary education students also must have 8 credits in teaching field with a 2.5 average.

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- That the student's admission to or retention in the program for certification be confirmed but that the student be apprised that certain weaknesses must be corrected before student teaching is approved.
- That the student's final admission to or retention in the program for certification be denied because of certain weaknesses which the committee believes are not correctable.

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## Student Advisers

Students should confer with the following persons depending upon the fields in which they expect to teach. Students should also feel free to consult with the dean or assistant dean of the College of Education.

Art	Mr. Neumann
Business Education	Mr. Eley, Mrs. King
Elementary	Mrs. Alleman, Mr. Arms, Mrs. Atwood, Mr. Barr, Miss Bruno, Mr. Christman, Mr. Ferguson, Mr. Hoch, Miss Leyden, Mr. McKnight, Mr. Meconi, Mrs. Noble, Miss Reuter, Mrs. Seifert, Mr. Sovchik, Mrs. Spencer, Mr. Steinen, Mr. Williams
Secondary	Mr. Bradley, Miss Cook, Mr. Eley, Mr. Foster, Mrs. King, Mrs. Lindbeck
Home Economics & Family Ecology	Mrs. Armstrong
Music	Mr. Nolin
Physical Education	Mr. Maluke
Special Education	Mr. Arn, Mr. Kovacevich
Mass Media-Communication	Miss Lewis
Theatre Arts & Dance	Mr. Slaughter
Speech Pathology and Audiology	Mr. Davis
Technical Education	Mr. Sugarman
Graduate	Mr. Adolph, Mr. Bradley, Mr. Esporite, Mr. Birdsell, Mr. Hoedt, Mr. Rich

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## Bachelor's Degrees

Students prepare to teach any one of the following areas or fields: nursery school, kindergarten-primary, elementary; the conventional academic fields found in junior and senior high schools; the special fields of art, business, home economics, music, physical education, slow learners and speech and hearing therapy; and post-secondary technical education. A minimum of 128 credits with a grade point of 2.0 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, subject matter areas and professional sequences.

The Bachelor of Arts in Education degree is granted to those whose major is one of the academic fields or speech and hearing therapy. The Bachelor of Science in Education is granted to those whose major is in the other special fields or in elementary education. The Bache-

lor of Science in Technical Education is awarded to those who complete the requirements of that program.

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## Student Teaching

Student teaching is done in the public schools under the direction of supervising teachers and a representative of the College of Education faculty.

In order to qualify for student teaching, a student must maintain a 2.5 average in the teaching field. Satisfactory work also must be done in other teaching fields and in professional education to warrant recommendation for a teaching certificate.\*

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## 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 of Education. The student must fill out an application form obtained in the Office of the Dean. This form should be completed about one month before the student plans to finish all requirements for teaching.

Students are expected to receive their recommendations for certification from the institution granting the degree. Students who expect to receive degrees from other institutions but who wish to qualify for certification at The University of Akron will be expected to meet all the certification requirements of The University of Akron.

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## Students Enrolled in Other Colleges At The University of Akron

Some students who receive degrees from other colleges in the University also may wish to qualify for teaching. They will be recommended for certification after completing their major and minor requirements and the pre-professional and professional courses included in the *Recommended Sequence for Secondary Education* listed in this section. Such students must be closely advised during the last two years.

Any student not enrolled in the College of Education who wishes to teach should register with the dean of the College of Education by completing the form, "Admission to Teacher Education" at the time of transfer to a degree-granting college or two years prior to eligibility to teach.

\*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.

## Programs of Instruction

### 5200: Elementary Education

#### Elementary

The elementary program is for those preparing to teach in grades one to eight inclusive. The requirements for a major in elementary education are as follows:

- **\* The General Studies — 39 credits.**
- **Pre-Professional Education**

	<i>Credits</i>
7100:191 Design	2
3750:100 Introduction to Psychology	3
3350:100 Introduction to Geography	2
3350:350 Anglo-America	3

One of the following three courses:

3700:100 Government and Politics in the U.S.	2
3400:201 U.S. History to Civil War	4
3400:202 U.S. History since Civil War	4
- **Professional Education**

<b>Basic:</b>	
5100:150 Introduction to Professional Education	3
5100:250 Human Development and Learning	3
5100:350 Educational Measurement and Evaluation	2
5100:450 Problems in Education	2

**Elementary Education:**

5200:141 Handicrafts	2
5200:286 Children's Literature	3
5200:321 Art for the Grades	2
5200:333 Science Elementary Grades	2
5200:335 Teaching of Language Arts	5
5200:336 Teaching Elementary School Math.	3
5200:337 Teaching of Reading	3
5200:338 Teaching of Social Studies	3
5200:339 Prin. Diag. Tchg. of Reading	3
5200:365 Comp. Mus. Elem. Teachers	4
5550:334 Games and Rhythms-Elem. Grades	2
5570:101 Personal Health	2

**Laboratory Experience:**

5200:100 Student Participation	1
5200:200 Student Participation	1
5200:300 Student Participation	1
5200:403 Seminar in Student Teaching	1
5200:495 Student Teaching	8
- **Area of Specialization — 12-20 credits.**

An area of specialization must be selected by the student with approval of the adviser. The student is urged to select an area of specialization which will contribute to successful teaching. The number of credits required (12-20) is above and beyond the number of credits required in any other part of the program.
- **Electives — 6 credits.**

\*Six credits of science are included in the General Studies requirements. Two of these six credits must be in biological science to meet certification requirements.

### Kindergarten Primary

The kindergarten-primary program is for students preparing to teach in the kindergarten through the third grade. Any elementary certificate will be validated for kindergarten teaching provided the applicant submits evidence of completion of the following 16 credits of coursework:

- **Required**

		<i>Credits</i>
7400:265 Child Development		3
5200:330 Early Elementary Education I		3
5200:331 Early Elementary Education II		3
- **Electives (choose seven credits from the following)**

5550:211 First Aid	2
2610:440 Dev. Char.: Excep. Indiv.	3
5100:410 Audio Visual Education	2
5200:497 Independent Study	1-3
3750:130 Developmental Psychology	4

### Nursery Schools

Students in the elementary program may also receive University recommendation as director of teaching in nursery schools by taking the following courses:

- **Required**

7400:265 Child Development	3
5200:310 Intro to Early Childhood Educ.	2
5200:311 Curr. Preschool Learning Ctrs.	2
5200:360 Nursery School Laboratory	3
- **Electives (choose six credits from the following)**

7400:460 O & S Child Care Ctrs.	3
5550:211 First Aid	2
7400:401 Fam. Life: Econ. Deprived	2
5200:497 Independent Study	1-3
5610:440 Deve. Char.: Except. Indiv.	3
7400:275 Play and Creative Exper.	4
5100:410 Audio Visual Education	2
3750:130 Developmental Psychology	4
7400:290 Admin: Child Care Ctrs.	3

### Certification for Teaching Foreign Language in the Elementary School

Persons desiring certification to teach modern foreign language on the elementary level must meet the regular requirements for certification on the secondary level, plus these Ohio requirements:

- Child psychology or human growth and development.
- Purpose and practices of elementary education or equivalent.
- Methods of teaching the modern foreign language.

### 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 a program of coursework 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

	<i>Credits</i>
Basic:	
5100:150 Introduction to Professional Educ	3
5100:250 Human Development and Learning	3
5100:350 Educ. Meas. and Evaluation	2
5100:450 Problems in Education	2
Elementary Education:	
5200:141 Handicrafts	2
5200:286 Children's Literature	3
5200:300 Student Participation	1
5200:321 Art for the Grades	2
5200:333 Science for Elementary Grades	3
5200:335 Teaching of Language Arts	5
* 5200:336 Teaching Elementary School Math.	3
5200:337 Teaching of Reading	3
5200:338 Teaching Social Studies	3
5200:339 Prin. Diag. Tchg. of Reading	3
5200:365 Comp. Mus. Elem. Teachers	4
5200:403 Seminar in Student Teaching	1
5200:495 Student Teaching	8
5550:334 Games and Rhythms	2
5570:101 Personal Health	2

- If certification for teaching kindergarten is desired, the following courses must be scheduled:

5200:330 Early Elementary Education I	3
5200:331 Early Elementary Education II	3

**Retraining from Secondary to Elementary Certificate**

- The holder of a provisional, professional, permanent high school or special certificate may obtain a Provisional Elementary Certificate valid for elementary teaching (grades 1-8) upon submitting evidence of the satisfactory completion of the following credits:

5200:451 Elementary Education	3
5200:337 Teaching of Reading	3
5200:336 Teaching Elementary School Math	3
5100:250 Human Development and Learning	3

- Such a certificate shall be designated as a "Retraining" certificate and shall be made standard upon evidence of the completion of the following coursework in elementary education:

5200:141 Handicrafts	2
5200:286 Children's Literature	3
5200:300 Student Participation	1
5200:321 Art for the Grades	2
5200:333 Science for Elem. Grades	3
5200:335 Teaching of Language Arts	5
5200:338 Teaching of Social Studies	3
5200:339 Prin. Diag. Tchg. of Reading	3
5200:365 Comp. Mus. Elem. Teachers	4
5550:334 Games and Rhythms	2
5570:101 Personal Health	2

- If additional credits are needed in the social sciences, a choice should be made from the following:

		<i>Credits</i>
3700:100	Government and Politics in the U.S.	3
3400:201	U.S. History to Civil War	4
3400:202	U.S. History Since Civil War	4
3350:100	Introduction to Geography (if no previous geography credits are recorded)	3

- If the student desires certification for teaching kindergarten, the following six credits must be scheduled:

5200:330	Early Elementary Education I	3
5200:331	Early Elementary Education II	3

- Student teaching is required in this program if evidence of teaching experience under the original certificate is lacking or it is deemed advisable by the dean of the College of Education, the director of student teaching and the head of the Department of Elementary Education. A 2.5 grade-point average in professional coursework is required to enroll in student teaching.

- Completion of the above credits does not necessarily constitute qualification for the Bachelor of Science degree in elementary education at The University of Akron. To qualify for the degree, certain additional requirements must be met.

**Certification for Teaching Music in the Elementary School**

Any student who completes a regular four-year program qualifying him for a Four-Year Provisional Elementary Certificate\* \* may have that certificate validated for teaching music in the elementary school by completing the following courses:

7500:151-2	Music Theory I and II	6
7500:154-5	Music Literature I and II	4
7500:161	Sight Singing I	2
7500:107	Class Voice	2
7500:261	Keyboard Harmony I	2
5200:323	Music Teaching Elementary Grades	2
5200:395	Field Experience	2
7500:356	Music Teaching Handicapped	2
	or	
7500:358	Functional: Class Guitar	2
7510:	Music Organization	2
5200:497	Independent Study (Music Student Tchg)	2

**Dual Certification Program Elementary and Secondary**

This curriculum prepares teachers for both elementary and secondary school. Students completing this curriculum will receive the Four-Year Provisional Certificate to teach in the secondary school and a certificate which will qualify them to teach in grades 1-8 in the elementary school.

\* 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.

\*\* Such certificates may also be validated in the following fields: visual arts, educational media, reading, outdoor education, physical education. Consult the Department of Elementary Education for details.

Students in this program must meet the requirements for elementary education; must complete 5300:310 *Principles of Secondary Education* and 5200:311 *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 of Elementary Education.\*

## 5300: Secondary Education

The secondary program is for students preparing to teach in 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 of Education adviser or by the head of the Department of Secondary Education.

The general requirements for a major in secondary education are as follows:

- General Studies Program — 39 credits.
- General Professional and Pre-Professional Courses:
 

	Credits
3750:100 Introduction to Psychology	3
5100:150 Introduction to Professional Education	3
5100:250 Human Development and Learning	3
** 5300:295 Exploratory Experiences in Secondary Schls.	1-2
5100:350 Educational Measurements and Evaluation	2
5300:310 Principles of Secondary Education	3
*** 5300:311 Instructional Techniques in Secondary Educ.	3
5300:495 Student Teaching	8
5300:403 Student Teaching Seminar	1
5100:450 Problems in Education	2
- Courses in Teaching Field(s) and Electives — 58 credits.

### Teaching Fields

Each student preparing for secondary school teaching must have at least two academic teaching fields. One field shall be at least six credits more than the minimum required by the Ohio State Department of Education, except where the state requirement in the teaching field is 30 credits or more. However, if a student chooses one of the special teaching fields, as listed below, preparation in a second field will not be required.

For selection of required courses and the recommended sequence for a teaching field, students should consult the head of the Department of Secondary Education who will appoint an adviser.

\* Student teaching in both fields is required.

\*\* Not required for those transferred to the college prior to Sept. 1, 1972.

\*\*\* Students with the following teaching majors substitute courses indicated for 5300:311: Art 7-12 certification, 5300:316; Art K-12, 5200:334 and 5300:316; Music, 5300:325 and 5300:396; Home Economics, 5400:351; and Physical Education, 5550:193 and 5550:194.

## †Minimum Number of Credits Required for Approval In Various Teaching Fields

### Comprehensive Subjects

Field:	Credits
Business Education (with shorthand)	56-60
Business Education (without shorthand)	47-51
Communications	60
Consumer Homemaking and Multi-area Vocational	55
Data Processing	55
Family Life Education	60
Science	60
Social Studies	60

### Specific Subjects

Field:	First Teaching Field Credits	Second Teaching Field Credits
Biology	52	33
Bookkeeping Basic Business		22
Chemistry	52	30-32
Consumer Homemaking Vocational	52	
Earth Science	50	43
Economics		22
English	37	31
General Science	38	27
Geography		21
Health Education (7-12)		20
History	31	30
Home Economics		31
Home Economics — Non Vocational	47	
Foreign Languages	30	30
Latin and Greek	20	20
Mathematics	27	20
Physics	51	43
Political Science		27
Sales Communication		22
Social Psychology		20
Sociology		20
Speech & Theatre (K-12)	43	
Speech and Theatre Arts	35	31
Stenography and Typing	26	22
Visual Art		31-32

### Special Fields K-12

Art — as determined by Department of Art — 50 credits.

Health Education — as determined by Department of Physical Education — 30 credits.

Music — as determined by Department of Music — 50 credits.

Physical Education (Men and Women) — as determined by Department of Physical Education — 45 credits.

Speech and Hearing Therapy — as determined by Department of Speech and Hearing.

## 5610: Special Education

This program involves in-depth preparation in the areas of mental retardation, learning disabilities and orthopedically handicapped. The program incorporates courses from secondary education, elementary education, counseling and educational foundations. Components include the General Studies, general professional education, special education studies (the major field), student teaching and related competency studies.

† Many fields require more than the minimum. Please see the department for specific program.

Completion of this program enables one to be certified in special education at both elementary and secondary levels for each of the areas of preparation.

### Comprehensive Programs

Three plans for preparation in special education include:

**Plan A:** Dual Certification — learning disabilities and educable retarded.

**Plan B:** Dual Certification — educable and moderately-severely-profoundly retarded.

**Plan C:** Dual Certification — educable retarded and orthopedically handicapped.

All three plans require the completion of the following curriculum:

- General Studies — 39 credits.
- Professional Education

	<i>Credits</i>
5100:150 Introduction to Professional Education	3
5100:250 Human Development and Learning	3
5100:350 Educ. Measurements and Evaluation	2
5100:450 Problems in Education	2
5300:310 Principles of Secondary Education	3
5610:403 Student Teaching Seminar	1
5610:495 Student Teaching EMR	8

- Related Competency Studies

3750:100 Introduction to Psychology	3
5200:335 Teaching the Language Arts	5
5200:336 Teaching of Elementary School Math.	3
5200:337 Teaching of Reading	3
7700:430 Aspects of Normal Language Dev.	3
5600:410 Personnel Services in Schools	2

Choose one of the following:

5570:101 Personal Health	2
5550:211 First Aid	2

Choose two of the following:

5200:321 Art for the Grades	2
5200:323 Music Teaching Elementary School	2
5200:334 Games and Rhythms	2

- Special Education Studies

5610:440 Developmental Characteristics of Exceptional Individuals	3
5610:441 Developmental Characteristics of Mentally Retarded Individuals	4
5610:443 Developmental Characteristics of Learning Disabled Individuals	3
5610:450 Educational Adjustment: Preschool and Primary Level Except. Ind.	3
5610:451 Educational Adjustment: Intermediate Level Except. Ind.	3
5610:452 Educational Adjustment: Secondary Level Excep. Indiv.	3
5610:456 Classroom Behavior Management Except. Ind.	2
*5610:457 Clinical Teaching Practicum Children with Learning Problems	3

- In addition, students must complete the following courses in their plan:

\* Final course before student teaching, advanced permission required.

<b>Plan A</b>		<i>Credits</i>
5610:201	Participation EMR-LD	1
5610:495	Student Teaching LD	8
5610:446	Dev. Characteristics of Behaviorally Disordered Individuals	3
	** Electives	5
<b>Plan B</b>		
5610:203	Participation EMR-TMR	1
	** Electives	16
<b>Plan C</b>		
5610:202	Participation EMR-OH	1
5610:495	Student Teaching OH	8
5610:445	Dev. Characteristics of Behaviorally Disordered Individuals	3
	** Electives	5

### Combination Special Education — Elementary Education Program

The addition of 18 to 33 special education credits, including student teaching, to the standard elementary education program in lieu of elementary education elective credits will provide the student a special area of preparation in the form of a non-certification minor, or certification minor in the areas of mental retardation, learning and/or behavioral disorders or in the area of teaching orthopedically handicapped children. Completion of any of these latter minors in the elementary program will lead to a teaching certificate valid in the regular and in a specified special classroom.

### Special Education as a Secondary Teaching Field

The addition of 31-36 special education credits, including student teaching, to the professional education courses required of secondary teachers may comprise a second teaching field in mental retardation, learning disabilities or orthopedically handicapped.

Specific program details for either of the above combinations with elementary or secondary can be obtained from the Department of Counseling and Special Education.

### Speech and Hearing Therapy

A baccalaureate degree certification program in the area of speech and hearing therapy is available to the student desiring to function in this capacity in the public schools. Specific program details can be obtained from the Department of Counseling and Special Education and/or the Department of Speech Pathology and Audiology.

### 5400: Technical Education

The undergraduate program in technical education is designed to prepare instructors and other educational personnel for post-secondary educational institutions, industry and public and private agencies engaged in the

\*\* Chosen in consultation with Special Education adviser.



education and training of technicians. The program is divided into the following major classifications: business technologies, engineering technologies, health technologies, natural science technologies and public service technologies. The baccalaureate program is intended to produce instructors primarily for teaching subjects within a technical specialty and is not intended to produce post-high school teachers in mathematics, physics, chemistry, English or other general education offerings. Graduates of this program would be awarded the degree of Bachelor of Science in Technical Education.

Students may elect other areas when the courses are available and their advisers approve.

The technical education program includes work in four areas: General Studies; the technical specialty;

professional education; and occupational experience. Specific course requirements may be secured from the Department of Secondary Education or from the advisers 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 2.0 average in all major departmental professional courses (5400), all professional education courses and a 2.5 average in all technical courses directly related to the student's teaching field.



# The College of Business Administration

James W. Dunlap, Ph.D., *Dean*

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## 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 degree programs during the day and evening and graduate degree programs during the 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 students for professional careers in commerce, industry and government. This is to be secured with the following aims:

- To instill in students competence in the basic functional areas of business enterprise.
- To develop in students an analytical ability and balanced judgment in the solution of business problems.
- To promote in students an understanding of human behavior and the impact of social, political and economic forces in the decision-making process.
- To cultivate in students a facility for the use of management tools of accounting, quantitative techniques and communications.
- To encourage in students the development of a business code of ethics.
- To foster in students a desire to continue the pursuit of knowledge and the achievement of excellence in the area of administration.

Additional objectives of the College of Business Administration are: to act as a service division by offering courses to students in other colleges; 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 students at the master's level; to prepare students for entering law school; and to prepare stu-

dents 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.

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## College Requirements

### Requirements for Admission

The college will accept students who have completed sufficient coursework 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 30 credits at the time of acceptance.

\*Enrollment in upper division business courses is limited to students who have:

- Applied for transfer to the college.
- Successfully completed at least 60 credits.
- Earned at least a 2.0 overall grade-point average and at least a 2.0 grade-point average in business administration and economics courses.

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### Transfer of Courses and Advanced Standing

In order for courses taken outside of the General 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 fol-

\*Exceptions to any or all of these may be granted by the dean.

lowing 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. 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

The College of Business Administration, organized on a departmental basis, offers programs of study in accounting, finance, management, marketing and international business. Three baccalaureate degrees are offered; the Bachelor of Science in Accounting, the Bachelor of Science in Business Administration and the Bachelor of Science in Industrial Management.

## 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 2.0 quality-point average. Not more than one credit of physical education may be included.
- Obtain at least a 2.0 quality-point average in all courses in the major as well as in all courses in business administration and economics.
- Obtain the recommendation of the department head.
- Complete other University requirements listed in Section 3 of this *Bulletin*.
- Complete the following courses:

General Studies	<i>Credits</i>
* 3450:111, 2, 3, 4 Modern University Mathematics	
3450:121, 2, 3 Modern University Mathematics	
3450:138 Mathematics of Finance	8
* 3250:201, 202 Principles of Economics	6
* 6200:201, 202 Accounting	8
Two sequential courses in psychology or sociology (minimum)	6
The following core program in business administration:	
** 6400:320 Legal Environment of Business or	4
6400:321 Business Law I	3
6400:371 Business Finance	3
6500:301 Management: Principles and Concepts	3
6500:321, 322 Quantitative Business Analysis	6
* 6500:323 Computer Applications for Business	3
6200:355 Electronic Data Processing	3
6600:300 Marketing Principles	3
6500:409 Business Policy	4

\* These are pre-business administration requirements.

\*\* Accounting majors must take 6200:355 and 6400:321, other majors must take 6500:323 and 6400:320.

## 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.

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. Accounting graduates who choose public accounting may become seniors, managers, principals or partners 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 graduates may choose.

The accounting curriculum is designed to prepare the student for professional service, including sitting for the uniform certified public accounting examination and to prepare the student to undertake advanced study leading to the master's degree. To receive the Bachelor of Science in Accounting degree, a student must complete the college requirements and the following departmental requirements:

	<i>Credits</i>
6200:301 Cost Accounting	3
6200:317, 318 Intermediate Accounting I & II	8
6200:430 Taxation I	3
6200:440 Auditing	3
6200:460 Controllership Problems	3
*** 6400:322 Business Law II	3
** 3250:380 Money and Banking or	3
*** 6400:338 Financial Intermediates	3

Students preparing for careers in public accounting are advised to take 6200:420 *Advanced Accounting* and 6200:431 *Taxation II*. Majors preparing for careers in industrial accounting should take elective courses in management.

Because of the increasing demand for accountants with a knowledge of computer theory and practice, majors are advised to elect 6200:454 *Accounting Systems*. Courses in mathematics beyond finite mathematics are also strongly recommended.

\*\*\* Grade not included in major quality-point average.

## 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 non-profit 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.

To receive a Bachelor of Science in Business Administration with a major in finance, a student must complete the college requirements and the following departmental requirements:

		<i>Credits</i>
*6200:317, 318	Intermediate Accounting I & II	8
6400:338	Financial Intermediaries	3
6400:343	Investments	3
6400:479	Problems in Finance	3
*3250:400	Macro-Economics	3
	or	
*3250:410	Micro-Economics	3

Two Department of Finance electives selected from:

6400:314	Credits & Collections	2
6400:318	Risk Management & Insurance	2
6400:436	Commercial Bank Management	3
6400:447	Security Analysis	3

Electives should be considered especially by those students who aim for careers in financial management from the following courses:

6400:400	Investing in Real Estate	3
6400:425	Business and Society	3
6400:322	Business Law	3

## 6500: Management

The University of Akron was one of the first institu-

\*Grade not included in major quality point average.

tions 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 and the behavioral sciences. 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 recognizes the unique directional problems of the firm involved in manufacturing producers' goods.

The graduate with an industrial management degree finds many employment opportunities with industrial firms in staff, supervisory and other management positions. The graduate possesses, in addition, the required basic understanding 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.

Departmental philosophy decrees that the student entering the field of management will have a solid basic liberal background within the framework of the management curriculum.

To receive the Bachelor of Science in Industrial Management with a major in management, a student must complete the college requirements and an option. The common departmental requirements are as follows:

		<i>Credits</i>
6500:331	Production & Systems Management	3
6500:332	Production & Operations Management	3
6500:341	Personnel Management	3
**6500:408	Management Problems	3

### Options

#### Production

6500:433	Business Operational Planning	3
6500:434	Production Planning & Control	3

#### Personnel

6500:342	Personnel Relations	3
6500:443	Advanced Personnel Management	3

### Industrial Accounting Emphasis

The industrial accounting emphasis jointly administered by the Department 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 who does not wish to become a CPA. The

\*\* The student's "problem" will be related to his area of concentration — production or personnel.

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 college requirements and the following courses:

		<i>Credits</i>
6200:301	Cost Accounting	3
6200:355	Intro. to Electronic Data Processing	3
	or	
6500:323	Intro. to Computer Applications for Business	3
6200:460	Controllershship Problems	3
6500:341	Personnel Management	3
6500:331	Production & Systems Management	3
6500:332	Production & Operations	3
6500:433	Business Operational Planning	3
6500:434	Production Planning & Control	3
Recommended electives:		
6200:317	Intermediate Accounting	4
6200:318	Intermediate Accounting	4

## 6600: Marketing

The chief marketing executive in the firm is responsible for sustaining customer acceptance of the firm's products and services, and for finding new opportunities for the firm through the development of new and improved products and services; effective advertising and other communications programs; efficient physical distribution of the firm's products and services so that they are accessible to present and prospective users; and 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 which 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 a clear understanding of the nature and uses of marketing techniques and their varying

combinations in a total marketing plan. The student is also given a sound basis for further scholarly research in such areas as consumer and buyer behavior, operational and symbolic aspects of products and services, the communications techniques and theory and organizational behavior as these relate to the objectives of the firm. Thus, the student becomes aware of current practices in the marketing discipline as well as the latest theoretical developments.

To receive a Bachelor of Science in Business Administration degree with a major in marketing, a student must complete the college requirements and the following departmental requirements:

		<i>Credits</i>
6600:460	Marketing Research	3
6600:480	Marketing Cases and Problems	3
Three Department of Marketing electives selected from:		
6600:320	Physical Distribution	3
6600:330	International Marketing	3
6600:340	Merchandising	3
6600:350	Advertising	3
6600:360	Industrial Marketing	3
6600:370	Purchasing	3
6600:430	Promotional Strategies	3
6600:470	Sales Administration	3

Students wishing to concentrate their electives according to either the consumer or industrial markets may use the following as a guide:

### Consumer

6600:340	Merchandising	3
6600:350	Advertising	3
6600:430	Promotional Strategies	3

### Industrial

6600:320	Physical Distribution	3
6600:360	Industrial Marketing	3
6600:370	Purchasing	3

In addition to courses from within the College of Business Administration, the following courses from other colleges are recommended as electives:

3250:380	Money and Banking	3
3250:400	Macro-Economics	3
3300:275	Specialized Writing-Business	3
3350:220	Economic Geography	3
3750:340	Social Psychology	4
3850:320	Social Stratification	3

# The College of Fine and Applied Arts

Gerard L. Knieter, Ed. D., *Dean*  
Kelvie Comer, Ed. D., *Assistant to the Dean*

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## Objectives

The purpose of the College of Fine and Applied Arts is to further the objectives of The University of Akron by providing a quality program of undergraduate and graduate education in the artistic, technological, clinical and studio experience in speech, the dramatic arts, music, social welfare, the visual arts and the family life arts, as well as:

- To maintain curricula for the preparation of student majors in these areas.
- To prepare such students for graduate study and career opportunities on the level of professional competence.
- To provide instruction designed to meet specific curricular needs of all the colleges of the University.
- To serve the elective interests of students seeking diversity and enrichment in their 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.

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## 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 at least a 2.0 grade-point average or above and have the approval of the dean. Students

transferring to the Department of Art from another institution must submit a portfolio of their work for approval before admission. Students transferring from another college or institution into the Department of Music must submit to a departmental placement examination.

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## Requirements for Baccalaureate Degrees

- University requirements set forth in the section on "Requirements for Graduation" in Section 3.
- Departmental requirements listed in the following pages.
- Electives which may consist of any 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, their application toward graduation will depend upon the nature of the student's intended program of study.
- The recommendation of the head of the student's major department.
- Demonstrated ability to use English. One other language depending upon the degree program.

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## Degrees

The following baccalaureate degrees are granted in the College of Fine and Applied Arts:

Bachelor of Arts  
 Bachelor of Arts in Dietetics  
 Bachelor of Arts in Foods and Nutrition  
 Bachelor of Arts in Textiles and Clothing  
 Bachelor of Arts in Family and Child Development  
 Bachelor of Arts in Speech Pathology and Audiology  
 Bachelor of Arts in General Speech  
 Bachelor of Arts in Theatre Arts  
 Bachelor of Arts in Mass Media-Communication  
 Bachelor of Arts in Communication/Rhetoric  
 Bachelor of Arts in Ballet  
 Bachelor of Music  
 Bachelor of Fine Arts

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## Major Field

To qualify for graduation, a student must earn a major in the work of a department of the college. The major consists of from 24 to 62 credits in addition to the required General Studies and, in the case of the Bachelor

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of Arts degree, foreign language courses. 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 or second year when the student is still under the guidance of the Office of Student Services. The shorter majors need not be declared before the student is ready for transfer to the College of Fine and Applied Arts.

The exact requirements for each major will be found on the following pages in the section headed "Programs of Instruction." 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. At the time of admission to the college, the student is assigned an adviser by the department head.

## Programs of Instruction

### 7100: Art

#### Bachelor of Arts

- General Studies and completion of a second year of a foreign language — 53 credits.
- Completion of requirements listed below in either studio art or history of art.
- Electives — 23-25 credits.

#### Studio Art Option

- Studio art coursework including one course in each of six different areas of emphasis: i.e., printmaking, sculpture, etc. — 41 credits.
- *Survey of History of Art I and II* (7100:100-1) 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. 7100:100-101 *Survey of History of Art* (8 credits) included — 38 credits.
- Studio art coursework to include at least four different areas of emphasis: i.e., painting, photography, etc. (7100:275 recommended) — 12 credits.

#### Bachelor of Fine Arts

- For admission, a portfolio review after completion of three semesters of regular work and prior to the completion of 36 credits in studio art
- General Studies — 39 credits.
- *Survey of History of Art I and II* (7100:100-1) plus two additional advanced level art history courses (ex-

cept graphic design emphasis) — 12-14 credits.

- Electives — 18-20 credits.
- Senior exhibition

### Areas of Major Emphasis

- Studio art (except graphic design emphasis) includes one area of major emphasis: — 56 credits.

#### Printmaking

Prerequisites before first major course:		Credits
7100:100	Survey of History of Art I	4
7100:101	Survey of History of Art II	4
7100:131	Drawing I	3
7100:144	Two-Dimensional Design	3
7100:231	Drawing II	3

A minimum of two of these four major courses:

7100:213	Lithography	3
7100:214	Seriography	3
7100:215	Relief Printing	3
7100:216	Intaglio Printing	3

Additional major courses:

7100:317	Printmaking II (may be repeated)	3
7100:418	Advanced Printmaking (may be repeated)	3

Additional required courses:

7100:121	Three-dimensional Design	3
7100:233	Life Drawing	2
7100:275	Photography I	3
7100:375	Photography II	3

A choice of one of these painting courses is required:

7100:245	Acrylic Painting	3
7100:246	Water Color Painting	3
7100:247	Oil Painting!	3

#### Sculpture

Prerequisites before first major course:

7100:100	Survey of History of Art I	4
7100:121	Three-Dimensional Design	3

Major Courses:

7100:222	Introduction to Sculpture	3
7100:322	Sculpture: Molding & Casting	3
7100:323	Sculpture: Fabrication	3
7100:421	Three-Dimensional Design Application	3
7100:422	Advanced Sculpture (to be repeated)	9

Additional required courses:

7100:101	Survey of History of Art II	4
7100:131	Drawing I	3
7100:144	Two-Dimensional Design	3
7100:231	Drawing II	3
7100:232	Instrument Drawing	3
7100:275	Photography I	3

#### Drawing

Prerequisites before first major course:

7100:100	Survey of History of Art I	4
7100:131	Drawing I	3

Major courses:

7100:231	Drawing II	3
7100:232	Instrument Drawing	3
7100:233	Life Drawing	2
7100:331	Drawing III	3
7100:333	Advanced Life Drawing	2
7100:431	Drawing IV	3

Additional required courses:

7100:101	Survey of History of Art II	4
7100:121	Three-Dimensional Design	3
7100:144	Two-Dimensional Design	3

**Painting Credits**

Prerequisites before first major course:

7100:100	Survey of History of Art I	4
7100:131	Drawing I	3
7100:144	Two-Dimensional Design	3

Major courses:

7100:245	Polymer Acrylic Painting	3
7100:246	Water Color Painting	3
7100:247	Oil Painting	3
7100:348	Painting II (to be repeated in different media)	6
7100:449	Advanced Painting (to be repeated)	6

Additional required courses:

7100:101	Survey of History of Art II	4
7100:121	Three-Dimensional Design	3
7100:231	Drawing II	3
7100:233	Life Drawing	2

**Ceramics Credits**

Prerequisites before first major course:

7100:100	Survey of History of Art I	4
7100:121	Three-Dimensional Design	3
7100:131	Drawing I	3

Major courses:

7100:254	Ceramics I	3
7100:354	Ceramics II	3
7100:454	Advanced Ceramics (to be repeated)	15

Additional required courses:

7100:101	Survey of History of Art II	4
7100:231	Drawing II	3
7100:144	Two-Dimensional Design	3

**Metalsmithing Credits**

Prerequisites before first major course:

7100:100	Survey of History of Art I	4
7100:101	Survey of History of Art II	4
7100:121	Three-Dimensional Design	3
7100:131	Drawing I	3
7100:144	Two-Dimensional Design	3

Major courses:

7100:266	Metalsmithing I	3
7100:268	Enameling on Metal	3
7100:366	Metalsmithing II	3
7100:466	Advanced Metalsmithing (to be repeated)	12

Additional required courses:

7100:232	Instrument Drawing	3
7100:283	Drawing Techniques	3
2920:247	Shop Methods and Practices	3

**Photography Credits**

Prerequisites before first major course:

7100:100	Survey of History of Art I	4
7100:131	Drawing I	3
7100:144	Two-Dimensional Design	3

Major courses:

7100:275	Photography I	3
7100:375	Photography II	3
7100:376	Photographics	3
7100:475	Advanced Photography (to be repeated)	12

Additional required courses:

7100:101	Survey of History of Art II	4
7100:121	Three-Dimensional Design	3
7100:213	Lithography	3
	or	
7100:214	Serigraphy	3
7100:231	Drawing II	3
7100:233	Life Drawing	2
7100:300	Art since 1945	3
7100:317	Printmaking II	3
3650:137	Light-Color-Camera and Perception	3

**Graphic Design Credits**

Prerequisite before first major course:

7100:131	Drawing I	3
7100:232	Instrument Drawing	3

Major courses:

7100:283	Drawing Techniques	3
7100:284	Intro. to Graphic Design	3
7100:286	Commercial Design Theory	3
7100:288	Letter Form & Typography	3
7100:387	Advertising Layout Design	3
7100:388	Advertising Production and Design	3
7100:389	Corporate Identity & Graphic Systems	3
7100:480	Advanced Graphic Design (May be repeated to 12 credits)	3
7100:484	Illustration	3
7100:485	Advanced Illustration (May be repeated to 9 credits)	3
7100:486	Packaging Design	3
7100:488	Publication Design	3

Additional required courses:

7100:100	Survey of History of Art I	4
7100:101	Survey of History of Art II	4
7100:231	Drawing II	3
	or	
7100:233	Life Drawing	2
7100:275	Photography I	3
2240:222	Advertising Photography	3

NOTE: Students whose major program is graphic design may substitute 7100:284, *Introduction to Graphic Design* wherever 7100:144 *Two-Dimensional Design* is indicated as a prerequisite; waive 7100:100, *Survey of History of Art I* as a prerequisite to either 7100:275, *Photography I* or 7100:231, *Drawing II*.

**Honors Program**

As a participant in the Honors Program, the student must complete a minimum of twelve credits of honors work, to be divided in such a way that not more than eight credits are received in either coursework (7100:499) or research project (7100:405, 409, 490). Thus, the maximum number of credits possible would be sixteen.

The student must complete some written or studio project, and earn an average grade of "B" or better in all honors work attempted.

**Art Education**

Students wishing certification in art education have several degree options in the Department of Art and in the College of Education. Certification requirements and curriculum guides are available in the Department of Art and in the College of Education.

- Bachelor of Fine Arts — The College of Fine and Applied Arts/Certification in Teacher Education
- Bachelor of Fine Arts — The College of Fine and Applied Arts/Graphic Design Emphasis and Certification in Teacher Education
- Bachelor of Arts — The College of Fine and Applied Arts/Certification in Teacher Education
- Bachelor of Science — The College of Education/Certification in Teacher Education
- Bachelor of Science — The College of Education/Certification in Visual Arts for the Elementary School



## \* 7400: Home Economics and Family Ecology

### Bachelor of Arts in Textiles and Clothing

- General Studies — 39 credits.
- Home Economics and family ecology courses:

		<i>Credits</i>
7400:121	Textiles	3
7400:123	Clothing Construction	3
7400:133	Nutrition Fundamentals	3
7400:147	Home Economics Survey	1
7400:158	House Furnishings	2
7400:159	Family Housing	3
7400:201	Relational Patterns in Marriage and Family	3
7400:265	Child Development	3
7400:301	Consumer Education	3
7400:305	Advanced Construction and Tailoring	3
7400:311	Contemporary Needle Arts	3
7400:317	Historic Costume	3
7400:362	Home Management Theory	3
7400:395	Community Involvement in Home Economics	1-3
	or	
7400:422	Advanced Home Management	3
7400:419	Clothing Communication	3
7400:439	Fashion	3
7400:449	Design and Draping	3

- Completion of one of the following options:

#### Business

7100:191	Design	2
2420:170	Business Mathematics	2
	or	
2520:211	Mathematics of Retail Distribution	3
6200:201	Accounting I	4
	or	
2420:211	Basic Accounting I	4
6600:300	Marketing Principles	3
	or	
2420:101	Elements of Distribution	2
6600:340	Merchandising	3
	or	
2520:202	Retailing Fundamentals	4
6600:350	Advertising	3
	or	
2520:103	Principles of Advertising	3

#### Communication

7100:191	Design	2
7600:190	Public Speaking	2
7600:281	Introduction to Radio and Television	2
7600:282	Communication Media: Radio	2
7600:283	Communication Media: Television	3
7600:288	Communication Media: Film	3

### Bachelor of Arts in Family and Child Development

- General Studies — 39 credits.
- The following courses:

3750:100	Introduction to Psychology	3
3750:130	Developmental Psychology	4

5200:360	Nursery School Laboratory	3
7750:276	Introduction to Social Welfare	4
7400:132	Early Childhood Nutrition	2
7400:141	Food for the Family	3
7400:147	Home Economics Survey	1
7400:159	Family Housing	3
7400:201	Relational Patterns in Marriage and Family	3
7400:204	Survey of Applied Home Economics in the Community	1
7400:218	Family Health and Home Nursing	2
7400:255	Fatherhood: The Parent Role	2
7400:265	Child Development	3
7400:301	Consumer Education	3
7400:362	Home Management Theory	3
7400:395	Community Involvement in Home Economics	1-2
7400:401	Family Life Patterns in the Econ. Deprv. Hm	2
7400:422	Advanced Home Management	3
7400:485	Seminar in Home Economics	
	• Workshops or seminars: drug education, family life and sex education.	
	• Emphasis with appropriate courses in education meets requirements toward family life education certification.	
	• For emphasis in child development and child care programming add:	
7400:275	Play and Creative Expression Activities	4
7400:290	Administration of Child Care Centers	3
7400:460/560	Organization and Superv. of Child Care Centers	2

### Bachelor of Arts in Dietetics

Both the coordinated undergraduate program (CUP) in general dietetics and the traditional program in general dietetics lead to a Bachelor of Arts degree. The traditional program requires an approved internship following graduation (or an advanced degree) to become eligible for membership in the American-Dietetic Association (ADA) and for the registration examination. The coordinated undergraduate program (CUP) integrates clinical experiences within the junior and senior years, allowing ADA membership and registration after graduation from the four-year program.

- The General Studies — 39 credits.
- Core Program:

3100:130	Principles of Microbiology	3
3100:265	Intro. Human Physiology	4
3150:129	General Chemistry I	4
3150:130	General Chemistry II	4
3150:202	Organic Chemistry and Biochemistry II	3
3240:100	Introduction to Economics	3
3750:100	Introduction to Psychology	3
3850:100	Introduction to Sociology	3
7400:147	Home Economics Survey	1
7400:201	Relational Patterns in Marriage & Family	3
7400:245	Basic Nutrition and Food	5
7400:265	Child Development	3
7400:301	Consumer Education	3
7400:316	Normal Nutrition	5
7400:340	Meal Service	2
7400:362	Home Management Theory	3
7400:381	Promotional Techniques: Dietetics	4

\*The second year of a foreign language is an optional requirement for the Department of Home Economics and Family Ecology. Please consult with the adviser in the proper degree area for options available.

*Credits*

7400:416	Quantity Food Preparation	4
7400:420	Experimental Foods	3

**Coordinated Undergraduate Program**

7400:314	Introduction to Food Systems Mgmt.	4
7400:328	Intro. to Nutrition in Medical Science	5
7400:414	Food Systems Management	10
7400:480	Community Nutrition I	4
7400:428	Nutrition in Medical Science	10

**Traditional Dietetics**

2280:135	Food Purchasing	3
2280:236	Menu Planning and Cost Controls	3
2280:243	Food Equipment and Plant Operations	3
3100:381	Human Genetics	2
6200:201	Accounting I	4
6500:341	Personnel Management	3
6600:300	Marketing Principles	3
7400:412	Institutional Management	3
7400:422	Advanced Home Management	3
7400:426	Therapeutic Nutrition	4
7400:430	Computer Assisted Food Service Mgmt.	3

**Bachelor of Arts in Foods and Nutrition**

- General Studies — 39 credits.

- Completion of the following courses:

2280:236	Menu Planning and Cost Controls	3
2280:243	Food Equipment and Plant Operations	3
2440:120	Intro. to Info. Processing	2
3750:100	Introduction to Psychology	3
6500:341	Personnel Management	3
6600:300	Marketing Principles	3
6600:340	Merchandising	3
7400:147	Home Economics Survey	1
7400:201	Relational Patterns in Marriage and Family	3
7400:204	Survey of Applied Home Ec in the Community	1
7400:245	Basic Nutrition and Foods	5
7400:265	Child Development	3
7400:301	Consumer Education	3
7400:316	Normal Nutrition	5
7400:340	Meal Service	2
7400:362	Home Management Theory	3
7400:415	Household Equipment	2
7400:416	Quantity Food Preparation	4
7400:420	Experimental Foods	3
7400:422	Advanced Home Management	3
7400:450	Demonstration Techniques	2
7600:203	Radio and Television News Writing	2
7600:281	Introduction to Radio and Television	2
7600:282	Communication Media: Radio	2
7600:283	Communication Media: Television	3
7600:288	Communication Media: Film	3

**Home Economics Education**

Requirements for majors in home economics education leading to a Bachelor of Science in Education may be obtained through the College of Education. The following options are available:

- Home Economics Non-Vocational Education
- Home Economics-Vocational Consumer-Homemaking
- Home Economics-Vocational Job Training; Child Care Services; Community and Home Services; Fabric Services; Food Service.

Certification requirements and curriculum outlines for all options are available in the College of Education and in the Department of Home Economics and Family Ecology.

**7500: Music**

A written and aural/oral examination in the fundamentals of music and an audition in a performance area are administered prior to entrance to the University to those students who intend to follow a musical degree program. Students must contact the office of the Department of Music to arrange for the examination.

**Bachelor of Arts**

- General Studies and the second year of a foreign language — 53 credits.

- Core curriculum in music:

	<i>Credits</i>	
7500:151	Theory I	3
7500:152	Theory II	3
7500:154	Music Literature I	2
7500:155	Music Literature II	2
7500:161	Sight Singing I	2
7500:162	Sight Singing II	2
7500:251	Theory III	3
7500:252	Theory IV	3
7500:261	Keyboard Harmony I	2
7500:262	Keyboard Harmony II	2
7500:351	History of Music I	3
7500:352	History of Music II	3

- Additional Courses:

* 7510	Music Organization (four semesters)	4
* 7520:	Applied Music	8
* 7500:157	Student Recital (four semesters)	0

- Electives — 47 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**

**Performance Major**

- General Studies — 39 credits.

- The core curriculum in music — 30 credits.

- Additional Courses:

** 7520:	Applied Music-primary instrument	32
7520:	Applied Music-secondary instrument	4
7510:	Music Organization (eight semesters)	8
7500:157	Music Recital (eight semesters)	0

Ten additional credits in music selected from the following:

7500:361	Conducting	2
7500:371	Analytical Tech I	2
7500:451	Intro to Musicology	2
7500:452	Composition	2
7500:453	Bibliography and Research	2

\* No more than four credits in applied music may be included in the minimum of 128 credits required for the degree. It is recommended that the students attend Student Recital, participate in music organizations and continue their study of applied music beyond the minimum requirements.

\*\* Passage to the 500 level in the primary applied levels is required prior to graduation.

		Credits
7500:454	Orchestration	2
7500:455	Advanced Conducting	2

- Electives — 6 credits.
- \*Senior Recital
- Minimum vocal and keyboard proficiencies must be attained before graduation.

#### Theory-Composition Major

- The General Studies — 39 credits.

- Additional Courses:

**7520:	Applied Music-primary instrument	16
7520:	Applied music-composition	8
7510:	Music Organization (eight semesters)	8
**7500:157	Student Recital (eight semesters)	0

The following additional credits in music:

7500:361	Conducting	2
7500:362	Choral Arranging	2
7500:371	Analytical Tech I	2
7500:372	Analytical Tech II	2
7500:451	Intro to Musicology	2
7500:452	Composition	2
7500:453	Bibliography and Research	2
7500:454	Orchestration	2
7500:455	Advanced Conducting	2
7500:471	Counterpoint	2
7500:472	Advanced Orchestration	2

- The core curriculum in music — 30 credits.
- Senior recital of original composition
- Keyboard proficiency before passage to the 300 level.
- Minimum vocal proficiency must be attained.
- Electives — 7 credits.

#### \*\*\*Bachelor of Music In Jazz Studies

- General Studies — 39 credits.
- Core Curriculum in Music — 30 credits.
- The following additional credits:

7500:361	Conducting	2
7500:371	Analytical Tech I	2
7500:454	Orchestration	2

#### Jazz core:

7500:307	Techniques of Stage Band Performance and Direction	2
7500:308	Jazz History and Literature	3
7500:309	Jazz Keyboard Techniques	2
7500:408-9	Jazz Improvisation I and II	4
7500:407	Jazz Arranging and Scoring	2
7500:497	Independent Study (Practicum in Jazz Studies)	2

#### Performance courses:

7500:157	Student Recital	0
7510:	Music Organization Major Conducted Jazz Ensembles	8 8
7520:	Applied Major-Level: Jury to 300 level. Senior Recital	16 0
	Saxophone major must pass flute and clarinet proficiency (promotion to 200 level)	32

\* A junior recital is recommended but not required.

\*\* Passage to the 300 level in the primary applied area is required before graduation.

\*\*\* Acceptance in jazz program by permission of director of Jazz Studies.

- Electives — 10 credits.

#### Bachelor of Music — Music Education Bachelor of Science in Education

- The General Studies — 39 credits.

- Additional courses are:

		Credits
†7520:	Applied Music-primary instrument	16
7510:	Music Organization (eight semesters)	8
7500:157	Student Recital (eight semesters)	0

- The following credits.

5200:323	Music Teach in the Elem. School	2
5300:325	General Music in the Secondary School	2
7500:254	String Instruments Tech I	2
7500:354	Woodwind Instrument Tech	2
7500:355	Brass-Percussion Instr. Tech	2
7500:361	Conducting	2
7500:454	Orchestration	2

#### Vocal and keyboard majors must take:

5200:324	Field Experience in Elementary School	2
7500:360	Choral Techniques	2
	Approved music electives	2

#### Instrumental major (not string or piano) must take:

5300:326	Field Experience in Inst. Music	2
7500:455	Advanced Conducting	2
	Approved music electives	2

#### String majors must take:

5300:326	Field Experience in Inst Music	2
7500:255	String Inst. Tech II	2
7500:455	Advanced Conducting	2

- The core curriculum in music — 30 credits.
- 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 proficiencies must be attained before assignment to student teaching.

Departmental electives for music majors include the courses listed below and such other courses agreed upon in consultation with the coordinator of music education (Department of Music):

7500:255	String Instrument Techniques II	2
7500:305	Marching Band Organization and Technique	1
7500:306	Marching Band Arranging	2
7500:362	Choral Arranging	2
7500:460	Repertoire and Pedagogy: Voice	3
7500:461	Repertoire and Pedagogy: Piano and Harpichord	3
7500:462	Repertoire and Pedagogy: Organ	3
7500:463	Repertoire and Pedagogy: String Instruments	3
7500:464	Repertoire and Pedagogy: Wind and Percussion	3

For details of the above music degree requirements and minimum standards of achievement please see the *Department of Music Handbook* available from the Department of Music, Guzzetta Hall.

† Passage to the 300 level in the primary applied area is required before graduation.

## 7600: Mass Media-Communication

### Bachelor of Arts

- The General Studies and second year of a foreign language — 53 credits.
- The departmental core curriculum — 12 credits.

		<i>Credits</i>
7600:202	Introduction to Journalism	3
7600:245	Argumentation	3
	or	
7600:344	Public Discussion	3
7600:252	Ethical Persuasion	3
	or	
7600:393	Interpersonal Communication	3
7600:351	Survey of Speech Comm.	3

- Concentration in general speech, mass media-communication or communication and rhetoric — 24-26 credits.

### Bachelor of Arts in General Speech

### Bachelor of Arts in Mass Media-Communication

### Bachelor of Arts in Communication and Rhetoric

- The General Studies — 39 credits.
- The departmental core curriculum — 12 credits.
- Concentration in general speech, mass media-communication or communication and rhetoric — 24-26 credits.
- A related sequence either from departmental offerings of other departments, approved by the student's adviser — 14 credits.

### Areas of Concentration

#### General Speech

This program is designed for the student who wishes to become a speech communication "generalist," pursue a secondary school teaching career or is initially uncertain about a more specialized concentration.

In addition to the core curriculum (12 credits), the student must complete a minimum of 26 credits in a speech distribution requirement. At least six of those credits must be earned in each of the following three areas: (1) the departmental concentration in communication and rhetoric, (2) the departmental concentration in mass media-communication and (3) the Department of Theatre Arts and Dance.

#### Mass Media-Communication

This program introduces students to the theory and production techniques and capabilities needed to pursue careers in radio or television broadcasting, film or print or electronic journalism. The skills learned may be applied to a number of related fields, including an emphasis within the department on organizational communication.

In addition to the core curriculum (12 credits) the students must complete a minimum of 24 credits within the department, including the following:

		<i>Credits</i>
7600:281	Introduction to Radio and Television	2
7600:282	Communication Media: Radio	2
7600:283	Communication Media: Television	3
7600:288	Communication Media: Film	3
7600:301	Communication Media: Print	3

#### Other recommended courses include:

7600:384	Speech-Communication Research I	2
7600:392	Speech in America	3
7600:483	Survey of Broadcast Station Departments	3
7600:484	Regulations in Mass Media	3

Electives should include at least 12 credits in a related field.

### Communication and Rhetoric

This program provides training in all aspects of the theory and practice of oral communication. Coursework is available in communication theory, group dynamics, interpersonal communication, persuasion and propaganda analysis, classical through contemporary rhetoric, argumentation, the history of public discourse and public address. Many majors prepare for careers in teaching, public administration, public relations, politics, law, business or industrial/organizational communication.

In addition to the core curriculum (12 credits) the student must complete 26 credits from departmental offerings, including the following:

7600:190	Public Speaking	2
7600:245	Argumentation	3
	or	
7600:344	Public Discussion	3
7600:252	Ethical Persuasion	3
	or	
7600:393	Interpersonal Communication	3
7600:392	Speech in America	3

#### Other courses recommended for the major include:

7600:310	Intercultural Communication	2
7600:384	Speech-Communication Research I	2
7600:385	American Film History: The Beginning to 1945	3
7600:386	American Film History: 1945 to the Present	3
7600:410	Organizational Communication	2
7600:445	Theories of Argument and Forensics	3
7600:454	Theory of Group Processes	3
7600:470	Analysis of Public Discourse	3
7600:484	Regulations in Mass Media	3

Electives should be selected in consultation with the adviser.

## 7700: Speech Pathology and Audiology

### Bachelor of Arts

#### Bachelor of Arts in Speech Pathology and Audiology

- \* Completion of the General Studies and the second year of a foreign language — 53 credits.

- Completion of the following:

	<i>Credits</i>
7700:110	3
7700:111	2
7700:130	3
7700:140	3
7700:210	3
7700:211	2
7700:230	3
7700:240	4
7700:241	3
7700:250	1
7700:271	3
7700:321	4
7700:322	4
7700:330	4
7700:340	2
7700:350	1
7700:351	1
7700:352	1
7700:450	3
	1
7700:451	1
	51
Total	51

- Electives — 24 credits.

Students planning to obtain a certificate from the State Department of Education with a degree from the College of Fine and Applied Arts should consult with an adviser about those requirements.

## 7750: Social Work

### Bachelor of Arts

- \* Completion of the General Studies and the second year of a foreign language — 53 credits.

#### Social Work Courses:

7750:276	Introduction to Social Welfare	4
7750:270	Poverty in the United States	3
7750:401	Social Work Practice I	3
7750:402	Social Work Practice II	3
7750:495	Field Experience: Social Agency (two semesters—3 credits each)	6
7750:421	Field Experience Seminar (two semesters—1 credit each)	2
7750:	Elective in Social Work	3
7750:	Elective in Social Work	3

\* Courses in the Department of Biology are required to fulfill the natural science requirement (see your adviser for specific courses) — BA & BFA. BFA in Speech Pathology and Audiology students substitute for the language requirement a core of courses in psychology and related disciplines (see your adviser for specific courses).

\*\* The student must complete 3850:100 *Introduction to Sociology* as part of the social science requirement, and 1100:221 *Natural Science: Biology* or some other human biology course as part of the *natural science* requirement.

- Courses from other departments:

Research/statistics requirement may be met by completing *one* of the following:

		<i>Credits</i>
3850:301	Methods of Social Research I	3
3750:110	Quantitative Methods in Psychology	3
3470:	(three of the modular courses)	3

- Racial and Intergroup Relations

Complete *one* of the following:

3850:421	Racial and Cultural Intergroup Relations	3
3400:413	Black Social and Intellectual History	3
3700:342	Minority Group Politics	3
2020:245	The Black American	2

All of the following:

3850:404	Contemporary Sociological Theories	3
3750:130	Developmental Psychology	4
3750:420	Abnormal Psychology	3

## 7800: Theatre Arts and Dance

### Bachelor of Arts

#### Bachelor of Arts in Theatre Arts

#### Bachelor of Arts in Ballet

- † The General Studies program and second year of a foreign language — 53 credits.

- The departmental core curriculum — 10 credits.

- Core Curriculum:

7800:261	Introduction to Theatre	3
7800:124	Introduction to Ballet	3
7800:175	Oral Interpretation I	3
7800:371	Acting I	2

### Areas of Concentration

#### Ballet

The ballet major is designed for the student who wishes to continue professional training in dance with the Bachelor of Arts degree. It is expected that the student will be able to work as a performer or teacher on a professional level upon completion of the degree.

Admission to the program is by audition only. Every student must pass a sophomore jury in ballet technique at the end of two years' study in order to be admitted to upper division standing in the ballet 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.

Upon entering the program, the student is placed at that level of ballet technique the faculty feels will ensure progress. In some cases, a student may be required to audit the level below the one in which he is placed in order to do remedial work on those aspects of basic technique that need attention.

† Students in Bachelor of Arts in Theatre Arts and Bachelor of Arts in Ballet Program substitute a related sequence of 14 additional credits either from departmental offerings or offerings of other departments, approved by the student adviser for the second year of a foreign language.

Depending on progress and previous training the time needed to complete the degree may be longer or shorter than four years. Please see the area director of ballet for further explanation.

Majors should attempt to earn a minimum of 63 credits in the first two years. The following courses should be completed by the end of the sophomore year.

- General Studies (lower division) — 27 credits.
- Major Field:
 

	<i>Credits</i>
7800:122, 222 Ballet Technique I and II	20
7800:126 Choreography Improvisation	2
7800:127 Choreography: Established Forms	2
7800:226-7 Choreography: Sound and Movement I & II	4
7800:116-7 Ballet Analysis I and II	4
7800:229 Contemporary Dance Techniques	4

- Sophomore jury taken by all majors at the end of two years' study.

The following must be completed during the last two years:

- General Studies (upper division) — 12 credits.
- Major Field:
 

7500:301-2 Music Appreciation	4
7800:322, 422 Ballet Technique III and IV	20

	<i>Credits</i>
7800:320 Dance Notation	2
7800:423 History of the Dance	2
7800:424 20th Century Dance	2
7800:425 Development of Ballet	2
7800:426-7 Techniques of Teaching Ballet I & II	4

**Theatre Arts**

The theatre arts concentration is designed to prepare students for competency in all areas of theatre — acting and directing, theatre history and criticism and technical theatre — in order that the student can acquire the skills to teach theatre courses, to undertake graduate work in theatre or to undertake professional post-baccalaureate work in the hope of entering the professional theatre.

In addition to the core of 10 credits, the student must complete 47 credits from departmental offerings including the following:

7800:367 History of Theatre: Greek-Elizabethan	4
7800:368 History of Theatre: Restoration to Present	4
Electives (in consultation with the student's adviser)	18

Through consultation with an adviser, the student may wish to follow a program in acting/directing, technical theatre or history/criticism.



# The College of Nursing

Lillian J. DeYoung, R.N., Ph.D., *Dean*

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## 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 community.

The primary focus of professional nursing is man; a complex, holistic being having physiological, psychosocial, spiritual and cultural dimensions. Man is unique and universal. Man, whose goal is self-actualization, is a thinking, interacting, adapting, valuing being constantly in the process of becoming. Man is an ecological being who affects and is effected by the total environment. The individual is a part of a diverse and dynamic society which possesses structure. As such, man functions as a facilitator of thoughts, values, beliefs, attitudes and actions which affect the health care system.

Health is viewed as a purposeful adaptive response to internal and external stimuli in order to maintain stability. Diminished health is viewed as a disturbed adaptive response which results in disequilibrium and inability to utilize effectively the usual health promoting resources. Health and the various degrees of health are viewed as a continuum. Quality health care is the right of individuals, families, groups and communities. Consumers of health care are participants in the decisions which affect their status on the health/diminished health continuum.

The goal of the professional nurse is to assist individuals, families, groups and communities to attain, maintain and/or regain an optimal level of health and to be supportive when optimal levels of health can no longer be achieved. Professional nursing practice is germane to any setting where health maintenance or support is a goal.

The professional practitioner utilizes the nursing process as a series of progressive steps which unite nursing action with critical thinking, integration of knowledge and decision making. This process is a dynamic methodology which is scientifically based and goal-directed with feedback mechanisms in the form of continuous evaluation and modification.

The emerging role of the professional nurse includes the exercise of social responsibility and independence in decision-making processes which affect the delivery of nursing care within the existing and changing social

system. An important dimension of the emerging role of the professional nurse is to support the client as he assumes the responsibility for making those decisions necessary for optimal health.

General education at the baccalaureate level is the base for rational thinking and as a framework for clarifying personal and professional values. This education provides the student with an inquiring approach to life and self with an opportunity to become a contributing member of the community.

Baccalaureate nursing education provides opportunities for students to apply concepts, knowledge and skills from the biologic, social, behavioral sciences and nursing science to professional practice. This education prepares a generalist who is capable of practicing in any environment and provides a foundation for research, continued study and leadership. Research is viewed as a quest for new knowledge pertinent to an identified area of interest through the application of the scientific process. Leadership is viewed as the ability to facilitate the movement of a person, group, family or community toward the establishment and attainment of a goal. Both faculty and students collaborate in the planning, implementation and evaluation of the educational program. The faculty attempt to establish an environment conducive to learning. Students have varied experiences and needs; therefore, the educational program must make provisions for the learner's individuality which includes variable progression and opportunities to practice new behaviors.

Recognizing that positive reinforcement motivates learning, faculty members endeavor to design experiences with expectations for success.

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## Objectives

The undergraduate program in Nursing is designed to prepare the graduate to do the following:

- Utilize the nursing process to move the client toward a higher level of functioning, to maintain stability, to restore equilibrium and/or to be supportive when optimal levels of health cannot be achieved.
- Initiate and/or adapt to changes affecting the health care system.
- Accept responsibility for own nursing interventions and be accountable to clients and colleagues in the health professions for nursing practice.
- Demonstrate personal growth by participating in self-directed learning activities.
- Utilize relevant nursing theories and concepts from the physical, biological, social and behavioral sciences in the application of the nursing process.
- Utilize political, cultural and social processes to affect the health of man and his environment.

- Utilize research findings to promote the practice of nursing and to extend nursing research.
- Utilize leadership skills for the advancement of professional nursing and health care.
- Share in the responsibility for optimal health care of clients by collaborating, consulting and coordinating with clients and members of the health team.
- Clarify own values in relation to nursing practice.
- Utilize concepts from human ecology in the practice of nursing.

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## Admission

Four classifications of students will be considered for admission to the College of Nursing: a) the generic student (entering freshman), b) the registered nurse, c) the post-baccalaureate student and d) the transfer student from other colleges and universities. Transfer students may receive credit for quality work earned in approved colleges. Enrollment of transfer students is contingent upon availability of University facilities.

Registered nurses who receive their preparation in hospital or associate degree programs are evaluated individually. RN students are expected to meet the same course requirements as the generic student and those of The University of Akron. It is expected that the registered nurse will want to challenge by examination and receive credit for selected nursing courses.

Students who wish to be considered for admission must meet the following requirements.

- Complete all General College requirements and College of Nursing prerequisites (see program of studies for freshman and sophomore year of the College of Nursing).
- Have a 2.5 grade-point average or better.

Deadlines will be established and published in spring semester 1980 and each spring thereafter; \* all applicants will be placed in a pool to be considered for admission at the same time. Applicants will be placed in rank order from the highest grade points to 2.5.

The top 180 students will be selected, 90 of whom will begin in the summer and 90 in the fall. \*\* An active alternate list of 20 students will be selected to take the place of students who choose not to continue at The University of Akron College of Nursing. All remaining applicants will be rank ordered for an inactive alternate list.

\* A revised program became effective with the freshman class entering Fall 1978. Consequently, transfer students from other colleges and universities will not be considered for admission to the program currently in effect, since the new curriculum (herein listed) will not have a sophomore nursing course, students will remain in General College for the freshman and sophomore years and transfer students will not be admitted until 1980.

\*\* Since the availability of clinical space places a limit of 180 on the number of students who can be admitted, having a grade-point average of 2.5 will not guarantee admission.

Applications for the College of Nursing are only effective for the current academic year.

Acceptance of the student into the College of Nursing is the responsibility of the dean in consultation with the dean of the General College and the Admissions Committee of the College of Nursing. Admission to the program in nursing does not guarantee the students placement in the nursing courses at the time they 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.*

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## Reapplying to the College of Nursing

Any student not enrolled in nursing courses for one or more semesters may request re-entry by the mid term prior to the semester desired by writing to the Student Admissions, Promotion and Retention Committee. The letter must include the student's social security number, the reasons for the drop out, and the date of desired re-entry. The committee will meet, will evaluate the situation and communicate the decision to the student by letter.

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## Probation and Retention

Students must achieve and maintain a grade-point average of 2.5 or higher on a 4.0 scale in the nursing major. A student who fails to maintain the 2.5 average will be placed on probation. Failure to raise the average to 2.5 in a period of two terms will result in dismissal from the program.

Students receiving a "D" or "F" in any clinical nursing course (theory and/or practice) will be required to repeat the course. Students may repeat the course only once.

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## Requirements for Graduation

- Complete all University requirements listed in Section 3 of this *Bulletin*.
- Complete a minimum of 131 semester credits toward the degree and earn a minimum of 2.5 grade-point average in the nursing major and a 2.0 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*.



## Program of Studies for the Generic Student

### Freshman Year

#### Semester I

1100:111	English Comp.	Credits	4
*1100:115	Institutions		3
3150:120	General Chemistry I		4
3450:111, 112	Math. Modules		2
3470:252,253	Descriptive Stats		2
8200:100	Intro. to Nursing		1
			<hr/> 16

#### Semester II

1100:112	English Comp.		4
*1100:116	Institutions		3
3150:130	General Chemistry II		4
*3850:100	Intro. to Sociology		4
1100:120-188	Physical Ed.		1
			<hr/> 16

### Sophomore Year

#### Semester I

3100:361	Human Anat. and Phys.		3
3100:130	Prin. of Microbio		3
3750:100	Intro. to Psych		3
1100:106	Eff. Oral Commun.		3
3600:101	Intro. to Philos.		3
	or		
3600:120	Intro. to Ethics		3
	or		
3600:170	Intro. to Logic		3
			<hr/> 15

#### Semester II

3100:362	Human Anat. & Phys.		3
3750:130	Develop. Psych.		4
3100:381	Human Genetics		2
3100:105	Ecol. and Biol. Res.		2
3850:340	The Family		3
	or		
7400:201	Relational Patterns in Marriage & Fam.		3
			<hr/> 14

### Summer Session

(between Sophomore and Junior Years)		
8200:200	Nursing Theories and Concepts	5

\*The six credit requirement in the social science area usually designated by *Institutions in the United States* 1100:115-116 can be met through several options as listed in the General College requirements. A nursing student who elects to use 3850:100 *Intro. to Sociology* as one part of the social science requirement for General College MUST complete an additional four credit sociology requirement to meet the prerequisites for the College of Nursing. This *must be completed* prior to application to the college.

### Junior Year

#### Semester I

1100:320	Western Cult. Trad.		4
8200:300	Nursing Process Appld. to Man's Adaptation		12
			<hr/> 16

#### Semester II

1100:321	Western Cult. Trad.		4
8200:320	Nursing Process Appld. to Man's Maladaptation		12
			<hr/> 16

### Senior Year

#### Semester I

1100:330	Eastern Civ.		2
8200:400	Nursing Process in Complex Situations		10
	Elective		5
			<hr/> 17

#### Semester II

1100:330	Eastern Civ.		2
8200:420	Advance Nursing Practice		10
	Elective		4
			<hr/> 16

Total Credits 131

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.

Students are responsible for their transportation to and from the institutions and agencies used for education experiences. A valid driver's license and the use of an automobile are essential during the senior nursing courses.

## Agencies

The agencies cooperating in providing the laboratory experiences in the courses in nursing are:

- Akron City Hospital
- Akron General Medical Center
- Barberton Citizens Hospital
- Cuyahoga Valley Community Mental Health Center
- Cuyahoga Falls General Hospital
- Fallsview Psychiatric Hospital
- Edwin Shaw Hospital
- Portage Path Community Mental Health Center
- Children's Hospital Medical Center
- The City of Akron, Department of Public Health
- Visiting Nurse Service of Summit County

# The Northeastern Ohio Universities College of Medicine

William A. Rogers, Ed.D., *Liaison Officer*

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## 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 of Medicine 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 of Medicine 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.

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## 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 Admissions Office, 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 of Medicine 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 pro-

gram. Applicants to Phase II should have taken the new MCAT test by May.

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## Program

The curriculum\* requires that students 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 coursework 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 of Medicine faculty, will assess these factors and will recommend Phase I students 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 Basic Medical Sciences 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.

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## 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.

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## Location

The Northeastern Ohio Universities Basic Medical Sciences Building is located on S.R. 44 in Rootstown just south of the I-76 intersection, across from the Rootstown High School.

\*See BS/MD program, Section 4, of this *Bulletin* for a description of the requirements for the Bachelor of Science part of this program.

# The University Honors Program

Arno K. Lepke, Ph.D., *Master*

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## Introduction

The University of Akron's Honors Program is designed to recognize and to support highly motivated and achievement oriented students in any major program. Emphasizing close student-faculty relationships, honors work offers unique learning experiences which should help participants discover their own potential, capabilities and sense of direction.

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## Admission

The requirements for admission to the University Honors Program are:

- a high school grade point average of 3.5 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.
- 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.

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## Program

### General Studies

Honors students are 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 coursework in the humanities, the social sciences and the natural sciences. The major objective of this re-

quirement 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.

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## Colloquia

Beginning at the sophomore level, all honors students attend one colloquium per year, one in the humanities, another in the social sciences and 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 together and to 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 their previous sphere of intellectual curiosity.

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## Major Requirements

Honors students complete 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.

Faculty preceptors serve as special advisers for honors students in each department. They assist 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.

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## Senior Honors Project

Every honors student is expected to complete a senior honors thesis or 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 the 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 all students completing the University Honors Program. At commencement exercises, they will be properly recognized as University Scholars.

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## Other Features

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### Scholarships

Honors students who maintain a minimum 3.25 cumulative grade-point average are eligible for substantial honors scholarships which are renewable annually.

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### Acceleration

To meet degree requirements, honors students 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.

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### Open Classroom

Honors students may attend undergraduate classes or lectures for which they are not formally enrolled. They have free access to all courses and programs.

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## Access to Graduate Courses

With the permission of the student's preceptor and the instructor, honors students 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.

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### Credit/Non-Credit Option

Upon completion of one-half of all degree requirements, honors students may enroll in one course per semester on a credit/non-credit basis. All elective credits thus earned are not considered in calculating grade-point average, but they count as hours completed toward graduation requirements.

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### University Honors Council

Seven faculty members representing the 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.



# Interdisciplinary and Certificate Programs of Study

## Overview

In order to add to the dimensions of the traditional disciplines, the University has established twelve interdisciplinary and interdepartmental programs of study. In addition to a major, the student may elect to pursue one of these programs which will add a dimension of depth through concentrated work focusing on Afro-American studies, cartographic specialization, environmental studies, peace studies, planning, Latin American studies, Soviet area studies, computer science, real estate, mid-careers in urban studies, life span development: adulthood aging or public policy.

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.

Further information may be obtained from the following:

- Mr. John W. Wilson, Acting Director of Afro-American Studies.
- Dr. William Beyer, Head, Department of Mathematical Sciences (regarding computer science).
- Dr. Edward W. Hanten, Coordinator, Mid-Careers in Urban Education.
- Dr. James Jackson, Assistant Professor of geology, Director of Environmental Studies.
- Dr. Warren Kuehl, Director of the Center for Peace Studies.
- Dr. Carl Lieberman, Chairman, Coordinating Committee, Public Policy.
- Dr. Theodore Mackiw, Program Coordinator of Soviet Area Studies.
- Dr. Donald Metzger, Program Coordinator of Latin American Studies.
- Dr. Allen Noble, Head, Department of Geography (regarding both cartographic specialization and planning programs).
- Mr. James Nolte, Coordinator of Real Estate Program.
- Dr. Harvey Sterns, Director, Life-Span Development: Adulthood and Aging.

## Afro-American Studies

### Requirements

To satisfy the requirements for the certificate in Afro-American studies, a student at The University of Akron must complete at least 11 semester credits and four courses with a 2.0 grade-point average or better from the list of acceptable courses and from other courses identified by the director of Afro-American studies as appropriate to the subject. Among these four courses must be the following:

		<i>Credits</i>
3400:220	History of the Black People of the U.S.	3
1810:401	General Seminar in Afro-American Studies (a research paper in Afro-American Studies will be written in this course)	3

### Acceptable Courses

1100:335	Eastern Civilizations — Africa	2
2020:254	The Black American	2
3250:486	Ghetto Economic Development	3
3300:350	History of Black American Literature	3
3350:363	Africa South of the Sahara	3
3400:220	Black People of the United States	3
3400:413	History of Black Social and Intellectual Thought	3
3700:327	African Politics	3
3850:421/521	Racial and Cultural Intergroup Relations	3
7750:270	Poverty in the Inner City	3
7750:276	Introduction to Social Welfare	4
1810:401	General Seminar in Afro-American Studies	3

### 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; shall be one semester in duration; and shall 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.

Students undertaking the Afro-American Studies Certificate Program must have prior consultation with the director of Afro-American Studies.

## Cartographic Specialization

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 students 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 in order 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 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 skills in business, industry and government, as well as the academic community.

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## Requirements

### Core Courses

Complete five of the following basic courses:

		<i>Credits</i>
3350:240	Maps and Map Reading	3
3350:340	Cartography	3
3350:444	Map Compilation and Rep.	3
3350:447	Intro: Remote Sensing	3
3350:449	Adv. Remote Sensing	3
3350:442	Thematic Cartography	3
3350:448	Aut. Computer Mapping	3

### Elective Courses

Each student must complete at least seven credits from the following offerings with regard to the student's background and career interests. These courses will be selected in consultation with the program director. Similar courses completed at other universities, up to five years prior to admission to 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 in order to cope with social, economic, politi-

cal, geographical, physical design and governmental problems. Selection of courses which duplicate or continue topical interests already well established in a particular student's background will be discouraged.

		<i>Credits</i>
4300:230	Surveying	4
4600:125	Engineering Graphics	2
7100:131	Drawing I	3
7100:191	Design	2
7100:284	Introl. Graphic Design	4
4450:206	Fortran (Sci/Eng)	2
5100:410	Audio Visual Education	2
6200:355	Elec Data Processing	3
2240:140	Typography & lettering	3
2240:222	Advert. Photography	2
2440:120	Intro to Infor. Proc.	2
2440:290	Spec. Topics in Data Processing	1-3
2920:121	Tech Drawing I	3
2980:224	Land Surveying	3
3370:395	Field Methods in Geology	2

### 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.

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## 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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## Computer Science

### Entrance Requirements

To qualify for the Computer Science Certificate Program, a student must be in good academic standing in

the major department, must have completed three credits of mathematics in the Department of Mathematical Sciences and must submit to the director of the program a written request for admission to the program. The request will outline the student's reasons and goals for enrolling. Students undertaking the program must have prior consultation with the director. The area of concentration adds a further dimension of depth of both mathematics and computer science to the student's major in one of the traditional academic disciplines.

## Course Requirements

		<i>Credits</i>
3460:201	Introduction to Fortran Programming or	2
4450:206	Fortran Programming for Scientists and Engineers	2
One language from the following:		
3460:202	Introduction to Cobol Programming (highly recommended)	2
3460:203	Introduction to APL Programming	2
3460:204	Introduction to PL/1 Programming	2
3460:205	Introduction to Algol Programming	2
All of the following:		
3460:420	Structured Programming	3
3460:210	Introduction to Computer Concepts	3
3460:416	Introduction to Data Structures	3
4450:306	Assembler Programming	3
	Computer Science Elective	3
	Total	19

## Environmental Studies

### Requirements

To qualify for the certificate program, a student must be in good academic standing with the major department and submit to the director a written request for admission. The request will outline the student's reasons and goals for enrolling in the program.

The undergraduate 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	2
1830:401	Seminar in Environmental Studies	2

Students will be required to select courses from areas other than their majors since the purpose of the program is to broaden their backgrounds. It is expected that courses from at least two disciplines will be selected.

The student's plan of study for this certificate will be developed in consultation with an environmental studies adviser; the adviser, if other than the environmental studies director, will be approved by the director.

An interdisciplinary research paper or project undertaken in conjunction with the environmental seminar is required of all students in the program.

## Acceptable Courses

		<i>Credits</i>
3100:105	Ecology and Biological Resources	2
3100:217	General Ecology	3
3100:422/522	Conservation of Biological Resources	3
3100:424/524	Limnology	3
3100:426/526	Applied Aquatic Ecology	3
3250:385	Economics: Natural Resources and Environment	3
3350:314	Climatology	3
3350:335	Recreational Resource Planning	3
3350:436/536	Urban Land Use Analysis	3
3350:447/547	Intro.: Remote Sensing	3
3350:495/595	Soil and Water Field Studies	3
3370:200	Environmental Geology	3
3370:474/574	Ground Water Hydrology	3
3370:678	Urban Geology	3
3850:321	Population	3
4100:201	Energy and Environment	2
4100:202	Atmosphere Pollution	2
4200:463/563	Pollution Control	3
4300:421	Environmental Engineering	3
4300:425	Environmental Engineering Lab	2
5800:491/591	Workshop: Arith. and Physical Science	3
1830:201	Man and the Environment	3
1830:401	Seminar in Environmental Studies	3

## Latin American Studies

### Requirements

Students in the Latin American Studies Certificate Program will major in their respective disciplines (economics, geography, history, political science, sociology and Spanish).

In addition, they will take 12 credits in the three separate disciplines chosen from the following list:

#### Political Science

3700:425	Latin American Politics	3
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#### History

3400:415/515	Latin America: National Origins	3
3400:416/516	Latin America: 20th Century	3
3400:417/517	U.S. Latin America and Imnper.	3
3400:418/518	Mexico	3

#### Geography

3350:353	Latin America	3
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**Sociology (Anthropology)**

		<i>Credits</i>
3870:256	New World Prehistory	3
3870:257	Indians of South America	3

1860:301	Value Concepts on Peace and War.	3
1860:350	Independent Study in Peace Studies.	1-3

**Economics**

3250:460	Economic Development and Planning For Underdeveloped Countries	3
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The student is also required to study three years of Spanish or the equivalent.

**Peace Studies****Requirements**

To satisfy the requirements for a certificate in peace studies, undergraduate students at The University of Akron must complete at least 15 credits from the list of acceptable courses. These must be distributed so that 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. Students 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:

3400:340	Peace, War and Mankind	3
1860:301	Value Concepts on Peace and War	3

**Acceptable Courses**

3250:450	Comparative Economic Systems	3
3250:460	Economic Development and Planning for Underdeveloped Countries	3
3250:461	Principles of International Economics	3
3300:489	Seminar in Twentieth Century Literature and History	3
3350:100	Introduction to Geography	3
3400:340	Peace, War and Mankind	3
3400:407	Diplomatic History of the United States, 1776-1919.	3
3400:408	Diplomatic History of the United States, 1914-present.	3
3400:417	U.S. Latin American Relations	3
3700:220	American Foreign Policy: Process and Problems.	3
3700:310	International Politics and Institutions	4
3700:415	Comparative Foreign Policy	3
3870:150	Cultural Anthropology	4
6600:330	International Marketing	3

**Planning With An Emphasis On City or Regional Resource Studies**

This program is intended to enhance understanding of the planning function and to increase the research and analytical abilities of persons who are preparing for work in, or who are currently engaged in, city, urban, regional, environmental and resource planning. The program is open to undergraduates, as well as persons with baccalaureate degrees, employed in local agencies doing related work, e.g. Model Cities, Urban Renewal, community redevelopment, community action environmental protection and private industry. Persons with degrees can enroll as postbaccalaureate or special students.

**Requirements**

- 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.

**Core Courses**

Complete five of the following:

3250:244	Intro. to Economic Analysis	3
3350:220	Economic Geography	3
3350:433	Urban, Regional and Resource Planning	3
3350:438	World Metropolitan Areas	3
3400:436	The American City	3
3700:380	Metropolitan Politics	4
3850:425	Sociology of Urbanization	3
4300:450	Urban Planning (Civil Engineering)	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 The University of Akron 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 signi-



ficant 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 in order to cope with social, geographical, physical design, economical and governmental problems. Selection of courses which duplicate or continue interests already well established in a student's background will be discouraged.

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## Project

Upon completion of the core and elective course requirements, the student will take 3350:385 *Planning Seminar* (1 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.

Participants who wish to apply for candidacy after completion of one or more core courses must apply within two years of completing the first course in order for that course to be applicable toward the certificate.

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.

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## Real Estate

### Requirements

The certificate program in real estate augments the business management technology (real estate) associate degree program. It is a professional education program designed to enhance the student's understanding of real estate as a product, a process and a profession. The certificate program is open to persons actively engaged in the real estate profession as well as to graduates and undergraduates at The University of Akron or other accredited institutions.

### Core Courses

To satisfy the requirements for a certificate in real estate, a regularly enrolled student at The University of Akron must complete the following requirements:

		<i>Credits</i>
2420:105	Real Estate Principles	2
2420:185	Real Estate Law	2
2420:245	Real Estate Finance	2
2420:255	Valuation of Residential Property	2
2420:265	Real Estate Brokerage	2
2520:212	Principles of Salesmanship	4

### Electives

At least four of the following must be completed:

		<i>Credits</i>
2420:115	Housing Design and Construction	2
2420:125	Land and Real Estate Development	2
2420:205	Introduction to Real Estate Management	3
2420:215	Real Estate Economics	2
2520:225	Industrial Real Estate	2
2420:235	Commercial Real Estate	2
2420:285	Applied Real Estate Mathematics	2
2420:299	Special Topics in Real Estate (may be repeated for a total of 4 credits)	2

In addition, upon completion of the core and elective course requirements, the student will complete the following:

2420:275	Special Project in Real Estate	2
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A grade of "C" or better is required in all courses undertaken as part of the certificate program. This certificate does not require the completion of a baccalaureate degree.

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## Soviet Area Studies

### Requirements

Students in the Soviet Area Studies Certificate Program will major in their respective disciplines (economics, geography, history, philosophy, political science and Russian).

In addition to the requirements for their major, they will take 12 credits in three or more separate disciplines with a concentration in the area of Soviet studies.

#### Economics

3250:450	Comparative Economic Systems	3
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#### Geography

3350:358	USSR	3
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#### History

3400:458/558	Russia to 1801	3
3400:459/559	Russia since 1801	3

#### Political Science

3700:200	Comparative Politics	4
3700:322	Soviet and East European Politics	3

#### Russian

Three years of study or the equivalent.

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## Life-Span Development: Adulthood and Aging

This certificate represents a concentration of study involving current knowledge and research in adulthood and aging adding another dimension to the know-

ledge and skills a student is able to offer in the many professions that are becoming specialized in adapting their services to the needs of adults and older adults. This program coordinates the training of personnel in adult developing and aging and helps to meet the critical shortage of trained manpower in the field of gerontology.

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## Admission

To participate in the certificate program, a student should:

- be formally admitted to The University of Akron as an associate, undergraduate, postbaccalaureate or graduate student.
- receive permission from faculty adviser.
- have an interview with a designated graduate faculty member of the Institute for Life-Span Development and Gerontology.
- make formal application to the program.

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## Program

### Graduate (12 credit minimum)

#### Required Courses:

		<i>Credits</i>
1850:680	Interdisciplinary Seminar in Life-Span Development and Gerontology	1
1850:695	Practicum/Internship	3

#### \*Electives:

3750:620	Methods and Theories of Human Development	4
3750:727	Psychology of Adulthood and Aging	4
3850:678	Social Gerontology	3
3980:620	Social Services Planning	3
3980:681	Special Topics: Urban Gerontology	3
5400:661	Current Issues in Higher Education: Life Span and Community Education	2
7400:603	Family Middle and Later Years	2
7700:583	Communication Disorders: Geriatric Population	3
7750:550	Social Needs and Services: Aging	3

### Undergraduate (17 credit minimum)

#### Required Courses:

1850:450	Interdisciplinary Seminar in Life-Span Development and Gerontology (to be repeated two times at one credit each)	2
3100:192	Biology of Aging	3
5550:300	Physiology of Exercise for the Adult and Elderly	2
1850:495	Practicum/Internship (within Institute individual department)	2

\*Select a minimum of three courses. Students are required to take two of the three electives outside their major or degree department.

#### \*Electives:

Two of the following:		<i>Credits</i>
3750:480	Special Topics: Adulthood and Aging	3
3850:343	Sociology of Aging	3
7400:485	Seminar in Home Economics Family: Middle and Later Years	3
7700:483	Communication Disorders: Geriatric Population	3
One of the following:		
5400:440	Life Span and Community Education	2
7750:450	Social Needs and Services in Later Adulthood and Aging	3

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## Certificate

The certificate will be awarded by the University upon successful completion of the program's requirements together with the appropriate degree. If a student has an acceptable graduate degree, the certificate received at the completion of the program is to be commensurate with the degree held. The graduate curriculum committee of the institute which comprises the members of the coordinating council and other select faculty who are graduate faculty members, will oversee this certificate program and certify through the director of the institute that all requirements for the certificate have been completed.

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## Public Policy

This program will assist persons in understanding, formulating, and implementing decisions in the public realm. Persons who are 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.

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## Admission

Persons are eligible for admission to the Graduate Certificate Program in Public Policy if they have been admitted to graduate study and are pursuing masters or doctoral degrees in the departments of Economics, Political Science or Sociology. Students who are pursuing graduate degrees in other departments at The University of Akron may be admitted upon the recommendation of the head of the department in which they are enrolled.

Students seek admission to this program by filing an application with the economics, political science or sociology departments. The student schedules courses with the assistance of an adviser in the department where application has been made.

## Requirements

### Core Course:

		<i>Credits</i>
3700:541	The Policy Process	3
	or	
3700:670	Seminar in the Administrative Process	3

- Four courses from the areas listed below (one course must be in economics and one in sociology):

### Economics

3250:531	Labor and Government	3
3250:606	Public Finance	3
3250:616	Economics of Regulation	3
3250:617	Anti-trust Economics	3
3250:635	Labor Law	3
3250:660	Seminar in Regional Economics Analysis and Development	3
3250:665	Seminar in Economic Planning	3
3250:683	Monetary Theory and Policy	3

### Political Science

3700:515	Comparative Foreign Policy	3
3700:561	The Supreme Court & Constitutional Law	4
3700:560	Urban Policy Problems	3
3700:610	Seminar in International Politics	3
3700:641	Seminar in Intergovernmental Relations	3
3700:660	Seminar in Civil Liberties and the Judicial Process	3
3700:680	Seminar in Urban and Regional Politics	3

### Sociology

3850:608	Evaluation Research and Program Improvement	1-3
3850:645	Social Organization	3
3850:646	Social Stratification	3
3850:647	Urban Sociology	3
3850:648	Complex Organizations	3
3850:649	Sociology of Work	3
3850:650	Research in Community and Area Problems	3
3850:679	Political Sociology	3
3850:686	Population	3
3850:687	Social Change	3

- Students must successfully complete an interdisciplinary seminar in public policy. Each student shall write and present a paper dealing with public policy during the seminar. Faculty members and other persons who have a knowledge of the policy-making process shall make appropriate presentations regarding the formulation and implementation of public policy.
- All persons enrolled in the Graduate Certificate Program in Public Policy must successfully complete *Internship in Political Science* [3750:691], a course which will permit students to gain experience working with public officials, government agencies, political parties or interest groups. Students will normally enroll in this course after having completed at least 12 semester credits of work relating to public policy. Persons with extensive administrative or governmental experience may be permitted, with the approval of their 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 towards meeting requirements for a graduate degree at The University of Akron.
- Students must maintain at least a "B" (3.0) average in their coursework for the certificate.

## Certificate

Upon completion of all requirements for this program and for the graduate degree which each student is pursuing, participants will be awarded a Certificate in Public Policy from the Graduate School of The University of Akron, and a note of the receipt of this certificate shall be entered on the student's transcript upon his request.

## 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 students have met requirements for the completion of the program and convening members of the coordinating committee whenever appropriate.

## Mid-Careers Program in Urban Studies

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

All students 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 they shall be admitted as special non-degree students. Students may wish to pursue additional electives. However, students admitted to this program will be limited to 20 credits. If they wish to pursue more than 20 credits, they must be admitted to the Master of Arts 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 adviser from the approved list of courses. Courses offered by other departments will be accepted if they are urban-related and will specifically contribute to the student's objectives.

**Core**

*3980:600	Basic Analytical Research	<i>Credits</i> 3
	or	
*3980:601	Advanced Research and Statistical Methods	3

**Options**

**Urban Public Administration**

3980:681	Urban Policy Analysis	3
3980:611	Urban Administration	4

\* Both required in urban research methods option.

3980:640	Fiscal Analysis Elective(s)	3 3
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**Urban Research Methods**

3980:670	Seminar in Urban Research Design	3
	Computer Applications	3
	Elective(s)	4

**Urban Planning**

3980:630	Planning Concepts and Methods	3
3980:681	Urban Planning Design	3
3980:681	Planning Theory and Innovation	3
	Elective(s)	4

**Urban Service Systems**

3980:620	Social Services Planning	4
3980:621	Urban Society and Service Systems	3
3980:681	Program Evaluation	3
	Elective(s)	3

**Urban Studies**

3980:602	Seminar in American Urban Development	3
	or	
3980:681	Urban Theory and Value	3
	Elective(s)	10



# The Evening College and Summer Sessions

Caesar A. Carrino, Ph.D., *Dean*  
Richard K. Bonnell, M.A., *Assistant to the Dean*  
Gordon A. Hagerman, B.A., *Assistant to the Dean*  
Martin M. McKoski, Ph.D., *Director of Developmental Programs*

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## Evening College

The University of Akron has a rich and historic tradition of service to those students who attend classes after five p.m. Evening class offerings run the full range from the Community and Technical College through the Ph.D. level. Through evening and Saturday credit courses, the Evening College keeps its doors open throughout the year.

The Evening College is a continuation of daytime college campus life. Credit courses taken in the evening have the same high academic value and full-time faculty members teach and are available to students in the evening. Part-time faculty are engaged to augment the full-time faculty; these part-time teachers represent a complete array of academic backgrounds and practical experiences to enrich the quality of coursework.

The president and his top-level administrators and the collegiate deans are vitally concerned and supportive of our effort to serve the needs of the evening students — some 7,500 strong.

Evening Student Council coordinates the extracurricular activities of the Evening College, which are similar to those of the day college and sometimes are part of the daytime activities. Organizations established for Evening College students include Alpha Sigma Lambda, Scholastic Honorary; Gamma Beta, Evening College Social Sorority; Chi Sigma Nu, Evening College Social Fraternity; Alpha Epsilon, a service honorary dedicated to giving recognition to evening students who have made significant contributions to campus and community; A.W.A.R.E. (Association of Women for Awareness,

Recognition and Enterprise); and *Nite Life*, the official monthly publication of the Evening Student Council.

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## Summer Sessions

The Summer Sessions reemphasizes the urban nature and mission of The University of Akron and the total involvement with our community. Curricular patterns reflect the vibrant interaction between "Town and Gown."

Summer study satisfies a myriad of student appetites and needs: regular full-time students accelerating their programs, recent high school graduates, transfer students from other institutions of higher learning, older persons with life-long learning interests, part-time students and, equally important, those who rejuvenate their intellectual energies in summer study only.

Summer Sessions serve over 18,000 students, young and old, local and commuting, at all stages from non-credit avocational courses to the professional and Ph.D. levels. Faculty, students, administration and the community each contribute talents and resources to further the dynamics of the academic and cultural process.

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## 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 and reading laboratories, such students 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 academic subjects taught in the first two years and is free of charge.

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

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# The Graduate School

Alan N. Gent, Ph.D., *Dean of Graduate Studies and Research*

Joseph M. Walton, Ph.D., *Associate Dean of Graduate Studies and Research*

Robert G. Corbett, Ph.D., *Coordinator of Research*

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## Objectives

The purpose of the Graduate School is to provide a quality program of graduate 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 knowledge for students for the benefit of mankind through the efforts of its faculty and students.

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## The Nature of Graduate Education

Qualified students who have completed their baccalaureate programs with sufficiently high standings may continue their studies through the University's Graduate School in programs leading to the master's degree as well as to the doctor's degree. Undergraduate students who qualify may enroll in certain graduate level classes and apply the credits earned to the total required for the baccalaureate degree. To receive graduate credit for the courses, however, students must be admitted to the Graduate School.

The Graduate School provides properly qualified students with education which they may require for the full development of their 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 able and enthusiastic advanced students who join faculty leaders to form a community of scholars dedicated to the common pursuit of truth. Critical analysis, independence of thought, originality of method, intensity of purpose, freedom from bias, thoroughness of inquiry, keenness of perception and vital creativity combine to produce in the successful student both the professional competence and the breadth of

understanding essential to leadership in many areas of human endeavor.

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## History of the Graduate School

Graduate study at The University of Akron 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, and the Colleges of Engineering and Business Administration in 1959. The first earned doctor's degrees were also conferred in 1959. Professor Charles Bulger was appointed first dean of Graduate Work in 1933, and he continued in that capacity until 1950. Professor Ernest H. Cherrington, Jr. served as director of Graduate Studies from 1955 to 1960 and as dean of the Graduate Division from its establishment in 1960 to 1967. Dr. Arthur K. Brintnall was appointed 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 is now 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 provision of minimum requirements for advanced degrees.

The Graduate School offers programs of advanced study leading to the degree of Doctor of Philosophy in chemistry, history, polymer science, psychology, sociology, 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 Graduate 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, earth science, economics, education (educational foundations, elementary, secondary, multi-cultural 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, mass media-communication, mathematics, mechanical engineering, music, nursing, philosophy, physics, political science, polymer science, psychology, sociology, Spanish, speech, speech pathology and audiology, statistics, technical education, theatre arts and urban studies. In addition,

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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 students who do not wish to devote their entire attention to one field.

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## Graduate Faculty and the Graduate Council

The graduate faculty is comprised of those members of the faculty who hold full-time 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:

- 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 students who have been nominated by the student's college faculty for the appropriate master's or doctor's 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.

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## Graduate School Regulations

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### Student Responsibility

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

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### Admission

Every person who desires to enroll in or audit any graduate 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 at least six weeks before registration. Each application must be accompanied by an application fee of \$20.00 (unless previously paid). This fee is not refundable under any circumstances. Payment should be made by check or money order payable 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. Accepted applicants 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 for admission.

Students are 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.

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## Classification

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

- *Full Admission* may be given to any applicant who desires to pursue a graduate degree and has a baccalaureate degree from an accredited college or university with an overall grade-point average of 2.75 or better or 3.0 for the last two years (64 semester credits or equivalent); or holds an advanced degree from an accredited college or university in or appropriate to the intended field; or holds a baccalaureate or master's degree from a foreign college or university with first class standing or its equivalent, plus satisfactory evidence of competence in English; or has *special admission* and has completed at least 12 semester credits at The University of Akron at the graduate level with a grade-point average of 3.00 or better in the intended major field; or has been deferred and has completed a specified program in the intended major at the post-baccalaureate level with a 3.00 or better grade-point average.
  - *Special Admission* may be given to persons who do not qualify for full admission under the criteria above but for whom there is reason to believe they can complete a graduate program. Department heads may recommend persons for *special admission* by attaching a statement to their recommendation elaborating their reasons. Persons admitted as special students must reapply for change in status and must be judged in accordance with the requirements for a new status.
  - *Special Non-Degree Admission* may be given to persons seeking to take particular courses but not working toward a degree. Each request for this category shall be judged on an individual basis. If a person accumulates 10 semester credits while in this category, the student's record must be reevaluated and recommendation provided by the admitting department for each additional course or program. Persons admitted as special non-degree students must reapply for any other status and be judged in accordance with the requirements for that status.
  - *Special Workshop* status is for persons permitted to take workshops for graduate credit *without being admitted to Graduate School*. Such permission is granted by the workshop director upon receipt of a signed statement of possession of a baccalaureate degree by the applicant, and terminates upon completion of this workshop. Students admitted to *special workshop* status must apply through regular channels for any other category. A limited number of 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 persons who are regularly enrolled graduate students in good standing in a degree program at another accredited university and have 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. Transient students are subject to the same rules and regulations as regularly enrolled students of The University of Akron.
  - *Undergraduate* status is for an undergraduate student at The University of Akron 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 semester (if a student does not have a 3.0 or better in his 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.
  - *Post-Doctoral* status is divided into three categories:
    - Fellows are those persons holding an earned doctorate who are engaged in advanced research. They shall be considered guests of the University and provided space and use of facilities within limits of practical need of the undergraduate and graduate programs. Tuition and fees shall be collected if allowed under sponsoring contract for any courses the Fellow may choose to take.
    - Specials are those persons holding an earned doctor's degree who desire an additional graduate degree. They 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
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subject to registration fees and program degree requirements.

- Guests are those persons holding an earned doctorate who desire to attend courses and seminars relevant to their work or interests without registering or receiving grades. A written application should be submitted to the dean of Graduate Studies and Research for each course taken, and approval of the instructor, department head and college dean shall be obtained. Guests are welcome to any course or seminar provided space is available. Normally, space and facilities for research cannot be provided for post-doctoral Guests 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.

## Standards: International Students

International students are normally admitted only in the fall and all credentials must be received by the Graduate School by June 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. International students seeking admission should not plan to leave their country until they have received notice of admission from the Graduate School.

Entering graduate students from countries other than the United States and those in which English is the major language in daily life are required to demonstrate high-level competence in the use of the English language, including reading, writing, speaking and listening. This competence can best be established by achieving a score of at least 550 on the TOEFL (the Test of English as a Foreign Language) and submitting it by June 1 for September admission. Because the TOEFL is given only four times a year in various parts of the world, applicants should make arrangements to take the test as soon as they contemplate study at The University of Akron. (TOEFL is administered by Educational Testing Service, Box 899, Princeton, NJ 08540, U.S.A.). If the TOEFL is not available, the applicant should contact the international student adviser, 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, students may be required to take an English language course for credit.

International students coming to The University of Akron in good standing from an accredited American college or university may have the English proficiency requirement waived upon written request.

## Non-Accredited American School Graduates

Students holding a baccalaureate degree from a non-accredited American college or university, if otherwise qualified, are normally required to complete at least 10 semester credits of post-baccalaureate work at a 3.0 level before they can be considered for admission to the Graduate School. The accreditation status of the school at the time of the student's graduation shall apply. Students should consult with the department head in their major field to develop a post-baccalaureate program.

## Grades

A student admitted to graduate study under any status at The University of Akron is expected to maintain a minimum 3.0 average (4.0=A) at all times. A grade-point average of 3.0 or better is required for graduation. Any student whose average falls below 3.0 is no longer in good standing in the Graduate School and considered on probation. In computing cumulative averages, "D" grades are treated as "F" grades. The dean of Graduate Studies and Research, with the approval of the department head, may dismiss anyone who fails to make satisfactory progress toward declared goals or who accumulates nine semester credits of "C" or below. The accumulation of six semester credits of "F" will result in mandatory dismissal. Students dismissed from the Graduate School for academic reasons may not be readmitted for one calendar year, and then only if evidence for expecting improved performance is submitted and found acceptable.

The grade of I (incomplete) may be given when work required in a course cannot be completed within the semester and there is a good reason for such failure. An incomplete must be completed during the next semester a student is enrolled or it is converted to an "F" grade.

The grade of IP (in progress) is normally given in research and thesis courses where the work is of a satisfactory level and is on a continuing basis. At the time work is completed, a single grade is given for all courses taken as IP.

## 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 his graduate education must be in good standing at the other school.

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## Course Load

A full load of coursework at the graduate level is normally 15 semester credits including audit. Students who are employed should reduce their academic load in proportion to the extent and obligations of such employment.

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## Registration

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

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## 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 performance. Information and procedure may be obtained from the head of the appropriate department.

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## Graduate Fees

All fees reflect charges in 1979-1980 and are subject to change without notice.

### Application Fee

This fee is not refundable under any circumstances \$20.00

### Tuition Fees

Resident student per credit	\$38.00
Non-resident student per credit (auditors pay same fees)	\$53.00

### General Service

9 or more credits per semester	\$24.00
8½ or fewer credits per semester	\$10.00

### Parking Permit Fee

9 or more credits per semester	\$30.00
8½ or fewer credits per semester	\$15.00
One summer session	\$10.00
Workshop participants	up to \$8.00

### Graduation Fees

Each degree	\$12.00
In absentia (additional)	\$2.00
Late application charge	\$5.00
Thesis and binding (payable at time of application for degree)	
Binding per volume	\$7.00
Microfilming (Ph.D. only) (payable at time of application for degree)	\$31.00

Change of schedule fee	\$4.00
Transcripts	\$2.00

Late Registration Fee	\$20.00
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## Refunds

Regulations regarding refunds are the same as for undergraduate students.

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## Commencement

Students earning graduate degrees are expected to participate in the Commencement exercises. Degree candidates who have legitimate reasons for graduating "In Absentia" should make a written request to the registrar within the established dates and pay the designated fee.

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## Financial Assistance

The University awards a number of graduate assistantships to qualified students. These assistantships provide a stipend of \$3,000 — \$4,800, plus remission of tuition and fees, and are available in all departments with graduate degree programs. Graduate assistants render service to the University through teaching, research and other duties. For information and/or applications, contact the head of the department.

A number of fellowships sponsored by industry and government agencies are available in some departments. Stipends range up to \$6,600. For information, contact the head of the department.

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

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## Master's Degree Requirements

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### 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 post-baccalaureate level. This may be recommended prior to beginning graduate work, or in some cases, can be done simultaneously.

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## 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.

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## Time Limit

All requirements must be completed within *six* years after beginning graduate level course work at The University of Akron or elsewhere. Extension of *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.

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## 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 of Akron.

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 fully-qualified students.

No graduate credit may be received for courses taken by examination or for 500-numbered courses previously taken as an undergraduate. No graduate credit may be received for courses taken in extension unless approved in advance by the department head and dean of Graduate Studies and Research.

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## Transfer Credits

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. They must be relevant to the student's program and fall within the six-year time limit. University of Akron students must receive prior approval to take courses elsewhere for transfer into their program.

Students 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 3.0 or better.

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## Optional Departmental 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.

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## Advancement to Candidacy

A student should apply for Advancement to Candidacy after completion of one-half of the credits required for the degree in the student's program but no later than September 15 for Commencement. Advancement to Candidacy forms are available in the Graduate School or from the department head. Advancement to candidacy will not be granted to a student who is not in good standing.

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## Graduation

To be cleared for graduation, a candidate must have completed coursework with a minimum average of 3.0; have been advanced to candidacy; filed an application for graduation with the registrar; paid all applicable fees; and met any other department and University requirements applicable.

If a thesis is required, two copies, properly prepared, are due in the Graduate School at least 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.

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## \*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. No specific number or sequence of courses constitutes a doctoral program or assures attainment of the degree. Formal degree programs consist 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.

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

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## Admission

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

A minimum grade-point average of 3.0 is required for graduation of candidates for all doctoral degrees.

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## 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 doctoral candidates in all programs is at least two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 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 *ten 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 University residence requirement will be met. Any special conditions must be described in detail 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.

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## Time Limit

All doctoral requirements must be completed within ten 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.

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## 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 of Akron.

Graduate credit may not be received for courses taken by examination or for 500-numbered courses previously taken as an undergraduate. Graduate credit may not be received for courses taken in extension unless approved in advance by the department head and the dean of Graduate Studies and Research.

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## 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 ten-year limit if beyond the master's level. Students already admitted to The University of Akron must receive prior approval to take courses elsewhere for transfer into their programs.

Students admitted with a master's degree or equivalent will have their work evaluated in relation to their programs to determine transfer credit. Credits transferable for master's degree holders may be up to 30 semester credits.

Students 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 3.0 or better.

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## Language Requirements

The foreign language requirement in all Ph.D. programs may be fulfilled by either of the following:

- 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
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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 students, 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.

In certain doctoral programs (counseling and guidance, elementary education, engineering, psychology, secondary education) the demonstration of competence in appropriate research skills may serve as a substitute for the foreign language requirement.

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## Optional Departmental Requirements

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

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## Advancement to Candidacy

A student must apply for Advancement to Candidacy by September 15 for Commencement. Applications for Advancement to Candidacy will not be accepted by the dean of Graduate Studies and Research until a substantial portion of the degree requirements have been completed. A student must be in good standing to be advanced to candidacy.

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## Dissertation and Oral Defense

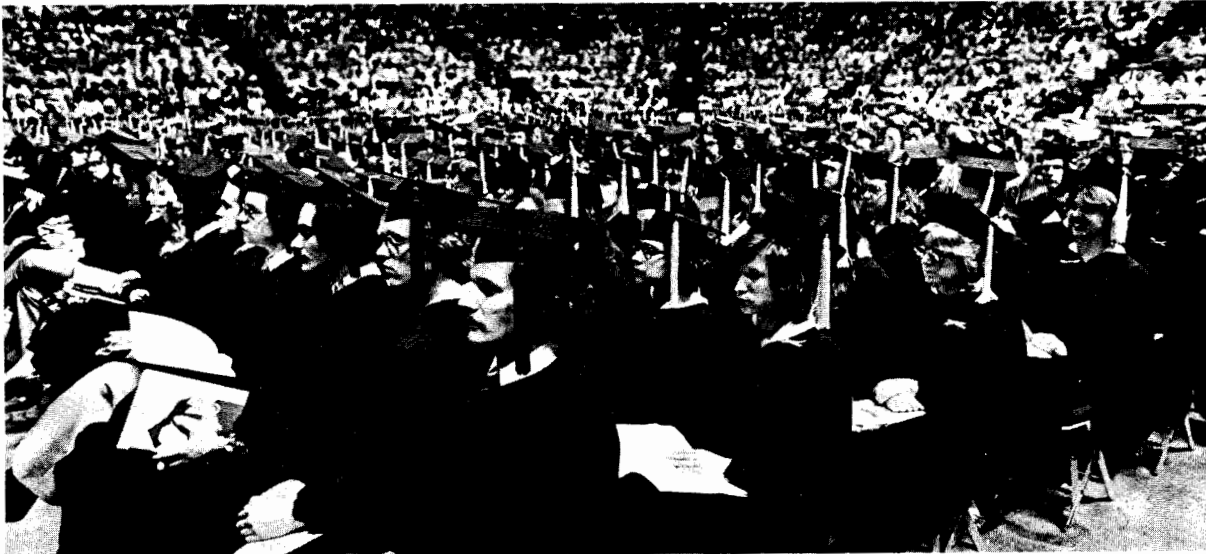
The ability to do independent research and demonstrate competence in scholarly exposition must be demonstrated by the preparation of a dissertation on some topic related to major subject. It should represent a significant contribution to knowledge, be presented in a scholarly manner, reveal the candidate's 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 entitled "Preparing a Thesis or Dissertation" is available in the Graduate School and all copies of the dissertation must conform to these instructions.

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## Graduation

To be cleared for graduation, a candidate must have completed the academic program with a grade-point average of at least 3.0; 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 applicable.



# The Buchtel College of Arts and Sciences

Claibourne E. Griffin, Ph.D., *Dean*

Paul S. Wingard, Ph.D., *Associate Dean*

Marlene Hathaway, M.A., *Assistant to the Dean*

## The 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 degree in chemistry, the Doctor of Philosophy degree in history, the Doctor of Philosophy degree in psychology and Doctor of Philosophy degree in polymer science. The Doctor of Philosophy degree in sociology is offered jointly with Kent State University.

### Doctor of Philosophy in Chemistry

In addition to satisfying the general requirements of the Graduate School, students working toward the Doctor of Philosophy degree in chemistry must meet the following requirements:

- Take proficiency exams in organic, inorganic, physical and analytical chemistry. Results of these exams will be used by the department for diagnostic purposes.
- Complete a course of study designed and accepted by the student's advisory committee. This course of study shall consist of a program deemed suitable to prepare the student in a designated area of chemistry, and shall consist of a minimum of 24 credits in graduate courses. Eight credits per semester shall be considered a normal load. At least 12 credits of graduate coursework and all dissertation credits must be completed at The University of Akron.
- Earn credit for a dissertation, to be established by enrollment in 3150:899, such that course credits plus dissertation credits total at least 84 credits (exclusive of Master of Science thesis).
- Pass cumulative examinations given approximately monthly. The candidate is urged to begin to take these examinations early in the graduate program, and must pass seven cumulative exams, six written and one oral, for the degree requirement.
- Pass an oral examination upon completion of the research dissertation.

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

### Doctor of Philosophy in History

The Doctor of Philosophy degree 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 the admission requirements of the Graduate 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, applicants 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 the English language.

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 which may be 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 a course of study selected by the student in consultation with an advisory committee. This will include:
  - Completion of 60 credits beyond Master of Arts 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, U.S. to 1865, U.S. since 1865, Latin America, Far East, (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 his/her 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.

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## 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 under the supervision of a departmental staff member in their own field. Research facilities of the Institute of Polymer Science are available for thesis research.

In addition to satisfying the general requirements of the Graduate School, students working toward the Doctor of Philosophy degree in polymer science must meet the following requirements:

- Complete a course of study prescribed by the student's advisory committee, based on their judgment of the student's background, and on the result of any special examinations they might impose. This course of study will consist of a minimum of, but usually more than, 36 credits in graduate courses, as outlined below, or their equivalent. At least 12 credits of graduate coursework, and all dissertation credits must be completed at The University of Akron.
- Credit for a dissertation, to be established by enrollment in 3940:899 such that course credits plus dissertation credits total 84 credits (exclusive of Master of Science thesis credit).
- Pass eight cumulative examinations which are given at intervals during the academic year. The candidate is urged to begin these examinations early in his graduate program.
- Passing an oral examination upon completion of the research dissertation.

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

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## Doctor of Philosophy in Psychology

The Department of Psychology offers a doctoral degree in psychology with specialization in industrial/organizational psychology, experimental/developmental psychology or industrial gerontological psychology.

Degrees will be awarded to students who, besides fulfilling the general requirements, have met the following specific requirements:

- Fulfill admission requirements of the Graduate School and Department of Psychology requirements.
  - Completion of master's degree including 30 graduate credits.
  - Completion of master's core courses or equivalent.
  - Graduate grade-point average of 3.25.
  - Graduate Record Examination Aptitude and Advanced Psychology Test.
  - Miller Analogies Test (MAT).
  - Three letters of recommendation.
  - Successful performance on Department of Psychology first-year examination.
- Major Field
  - Ninety minimum graduate credits including 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 industrial/organizational psychology or doctoral core courses, developmental psychology, or doctoral core courses in industrial gerontological psychology. Core courses are specified in the *Department of Psychology Graduate Student Manual*. Students are required to maintain at least a 3.00 GPA in core courses.
  - Completion of additional required and elective courses to be planned in conjunction with the student's faculty adviser and subject to approval by the department industrial/organizational, developmental or industrial gerontological psychology committees.
- Written Comprehensive Examinations
  - Satisfactory performance on doctoral written and oral comprehensive examinations in the major area of industrial/organizational psychology, developmental psychology or industrial gerontological psychology (Refer to *Department of Psychology Graduate Student Manual*).

- Dissertation Research
  - Completion of 3750:899 *Dissertation Research*.
  - Satisfactory performance on final oral examination and defense of dissertation research.
- Other Requirements
  - Refer to the *Department of Psychology 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 student's dissertation.

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## 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 regarded as one single graduate department. Coursework is offered at both campuses and faculty and students interchange freely.

The general objective of the Akron-Kent Ph.D. program is to train sociologists whose specialty includes a strong emphasis on urban processes.

### Admission to the Program

- Applying with a completed master's degree or equivalent, or
- Applying to the doctoral program after at least one year of full-time course work or equivalent (18 credits) in the sociology Master of Arts program at Akron. The coursework must include the Master of Arts core sequence. This type of admission is limited to students whose records clearly indicate both scholarly and research potential to do doctoral level work.

### Degree Requirements (for students admitted with the master's degree or equivalent)

In addition to meeting the general requirements of the Graduate School, students working toward the Doctor of Philosophy degree in sociology must meet the following requirements:

- *Seminar in Urban Processes* (3850:656) 3 credits.
- 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*).

- Two doctoral level courses in methods/statistics. These courses are to be selected from the predetermined group of courses (see *Department of Sociology Graduate Student Handbook*).
- Complete a substantive specialty of at least 15 credits.
- Complete a minimum total of 30 credits (semester) in coursework.
- Pass the doctoral comprehensive examination. This examination is given in the specialty area and will include an evaluation of methodology, theory and urban process relevant to the specialty area.
- Fulfill residency requirement of the Graduate School.
- Complete foreign language requirement by one of four sequences as detailed in the *Department of Sociology 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 students admitted without the master's degree)

In addition to meeting the requirements for students admitted with the master's degree, the student must meet the following requirements:

- Completion of the Master of Arts core coursework.
- Completion of a research practicum (3 credits). This may be waived for students who already have sufficient research experience.
- Completion of a minimum of 60 credits of graduate level (600 or higher) coursework beyond the bachelor's degree.

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## The 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, (French and Spanish), Philosophy, Physics, Political Science, Polymer 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 gradu-

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ate specialty have been met or that the student has performed work which the department approves as equivalent to an undergraduate major.

## Biology

### Master of Science

#### Thesis Option

This program is designed primarily for students who will pursue a research career, including those who intend to enter a doctoral program in the biological sciences.

- Coursework in addition to the master's research (must be approved by the student's advisory committee) — 24 credits.
- Research and thesis — 6 credits.
- Participation in seminars
- The student's advisory committee may require the demonstration of reading proficiency in a foreign language appropriate to the field of study.

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

#### Non-thesis Option

The curriculum is oriented to the needs of students for whom the Master of Science degree will probably be the terminal scientific degree and who do not need extensive research experience.

The requirements are the same as the research option except that no thesis and research is undertaken, but a total of 36 credits of approved coursework is required.

For additional details concerning selection of options, refer to the *Department of Biology, Graduate Student Guide*.

## Chemistry

### Master of Science

- \*Chemistry coursework — 24 credits.
- Research and Thesis — 6 credits.
- Participation in departmental seminars
- Demonstration of reading proficiency in a foreign language appropriate to the field of study prior to the last semester of enrollment.

\*With approval of advisory committee 12 credits may be taken in mathematics or physics with permission of the committee.

## Economics

### Master of Arts

#### Thesis Option

A minimum of 30 credits of coursework including a thesis equivalent to six credits of the 30 credits is required.

#### Non-Thesis Option

A minimum of 30 credits of coursework 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:

	<i>Credits</i>
**3250:520	Mathematical Economics I 3
**3250:528	Statistical Applications in Economics 3
3250:602	Macro-Economic Analysis I 3
3250:611	Micro-Economic Theory I 3

Exceptional departures from these requirements may be approved with the permission of the graduate faculty and department head. A comprehensive examination is intended to test the candidate's knowledge of economic theory and the chosen field of specialization.

### \*\*\*Labor and Industrial Relations Option

#### • Core Requirements:

3250:526	Statistical Applications 3
3250:610	Framework of Economics Analysis 2
3250:633	Theory of Wages and Employment 3
3250:634	Collective Bargaining I 3
3250:635	Labor Law I 3

#### • Additional Requirements (select one of the two tracks)

##### Industrial Relations Track

3250:636	Collective Bargaining II 3
3250:637	Labor Law II 3

##### Labor/Management Track

3250:531	The Economics of Human Resources 3
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#### • 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
3850:649	Sociology of Work 3

#### • A total of 30 credits is required for the degree.

\*\*These courses may be waived for students who can demonstrate, in a qualifying exam, that they have adequate preparation in mathematics and statistics.

\*\*\*Students should have an ABA degree from an accredited college or university and some background in labor and industrial relations. Interested students who have no background may take the following courses:

3250:201-2	Principles of Economics 6
3250:330	Labor Problems 3
3470:251-7	Introductory Statistics 7

## English

### Master of Arts

Thirty credits of course work (at least 16 of these must be at the 600 level) are required. The program will include the following unless previously taken:

		<i>Credits</i>
3300:506	Chaucer	3
3300:570	History of the English Language or	3
3300:670	Modern Linguistics	3
3300:615	Shakespearean Drama	3
3300:691	Bibliography and Literary Research	2

A thesis (330:699) or two thesis essays are required. 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.

## French

### Master of Arts

- Thirty-two credits of graduate work, which may include a thesis amounting to four credits.
- Core Requirements:
  - Literature — 16 credits.
  - Culture — 8 credits.
  - Linguistics — 8 credits.
- Admission Requirement:  
Proficiency level of listening comprehension, speaking, reading and writing French.
- Second Language Requirement:  
The candidate will be required to demonstrate a reading knowledge of a modern foreign language other than French. Choice of the second language will be left to the student in consultation with an adviser.
- Final Comprehensive Examinations:  
The candidate will be required to pass both a written and oral final examination covering all areas of study included in the candidate's program.

## Geography

### Master of Arts

#### Master of Science

- \*Complete a minimum of 30 credits (exclusive of research) of which 16 must be in geography

\*In Master of Arts degree, at least 24 credits must be in coursework.

courses. A minimum of 12 credits (exclusive of thesis) must be at the 600 level. The 30 credits must include the following:

		<i>Credits</i>
3350:581	Introduction to Geographic Research	2
3350:583	Introduction to Spatial Analysis	2
3350:687	History of Geographic Thought	3

- Thesis (Master of Arts only) — 4-6 credits.
- Statistics (Master of Science only) — 8 credits.
- Successful completion of a comprehensive examination administered by the departmental committee.

Students who have 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 of Geography must be approved by the department prior to enrollment.

## Geology

### Master of Science

- Complete a minimum of 30 credits with a 3.0 grade-point average. At the beginning of the program, the student must take a proficiency examination covering the following areas:
  - The Solid Earth
  - Earth History
  - The Atmosphere and Hydrosphere
  - Earth-Space Relationships
- The student who demonstrates a lack of basic knowledge in one or more of these areas will be required to complete appropriate undergraduate courses. At least one-third of the minimum degree credits shall be at the 600 level.
- Required courses for all areas of specialization:
 

3370:699	Thesis Research	6
**3370:596	Geology Field Camp	6
3370:680	Seminar in Geology	2

One course in each of the areas of solid earth, earth history, atmosphere and hydrosphere and earth space relations.

- Pass a written comprehensive examination after the completion of 18 credits. The written comprehensive examination may be attempted two times only.
- Specialization in engineering geology or geophysics requires one undergraduate year in chemistry and physics and one course in calculus. Specialization in environmental geology or earth science requires the completion of a minimum of one undergraduate year

\*\*Required only if not taken as an undergraduate student.

of biology, chemistry or physics and one course in calculus. Deficiencies in undergraduate preparation can be satisfied by appropriate courses taken concurrently with graduate studies.

#### Geology

A minimum of six credits from each of the two following groups — solid earth and earth history.

#### Earth Science

Attainment of a balanced knowledge of all four basic areas as determined by the advisers and demonstrated by the student's comprehensive examination.

The program of the student who will become a teacher of earth science must also include a minimum of three credits in 5300:780 *Seminar in Secondary Education: Earth Science*.

#### Geophysics

Completion of the following courses:		Credits
3650:531	Mechanics	3
3650:536	Electricity and Magnetism	3

Completion of a minimum of six credits from the following:

3370:541	Fundamentals of Geophysics	3
3370:546	Exploration Geophysics	3
4300:518	Soil and Rock Exploration	

#### Engineering Geology

This program is for the graduate engineer and geologist who wishes to broaden his expertise in the other field. Entering students who have some deficiencies in either engineering or geology may have to satisfy one or more of the following requirements while proceeding with graduate studies.

3370:101	Introductory Physical Geology	4
3370:210	Geomorphology	3
3370:350	Structural Geology	4
3450:221,2	Analytical Geometry Calculus I and II	8
3450:223	Analytical Geometry Calculus III	4
4300:201	Statics	3
4300:202	Introduction to Mechanics of Solids	3
4300:311	Geotechnical Engineering	5
4600:310	Fluid Mechanics	3

#### Required Courses:

3370:631	Rocks and Minerals	4
4300:611	Fundamentals of Soil Behavior	2
4300:614-5	Foundation Engineering I and II	6

#### Environmental Geology

##### Required Courses:

3370:574	Ground Water Hydrology	3
3370:541	Fundamentals of Geophysics	2
3370:570	Geochemistry	3
3370:631	Rocks and Minerals	4
3370:678	Urban Geology	3

Six to eight credits or courses may be selected from biology, geography and/or engineering with the approval of an adviser.

## History

### Master of Arts

Students must have had at least 15 semester or 22 quarter credits in undergraduate history courses. Per-

sons who have not taken 3400:405/505 *Historical Methods* or its equivalent must complete this course in addition to the 30 credit degree requirements.

Students who plan to do doctoral work must demonstrate a reading knowledge of one foreign language within the first year of residency or on completion of 18 credits. The thesis adviser, or the director of master's studies, or both, may require a student to have a reading knowledge of a specific language or mastery of a particular research skill if pertinent to the student's field of study. In other cases, a reading knowledge of one foreign language is desirable but not mandatory.

In consultation with the adviser, students select three fields of study from the following: ancient medieval Europe, Renaissance to 1815; Europe 1815 to present; England and the empire; United States to 1865; United States since 1865; Latin America; Far East and history of science. A third field may be selected from a cognate discipline such as political science or economics. If all three fields are taken in history, one of the fields must be unrelated to the first two. Credits will be distributed among the three fields according to each person's needs. At least 11 of the minimum 30 credits must be at the 600 level, excluding individual reading.

Comprehensive written examinations, appropriate to the level of scholarship expected in major and minor fields are required. If the student does not pass these examinations unconditionally, the examining faculty may reexamine the student orally or require a written examination or examinations be retaken after a lapse of three months.

If the candidate has not had a course in historiography, 3400:689 *Historiography* must be included in the minimum program of 30 credits.

#### Thesis Option

A minimum of 30 credits which must include a research seminar, a satisfactory thesis and field examinations. A board of at least three faculty members will conduct a final oral examination which will include a defense of the thesis and the relationship of the thesis to the major field.

#### Non-Thesis Option

A minimum of 30 credits which must include a research seminar, at least two pro seminars and field examinations. The seminar paper must be read, approved and awarded no less than a grade of "B" by the seminar adviser and at least one other faculty member to be designated by the director of master's studies.

## Mathematical Sciences

### Master of Science — Mathematics

#### • Core Requirements:

		Credits
3450:611	Algebraic Theories I	3
3450:612	Algebraic Theories II	3

		Credits
3450:621	Functions of a Real Var I	3
3450:622	Functions of a Real Var II	3
3450:692	Mathematics and Statistics Seminar	2

In addition, six credits in a single approved area of concentration in mathematics or statistics must be completed.

- With the consent of the department, up to six credits of approved graduate level electives outside the department may be submitted in thesis or non-thesis options.
- A comprehensive exam, taking the form suggested by the department.

#### Non-Thesis Option

Thirty credits of graduate work are required. Ten additional credits in 500/600 level mathematics or statistics courses must be completed.

#### Thesis Option

Thirty credits of graduate work, including four credits of thesis work are required. Eight additional credits in 500/600 level mathematics or statistics courses and two credits in 3450:699 *Research and Thesis* must be completed.

### Master of Science — Statistics

- Core Requirements:

3450:610	Matrix Algebra	3
3450:692	Mathematics and Statistics Seminar	2
3470:564	Experimental Design II	2
3470:650	Advanced Probability	3
3470:651-2	Mathematical Statistics I and II	6
3470:665	Regression and Correlation	3
3470:655	Linear Models	3

- 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.
- A comprehensive exam, taking the form suggested by the department must be completed.

#### Non-Thesis Option

Thirty credits of graduate work are required. Eight additional credits in 500/600 level mathematics or statistics courses must be completed.

#### Thesis Option

Thirty credits of graduate work, including four credits of thesis work are required. Six additional credits in 500/600 level mathematics or statistics courses and two credits in 3450:699 *Research and Thesis* must be completed.

### Master of Science — Applied Mathematics

- Core Requirements:

3450:610	Matrix Algebra	3
3450:621	Functions of a Real Var I	3
3450:625	Anal Function Theory	3
3450:627	Adv. Numerical Analysis I	3
3450:633-4	Continuous Systems I and II	6
	or	
3450:635-6	Discrete Systems I and II	6

		Credits
3450:692	Mathematics and Statistics Seminar	2
*3470:552	Theoretical Statistics II	3

- With the consent of the department, six credits of approved graduate level electives in a single area of concentration outside the department may be substituted in the thesis or non-thesis option.
- A comprehensive exam taking the form suggested by the department.

#### Non-Thesis Option

Thirty credits of graduate work are required. Seven additional credits in 500/600 level mathematics and statistics courses must be completed.

#### Thesis Option

Thirty credits of graduate work, including four credits of thesis work are required. Five additional credits in 500/600 level mathematics or statistics courses and two credits in 3450:699 *Research and Thesis* must be completed.

## Philosophy

### Master of Arts

- Attain a minimum of 2.75 grade-point average in undergraduate work, a minimum 2.75 grade-point average in major area, complete the Graduate Record Examination or Miller Analogies Test and secure three letters of recommendation.
- Have completed at least four quarter or semester courses in undergraduate philosophy or a major in some related area. Students with inadequate background in philosophy will be expected to make up the deficiency.
- Complete at least 30 semester credits with a 3.0 cumulative grade-point average.
- Complete:

3600:615	Seminar in the History of Philosophy (3 credits) or equivalent in study of three different philosophers	9
	Value Theory	One course
	Logic	One course

- Pass a comprehensive examination in the history of philosophy and two others from the following fields:
  - Logic, philosophy of science and methodology
  - Value theory, including ethics, aesthetics and social and political philosophy
  - Epistemology and metaphysics
- Demonstrate mastery of a second language by written translation.
- Complete a thesis under departmental supervision after passing the comprehensive examination.

\*Or equivalent statistics courses as determined by the department.

## Physics

### Master of Science

- Complete 30 credits with a 3.00 cumulative grade-point average.
- Required Courses:

		<i>Credits</i>
3650:601-2	Atomic and Nuclear Physics I and II	6
3650:651-2	Theoretical Classical Physics I and II	6
3650:681	Quantum Mechanics I	3

- A comprehensive examination, taking the form suggested by the department must be passed; the fields covered will include classical mechanics, quantum mechanics, electricity and magnetism, atomic and nuclear physics, thermodynamics and optics.
- Graduate research participation is strongly encouraged. Up to five credits may be earned in 3650:697 *Graduate Research*, upon the satisfactory completion of a graduate research project. One additional credit may, upon approval by the department, be permitted in 3650:699, *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

- Pass a comprehensive examination covering one field to be determined in conjunction with a departmental adviser.
- Complete 3700:640 *Seminar in Political Behavior* and at least one graduate seminar in each of the following areas:

#### American Government and Politics

		<i>Credits</i>
3700:630	Seminar in National Politics	3
3700:641	Seminar in Intergovernmental Relations	3
3700:660	Seminar in Civil Liberties and the Judicial Process	3
3700:680	Seminar in Urban and Regional Politics	3
3700:670	Seminar in the Administrative Process	3

#### Comparative Politics

3700:620	Seminar in Comparative Politics	3
3700:626	Seminar in Politics of Developing Nations	3

#### International Politics

3700:610	Seminar in International Politics	3
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#### Political Theory

3700:600	Seminar in Political Theory	3
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In exceptional cases, with the approval of the graduate adviser, and the head of the department, the student may be permitted to omit a graduate seminar in one of these areas and to substitute another graduate level course in its place.

In certain cases, at the discretion of the department head, candidates may be asked to take undergraduate courses to overcome serious deficiencies.

### Non-Thesis

Thirty credits of graduate work, at least 18 credits of which must be at the 600 level in political science. Each student must submit two high-quality seminar papers for approval by a departmental committee of three persons chosen by the department head.

### Thesis Option

Thirty credits of graduate work, at least 18 credits of which (including thesis) must be at the 600 level in political science. Six credits of thesis. Thesis topic and completed thesis must be approved by student's thesis committee.

## Polymer Science

### Master of Science

- A minimum of 24 credits in appropriate courses in biology, chemistry, mathematics, physics, polymer science and engineering as prescribed by the student's advisory committee.
- Completion of a research project (3940:699) and the resulting thesis — 6 credits.
- Attendance at and participation in seminar-type discussions scheduled by the department.

## 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.
  - Grade-point average of 3.0 in psychology courses.
  - Graduate Record Examination, Aptitude and Advanced Psychology Test.
  - Miller Analogies Test.
  - Two letters of recommendation.
- Course Requirements:
  - Completion of a minimum of 30 credits of graduate psychology courses including the Master of Arts core courses or equivalents, Master of Arts required courses and electives as specified in the *Department of Psychology Graduate Student Manual*.
  - Students are required to maintain at least a 3.0 grade-point average in Master of Arts core courses as well as overall.

- **Master of Arts Examination: First Year**
  - Thesis Option: Qualifying examination covering core course subject area.
  - Non-Thesis Option: Written and oral comprehensive examinations in the specialty area.
- **Other Requirements:**
  - Refer to the *Department of Psychology Graduate Student Manual* for additional guidelines and details.
  - Complete and fulfill general master's degree requirements of the Graduate School.

**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 psychology, clinical/counseling psychology or developmental psychology.

**Thesis Option**

Completion of a minimum of 30 credits of graduate work including thesis.

**Sociology****Master of Arts**

- Complete three required core courses with at least a 3.0 grade-point average.

		<i>Credits</i>
3850:603	Sociological Research Methods	3
3850:604	Social Research Design	3
3850:617	Sociological Theory	3

**Non-Thesis Option**

This degree option is intended for students who want intensive substantive training in a specialized area.

Completion of 32 credits of graduate work. No more than six credits can be taken at the 500 level.

Completion of at least 15 credits in a contracted specialty area. This area must be defined in consultation with the student's adviser and approved by the graduate studies committee. Courses from other departments may be taken to meet the specialty requirement.

Pass a two-hour oral examination on the specialty area.

**Thesis Option**

This degree option is intended for students who either plan on eventually pursuing a Ph.D. degree, or whose work will require the ability to conduct evaluation/research.

Completion of 32 credits of which at least 21 must be at the 600 level in sociology or anthropology (excluding 3850:699, *Thesis*, and 3850:697, *Readings in Contemporary Sociological Literature*.)

Complete at least 6 credits in 3850:699 *Thesis*. No more than six credits will count toward the degree.

Completion of master's thesis and successful oral defense.

**Spanish****Master of Arts**

- **Core Requirements:**

Thirty-two semester credits of graduate work, which may include a thesis amounting to 4 credits:

literature — 16 credits.  
culture — 8 credits.  
linguistics — 8 credits.
- **Admission Requirement:**

Proficiency level in listening comprehension, speaking, reading and writing Spanish.
- **Second Language Requirement:**

The candidate will be required to demonstrate a reading knowledge of a modern foreign language other than Spanish. Choice of the second language will be left to the student in consultation with an adviser.
- **Final Comprehensive Examinations:**

The candidate will be required to pass both a written and oral final examination covering all areas of study included in the candidate's program.

**Urban Studies****Master of Arts**

- **Core Requirements:**

3980:600	Basic Analytical Research	3
3980:601	Advanced Research and Statistical Methods	3
3980:602	American Urban Development	3
3980:690	Urban Studies Seminar	3

**Basic Program:**

Complete thirty-four credits of coursework as follows:

- Core requirements — 12 credits.
- Selection from a list of recommended courses — 6 credits.
- Urban related courses — 16 credits.

**Public Administration Option:**

Forty credits of coursework (plus internship where applicable) as follows:

- Core requirements — 12 credits.
- Other Urban Studies required courses in public administration — 15 credits.
- Selection from a list of recommended courses — 13 credits.
- Internship for students without professional public employment experience — 1-3 credits.

**Urban Planning Option:**

Forty-eight credits of coursework (plus internship where applicable) as follows:

- Core requirements — 12 credits.
- Urban Studies required courses in urban planning — 17 credits.
- Selection from a list of recommended courses — 19 credits.

- Internship for students without professional planning experience — 1-3 credits.

Courses may be taken outside the Department of Urban Studies for the purpose of fulfilling any of the above requirements, 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.



# The College of Engineering

Coleman J. Major, Ph.D., *Dean*

Joseph A. Edminister, M.S.E., J.D., *Assistant to the Dean*

## The Doctor of Philosophy in Engineering

Interdisciplinary programs in environmental engineering, materials science, mechanics, systems engineering and transport processes are offered through the College of Engineering. In addition to the general requirements of the Graduate School, a student must hold a bachelor's degree in a curriculum accredited by the Engineers' Council for Professional Development at the time of his 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. The student must also:

- Successfully complete a qualifying examination before completing either 10 credits of coursework after admission in the program or within two 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, generally 60 for course work and 30 for dissertation, must be earned.
- Pass a candidacy examination which may be taken after ninety percent of the coursework specified in the plan of study has been completed.
- Register for dissertation credits according to the schedule available from the dean of engineering.
- Pass an oral examination in defense of the dissertation.

The student advisory committee shall specify the student's language requirements. The appropriate

\* Students without a B.S. in Engineering but with a baccalaureate degree in a related field may be accepted for graduate studies but the student will be required to make up the undergraduate deficiencies for which the student will not receive graduate credit.

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.

## The Master's Degree

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

### Master of Science in Chemical Engineering

#### Thesis Option

		<i>Credits</i>
4200:604	Transport Phenomena	3
4200:610	Classical Thermodynamics	3
4200:615	Chemical Reaction Engineering	3
	*Chemical Engineering Electives	6
	Approved Electives	6
	Approved Mathematics	3
	Thesis	6

The thesis must be satisfactorily defended in an oral examination. Students must pass a comprehensive examination. Students are expected to attend and participate in the Department of Chemical Engineering seminars.

#### Non-Thesis Option

4200:604	Transport Phenomena	3
4200:610	Classical Thermodynamics	3
4200:615	Chemical Reaction Engineering	3
	*Chemical Engineering Electives	6
	Approved Electives	18
	Approved Mathematics	3

Students must pass a comprehensive examination and are expected to attend and participate in the Department of Chemical Engineering seminars.

### Master of Science in Civil Engineering

#### Thesis Option

	Civil Engineering Coursework	15
	Approved Mathematics or Science	3
	Approved Electives	6
	Thesis	6

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



The thesis must be satisfactorily defended in an oral examination.

**Non-Thesis Option**

	<i>Credits</i>
Civil Engineering Coursework	15
Approved Mathematics or Science	3
Approved Electives	12
Special Problem	2

**Master of Science in Electrical Engineering**

At the beginning of their program, students are required to take a comprehensive proficiency examination on six undergraduate topics covering circuit theory, circuit applications, electronics, electromagnetic fields, machines and power and controls. Students who demonstrate a lack of knowledge in one or more of these areas will be required to successfully complete appropriate undergraduate courses. Topic outlines are available from the departmental office.

**Thesis Option**

3650:581-2	Methods of Mathematical Physics I and II	6
4400:641	Random Signal Analysis	3
4400:651	Electromagnetic Fields	3
	*Electrical Engineering Electives	8
	Approved Engineering, Mathematics or Science	4-8
	Thesis	4-6

The thesis must be satisfactorily defended in an oral examination.

**Non-Thesis Option**

3650:581-2	Methods of Mathematical Physics I and II	6
4400:641	Random Signal Analysis	3
4400:651	Electromagnetic Fields	3
	*Electrical Engineering Electives	8
	Approved Engineering, Mathematics or Science	10

Students must pass a graduate level oral comprehensive examination which may be taken after 24 credits have been completed.

**Master of Science in Mechanical Engineering**

**Thesis Option**

**Mechanical Engineering Coursework	15
Approved Mathematics	3
**Approved Electives	6
Thesis	6

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

The thesis must be satisfactorily defended in an oral examination.

**Non-Thesis Option**

	<i>Credits</i>
**Mechanical Engineering Coursework	15
Approved Mathematics	3
**Approved Electives	12
Special Problem	2

**Master of Science in Engineering**

This program is intended for those students whose educational objectives cannot be met by one of the four departmental programs.

**Thesis Option**

Engineering Coursework	12
Approved Mathematics or Science	3
Approved Electives	9
Thesis	6

The thesis must be satisfactorily defended in an oral examination.

**Non-Thesis Option**

Engineering Coursework	18
Approved Mathematics or Science	3
Approved Electives	9
Special Problems	2

The overall program is administered by the dean of the College of Engineering. Students should declare to the dean of the College of Engineering their intention to study toward the Master of Science in Engineering degree before the completion of ten graduate credits. Later admission to the program may be granted upon petition to the dean of the College of Engineering.

Upon admission, the dean will appoint an advisory committee consisting of at least two faculty members selected from the faculties of 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.

\*\*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 fifteen credits of mechanical engineering coursework. For students specializing in systems and controls, and 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 fifteen credits of mechanical engineering courses. Prior written approval from the student's adviser must be obtained. The limitations on 500 level courses still apply in each category for students in systems and controls.

# The College of Education

H. Kenneth Barker, Ph.D., *Dean*  
 Don Birdsell, Ph.D., *Assistant Dean*  
 Walter Yoder, Ed.D., *Assistant to the Dean*

## The Doctor of Philosophy Degree

Programs leading to the Doctor of Philosophy degree in elementary education, secondary education and guidance and counseling are offered through the College of Education. The degree will be awarded to students who, in addition to filling the general requirements of the Graduate School, have met the following specific requirements:

- Completion of the Miller Analogies Test.
- A minimum of 90 graduate credits (including a 30-credit master's program where applicable), including the doctoral dissertation. Students considered deficient in any area may be required to take additional courses.
- The completion of a foundation studies program designed to prepare the student generally before specialization.
- The completion of preliminary examinations on the foundation studies areas and the major field of concentration.
- Successful completion of an examination in a language judged not to be the student's native tongue.
  - Students in the Department of Counseling and Special Education may elect to develop appropriate research skills prescribed by their adviser in lieu of the foreign language requirements.
  - Students in the Department of Elementary Education may elect to develop appropriate alternative research skills prescribed by their adviser, subject to review by the department head, depending upon the career goal of the student, and upon the academic and/or scientific requirement of the dissertation in lieu of the foreign language requirement.
  - Students in the Department of Secondary Education may elect to develop appropriate research skills prescribed by their adviser, subject to review by the department head in lieu of the foreign language requirement.
- The completion of at least eight credits in a cognate area.

- The completion of final written and oral examinations in the student's major field of concentration.
- The completion of a dissertation comprising not more than 20 credits. The oral examining committee must be constituted of at least five full-time staff members, one of whom must be from outside the College of Education.
- Pass the general requirements for the Doctor of Philosophy degree.

The Ph.D. program in counseling has been approved by the Ohio State Board of Psychology "as being a doctoral program equivalent to one in psychology." Candidates completing the program, as approved by the Board of Psychology, may, after an appropriate period of supervised experience, qualify to take the psychologist license examination.

## The Doctor of Education Degree

Admission procedures and requirements for this degree are the same as those for the Doctor of Philosophy degree program except for the following:

- The Bernreuter Scale, Watson-Glaser and Guilford-Zimmerman examinations are substituted for the Miller Analogies Test.
- The language requirement is waived.

## Foundation Studies Education — Doctoral Program Requirements

### Behavioral Studies

		<i>Credits</i>
5100:620	Behavioral Bases of Education	3
	or	
5100:624	Seminar in Educational Psychology	3
5100:721	Learning Processes	3
	or	
5100:725	Teaching Behavior and Instruction	3

### Humanistic Studies

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

### Social and Philosophical

5100:600	Philosophies of Education	3
	or	
5100:604	Seminar in Cultural Foundations of Educ.	3
	or	
5100:602	Comp. and International Education	3
5100:705	Seminar in Social-Philosophical Found.	3

**Research**

5100:640	Techniques of Research	3
5100:741	Statistics in Education	3
5 - - :899	Dissertation	10-20

**The Master's Degree**

Programs of advanced study leading to the degree of Master of Arts in education, Master of Science in education and Master of Science in technical education are offered.

Students who expect to earn the master's degree for advancement in the field of teaching must have met the general requirements for admission to the Graduate School and must be qualified to hold a standard teaching certificate. Exceptions to this latter requirement will be made for qualified students who do not wish to teach or perform duties in the public schools provided they present or acquire an appropriate background of study or experience. Students who expect to earn the master's degree in guidance and administration also should have had successful teaching experience. A physical examination may be required if and when indicated. Any student who exhibits a deficiency in English or other skills may be required to correct it before recommendation for an advanced degree.

All students must complete a minimum of nine credits in foundation studies in education:

5100:620	Behavioral Bases of Education	3
	or	
5100:624	Seminar in Educational Psychology	3
5100:600	Philosophies of Education	3
	or	
5100:604	Seminar in Cultural Foundations of Educ.	3
5100:640	Techniques of Research	3

**Programs**

**Elementary Education**

**Objectives**

- Knowledge
  - the nature of the elementary school
  - the organization of the elementary school and its curriculum
  - the application of theory
- Skills
  - ability to assess curricular needs
  - ability to select appropriate materials
  - ability to develop appropriate learning activities

- Attitudes and Values
  - belief in the humanistic approach to education
  - awareness and concern for the welfare of one another
  - ability to accept those that are different

**Program**

- Foundation Studies Courses — 9 credits.
- Elementary Education:
 

5200:630	Elementary School Curriculum & Instruc.	2
*5200:780	Seminar in Elementary Education	4-8
5200:699	Research in Education	2
- Electives — 9-13 credits.

Total Credits 30

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. Elective courses should be planned with the graduate adviser.

This program is intended primarily for the student who expects to progress as a teacher in elementary schools.

**Secondary Education**

**Objectives**

This program is intended to prepare the teacher of grades seven through twelve for the following areas: master teacher, department head, supervisor and resource teacher. Students planning to major in physical education should consult their advisers for alternate course requirements. This program may also serve as preliminary preparation for those who wish to apply for the Doctor of Philosophy degree in secondary education.

**Program**

- Foundation Studies Courses — 9 credits.
- Secondary Education:
 

5300:780	Seminar in Secondary Education: Improvement of Instruction in the area of concentration	2
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- Ten credits from the following:
 

5300:619	Secondary Curriculum and Instruction	2
5300:721	Supervision of Instruction	2
5300:525	Reading Programs in Secondary Education	2
**5300:780	Seminar: Secondary Education Topics: Senior High Junior High Computer Assisted Instruction Individualized Instruction	2
5300:895	Field Experience	1-6

\* Two seminars are required.

\*\* Only two seminars for this option may be counted towards the degree.

5400:505	Vocational Education for Youth and Adults	Credits 2
5300:699	Masters Problem or Thesis	1-4
<ul style="list-style-type: none"> <li>• Area of Concentration (500 level or above) — 10 credits.</li> <li>• Electives — 2 credits.</li> </ul>		
Total Credits		33

## Elementary School Principal

### Objectives

- Provide students with an understanding of the elementary school and its history, its present purpose and its future potential.
- Assist prospective administrators in perceiving the role of the elementary principal and determining whether it appeals to them as a career choice.
- Provide students with the opportunity to experiment with alternate leadership styles in order to determine how they might best lead.
- Coordinate classroom activities with field experiences in order to exercise students' administrative skills and test their ability to relate their understandings to performance.

### Program

- Foundation Studies Courses — 9 credits.
- Administration:
 

5200:630	Elementary School Curriculum and Instruction	2
5700:631	Elementary School Administration	2
5200:732	Supervision of Instruction in the Elementary School	2
5600:602	Intro to Counseling	2
5700:601	Principles of Educational Administration	3
5700:610	Principles of Educational Supervision	3
5700:697	Field Experience for the Elementary Administrator	2
5700:699	Master's Problem or Thesis	2
5700:797	Field Experience for the Elementary Administrator	2
- Elective courses should be planned with the graduate adviser. This program is intended primarily for the student who expects to progress as a principal or administrator in the elementary schools — 3 credits.

Total Credits 30

## 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 in the secondary school.
- Develop within the individual student the ability to communicate successfully with individuals and groups.
- Work with individuals and groups successfully to improve the educational program.
- Implement the technical aspects of secondary education.

### Program

- Foundation Studies Courses — 9 credits.
- Administration:

		Credits
5700:696	Field Experience for the Secondary School Administrator	3
5600:602	Intro. to Counseling	2
5300:619	Secondary School Curriculum and Instruction	2
5700:620	Secondary School Administration	3
5700:610	Principles of Educational Supervision	3
5700:601	Principles of Educational Administration	3
5700:607	Legal Basis of Education	2
5300:721	Supervision of Instruction in the Secondary School	2
5300:780	Seminar: Secondary Education: The Junior High School	2
5400:505	Vocational Education for Youth and Adults	2
	or	
5700:710	Principles of Curriculum Development	3
Total Credits		33-34

## Supervisor

### Program

- Foundation Studies Courses — 9 credits.
- Major Field:
 

5700:710	Principles of Curriculum Development	3
*5200:630	Elementary School Curriculum and Instruction	2
**5300:619	Secondary School Curriculum and Instruction	2
***5610:601	Seminar: Special Education Curriculum Planning	3
5700:610	Principles of Educational Supervision	3
*5200:732	Supervision of Instruction Elementary School	2
**5300:721	Supervision of Instruction Secondary School	2
***5610:602	Supervision of Instruction Special Education	3
5700:695	Field Experience of Supervisors	2
- With the approval of the adviser, 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
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\*Required only of elementary students.

\*\*Required only of secondary students.

\*\*\*Required only of special education students.

		<i>Credits</i>
5100:741	Statistics in Education	3
5700:740	Theories of Supervision	3
5700:699	Master's Problem or Thesis	2
	Total Credits	30

## Local School Superintendent

### Objectives

The elements of the local superintendent program will enable the student to:

- Communicate effectively.
- Organize and operate a curricular program.
- Supervise and evaluate a teaching and support staff.
- Prepare, coordinate and carry out a budget and appropriation plan.
- Analyze, evaluate and articulate the legal aspects of education.
- Design, systemize and coordinate a school facilities plan.

### Program

- Foundation Studies Courses — 9 credits.
- Major Field:

5700:601	Principles of Educational Administration	3
5700:605	Decision-Making Theory and Practice in Educational Administration	3
5700:606	Evaluation of Educational Institutions	3
5700:607	Legal Basis of Education	2
5700:608	Principles of School Finance	2
5700:610	Principles of Educational Supervision	3
5700:710	Principles of Curriculum Development	3
5700:604	School and Community Relations	2
5700:895	Field Experience for the Superintendent	2
5700:699	Master's Problem or Thesis	2
	Total Credits	34

## Counseling and Special Education

Selected program offerings in the Department of Counseling and Special Education are available to persons 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, special education and visiting teacher. Persons who meet program prerequisites and who have earned a master's degree may matriculate as non-degree students and pursue programs that lead, in selected areas, to certification.

## Elementary School Counseling Certification Program

### Program

- Foundations Studies Courses — 9 credits.
- Major Field:

		<i>Credits</i>
5600:600	Seminar in Counseling	1
5600:631	Elementary School Guidance	3
5600:643	Counseling: Theory and Philosophy	3
5600:645	Group Testing in Counseling	3
5600:647	Career Counseling: Theory and Practice	3
5600:651	Techniques in Counseling	3
5600:653	Group Counseling	3
5600:657	Consultant: Counseling	3
5600:659	Organization and Administration of Guidance Services	3
5600:661	Seminar in Elementary School Counseling	2
5600:675	Practicum in Counseling	4
5610:540	Developmental Characteristics of Exceptional Individuals	3
	Total Credits	43

## Secondary School Counseling Certification Program

### Program

- Foundation Studies Courses — 9 credits.
- Major Field

5600:600	Seminar in Counseling	1
5600:633	Secondary School Guidance	3
5600:643	Counseling: Theory and Philosophy	3
5600:645	Group Testing in Counseling	3
5600:647	Career Counseling: Theory and Practice	3
5600:651	Techniques in Counseling	3
5600:653	Group Counseling	3
5600:659	Organization and Administration of Guidance Services	3
5600:663	Seminar in Secondary School Counseling	2
5600:675	Practicum in Counseling	4
5610:540	Developmental Characteristics of Exceptional Individuals	3

- Electives — 2 credits.

Total Credits 42

## Community and College Counseling

### Program

- Foundation Studies Courses — 9 credits.
- Counseling:

5600:600	Seminar in Counseling	1
5600:635	Community and College Counseling	3
5600:643	Counseling: Theory and Philosophy	3
5600:645	Group Testing in Counseling	3

		<i>Credits</i>
5600:647	Career Counseling: Theory and Practice	3
5600:651	Techniques of Counseling	3
5600:653	Group Counseling	3
5600:665	Seminar in Community and College Counseling	3
5600:675	Practicum in Counseling	4

- Electives — 6 credits.

Total Credits	41
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## Special Education

A program of studies in special education will be selected from the following course listings. Students in special education who hold certification prior to enrollment in Graduate School must choose a program focus emphasizing one of the following areas: supervision, clinical practice, early childhood, developmental disabilities, school educational consultant or some other focus to meet an individual's educational need. Elective options may be utilized to meet state certification requirements for teaching the mentally retarded child, the learning and/or behavioral disordered child or the orthopedically handicapped child. However, the master's degree can be completed with or without meeting requirements for special education certification depending on program selection. Certification as a special education supervisor may also be pursued in combination with other departments.

At least one-half of the master's degree program must be 600 level courses and at least 20 credits must be within special education. The minimum program requirement is 35 credits.

### Program

- Foundation Studies Courses — 9 credits.
- Departmental Core (required of all candidates):
 

5600:651	Techniques of Counseling	3
5610:540	Developmental Characteristics of Exceptional Individuals	3
	or	
5610:543	Developmental Characteristics of Learning Disabled Individuals	3
5610:556	Classroom Behavior Management of Exceptional Individuals	2
5610:603	Assessment and Educational Programs in Special Education	3
5610:604	Educational and Management Strategies for Parents of Exceptional Individuals	3
- Departmental Option — Master's paper (candidate required to choose one):
 

5610:600	Seminar in Special Education	3
5610:699	Special Education — Thesis or Problem	3
- Electives: Select from the following areas of consultation with an adviser:
 

Psychology	Sociology
Educational Foundations	Elementary Education

Secondary Education Counseling	Physical Education
Inner-City Education	Special Education
Family Ecology	Educational Administration
	Speech Pathology and Audiology

### Options

Students must elect a program from one of the following:

- Supervision — Certification Program:

Requires completion of the following courses, 27 months of classroom teaching with the identified handicapped and a master's degree.

		<i>Credits</i>
*5100:600	Philosophies of Education	3
*5100:620	Behavioral Bases of Education	3
*5100:640	Techniques of Research	3
5700:610	Principles of Educational Supervision	3
5700:710	Curriculum Development	3
5610:601	Seminar: Special Education Curriculum Planning	3
5610:602	Supervision of Instruction Special Education	3
5700:695	Field Experience — Supervisors	2
		23

- Clinical Practice — Special Education:

5610:557	Clinical Teaching Practicum: Children with Learning Problems	3
5610:695	Field Experience — Master's Electives to complete program.	3

- Early Childhood — Special Education:

5610:450	Educational Adjustment: Preschool and Primary Level Exceptional Children	3
5610:695	Field Experience — Master's Electives to complete program.	3

- Developmental Disabilities:

5610:554	Educational Adjustment: Moderately-Severely and Profoundly Retarded	3
5610:695	Field Experience — Master's Electives to complete program.	3

- School Educational Consultant — Special Education:

5610:605	Program Development and Service Delivery Systems — Special Education	3
5610:695	Field Experience — Master's Electives to complete program.	3

- Other programs can be developed to meet individual needs.

## Visiting Teacher or School Social Worker Certification Program

Inquiry related to program requirements and admission standards should be addressed to the Department of Counseling and Special Education.

\*A part of foundation core courses.

## Multicultural Education

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

### Objectives

- to acquire/extend knowledge of:
  - early, recent and current literature and research on multicultural education and culturally different learners.
  - majority and subculture value systems, family life styles, child rearing practices and language patterns as they relate to educational programming.
- to strengthen/develop skills that demonstrate ability to:
  - determine appropriate motivational, instructional and management techniques for multicultural populations.
  - construct and adapt materials appropriate to education that is multicultural.
- to express/demonstrate attitudes that
  - promote the concepts of cultural pluralism and equality of educational results.

### Program

- Required Courses:

	<i>Credits</i>
5630:581 Multicultural Education in the United States	3
5630:582 Characteristics of Culturally Different Youth	3
5630:686 Seminar: Education of the Culturally Different	2
5300:760 Seminar in Secondary Education	2
5300:780 Seminar in Secondary Education	2
5600:645 Group Testing in Counseling	3
5100:640 Techniques of Research	3

- Electives in related special fields in education — 17 credits.

Total Credits 35

## Physical Education

### Program

- Foundation Studies Courses — 9
- Required Courses:

5550:699 Research in Education	1-3
or	
5550:695 Field Experience Master's	1-6
5550:536 Adapted Physical Education for the Learning Disabled Child	2
5550:601 Administration of Health, Physical Education, Recreation and Athletics	3

		<i>Credits</i>
5550:603 Curriculum Planning in Health and Physical Education		2
5550:605 Physiology of Muscular Activity and Exercise		2
5550:606 Measurement and Evaluation in Physical Education		3
5550:608 Supervision of Physical Education		2
• Electives agreed on by the adviser to meet special student needs — 9 credits.		
Total Credits		<u>30</u>

## Outdoor Education

### Options

- \*Elementary Education

5560:450/550 Application of Outdoor Education to the School Curriculum	4
5560:452/552 Methods, Materials and Resources for Teaching Outdoor Education	3
5560:695 Practicum in Outdoor Education	3
Total	<u>10</u>

- \*Secondary Education

5560:450/550 Application of Outdoor Education to the School Curriculum	4
5560:452/552 Methods, Materials and Resources for Teaching Outdoor Education	3
5560:695 Practicum in Outdoor Education	3
Total	<u>10</u>

## Technical Education

The major objective of the technical education program is to prepare instructors 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 program requires completion of 32 credits.

### Program

- Foundation Studies Courses — 9 credits.
- Professional Technical Education:

5400:510 The Two-Year College	3
5400:521 Instructional Techniques in Tech Ed	4
**5400:530 Course Construction in Technical Ed	2

- Teaching Internship:

Students entering the program without teaching experience are required to take a teaching internship at a cooperating two-year institution.

5400:690 Internship: Teach Vocational Education	2
or	

\*In addition to other requirements peculiar to elementary and secondary programs.  
 \*\* Students selecting the vocational home economics option may take 5400:511 Vocational Home Economics in place of 5400:530. Students selecting this option must take an additional two credits in a course emphasizing the adult in vocational education.

		<i>Credits</i>
5400:691	Internship: Teach Technical Education	2
	or	
5400:692	Internship: Teach Post-Secondary Ed.	2

Students in vocational home economics programs without teaching experience must take a teaching internship at a cooperating two-year institution under the Ohio Board of Regents. Students who already hold a four-year provisional certificate in home economics and who desire certification in vocational high school home economics may select the internship experience in a vocational high school.

- Elective credits may support the student's field of specialization, add to the student's general education or be professional education courses — 0-4 credits.
- Other Requirements:  
Work experience in technical occupation is also required; the number of years is determined by the student's other qualifications.

**Options**

Select one for a total of 8-13 credits.

- Teaching:  
An approved schedule of technical courses selected from the offerings of the Graduate School. Course selections will be determined on the basis of the student's academic and professional background.
- Guidance — Option A (must be taken in sequence):
 

5600:635	Community and College Counseling	3
5600:647	Career Counseling Theory and Practice	3
5800:675	Practicum in Counseling	4
- Guidance — Option B:  
5600:635 Community and College Counseling 3  
5600:647 Career Counseling Theory and 3  
5600:645 Group Testing in Counseling 3  
Select one of the following:  
5600:649 Counseling and Personnel Services in Higher Education 2  
5600:665 Seminar: Community and College Counseling 3  
5600:526 Career Education 2
- Curriculum and Supervision:  
5700:610 Principles of Educ. Supervision 3  
5700:710 Principles of Curriculum Development 3  
Elective in Curriculum or Supervision 2
- Vocational Home Economics — Family Life (select 8-9 credits from the following):  
7400:501 Family Life Patterns in the Economically Deprived Home 2  
7400:601 Family in Transition 2  
7400:602 Family: Lifespan 2  
7400:603 Family: Middle and Later Years 2

		<i>Credits</i>
7400:651	Family Law	2
7400:697	Individual Investigation in Family Life	1-4
• Vocational Home Economics — Child Care and Development, Job Training Specialization (select 8-9 credits from the following):		
7400:501	Family Life Patterns in the Economically Deprived Home	2
7400:560	Organization and Supervision of Child Care Centers	3
7400:616	Infant and Child Nutrition	2
7400:660	Programming for Child Care Centers	2
7400:665	Development in Infancy	2
7400:698	Individual Investigation in Child Development	1-4
Total Credits		32

**School Psychologist**

**Program**

- Foundation Studies Courses — 9-10 credits.
- Major Field:
 

5610:540	Developmental Characteristics of Exceptional Individuals	3
5610:543	Developmental Characteristics of Learning Disabled Individuals or Classroom Behavior Management for Exceptional Children	3
5610:556	Counseling: Theory and Philosophy	2
5600:643	Theories of Psychotherapy	3
- Program Requirements:
 

5100:741	Statistics in Education	3
5800:845	Group Testing in Counseling or Psychological Tests and Measurements	3
3750:510	Personality	4
3750:500	or Theories of Personality	3
3750:704	Methods and Theories of Human Development	4
5620:601	or Cognitive Function Models: Principles Educational Planning	3
3750:702	Principles and Practices of Individual Intelligence Testing	4
3750:700	Survey of Projective Techniques	2
5620:600	Seminar: Role and Function of School Psychologist	3
5620:610	Educational Diagnosis for the School Psychologist	4
5620:611	Practicum in School Psychology	4
	8 credits required (register for two semesters)	
5620:899	School Psychology: Thesis or Problem	1-3
Total Credits		47-51

The student completing this program of study who holds a valid Ohio teaching certificate must complete a full-time nine-month internship in a school setting and concurrently complete the associated seminars as follows:

5620:630	Internship: School Psychology	3
5620:631	Internship: School Psychology	3



		<i>Credits</i>
5620:640	Field Seminar I: Issues and Assessment	2
5620:641	Field Seminar II: Classroom Environment	2

The student completing this program, including the internship experiences, who does not hold a valid Ohio teaching certificate, must complete the following course pattern:

5200:630	Elementary School Curriculum and Instruction	2
5700:631	Elementary School Administration	2
5225:661	Diagnosis of Reading Problems	5
5620:695	Field Experience: Master's	3
5100:600	Philosophies of Education	3

## Certification as a Reading Supervisor

### Objectives

- The student will develop an understanding of the reading process and its relationship to allied areas of study.
- The student will evaluate the reading strengths and weaknesses of children by diagnosing and recommending procedures of remediation.
- The student will write case studies of several different types of reading disabilities in a supervised setting.
- The student will investigate the organization of remedial programs in the schools and in reading clinics.

### Program

To qualify as a reading supervisor, the student must have a minimum of three years of successful teaching experience and a master's degree or its equivalent in credits, which includes the following program:

- Foundation Studies Courses — 9 credits.

- Required Reading Courses:

5250:692	Adv. Study and Research in Reading Instruction	3
5250:693	Supv. and Curr. Dev. in Reading Instruction	2
*5250:681	Diag. of Reading Problems	5
5250:682	Clin. Pract. in Reading	5
5200:780	El. Ed. Sem: Chil. Lit-Rdg.	2
5200:899	Research in Education	2
• Two credits from the following list of electives:		
5800:592	Workshop in Reading	2
5250:511	Mat. and Org. in Rdg. Instr.	3
5250:680	Trends in Rdg. Instr.	2
5200:780	El.Ed. Sem: Reading	2
Total Credits		30

Students in graduate programs with other areas of concentration may elect any specialized course in reading, provided they meet the prerequisites.

\*This course previously listed as a Master's Degree requirement. Students must complete at least one graduate level reading course prior to enrolling in 5250:681. Courses 681 and 682 must be taken in sequential order.

## Certification as Administrative Specialist: School and Community Relations

### Program

- Foundation Studies Courses — 9 credits.
- Required Courses:

		<i>Credits</i>
5700:601	Principles of Education Administration	3
5700:604	School and Community Relations	2
5700:605	Decision-Making Theory and Practice	3
5700:606	Evaluation of Educational Institutions	3
5700:607	Legal Basis of Education	2
5700:608	Principles of School Finance	2
5700:610	Principles of Educational Supervision	3
5700:710	Principles of Curriculum Development	3
5700:732	Organizational Communications and the School Administrator	3
7600:686	Studies in Communication Media	3
7600:687	Studies in Communication Media	3
7600:688	Studies in Communication Media	3
5700:695	Field Experience — Superintendent	2
5700:699	Research in Education (Master's Thesis or Problem)	2
Total Credits		46

## Sixth Year Program: City School Superintendent

### Program

- Required Courses:

5700:601	Principles of Education Administration	3
5700:605	Decision-Making Theory and Practice in Educational Administration	3
5700:606	Evaluation of Educational Institutions	3
5700:604	School and Community Relations	2
5700:607	Legal Basis of Education	2
5700:608	Principles of School Finance	2
5700:701	School Buildings and Construction	2
5700:703	Administration of Staff Personnel	2
5700:610	Principles of Educational Supervision	3
5700:710	Principles of Curriculum Development	3
5100:701	History of Education in American Society	3
	or	
5100:703	Seminar: History and Philosophy of Higher Education	3
5100:600	Philosophies of Education	3
	or	
5100:604	Topical Seminar in Cultural Foundations of Education	3
5100:620	Behavioral Bases in Education	3
	or	
5100:624	Seminar: Educational Psychology	3
5100:723	Teacher Behavior and Instruction	3
	or	
5100:721	Learning Processes	3
5100:840	Techniques of Research	3
5100:741	Statistics in Education	3

		<i>Credits</i>
*5700:699	Master's Problem or Thesis	2
5700:895	Field Experience — Superintendent	<u>2</u>
	Total	45-47

- \*\*Elective Courses — 13-15 credits.

- Other Requirements:

The candidate will engage in a period of full-time study for at least one semester. This requirement may be fulfilled during one full summer session.

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## Educational Foundations

This program area is designed for either those students interested in improving present educational skills or those students 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 adviser. Emphasis

\*Required of those completing the master's degree.

\*\*Electives should be selected with adviser's approval.

can range from advanced instructional technology to traditional studies in educational psychology or the social/philosophical aspects of education. A thesis is required.

## Program

- Foundation Studies Courses — 9 credits.

- \*\*\*Departmental Requirements

Students will earn a minimum of 15 credits, excluding thesis, within the Department of Educational Foundations. These credits will be distributed between humanistic studies and behavioral studies with a minimum of 9 credits from one of these areas and 6 credits from the other (college requirements may be included). 15

• Thesis		
5100:699	Research in Education	3-4
• Inter-Departmental Electives		
	A minimum of 6 credits will be taken outside the Department of Educational Foundations	<u>6</u>
	Total Credits	30

\*\*\*After accumulating 20 credits, students will take a written qualifying examination. Student and program committee will then determine the remainder of the program.



# The College of Business Administration

James W. Dunlap, Ph.D., *Dean*

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## The Masters Degree

The College of Business Administration (CBA) offers graduate programs which lead to the degrees of Master of Business Administration, Master of Science in Accounting, Master of Science in Management and Master of Taxation in Accounting. The University of Akron 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 450 graduate students, the community and regional business organizations. To meet its urban objectives, the College of Business Administration offers graduate courses only in the evening hours between 5:00 and 10:30 p.m. The master's programs are designed to service those who work full time and wish to pursue a master's program on a part-time basis.

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## Admission Policy

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

- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,000 or more points based upon the overall undergraduate grade-point average (A=4.0) times 200 plus the Graduate Management Admissions Test (GMAT) score.
- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,050 or more points based on the junior-senior (i.e., last 64 semester or 96 quarter credits) GPA (A=4.0) times 200 plus the GMAT score.
- Hold a degree from outside the United States and have an academic standing of first or high second class, satisfactory evidence of competence in English (i.e., TOEFL score of 550 or above and a score of at least 450 on the GMAT).

- Take the Graduate Management Admissions Test (GMAT) and have the results 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, applicants should register for it sufficiently in advance to the filing of the graduate application so their 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 (formerly called the ATGSB) more than five years ago are required to retake it.

## Comment

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 serviced among those eligible. As a result, offers of admission may be limited to only the most qualified of the eligible applicants as determined by the CBA Graduate Admissions Committee. The committee will consider the following in making decisions: the difficulty of the applicant's undergraduate program; the length of time and activities since graduation; and the percentile ranking on the GMAT. Applicants are expected to score at least in the 55th percentile on the GMAT — approximately 480 — in order for an offer of admission to be extended.

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 grade-point average (GPA) upon the completion of 12 graduate credits will be dismissed from the program.

In rare instances, applicants who have taken the GMAT but do 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.

All applications and accompanying documentation are evaluated simultaneously by the Graduate Admissions Committee (GAC). The GAC meets only four times approximately four weeks after each GMAT date. The applicant will be informed in writing of the GAC's decision approximately one week after it meets.

## Requirements

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

- Meet the time limit and grade-point requirements of the Graduate School.
- Complete the minimum credits indicated in each of the degree descriptions.
- Complete all the specific course requirements in Phase I, II and III of each respective master's program.

In all programs, some or all of the requirements of Phase I may be waived, and the student may be awarded advanced standing depending upon the academic background of the individual. Phase I, II and III courses can be taken concurrently provided that all prerequisites have been met.

## Master of Business Administration

The Master of Business Administration program is designed to give the student a general knowledge of the functional areas of business and permit the concentration of study in one of the five following areas: accounting, finance, management, marketing or international business. Three phases of coursework are required: Phase I (foundation courses), MBA Phase II (core courses) and MBA Phase III (areas of concentration courses). The program consists of 54 graduate semester credits. Phase I courses may be waived for those who have had previous study in the areas.

### \*Phase I: Foundation Courses

		Credits
3250:600	Foundation of Economic Analysis	3
6200:601	Financial Accounting	3
6400:602	Managerial Finance (6200:601 or equiv.)	3
6500:600	Management Concepts, Practices and Theory	3
6500:601	Qualitative Decision Making	3
6600:600	Managerial Marketing	3
		18

### Phase II: Required Core Courses

6200:610	Accounting Management and Control (6200:601 or equivalent)	3
6400:650	Administering Costs and Prices (3250:600 or equivalent)	3
6400:655	Government and Business (3250:600 and 6500:600 or equivalents)	3
6400:674	Financial Management and Policy (6200:610)	3
6500:662	Quantitative Methods in Operations Management (6500:601 or equivalent)	3
6500:652	Organizational Behavior (6500:600 or equivalent)	3
6600:660	Marketing Management and Policy (6600:600 or equivalent)	3

\*Those seeking the MBA accounting concentration degree must also have equivalent preparatory coursework in intermediate and cost accounting.

6500:655	Business Strategy and Policy (this course is restricted exclusively to those students who will complete their master's program within two semesters)	3
	** Elective (any graduate credits offered by the College of Business but not in the area of concentration chosen)	3
	Total	27

## Phase III: Area of Concentration Courses

There are five areas of concentration in the MBA program from which the student must select one. Each concentration has a non-paper and master's report (paper) option. Those who elect the paper option are required to register for the seminar course twice (non-concurrently). The required courses and electives for each area of concentration and its paper option or non-paper option are presented below. Elective selection is at the discretion of the student within the specified restrictions provided the course prerequisites have been met.

NOTE: Phase I graduate credits and graduate workshop course credits cannot be used for Phase II, III electives. Also, those students who have taken a 400 level course for undergraduate credit at The University of Akron (or an equivalent course elsewhere) are ineligible to register for and earn graduate credit for the corresponding 500 level graduate course. Examples are *Tax I, Auditing, Marketing Research*, etc.

### Accounting Paper Option

6200:637	Advanced Accounting Theory (6200:318 or equiv. and 6200:610)	3
6200:699	Seminar in Accounting (3+3) (15 post MBA Phase I credits)	6
	Phase II and III Total Credits	36

### Accounting — Non-Paper Option

6200:637	Advanced Accounting Theory (6200:318 or Equiv. and 6200:610)	3
	Electives (Any 6 graduate credits of accounting (department 6200))	6
	Phase II and III Total Credits	36

### Finance Paper Option

6400:699	Seminar in Finance (3+3) (15 post MBA Phase I credits)	6
	Electives (Any 3 graduate credits of finance (department 6400))	3
	Phase II and III Total Credits	36

### Finance — Non-Paper Option

	Electives (Any 9 graduate credits of finance (department 6400))	9
	Phase II and III Total Credits	36

\*\* Students may petition the director, in writing, for permission to enroll in a course related to their field of study in another college of the University.

<b>Management — Paper Option</b>		<i>Credits</i>
6500:653	Organizational Theory & Policy Form (6500:652)	3
6500:699	Seminar in Management (3+3) (15 post MBA Phase I credits)	
	Phase II and III Total Credits	36

<b>Management — Non-Paper Option</b>		
6500:653	Organizational Theory and Policy Form. (6500:652)	3
	Electives	6
	Any 6 graduate courses of management (department 6500)	
	Phase II and III Total Credits	36

<b>Marketing — Paper Option</b>		
6600:699	Seminar in Marketing (3+3) (15 post Phase I credits)	6
	Electives	3
	Any 3 graduate credits of marketing (department 6600)	
	Phase II and III Total Credits	36

<b>Marketing — Non-Paper Option</b>		
	Electives	9
	Any 9 graduate credits of marketing (department 6600)	
	Phase II and III Total Credits	36

<b>International Business — Paper Option</b>		
Reading and conversational proficiency in one language other than English.		
6600:690	Seminar in International Business (3+3)	6
	Electives	3
	(Must be approved by the director of Graduate Programs in business)	
	Phase II and III Total Credits	36

<b>International Business — Non-Paper Option</b>		
Reading and conversational proficiency in one language other than English.		
	Electives	9
	(Must be approved by the director of Graduate Programs in business)	
	Phase II and III Total Credits	36

6500:601	Quantitative Decision-Making	3
6600:600	Managerial Marketing	3
		18

**Post Baccalaureate (PB) Foundation Courses:**

6200:301	Cost Accounting (3250:600 and 6200:601 or equivalents)	3
6200:317	Intermediate Accounting I (6200:601 or equivalent)	4
6200:318	Intermediate Accounting II (6200:317)	4
6400:321	Business Law I	3
6400:322	Business Law II (6400:321)	3
6500:409	Business Policy	4
		21

**Phase II: Core Courses**

6200:610	Accounting Management and Control (6200:601 or equivalent)	3
6200:637	Advanced Accounting Theory (6200:318 or equiv. and 6200:610)	3
6200:655	Information Systems (6200:610)	3
6400:650	Administering Costs and Prices (3250:600 or equivalent)	3
6400:674	Financial Management and Policy (6400:602 or equiv. and 6200:610)	3
	MS Phase II Total Credits	15

**Phase III: Area of Concentration**

Paper or non-paper option is required. Before selection the student is to consult with the head of the Department of Accounting. Those who elect the paper option are required to register for the seminar course twice (non-concurrently). Phase I graduate credits and graduate workshop course credits cannot be used for Phase III electives. Also, those students who have taken a 400 level course for undergraduate credit at The University of Akron (or an equivalent course elsewhere) are ineligible to register for and earn graduate credit for the corresponding 500 level graduate course. Examples are *Tax I, Tax II, Auditing, Advanced Accounting, etc.*

**Master of Science in Accounting**

The Master of Science in Accounting program is designed to give the student limited exposure to the functional areas of business and a detailed concentration in accounting. Three phases of coursework are required. Phase I consists of specialized graduate and post baccalaureate foundation courses. Phase II consists of the accounting core courses and are all required. Phase III consists of electives from which the student can elect the paper option or the non-paper option. Phase I courses may be waived for those who have had previous study in the areas.

**Phase I: Foundation Courses**

**Graduate Foundation Courses:**

		<i>Credits</i>
3250:600	Foundation of Economic Analysis	3
6200:601	Financial Accounting	3
6400:602	Managerial Finance (6200:601 or equivalent)	3
6500:600	Management Concepts, Practices and Theory	3

**Paper Option**

6200:699	Seminar in Accounting (3+3) (15 post Phase I credits)	6
	Electives	9
	Any 6 graduate credits of Accounting (department 6200) and any 3 graduate credits offered by the College of Business (departments 6200, 6400, 6500, or 6600)	
	Phase II and Phase III (Option A) Total Credits Required	30

**Non-Paper Option**

	Electives	15
	Any 12 graduate credits of Accounting (department 6200) and any 3 graduate courses offered by the College of Business (departments 6200, 6400, 6500 or 6600)	
	Phase II and Phase III (Option B) Total Credits Required	30

## Master of Taxation in Accounting

The Master of Taxation program is a professional degree designed to provide timely 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 three phases of coursework: Phase I: foundation courses; Phase II: required courses; and Phase III: elective courses.

### Phase I: Foundation Courses

All are required except for those who have earned baccalaureate, graduate or professional, i.e., law, coursework credit which is equivalent in content.

		<i>Credits</i>
3250:600	Foundation of Economic Analysis	3
6200:601	Financial Accounting	3
6400:602	Managerial Finance (6200:601)	3
6500:600	Management Concepts	3
6500:601	Quantitative Decision Making	3
6600:600	Managerial Marketing	3
6400:320	Legal Environment of Business	4
6500:409	Business Policy	4
6200:430	Taxation I	3
6200:431	Taxation II	3
	Total	32

### Phase II: Required Courses

6200:630	Tax Research and Planning	3
6200:631	Corporate Taxation I	3
6200:632	Taxation of Transactions In Property	3
6200:633	Estate and Gift Taxation	3
	Total	12

### Phase III: Electives

(18 semester credits of which at least 12 must be in taxation)

6200:641	Taxation of Partnerships and Subchapter S Corporations	3
6200:642	Corporate Taxation II	3
6200:643	Tax Accounting	2
6200:644	Income Taxation of Trusts & Estates	2
6200:645	Advanced Individual Taxation	3
6200:646	Consolidated Tax Returns	2
6200:647	Deferred Compensation	2
6200:648	Tax Practice and Procedure	2
6200:649	State and Local Taxation	2
6200:650	Estate Planning	2
6200:651	U.S. Taxation of Transnational Opera.	2
6200:652	Tax Exempt Organizations	2
6200:653	Business Planning	2
6200:654	Individual Studies	1-3
	or other electives (not more than six credits) by consent of the program director	
	Total	18

## Master of Science in Management

The Master of Science in Management program is designed to provide those students with strong quantitative backgrounds an opportunity to pursue advanced study utilizing their previously acquired knowledge. Students with undergraduate training in engineering, mathematics and the physical sciences will apply their skills to management problem solving and decision making along quantitative lines. Three phases of coursework are required. Phase I consists of foundation courses. Phase II consists of selected electives and Phase III is comprised of required courses. Phase I courses may be waived for those who have had previous study in the areas.

### Phase I: Foundation Courses

		<i>Credits</i>
3250:600	Foundation of Economic Analysis	3
6200:601	Financial Accounting	3
6400:602	Managerial Finance (6200:601 or equivalent)	3
6500:600	Management Concepts, Practice and Theory	3
6500:601	Quantitative Decision-Making	3
6600:600	Managerial Marketing	3
	MS Phase I Total Credits	18

### Phase II: Selected Electives

(two required)

6200:610	Accounting Management and Control (6200:601 or equivalent)	3
6400:674	Financial Management and Policy (6200:610)	3
6600:660	Marketing Management and Policy (6600:600 or equivalent)	3
	MS Phase II Total Credits	6

### Phase III: Required Courses

6500:654	Industrial Relations (6500:600 and equivalent)	3
6500:671	Advanced Operations Research (6500:601)	3
6500:672	Manufacturing and Operation Analysis (6500:601)	3
6500:652	Organizational Behavior (6500:600 or equivalent)	3
6500:653	Organizational Theory and Policy Form. (6500:652)	3
6500:663	Applied Industrial Statistics I (6500:601)	3
6500:664	Applied Industrial Statistics II (6500:663)	3
6400:655	Government and Business (3250:600 and 6500:600 or equivalent)	3
6500:699	Seminar in Management (3+3) (15 post Phase I credits)	6
	Phase II and III Total Credits	30

# The College of Fine and Applied Arts

Gerard L. Knieter, Ed.D., *Dean*  
 Kelvie Comer, Ed.D., *Assistant to the Dean*

## The Master's Degree

### Home Economics and Family Ecology

A program of study is offered leading to the Master of Arts degree in Home Economics and Family Ecology with an emphasis in either family development or child development. Prior to acceptance in the program, the student must meet the following conditions:

- The general requirements for admission to the Graduate School.
- The standard requirements for an undergraduate major in the proposed area of graduate study or preparation which has been accepted as equivalent by the department head and the department graduate faculty.

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 options with a minimum of 32 credits.
- 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 a creative, historical or experimental design.

The internship option involves the design, development, implementation and evaluation of original and creative programs and/or resource materials pertaining to family and/or child development. Part of the internship experience may take place in a community based agency which serves families and/or children.

A written proposal for either the thesis or internship option must be submitted at the completion of approximately 20 credits of graduate study.

- Complete eight credits in a cognate field outside the major area. These courses, selected in consultation with the student's graduate faculty adviser, must represent a cohesive focus pertaining to the student's area of preparation and professional goals. Suggested cognate areas include guidance and counseling, gerontology, mass media, psychology, sociology and special education.

- Pass a written comprehensive examination over major and minor areas after the completion of at least 20 credits of graduate work.
- Apply for Advancement to Candidacy upon successful completion of 25 credits of graduate study, the written comprehensive examination and an approval prospectus for a thesis or internship.
- Pass an oral examination covering the thesis or internship report.

### Child Development Option

- Core Program:

		<i>Credits</i>
7400:501	Family Patterns in Economically Deprived Homes	2
7400:560	Org. and Supr. of Child Care Centers	2
7400:585	Seminar in Analysis and Interpretation of Family Literature	3
7400:585	Seminar in Parent/Child Relations	2
7400:616	Infant and Child Nutrition	2
7400:660	Programming Child Development Centers	2
7400:665	Development in Infancy	2

- Thesis or Internship (select one):

7400:699	Thesis Student must have background in research design and statistical analysis appropriate to proposed research.	5
	or	
7400:690	Internship Student must have 7400:342 <i>Community Involvement</i> or equivalent.	5

- Cognates (outside home economics and family ecology) — 8 credits.
- Electives — 4 credits.

### Family Development

- Core Program:

7400:501	Family Patterns in Economically Deprived Home	2
7400:585	Seminar in Parent/Child Relations	2
7400:601	Family in Transition	2
7400:602	Family: Lifespan Perspective	2
7400:603	Family: Middle and Later Years	2
7400:651	Family Law	2
7400:585	Seminar: Analysis and Interpretation of Family Literature	3

- Thesis or Internship (select one):

7400:699	Thesis Student must have background in research design and statistical analysis appropriate to proposed research.	5
	or	
7400:690	Internship Student must have 7400:342 <i>Community Involvement</i> or equivalent.	5

- Cognates (outside home economics and family ecology) — 8 credits.
- Electives — 4 credits.

## Music

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

- The standard requirements for an undergraduate major in the area of proposed graduate specialty or performance which the department head approves as equivalent to an undergraduate major.
- A 2.75 or better grade average or 3.0 for the last two years, and a 3.0 average or better in the major field.
- The Graduate School's general requirements for admission.
- The performance option requires an audition on the student's major instrument. Please contact the coordinator of graduate studies for an audition time.

For the performance option in voice, Italian and German are required. If the student has lack of background in any of these language requirements, auditing of undergraduate courses is required.

- Within the composition option, compositions representing the applicant's composition techniques are required.
- Ensemble requirements are made for all options. Students are to sign for ensembles with their major adviser at the beginning of each semester.

The student should consult with the coordinator of graduate studies in music for additional information regarding the individual nature of each option.

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

### Music Education Option

- Core Courses — 9 credits:

		<i>Credits</i>
7500:615	Musical Styles and Analysis (Chant through Palestrina)	2
7500:616	Musical Styles and Analysis II (Baroque through early Beethoven)	2
7500:617	Musical Styles and Analysis III (late Beethoven through Mahler/Strauss)	2
7500:618	Musical Styles and Analysis IV (Twentieth Century)	2
7500:619	Theory Pedagogy	2
7500:621	Historical Survey: Music of Middle Ages & Renaissance	2
7500:622	Historical Survey: Music of the Baroque	2
7500:623	Historical Survey: Music of the Classic & Romantic Eras	2
7500:624	Historical Survey: Music of the Twentieth Century	2
7520:5--	Applied Music	4

- Required Courses — 13 credits:

5100:640	Techniques of Research	3
7500:611	Foundations and Principles of Music Education	3
7500:612	Practices and Trends in Music Education	3
7500:614	Measurement and Evaluation in Music	2
7500:699	Master's Thesis (approved by committee)	2

- \* Music Electives — 6 credits:

7500:555	Advanced Conducting	2
7500:502	Workshop in Music	4
7500:551	Introduction to Musicology	2
7500:553	Bibliography and Research	2
7500:560-564	Repertoire and Pedagogy	3
7500:601	Choral Literature	2
7500:604	Development of Opera	2
7500:697	Advanced Problems in Music	1-3
7500:542	Applied Composition	4

- \* Cognate Electives — 4 credits

Total 32

### Composition Option

- Core Courses — 16 credits:

7500:555	Advanced Conducting	2
7500:615	Musical Styles and Analysis I (Chant through Palestrina)	2
7500:616	Musical Styles and Analysis II (Baroque through early Beethoven)	2
7500:617	Musical Styles and Analysis III (late Beethoven through Mahler/Strauss)	2
7500:618	Theory Pedagogy	2
7500:---	Ensemble (participation in 2, one hour ensembles required)	
7520:542	Applied Composition	8

- Required Courses — 9 credits:

7500:601	Choral Literature	2
7500:618	Musical Styles and Analysis IV (Twentieth Century)	2
7500:624	Historical Survey: Music of the Twentieth Century)	2
7500:647	Master's Chamber Recital	1
7500:699	Master's Thesis (composition approved by committee)	2

- Music Electives — 4 credits:

7500:502	Workshop in Music	4
7500:551	Introduction to Musicology	2
7500:553	Bibliography and Research	2
7500:560-564	Repertoire and Pedagogy	3
7500:604	Development of Opera	2
7500:611	Foundation and Principles of Music Education	3
7500:612	Practices and Trends in Music Education	3
7500:614	Measurement and Evaluation in Music	2
7500:621	Historical Survey: Music of the Middle Ages & Renaissance	2
7500:622	Historical Survey: Music of the Baroque	2
7500:623	Historical Survey: Music of the Classic & Romantic Eras	2
7500:697	Advanced Problems in Music	1-4
7520:5--	Applied Music	1-4

- Cognate Electives — 3 credits.

Total 32

\* Elective credits are determined by the student and adviser.



**Performance Option**

Credits

• **Core Courses — 16 credits:**

7500:555	Advanced Conducting	Credits	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	
7500:621	Historical Survey: Music of the Middle Ages & Renaissance	2	
7500:622	Historical Survey: Music of the Baroque	2	
7500:623	Historical Survey: Music of the Classic & Romantic Eras	2	
7500:624	Historical Survey: Music of the Twentieth Century	2	
7510:---	Ensemble (participation in 2, one hour ensembles required)		
7520:5--	Applied Music	8	

• **Required Courses — 7 credits:**

7500:560-564	Repertoire and Pedagogy	3
7500:618	Musical Styles and Analysis IV (Twentieth Century)	2
7500:699	Master's Recital & Document (approved by committee)	2

• **\*Music Electives — 5 credits:**

7500:502	Workshop in Music	4
7500:551	Introduction to Musicology	2
7500:553	Bibliography and Research	2
7500:601	Choral Literature	2
7500:604	Development of Opera	2
7500:611	Foundations and Principles of Music Education	3
7500:612	Practices and Trends in Music Education	3
7500:614	Measurement and Evaluation in Music	2
7500:697	Advanced Problems in Music	1-4
7520:542	Applied Composition	1-4

• **\*Cognate Electives — 4 credits.**

Total 32

7500:621-624	Music History Survey Seminars (select one of these)	2
7500:699	Master's Thesis (approved by committee)	2

• **\*Music Electives — 4 credits:**

7500:551	Introduction to Musicology	2
7500:601	Choral Literature	2
7500:604	Development of Opera	2
7500:621-624	Music History Survey Seminars (select one of these)	2
7500:560-563	Repertoire and Pedagogy	3
7500:614	Measurement and Evaluation in Music	2
7500:611	Foundations and Principles of Music Education	3
7500:612	Practices and Trends in Music Education	3
5900:640	Techniques of Research	4
7520:5--	Applied Music	2-4

• **\*Cognate Electives — 4 credits.**

Total 32

**Music History and Literature Option**

• **Core Courses — 16 credits:**

7500:555	Advanced Conducting	
7500:621	Historical Survey: Music of the Middle Ages & Renaissance	2
7500:622	Historical Survey: Music of the Baroque	2
7500:623	Historical Survey: Music of the Classic & Romantic Eras	2
7500:624	Historical Survey: Music of the Twentieth Century	2
7500:697	Advanced Problems in Music	8
7510:---	Ensemble (participation in two, one hour ensembles required)	

• **Required Courses — 8 credits:**

7500:551	Introduction to Musicology	2
7500:553	Bibliography & Research	2
7500:618	Musical Styles and Analysis IV (Twentieth Century)	2
7500:699	Master's Thesis (approved by committee)	2

• **\*Music Electives — 5 credits:**

7500:502	Workshop in Music	4
7500:560-564	Repertoire and Pedagogy	3
7500:601	Choral Literature	2
7500:604	Development of Opera	2
7500:611	Foundations and Principles of Music Education	3
7500:612	Practices and Trends in Music Education	3
7500:614	Measurement and Evaluation in Music	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
7500:5--	Applied Music	1-4
7520:542	Applied Composition	1-4

• **\*Cognate Electives — 3 credits.**

**Theory Option**

• **Core Courses — 16 credits:**

7500:615	Musical Styles and Analysis I (Chant through Palestrina)	2
7500:616	Musical Styles and Analysis II (Baroque through early Beethoven)	2
7500:617	Musical Styles and Analysis III (late Beethoven through Mahler/Strauss)	2
7500:618	Musical Styles and Analysis IV (Twentieth Century)	2
7500:619	Theory Pedagogy	2
7500:697	Advanced Problems in Music	8
7500:642	Applied Composition	2
7510:---	Ensembles (participation in two, one hour ensembles required)	

• **Required Courses — 8 credits:**

7500:553	Bibliography and Research	2
7500:555	Advanced Conducting	2

\*Elective credits are determined by the student and adviser.

\*Elective credits are determined by the student and adviser.

## Mass Media-Communication

Master of Arts programs are offered in mass media-communication, communication and rhetoric or general speech. All programs involve the following requirements:

- Meet the general requirements for admission to the Graduate School.
- Have undergraduate coursework required for a major in the chosen area of concentration.
- Complete a written thesis. The student may enroll for thesis credit only after passing all parts of the written comprehensive examination and completing an acceptable thesis prospectus.
- Complete a written comprehensive examination over departmental coursework taken before advancement to candidacy. At the completion of 24 credits of work, the student should contact the director of graduate studies to arrange the examination.
- Earn a minimum of 30 semester credits plus one to six credits for the thesis. A minimum of nine credits must be earned in three of the four tracks described below. Within each track, courses are listed generally in the order in which they should be taken.

### Track I — Research

		<i>Credits</i>
* 7600:600	Intro. to Graduate Studies in Mass Media-Comm.	
** 7600:601	Intro. to Quantitative Research	3
7600:683	Mass Media Research Seminar (601)	2
7600:610	Seminar: Communication Problems (600, 601)	3

### Track II — Media Production

7600:588	Cinematography	3
7600:590	Media Workshop	1-3
7600:686	Comm. Media Radio	3
7600:687	Comm. Media Television	3
7600:688	Comm. Media Film	3
7600:685	School Administration: Comm. Design	2

### Track III — Rhetorical Theory and Criticism

7600:545	Theories: Argumentation and Forensics	3
7600:570	Analysis of Public Discourse	3
7600:571	Theories of Rhetoric	3
7600:671	Rhetorical Forms: Seminar	3
7600:675	Rhetorical Criticism: Seminar (570 or 571)	3
7600:676	Rhetorical Theory: Seminar (571)	4

### Track IV — Communication Theory

7600:684	Survey Communication Theory (601)	3
7600:554	Theory of Group Discussion (684)	3
7600:681	Theory: Interpersonal Communication (684)	3

The courses 7600:680 *Special Problems in Communication and Mass Media*, 2 credits and 7600:697 *Graduate Research in Mass Media Communication*, 1-6 credits, and any electives taken out-

\*Required of all graduate students in the department. To be taken the first year.

\*\*Required of all students except those with an emphasis in rhetorical theory and criticism.

side the department, may be used to supplement any of these groups after the student has completed six credits in that group.

## Theatre Arts and Dance

The following program will qualify the student in the field of theatre arts. There is no graduate program in dance.

- 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 head of the department.
- Complete a minimum of 30 credits, including two to six credits of thesis, from the following courses or from approved courses in the cognate field.

		<i>Credits</i>
7800:600	Introduction to Graduate Studies (required)	1
7800:567	Contemporary Theatre Styles	3
7800:568	Children's Theatre	3
7800:603	Special Topics in Theatre Arts/Dance	2
7800:636	Special Problems in Oral Interpretation	2
7800:641	Problems in Directing	3
7800:642	Problems in Contemporary Acting	3
7800:658	History of Technical Production	3
7800:659	History and Theory of Stage Lighting	3
7800:660	Advanced Technical Theatre	2
7800:661	Seminar in Stage Costume Design	3
7800:662	Seminar in Scene Design	3
7800:663	Seminar in American Theatre	2
7800:665	Seminar in Theatre Audience	2
7800:666	Introduction to Arts Management	2
7800:667-9	Studies in Dramatic Practice	2 ea.
7800:690	Graduate Research/Readings	1-6

- Complete an oral defense of the thesis.

## Speech Pathology and Audiology

The program of study leading to the Master of Arts in Speech Pathology and Audiology may also lead to certification by the American Speech and Hearing Association in speech pathology and/or audiology.

- Complete the general 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 a course of study with a minimum of 32 credits, including thesis — or a minimum of 38 credits in the non-thesis option. Those students anticipating dual ASHA certification — that is, clinical certification in both the areas of speech pathology and audio-

logy — may need to complete up to eight additional credits in the non-thesis option. Academic requirements within the department include:

		<i>Credits</i>
7700:611	Research Methods in Communicative Disorders I	3
7700:650	Advanced Clinical Prac.: Differential Diag.	1
7700:612	Research Methods in Communicative Disorders II	3
	or	
7700:699	Research and Thesis	2-6

Two credits must be taken from the following:

7700:651	Advanced Clinical Practicum: Voice	1
7700:652	Advanced Clinical Practicum: Fluency	1
7700:653	Advanced Clinical Practicum: Aphasia	1
7700:654	Advanced Clinical Practicum: Audiology	1

Audiology majors must take four credits in speech pathology.

Speech Pathology majors must take four credits in audiology. It is recommended that speech pathology majors elect 7700:639 *Adv. Clin. Testing* as the first of their audiology courses.

- The following limitations on work toward the degree may be exceeded only with approval of two-thirds of the graduate faculty of the department.
  - No more than four credits of workshop courses.
  - No more than six credits of directed study coursework (including *special problems*).
  - No more than six credits of coursework taken in disciplines other than speech pathology or audiology.

## Social Work

There is no graduate degree in social work. Students interested in coursework may enroll if admitted to Graduate School through other programs or may apply for "Special Non-Degree" student status through the Department of Speech Pathology and Audiology. Students 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 coordinator of the social work program.



# The College of Nursing

Lillian J. DeYoung, R.N., Ph.D., *Dean*

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## The Master of Science in Nursing

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### Philosophy

The Master of Science in Nursing degree program prepares students for family health nursing in the areas of family, adult or geriatrics and for a functional role of teaching, administration or nursing practice.

The program focuses on the advancement of nursing theories by defining the parameters of nursing at the graduate level and by the generation, application and testing of knowledge to promote improved health care through the practices and research of faculty and students within the framework of current and emerging health care systems.

The philosophy of graduate education in nursing evolves from the undergraduate philosophy. Therefore, the perspectives of health care are eclectic, pluralistic and complex, and acknowledge the individual, the family and the community as the foci of care and study. This belief embraces the ecological approach toward achieving a high level of health for community members, whereby each individual is studied in terms of his total environment, and is assisted in sustaining that quality of life which enables him to survive and prevail.

Graduate education in nursing prepares the student to assist individuals, families and communities in becoming self sustaining through the effective utilization of human and environmental resources. This focus enables the health sustaining unit and its individual members to maintain a dynamic balance and purposeful direction within the environment wherein they function. Advanced study in nursing is designed to facilitate the self-direction of clients and to encourage their knowledgeable participation in the management of their own health. The core content includes concepts explaining man's physical, psychological, cultural and social responses to life processes, and man's variable life experiences as they relate to nursing practice and research.

The graduate program is predicated on baccalaureate preparation in nursing. Consequently, learning at the graduate level must be self-directed and the curriculum must provide the freedom for individual learning experiences, educational needs and career goals.

The student should become a scholarly individual capable of leadership in current and emerging health care

systems, and the generation of knowledge through research. Although the primary emphasis of the program is to prepare a practitioner in nursing, it will also provide a basis for doctoral study for those who wish to pursue further graduate work.

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### Objectives

The College of Nursing's objectives are to develop a graduate nursing curriculum which embraces the ecological approach to the care and the study of man in terms of his total environment, and provide a basis for doctoral study in nursing.

Graduates of the program are able to:

- Appraise the health status of individuals, families and communities.
- Analyze with individuals, families and communities their health care assets and deficits.
- Collaborate with individuals, families and communities to determine their self-care potential.
- Synthesize concepts of nursing, health, life-span development, family and community to determine nursing action directed toward promoting, restoring and maintaining health.
- Initiate planned change to affect the health care system through political, social and cultural processes.
- Utilize research findings in family health nursing.
- Identify areas of need for nursing research.
- Participate actively in nursing research.
- Implement teaching/learning concepts with other health care professionals and individuals, family and community.
- Demonstrate competence in selected functional areas of teaching, administration or practice.

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### Admission

#### Policies

Applicants for admission to the graduate program must:

- Hold a current state license to practice nursing.
- Have a baccalaureate degree in upper division nursing from an NLN accredited school of nursing.
- Hold a grade-point average of 3.0 on a four point scale from the undergraduate program.
- Have satisfactorily completed an undergraduate statistics course and an elementary course in research methodology or equivalent.
- Have three letters of reference from:
  - A recent employer.
  - A member of the nursing profession who can attest to the applicant's scholarly abilities.

— A former college or school faculty member.

- Submit a 300 word essay describing professional goals and reasons for seeking graduate education.

Applicants with an undergraduate grade-point average of 2.75 to 2.99 may be admitted as Special Admission as defined in the *Graduate School Bulletin*.

Applicants with an undergraduate grade-point average of 2.5 to 2.74 may be assigned to Deferred Status and advised to take post baccalaureate courses — the number to be taken dependent on the applicant's undergraduate grade-point average. Once such work is completed with a "B" or better for each course, a student may reapply for a change in status.

Applicants whose upper division grades in their baccalaureate program are all pass/fail and individuals who do not meet the above criteria will be considered on an individual basis.

Graduates from non-accredited baccalaureate programs may qualify for the graduate program by successfully challenging or completing the six upper division clinical nursing courses of The University of Akron, College of Nursing, baccalaureate program. The director of the graduate program is adviser for these students and facilitates completion of this program of study.

**Procedures**

First, the student secures application for Graduate School from the Office of the Dean of Graduate School, The University of Akron. Criteria for admission, forms for references, etc. may be secured from director of graduate program, the College of Nursing.

Second, completed application must be in the office of the College of Nursing by March 1 or November 1. Students will be notified of status by April 1 or December 1.

Last, the director of graduate program and an Admissions Committee of four review all applications. The committee makes recommendations to the director of graduate program regarding the status accorded each student. The director forwards each recommendation first to dean of the college, then to dean of the Graduate School who notifies the student.

**Instructional Program**

The program is two academic years in length and provides instruction in nursing practice; research; the

functional areas of teaching, administration and nursing practice; and cognate courses. Through these areas, the student develops an understanding of theoretical content and intensive related and supervised nursing practice; skills of inquiry directed toward the solution of nursing problems; and the framework for the integration of physiological, psychosocial, economic, political and cultural theoretical concepts applicable to nursing practice.

The following courses are required of all students:

	<i>Credits</i>
8200:600      Theoretical Basis for Nursing Practice I	3
8200:601      Theoretical Basis for Nursing Practice II	2
8200:612      Nursing Inquiry	4
8200:615      Health Appraisal	6
8200:620      Nursing I	6
8200:621      Nursing II	6
8200:698      Non-thesis Project Option	4
or	
8200:699      Thesis Option	4
Statistics	3
Total Foundations	34
Functional option in nursing administration, nursing education or nursing practice	7
Cognate electives in support of functional area	6-9
Nursing electives	4
Total	51-54

**Options**

8200:698; Non-Thesis Project Option — 4 credits — is a report of the application of research findings in a clinical setting, a critical analysis of the literature directed toward a significant nursing problem or individualized project which meets the approval of a faculty committee.

8200:699; Thesis Project Option — 4 credits — is a report of a faculty supervised clinical or non-clinical research investigation, that is suitable for publication and which meets the approval of a three member faculty committee. Prerequisite: completion of first year of program.

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**Cooperative Statement**

This program is in cooperation with Kent State University, School of Nursing, where students have the option to take cognate or nursing electives and utilize their library facilities.

# The School of Law

Albert S. Rakas, J.D., *Associate Dean*

## Objectives

The purpose of the School of Law is to further the objectives of The University of Akron by providing a quality program of university education for law and to pursue the following aims:

- To prepare students 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 to develop in students an active and critical attitude rather than a passive approach toward the rules of law and their social implications.
- To develop in students 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 school recommends each student for the degree of Juris Doctor upon completion of the requirements.

The School of Law was established on 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 offers a program for the full-time study of law with classes scheduled primarily between the hours of 9:00 a.m. and 4:00 p.m., and a plan of part-time study of law for the working student with classes scheduled during the evening hours, primarily between 6:30 p.m. and 9:30 p.m.

The schedule of courses for full-time students is designed so that the degree of Juris Doctor may be earned in three academic years consisting of six semesters. Attendance at the Summer Sessions is optional.

The schedule of courses for part-time evening students is designed so that the degree of Juris Doctor may be earned in four academic years consisting of eight semesters and three, eight-week Summer Sessions. The normal academic load in the evening program

is nine credits and the Summer Sessions are an integral part of the program.

The schedule of courses has been designed by the faculty to provide a logical progression of subject matter, as well as reasonable freedom in the selection of elective courses. Students are encouraged to observe this schedule in planning their programs so that they can continue their advantageous progression of subject matter.

The primary purpose of students enrolling in the School of Law is to accrue fundamental knowledge of law and the role of law in society, interlaced with a grasp of the public responsibilities of the lawyer, enabling them 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 the future of society.

Students are trained to develop their 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 the management of litigation.

## Pre-Legal Education

A student expecting to enter the School of Law must hold a baccalaureate degree which has been granted by an accredited institution of higher learning. His undergraduate courses should have developed his ability in expression and comprehension of the English language, afforded him basic information about human institutions and cultivated his ability to think creatively and critically, with thoroughness and intellectual curiosity.

Requirements are flexible for undergraduate study preceding legal education. However, it is generally recommended that students have a liberal arts background with majors in any of these fields: English, economics, history, mathematics, philosophy, political science, psychology, sociology or a science. Also, acceptance is granted to students with degrees in areas of business administration, education and engineering.

## Requirements for Admission

An applicant for admission to the School of Law desiring to become a candidate for the degree of Juris Doctor must:

- Be of good moral character.
- Show evidence of the award of a baccalaureate degree from a regionally accredited college or uni-

versity 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 degree.

- Have taken, prior to admission, the Law School Admission Test (LSAT) and earned a satisfactory score.
- Register with the Law School Data Assembly Service (LSDAS).

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## Admission Procedures

The School of Law accepts beginning students only in the fall semester. The procedures for securing admission are as follows:

- Obtain an application form from the School of Law. It is recommended that both day and evening applicants apply and complete their applications (with LSAT and LSDAS) as soon as possible after October 1. Students will be placed on a waiting list. The school *estimates* that the day class will be filled by April 1; the evening class by June 1. Because the school considers each application soon after it is completed, there is no way of knowing whether 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.

- Submit to the School of Law, The University of Akron, an application fee of \$20 if never previously enrolled for credit courses at The University of Akron.
- Arrange to take the Law School Admission Test, which is given at the University and elsewhere, by making application to the Law School Admission Test, Educational Testing Service, Box 944, Princeton, NJ 08540.
- Register with the Law School Data Assembly Service by making application to the Law School Data Assembly Service, Educational Testing Service, Box 944, Princeton, NJ 08540. (An LSDAS registration form is contained in the Education Testing Service packet of materials on the Law School Admission Test).

File with the Law School Data Assembly Service a copy of the transcript of record from each college or university attended. (The LSDAS provides the School of Law an analysis of transcripts and forwards to the School of Law such analysis, unofficial copies of transcripts and LSAT scores).

A personal interview with the associate dean of the School of Law may be required as a condition of admission; otherwise, the personal interview is optional.

If accepted for admission to the Juris Doctor degree program, the student must file with the School of Law a final, official (bears raised Seal of the institution and the signature of the Registrar) transcript of record showing the award of the baccalaureate degree, mailed from the institution awarding the baccalaureate degree.

A "Certificate of Completion of Degree Requirements" is filed by the student with the School of Law temporarily in lieu of an official transcript for those students satisfactorily completing baccalaureate degree requirements during summer sessions, but the formal award of the degree is conferred by an authorized official (usually the Office of the Registrar) of the institution awarding the baccalaureate degree. An official transcript showing award of the baccalaureate degree must be filed by the student with the School of Law at the earliest time such transcript becomes available from the institution awarding the baccalaureate degree.

The official transcript, or, in cases where applicable, the "certificate," should be received by the School of Law at least one week prior to the official registration period published in the University calendar.

Students admitted to the Juris Doctor degree program are requested to file the official transcript *only after* receiving the authorized, signed admissions advisement form indicating actual admission to Juris Doctor degree candidacy of the School of Law.

The unofficial copy of transcript forwarded to the School of Law by the LSDAS does NOT constitute filing of transcript with the School of Law.

The School of Law reserves the right to refuse registration if registration forms are not filed by the announced deadlines as established by the University. A late fee penalty is assessed if an exception is made and late registration permitted.

The University of Akron is a non-sectarian, state-supported University. Students qualified for the study of law are admitted without discrimination as to race, sex, religion or national origin.

All inquiries and correspondence pertaining to admission should be sent to:

**Associate Dean  
School of Law  
The University of Akron  
Akron, OH 44325**

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## Admission to 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, 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: 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; submit evidence of meeting the admission requirements of The University of Akron School of Law; present an official transcript of all work completed at the previous law school. Credit to be given for the prior law school work shall be determined by the dean of the School of Law.

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## Auditors

Members of the Bar and graduates of law schools who are not yet members of the Bar may, with the permission of the dean of the School of Law, enroll 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 the auditor is the same as for a regular student.

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## Standards of Academic Work

The following system of grades is used in recording the quality of a student's academic work:

Grade		Quality Points Per Credit
A	Excellent	4.0
A-		3.7
B+		3.3
B	Good	3.0
B-		2.7
C+		2.3
C	Satisfactory	2.0
C-		1.7
D+		1.3
D	Poor	1.0
D-		0.7
F	Failed	0.0
I	Incomplete	0.0
IP	In Progress	0.0
PI	Permanent Incomplete	0.0
AUD	Audit	0.0
* CR	Credit	0.0
NCR	Non-Credit	0.0

Academic averages are computed by dividing the quality points achieved by the hours attempted. When a course is failed and repeated, the hours and the quality points involved each time are included in the computation as if the repeated course were an independent course.

A quality-point ratio of less than 2.00 is unsatisfactory. A law student whose scholarship is unsatisfactory may be 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

\*Not calculated in cumulative average.

the School of Law to whom a written petition for reinstatement should be addressed.

If a student withdraws from a course with the permission of the dean, it will not count as work attempted. If a student leaves a course without the permission of the dean or is dropped from any course by the dean, the student is given a failing grade in the course and it is counted as work attempted.

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## Requirements for a Degree

The degree of Juris Doctor is conferred upon students of good moral character who have been recommended by the dean and faculty of the School of Law and who have:

- Completed satisfactorily all required courses, seminars and electives to earn at least 84 credits, the writing requirement and met residency requirements.
- Attained at least a 2.00 average for all courses taken and at least a 2.00 average for the senior year.
- Spent their last year at the University unless excused by the dean.

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## Fees and Expenses 1978-1979 Academic Year\*\*

Fees are as follows:

Application fee (payable once, nonrefundable and inapplicable to students previously enrolled at the University for credit)	\$20
Fees for residents of Ohio, per credit	\$38
Fees for nonresidents of Ohio, per credit	\$53

Students taking less than nine credits in any semester pay a General Service Fee of \$10 for that semester. Students taking nine or more credits pay \$24.

University housing is not available for graduate or professional students. However, a meal ticket may be purchased at a cost of \$420 per semester.

Books (new) will cost approximately \$200 per year for full-time students and about \$125 per year for part-time students.

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## Loan Funds

University loans, by which tuition and maintenance

\*\* All fees, subject to change without notice.



fees may be paid over the semester in periodic installments, may be requested through the Office of the Cashier. Normally, these loans do not exceed one-half the fees due in a semester.

Law students may apply for the following loans: National Direct Student Loans, the Phillip H. Schneider Scholarship Loan Fund and the Ohio Higher Educational Assistance Commission Loans (available to full-time students who are residents of Ohio).

Application for loans should be obtained from the Student Financial Aids Office, The University of Akron, and completed by April 1.

Loans for emergency purposes will be considered during the academic year.

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## Library

The law library is the laboratory of the School of Law and is most important in providing the law student with materials for research and study. The law library contains approximately 130,211 volumes. University libraries comprising more than one million volumes are available to law students.

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## Enrollment in Other Schools

A student who is enrolled in the program leading to the degree of Juris Doctor may not take work in any other school, college or course of instruction, unless he first obtains the written consent of the dean. No student may attend a course designed as a review for the bar examination until he has completed all course requirements for the degree of Juris Doctor.

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## Bar Admission Requirements

Each student entering the School of Law is encouraged to read Rule I of The Supreme Court Rules For The Government Of The Bar Of Ohio, ADMISSION TO THE PRACTICE OF LAW, or the comparable rule of court in the jurisdiction wherein he desires to take the bar examination and practice law.

The Supreme Court of Ohio requires that each student entering a law school and who intends to practice law in Ohio shall file within 120 days from the beginning day of the fall term after beginning the study of law an application for registration as a law student, evidence of his meeting the pre-legal educational requirements established by the rule, a legible set of fingerprints on a prescribed form and a filing fee of \$30.00. 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, a certificate of the School of Law that the student has completed or will complete all courses required by the rule and a filing fee of \$60. The rule requires that a student be tested in the following courses: business associations (including agency, partnerships and private corporations), commercial transactions (commercial paper, secured transactions), constitutional law, contracts (equity), criminal law, evidence, federal taxation, pleading and practice, property (real and personal), torts, trusts and wills. Further, the student must be certified as having had instruction in legal ethics.

The appropriate forms may be obtained from the School of Law on-request. It is the responsibility of the student to initiate a request for, to execute properly and file timely, the requisite forms.

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## The 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.

One noteworthy feature of the honor system is that each examination is unproctored. Entering students are urged to familiarize themselves with the honor code.

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## Placement

The School of Law assists students and alumni in obtaining legal and law-related positions subsequent to graduation and temporary positions as law clerks after completion of the first year of law school, and provides career counseling and the development of the tools necessary for the job search process.

Membership is maintained in the National Association for Law Placement.

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## The Akron Law Review Association

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 those students of superior academic

achievement or of demonstrated writing skill who desire to engage in legal research, analysis, writing and editorship. Membership on the board of student editors is indicative not only of scholarship, but of uniquely valuable training in skills important to the profession of law.

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## Law Students Associations

ARETE Publications, a student-managed organization, publishes two student legal works — the *Newsletter* (monthly) and the *Journal* (quarterly) — intended to serve as a forum for law students, faculty and outside opinions on a wide range of contemporary issues related to law. ARETE is open to students after the first year.

THE BLACK AMERICAN LAW STUDENT ASSOCIATION (BALSA), accredited as a law student organization in 1974, has as its primary objective increasing the enrollment and retention of minority law students. Akron BALSA, an affiliate of National BALSA, Inc., sponsors community seminars on the law and the legal rights of black, poor and oppressed people.

BRACON'S INN, a student-managed organization, conducts an appellate moot court program. BRACON'S INN has as its purpose the development of skills in legal research, brief writing and oral advocacy before a moot appellate tribunal. Among the activities sponsored by BRACON'S INN is the Client Counseling Competition which offers students experience of participation in regional and national competition with other law schools in simulated exercises of lawyer-client interviews and consultations. BRACON'S INN also sponsors the Mock Trial program which gives students an opportunity to serve as counsel in an actual trial setting.

Charter member with 35 law schools, The University of Akron School of Law established in 1970 a national honor society entitled ORDER OF BARRISTERS whose aim is to promote recognition of appellate advocacy. Law students successfully completing the appellate advocacy program of BRACON'S INN are eligible for consideration to membership in the student-managed ORDER OF BARRISTERS.

THE SEIBERLING SENATE, DELTA THETA PHI LAW FRATERNITY, 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. Law students in good standing are eligible for membership after their first semester.

THE INTERNATIONAL LAW SOCIETY, a chapter founded in 1971 as an affiliate of the National Association of Student International Law Societies, is designed to stimulate interest and participation in the field of international law by providing opportunities for student exposure to world affairs through speakers, panel

and competitive events, such as the annual Philip C. Jessup International Law Moot Court Competition, and to better prepare law students for related occupational positions subsequent to graduation.

THE LAW WIVES CLUB is primarily an informal, social organization for the wives of all law students. LAW WIVES support activities which provide funds for student awards and donations toward improvements of the School of Law facilities for the benefit of all law students.

THE STUDENT CHAPTER, NATIONAL LAWYERS GUILD, founded in 1975, unites law students and honorary members in promoting group interaction and sensitivity to the ongoing societal evolution of the primacy of human rights, liberties and equality of opportunity. To these ends law is viewed as an instrument for protection and not repression of such rights and opportunities, and the lawyer as a catalyst for societal changes and not merely a client-caretaker.

THE GRANT CHAPTER, PHI ALPHA DELTA LAW FRATERNITY, INTERNATIONAL, 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 men and women members. Speakers, workshops, parties, luncheons and the annual used-book sale are among some of the activities sponsored by Grant Chapter. "PAD" welcomes all students in good standing after the first semester.

THE STUDENT BAR ASSOCIATION is designed to introduce law students to the professional responsibilities and problems they will face upon admission to the bar, to provide closer integration among the future lawyers and present-day leaders of the legal profession, to promote professional responsibility and to acquaint law students with the opportunities and obligations to improve the administration of justice through the organized bar. In addition, the Student Bar Association provides a form of student government and promotes good fellowship.

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## Scholarships, Honors and Awards

A limited amount of tuition-remission assistance is available to full-time (day) students from disadvantaged groups in need of assistance, and may be renewed in the case of continuing need, and good academic standing, in amounts up to \$1,000 per regular academic year (fall and spring semesters). Application for such assistance should be made prior to June 1, through the Office of the Associate Dean, School of Law.

The Akron Bar Association Auxiliary Scholarship, established by the Akron Bar Association Auxiliary, provides an annual scholarship from principal and income not to exceed \$1,000 to an entering student in a full-

time program of law study. The 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 National Bank provides an annual award of \$200 to the graduating senior who excels in the study of the law of trusts and estates, with the selection to be made by the dean.

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 Publishing Company awards annually a two-volume work entitled *Jacob's Ohio Civil Practice Under the Rules* to the graduating law student displaying scholarship in the study of code pleading, as determined by the dean, School of Law.

The Bracton's Inn Award, established by the Law Wives Club of the School of Law, is presented annually in recognition of superior performance in the law school's moot court program.

The Brewster Book and Scholarship Award is funded by income from an endowment fund established in 1978 by Attorney Evan B. Brewster and is awarded to deserving 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 in the amount of \$1,000 to an entering student in the full-time program of law study, on the basis of merit, who was the outstanding graduate of The University of Akron College of Business Administration, from the Department of Finance or Accounting, as determined by the dean, School of Law, upon recommendations submitted by the dean, College of Business Administration. The scholarship is not renewable to the recipient.

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 Client Counseling Competition, sponsored by Bracton's Inn and the Student Bar Association, offers an annual prize of a \$25 U.S. Savings Bond and a certificate to the winners of a simulated exercise in lawyer-client consultation and accompanying office memoranda, and an opportunity to compete in regional and national competition.

The Roberts Crafts Memorial Scholarship is a fund established in 1969 by Mrs. Robert Crafts in memory of her husband, Robert Crafts, Esq., of which the income or principal or both will be used to assist worthy students in the School of Law who enter under the Council on Legal Education Opportunity program, and students

similarly situated, on the recommendation of the dean, School of Law.

The Goodyear Tire & Rubber Company Fund is a fund established in 1969 by the Goodyear Tire & Rubber Company Fund, of which the principal and income will be used for scholarships 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 fund is administered by The University of Akron Development Foundation.

The Lawyers Co-operative Publishing Company and Bancroft-Whitney Company, joint publishers of *American Jurisprudence*, award to top ranking students in about twenty-four courses, a specially bound copy of the equivalent title from their multi-volume publication, as determined by the instructor(s) in charge.

The Judge W. E. Pardee Memorial Award of \$300 (established 1963-64) is presented annually to a participant (or team of participants) in Bracton's Inn (the case club of the School of Law) who best displays (display) advocacy skill and professional decorum, as determined by intramural competition.

The Judge and Mrs. W. E. Pardee Memorial Scholarship in an amount not to exceed \$500 is awarded annually to a deserving, full-time law student of demonstrated scholarship.

The Phi Alpha Delta Law Fraternity, International, Grant Chapter, awards annually the Judge Florence E. Allen Memorial Award of a \$50 U.S. Savings Bond to a graduating law student predicated upon meritorious achievements in scholastics, community service and P.A.D., as determined by a committee chaired by the dean, School of Law.

The Phi Alpha Delta Law Fraternity, International, annually makes available nationally twenty-two \$50 awards, and loans up to \$1,000, to students who are members of the fraternity. Application should be made through the faculty adviser of the Grant Chapter, School of Law.

Prentice-Hall, Inc. provides annually a complimentary subscription to its *Federal Tax Guide*, edition "A," to the graduating senior who has excelled in the study of taxation, as determined by the dean, School of Law.

The Judge and Mrs. Charles Sacks Scholarship is a fund established in 1969-70, the centennial year of the University, in honor of Judge and Mrs. Charles Sacks by their children, Robert and Naomi Christman, Sy and 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 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 recom-

mentation of the dean, School of Law. The award may be renewed.

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.

Other scholarships and grants not specifically earmarked for law students but open to all University students are available. The student should consult the Financial Aids section of this *Bulletin*, and should apply seasonably through the University Financial Aids Office.

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## Clinical Training and Public Service

The Legal Clinical program emphasizes the day-to-day aspects of practicing law and operates to assist the student in developing skills associated with management of the affairs of a client, as well as developing a critical awareness of the lawyer's responsibility in improving the administration of civil and criminal justice.

An internal program within the School of Law provides opportunity to assist indigents in civil and criminal actions in a law office setting. Students also are detailed to work with community organizations such as the Legal Aid Society, the Public Defender's Office, the City and County Prosecutor's Office and other similar organizations. Students may participate in these programs by enrolling in the legal aid courses upon completion of 28 credit hours and receiving permission of the clinical director.

Students who have completed at least 56 credit hours toward the degree of Juris Doctor, are in good academic standing, are enrolled as candidates for the Ohio bar examination and whose academic work is current, may be admitted to the Limited Practice of Law in Ohio as legal interns on obtaining approval from the dean of the School of Law and the Supreme Court of Ohio. As a legal intern, the student may serve as counsel in civil cases and criminal misdemeanor cases under the Law School Clinical program.

The applicable Supreme Court Rule (II) provides: The certificate may be revoked prior to its expiration upon revocation of the approval of the dean or by the Court, *sua sponte*, either of which may be without notice, hearing or other statement of clause.

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## The BFGoodrich Company Chair of Law

The BFGoodrich Company in 1975 endowed a Professional Chair of Law in International Transactions and Relations. Professor Hamilton DeSaussure was appointed as holder of the Goodrich Chair.

Its aim is to assist in the training of law students as counselors in business, government and private practice in international business transactions, and their education in a global awareness of the economic and political problems of other nations, as reflected in their legal systems. With the cooperation of other academic units of the University, a unique opportunity is provided for an interdisciplinary study of subject matter areas such as in business, economics and government vital to counseling in international transactions and relations.

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## Curriculum

### Full-Time Program

(These courses are offered during the day.)

#### First Year, Required

Fall Semester		Credits
9200:601	Civil Procedure I	3
9200:605	Contracts I	3
9200:611	Legal Process	2
9200:613	Legal Research and Advocacy	1
9200:614	Property I	3
9200:616	Torts I	3

#### Spring Semester

9200:602	Civil Procedure II	3
9200:606	Contracts II	2
9200:607	Criminal Law	3
9200:615	Property II	3
9200:617	Torts II	3

#### Second and Third Year, Required

#### Fall Semester

9200:603	Constitutional Law I	2
9200:608	Evidence I	2
9200:612	Legal Profession	1

#### Spring Semester

9200:604	Constitutional Law II	2
9200:609	Evidence II	2

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### Part-Time Program

(These courses are offered during the evening.)

#### First Year, Required

#### Fall Semester

9200:605	Contracts I	3
9200:611	Legal Process	2
9200:612	Legal Profession	1
9200:616	Torts I	3

**Spring Semester**

*Credits*

9200:606	Contracts II	2
9200:607	Criminal Law	3
9200:613	Legal Research and Advocacy	1
9200:617	Torts II	3

*Second Year, Required*

**Fall Semester**

9200:601	Civil Procedure I	3
9200:614	Property I	3

**Spring Semester**

9200:602	Civil Procedure II	3
9200:615	Property II	3

*Third and Fourth Year, Required*

**Fall Semester**

9200:603	Constitutional Law I	2
9200:608	Evidence I	2

**Spring Semester**

9200:604	Constitutional Law II	2
9200:609	Evidence II	2

9200:643	Federal Jurisdiction and Procedure	3
9200:644	Financing State and Local Government	2
9200:645	Government Contracts	3
9200:646	Injuries To Relations	2
9200:647	Juvenile Law	2
9200:648	Insurance Law	2
9200:649	International Law	3
9200:650	Labor Law	3
9200:651	Labor Arbitration and Collective Bargaining	2
9200:652	Land Use Planning	2
9200:653	Law and Social Change	2
9200:654	Law of Consumer Credit	2
9200:655	Law Review Internship I	1
9200:656	Law Review Internship II	1
9200:657	Law Review, Staff	1
9200:658	Law Review, Editorial Board	1
9200:659	Lawyer As Negotiator	2
9200:661	Legal Control of the Environment	3
9200:662	Legal Regulation of Competition	2
9200:663	Legislation	2
9200:664	Local Government Law	2
9200:665	Modern Real Estate Transactions	3
9200:666	Moot Court	1
9200:667	Patent, Trademark and Copyright Law	2

**Electives**

9200:621	Accounting For Lawyers	2
9200:622	Administration of Criminal Justice	3
9200:623	Administrative Process	3
9200:624	Air Law	3
9200:625	Antitrust Law	2
9200:626	Basic Business Associations	3
9200:627	Commercial Transactions: Negotiable Instruments	3
9200:628	Commercial Transactions: Sales	2
9200:629	Commercial Transactions: Secured Transactions	3
9200:630	Admiralty	2
9200:631	Conflict of Laws I	2
9200:632	Conflict of Laws II	2
9200:633	Corporations I	2
9200:634	Corporations II	2
9200:635	Creditors' Rights	2
9200:636	Development of Law and Legal Institutions	2
9200:637	Equal Opportunity Law	2
9200:638	Family Law	3
9200:639	Federal Estate and Gift Taxation	2
9200:641	Federal Income Taxation I	3
9200:642	Federal Income Taxation II	3

9200:668	Remedies I	2
9200:669	Remedies II	2
9200:671	Securities Regulation	2
9200:672	Seminar in Business Planning	3
9200:673	Seminar in Comparative Legal Systems	2
9200:674	Seminar in Corrections and Prisoners' Remedies	2
9200:675	Seminar in Estate Planning	3
9200:676	Seminar in International Transactions and Relations	3
9200:677	Seminar and Judicial Administration	2
9200:678	Seminar in Jurisprudence	2
9200:679	Seminar in Labor Law	2
9200:680	Seminar in Pension and Profit Sharing	2
9200:681	Seminar in Legal Problems of the Disadvantaged	2
9200:682	Seminar in Political and Civil Rights	2
9200:683	Seminar in Product Liability	2
9200:684	Seminar in Selected Legal Problems	1-3
9200:685	Wills, Trusts and Estates I	3
9200:686	Wills, Trusts and Estates II	3
9200:691	Selected Problems, International Law	2
9200:692	Problems in Trial Advocacy	2
9200:696	Legal Aid	2
9200:698	Individual Studies and Research	1-3



# Research Centers and Institutes

Alan N. Gent, Ph.D., *Dean of Graduate Studies and Research*

Joseph M. Walton, Ph.D., *Associate Dean of Graduate Studies and Research*

Robert G. Corbett, Ph.D., *Coordinator of Research*

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 the emphasis is on work that is relevant, not on mere knowledge for knowledge's sake. 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.

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## Research Council

Sponsored research activities on campus are coordinated by the University Research Council which was 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 coordinator of research and the directors of the four research institutes; the Institute of Polymer Science, the Institute for Technological Assistance, the Institute of Civic and Educational Research and the Bureau of Organizational Development.

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## Institute of Polymer Science

Frank N. Kelley, Ph.D., *Director*

The Institute of Polymer Science carries out basic

and applied research in polymer science and the graduate training of polymer scientists and engineers.

Because of its location in the heart of the world's largest concentration of rubber industries, The University of Akron has always maintained a special interest in the science of rubber, dating back to the establishment in 1908 of the world's first course in rubber chemistry by the late Dr. C. M. Knight. During World War II, the research activities were expanded under the impetus of the U.S. Government Synthetic Rubber Program. After the war, it soon became apparent that the phenomenal rise of the synthetic rubber industry had brought the whole science and technology of rubber into the broader field of polymer science, and the need for polymer scientists was fast outstripping the meager supply. Hence, the establishment of the Institute of Rubber Research in 1956 was accompanied by the inauguration of the University's Ph.D. program in polymer chemistry, the first of its doctoral programs.

Because polymer science and technology seeks ultimately to relate the molecular structure of macromolecules to their physical behavior, it requires the combined efforts of chemists, physicists and engineers. Hence, the best trained polymer scientist or engineer is one who has a broad understanding, including areas outside his own specialty. To fill this need, The University of Akron, in 1964, broadened its original polymer chemistry program into an interdisciplinary program in polymer science, available to chemists, physicists and engineers, and leading to M.S. and Ph.D. degrees in polymer science. This program is administered by the Department of Polymer Science, the academic arm of the institute.

The institute and department occupy the north tower of the Auburn Science and Engineering Center and the adjacent Whitby Hall. It includes both chemical and physical laboratories, the latter devoted to physical measurements on polymers and elastomers. These facilities enable a wide scope of research to be carried out, including organic reactions, polymerization studies, characterization of macromolecules, and physical behavior and testing of polymers and elastomers. The well-equipped laboratories, together with the large interdisciplinary group of faculty, staff and graduate students, make the institute a unique facility in this field. It is now comprised of thirteen full-time faculty members in various disciplines, a combined technical and non-technical staff of ten, and sixty-five full-time graduate students, mainly pursuing doctoral degrees. Thus, the institute is the largest academic facility of its kind in the United States.

The basic research work at the institute is performed by graduate degree candidates under the supervision of faculty members. The fundamental character of this research makes it suitable for use in the graduate thesis or dissertation.

The institute also operates an applied research section which undertakes projects as a service for govern-

ment and industry, performed by a special staff of investigators.

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## **Institute for Technological Assistance**

Coleman J. Major, Ph.D., *Director*

The Institute for Technological Assistance provides technical assistance nationally and internationally to those seeking to advance their academic status. It assists individual faculty members in their research and educational efforts and carries out various functions as defined by protocols and contracts in this country and with foreign nations.

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## **Institute of Civic and Educational Research**

H. Kenneth Barker, Ph.D., *Director*

Concerned with the increasingly complex human problems facing our society today, this institute is carrying out a number of studies designed to assist government and industry meet the challenges of the times. In addition to studies whose concern is to improve the educational process, there are a number of programs which aim to improve governmental service, both by devising new solutions to problems and by bringing together experts in various fields to share their expertise with others.

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## **Bureau of Organizational Development**

Joseph C. Latona, Ph.D., *Director*

The Bureau of 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 bureau is to update the organizational skills of area managers in all types of organizations and at all levels. The bureau 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.

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## **Institute for Bio-Medical-Engineering Research**

Coleman J. Major, Ph.D., *Director*

The Institute for Bio-Medical-Engineering Research at The University of Akron promotes interdisciplinary exchange of information, ideas and knowledge concerning the fields of biology, medicine and engineering; improves curricular offerings within the University directly related to these academic disciplines; promotes joint interdisciplinary research efforts among participants and their graduate students; and utilizes the research equipment and facilities available in various hospitals, the University and the Northeastern Ohio Universities College of Medicine.

Membership in the institute is by invitation and open to area physicians and faculty of the College of Medicine and The University of Akron. A director appointed by the president of The University of Akron coordinates the activities of the institute through the dean of graduate studies and research.

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## **Other Research Areas**

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### **Center for Environmental Studies**

Jim L. Jackson, Ph.D., *Director*

The Center for Environmental Studies matches the expertise of ninety-five affiliates in thirty-three disciplines with the needs of students seeking study and research opportunities in complex environmental issues. Since its founding in 1970, the center has sponsored, or in other ways supported, activities appropriate to the goal of attaining a quality environment for mankind.

The center coordinates special forums, workshops and seminars that address major issues. Examples include The National Energy Forum, 1976; The World Food Forum, 1978; and The Application of Geologic and Soils Information, 1979. Teacher workshops on energy, natural history and environmental studies in England also emphasize the interdisciplinary approach to the resolution of issues.

The center is currently working with the National Park Service to provide a program 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. Located in the CVNRA, the center encourages research and educational opportunities in the park. Oak Hill activities are supported by grants from foundations, The National Park Service, The University of Akron and fees from program participants.

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## Center for Urban Studies

Frank J. Costa, Ph.D., *Director*

Edward W. Hanten, Ph.D., *Associate Director*

One of the greatest challenges facing the urban university is that of effectively using its many resources in urban analysis. The Center for Urban Studies at The University of Akron was established in 1965 in response to this challenge and is the focus around which the University applies available knowledge to urban problem solution. The center seeks to organize and develop programs and research areas which use and stimulate faculty participation in urban area analysis. The center's objectives are to apply new methods and to experiment with new approaches in solving urban problems. Thus, it strives to stimulate, within the University, creative solutions to urban problems by coordinating the urban perspectives of the various disciplines and professions.

The center provides advisory and research expertise in a wide range of areas to both public and private agencies on the local, state and federal levels. Research covers such areas as urban and regional planning, administrative organization, cost-benefit analysis, community development, housing, intergovernmental relations, urban employment, criminal justice planning, recreation, social services planning and urban education.

The Center for Urban Studies represents a multidisciplinary approach to the analysis of the urban region. It augments its research capabilities by drawing upon the expertise of the faculties in the various colleges within the University. Through its programs in research, data accumulation and extension, the center provides the setting and facilities through which interested faculty and graduate students can become involved in urban research or public service activities.

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## Institute for Life-Span Development and Gerontology

Harvey L. Sterns, Ph.D., *Director*

The Institute for Life-Span Development and Gerontology was formally established at The University of Akron in February, 1976. The statement of purpose of the institute is to bring together disciplines and activities of the University — in training, in research and in public service — so that, in the broad application, we may improve the quality of life for the young, the middle aged and the elderly of our community. Thus, through interdisciplinary involvement, the institute is concerned with research and training in the areas of child and adult development as well as with response to the needs and wants of older adults.

Among the objectives of the institute are: to coordinate a multidisciplinary program in life-span development and gerontology with undergraduate and graduate

certificate programs to be received with associate, baccalaureate or graduate degrees in existing academic programs; to provide student placement experience which involves children and older adults at The University of Akron/Akron Metropolitan Housing Authority Edgewood Community Services Center and in other community agencies and facilities.

The Edgewood Center is located about three miles off campus at Wooster Avenue and Edgewood Avenue. Five days each week a nutrition and activities program is offered to older adults and a day care center for pre-school children is held. Edgewood serves not only as a community facility but also as a training and research center for faculty and students of the University and for professional and para-professional people within the community.

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## Institute for Futures Studies and Research

Upon the recommendation of an ad hoc committee of faculty, administrators and students, the Institute for Futures Studies and Research was established in 1978 to provide a focal point, function as a catalyst and assist in establishing curricula, studies and cross-disciplinary activities dealing with the future. Because of its very nature, the institute encourages involvement and cooperation of faculty and students from a variety of disciplines.

Among its major activities, the institute will work with faculty, administration and the University's standing Commission on Institutional Planning and Development to facilitate integration of futures research and awareness with academic programming, planning and decision making.

The institute also plans to involve local business, industry and local 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.

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## Center for Peace Studies

Warren F. Kuehl, Ph.D., *Director*

The Center for Peace Studies at The University of Akron 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 students who wish to pursue this course of study and the center sponsors special campus programs, a film series 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.

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## Center for International Programs

Laurence J.C. Ma, Ph.D., *Director*

The University of Akron serves a community that is very much on the international scene. The world's major rubber 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 400 foreign students. The University faculty has wide interests and has traveled extensively to various parts of

the world. The various colleges of the University have developed programs to give students an awareness of the global nature of knowledge. There are numerous courses in non-western studies, area concentrations, programs in international business and various opportunities for students and alumni to travel overseas.

Through its advisory committee, composed of faculty and students of the various colleges, the Center for International Programs attempts to find ways of committing the University to programs that produce students who will be more knowledgeable about the total world in which we find ourselves. Hopefully, this can be done by increasing the international content of our various courses and finding ways to expose students and faculty to the various cultures of the world.



# Continuing Education and Public Services

William A. Rogers, Ed.D., *Executive Dean*  
Kathryn Vegso, M.S. Ed., *Assistant Dean*

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## Background

Since 1956, The University of Akron has offered special institutes, workshops and courses to professional groups. The University, through its academic departments, Institute for Civic Education, Department of Special Programs and its various institutes and centers will continue to provide "outreach" programs, whenever practical.

As an urban institution of higher learning, the University clearly identifies and supports its public service role. Off-campus programs have been developed throughout the calendar year.

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## The Urban Commitment

The mission of most universities includes teaching, research and public service. Time and location dictates the varying manner by which institutions of higher education carry out their mission.

The rate of man's knowledge has accelerated at a staggering pace in the past three decades. The universities' traditional mission to educate 18 to 22 year olds and reproduce its own replacements in the doctoral format is too limiting a role for an urban institution. A society that supports urban public higher education expects the university to play a wider role and to intersect with almost all segments of its population. There now exists in our society a greater need for continued education.

Some have observed that for the first time in our history, Americans are members of a learning society in addition to the working one. If an urban institution of higher learning is to fulfill its non-traditional role, different administrative structures within the institution are necessary to provide a proper balance among teaching, research and service. At The University of Akron, a variety of such units are dedicated to the support of the urban commitment.

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## Objectives

The primary objective is to provide University-level continuing education; programs for those beyond

college age; and other educational programs for adults interested in non-degree oriented activities. In addition, the establishment and maintenance of an effective liaison with all Akron area agencies responsible for formal and informal post-secondary education is part of the University's urban mission.

Other objectives include the following:

- To offer meaningful learning opportunities to those engaged in the various professions.
- To offer assistance to industry, business, labor, public officials and community leaders in developing staff personnel and programs that will help them function more effectively.
- To offer joint University and community assistance to local, specialized organizations, agencies and other community groups to help them achieve their educational goals.
- To offer a variety of opportunities to adults who wish to increase their personal awareness and insights as individual members of a larger society.
- To serve as a coordinating body for post-secondary activity for the Akron area.
- To support and conduct research directed toward the identification of innovative approaches to continuing education and public service.
- To provide training programs for off-campus clients that will upgrade skills and help organizations improve the quality of their services.
- To motivate the University's continuing education personnel to become sensitive to individual and group, implicit and explicit, needs within the larger community.

To accomplish these objectives, Continuing Education and Public Services will cooperate with faculty and all campus offices to develop proposals for outside funds to help the University better serve its many audiences.

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## Institute for Civic Education

Marvin E. Phillips, M.A., *Director*  
Mary Elizabeth Chesrown, B.A., *Assistant Director*

The Institute for Civic Education is the public services programming center for The University of Akron. Many informal programs are designed for the community, utilizing the resources of the entire University and community. These programs are conducted both on and off the University campus; they vary in length and frequency; and many are free.

Universities cannot completely rely on the traditional academic classroom approach to fulfill the requirements of education for public responsibility because learning is a life-long process distilled from varied educational and

practical experiences. The institute sees its role as the catalyst for bringing together the skills and expertise of University personnel and community leaders to focus on the issues and problems of the urban society.

The continuing educational services provided by the institute include:

- Coordination and cooperation with more than 400 community organizations in program planning, workshops and seminars.
- Complete conference planning for organizations both on and off campus.
- Presentation of lectures by speakers in public life and national and world affairs, often in cooperation with University departments and community organizations.
- Co-sponsor the Community and College Ambassador programs.
- Coordinate the formation of the Speakers Bureau with more than 100 faculty members covering 300 topics.
- Sponsor the World-at-Our-Door travel film series.
- Publish the monthly Civic Educalendar listing events and programs.
- Present the Great Decisions discussion group.
- Initiate the weekly Current Issues Forum.
- Cooperate with area film societies in the Akron Area Film Society.

Programs are described in special announcements that are distributed to a community via a mailing list of approximately 4,000.

The institute represents the University in many community, state and national organizations including the Ohio Association for Adult Educators, United Community Council Conference of Executives and Foreign Policy Association.

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## Department of Special Programs

Cecil L. Dobbins, B.B.A., *Director*

Continuing education in today's age of specialization is a necessity for many persons wishing to improve work skills. For others, it is a leisure-time avocation for personal enrichment. Since 1937, The University of Akron, through the Department of Special Programs' year-round sessions of informal courses, has offered

courses in both categories for adults who do not require academic credit.

More than 175 classes, based upon the educational needs of the community, are offered each term. There are no requirements for admission to informal courses and any educational background is acceptable. Interest in learning in a relaxed and non-competitive environment is the only consideration.

Permanent student records are kept for all persons enrolled. Homework and examinations may be given; however, certificates of satisfactory completion are awarded based solely on attendance.

Following is a representative though partial listing of types of subjects taught in informal classes:

- Business and Industry — Accounting, bookkeeping for small business, building trades blueprint reading, diesetting, estimating for construction, federal income taxation, human relations, investing, psychology in business and industry, production and inventory control, quality control, selling, small business management, steam plant operation, supervision, technical drawing.
- Communications Skills, Verbal and Written — Creative writing, effective oral communications, English as a second language — verbal, English grammar, English review for the college bound, practical journalism, reading improvement, skills in listening, speed reading, vocabulary improvement.
- Data Processing — Assembler language, business data processing and computer programming, cobol workshop, fortran, key punching.
- Electronics — Basic electronics, fundamentals of AC-DC circuitry.
- Humanities and Fine Arts — Antiques, glass blowing, interior decorating, Judaism, motion picture production, photography.
- Mathematics — Algebra, math for everyday use, plane geometry, trigonometry.
- Metallurgy — Metal casting.
- Modern Languages and Culture — Arabic, Chinese, French, German, Greek, Italian, Polish, Romanian, Russian, Serbo-Croatian, Spanish, Swahili.
- Physical Education and Recreation — Korean karate, physical fitness for men and women, scuba and skin diving, swimming for women, self-defense for women, yoga.
- Real Estate — Appraising, commercial property, communications, finance, fundamentals I & II, house construction, legal aspects, management and investment marketing, understanding real estate.
- Science — Air pollution, engineering refresher, German, Russian for polymer scientists.
- Secretarial Skills — Business machines, certified professional secretaries review seminar, Gregg shorthand, office receptionist, typewriting.

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## Adult Resource Center

Kathryn Vegso, M.S. Ed., *Director*

The Adult Resource Center is a brokerage service which provides educational information, guidance and referral, and reflects a collaboration among the educational, business, governmental and social service units of this community. This community education center provides career/life planning for persons and organizations in the greater Akron area. It also serves as a catalyst for community and University organizations which want to publicize and/or develop information and programming to meet the needs of a broader segment of the population. This brokerage service represents a

new network of the community's educational services; a new approach to adults making role changes; and a new focus on the adults of this community as prospective learners with unique needs.

To identify the interrelationships between education and work at various stages of life, the Adult Resource Center schedules seminars and workshops to focus on helping persons plan ways to make greater use of their human potential.

For those persons who have experienced career/life changes and recognize the value of continuing to learn over the lifespan, learning consultants, at both the campus and community sites, help the individual identify and gain access to learning opportunities.

"Within each of us there is what we have not yet become."



# \*Course Numbering System

## Index

### The Department of Developmental Programs

1020 Development Programs

### The General College

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### U.S. Air Force R.O.T.C.

1500 Aerospace Studies

### U.S. Army R.O.T.C.

1600 Military Science

### Interdisciplinary Programs

1810 Afro-American Studies  
1820 Institute for Future Studies and Research  
1830 Environmental Studies  
1850 Institute for Life-Span Development and Gerontology  
1860 Peace Studies  
1870 Honors Program  
1880 Medical Studies

### The Community and Technical College

2020 Associate Studies  
2200 Educational Technology  
2220 Criminal Justice Technology  
2230 Fire Science Technology  
2240 Commercial Art  
2260 Community Services Technology  
2270 Labor Studies  
2280 Food Service Management  
2420 Business Management Technology  
2430 Real Estate  
2440 Data Processing  
2520 Sales and Merchandising  
2540 Secretarial Science  
2560 Transportation  
2740 Medical Assisting  
2760 Radiologic Technology  
2770 Surgical Assisting  
2780 Allied Health  
2790 Respiratory Therapy  
2840 Chemical Technology  
2860 Electronic Technology  
2880 Industrial Technology  
2900 Instrumentation Technology  
2920 Mechanical Technology  
2980 Surveying and Construction Technology

### The Buchtel College of Arts and Sciences

3100	Biology	3500	Modern Languages
3120	Medical Technology	3520	French
3150	Chemistry	3530	German
3200	Classics	3550	Italian
3210	Greek	3570	Russian
3220	Latin	3580	Spanish
3250	Economics	3600	Philosophy
3300	English	3650	Physics
3350	Geography	3700	Political Science
3370	Geology	3750	Psychology
3400	History	3850	Sociology
3450	Mathematics	3870	Anthropology
3460	Computer Science	3940	Polymer Science
3470	Statistics	3980	Urban Studies

### The College of Engineering

4100 General Engineering  
4200 Chemical Engineering  
4300 Civil Engineering  
4400 Electrical Engineering  
4450 Engineering Computer Science  
4600 Mechanical Engineering  
4980 Construction Technology

### The College of Education

5100 Educational Foundations  
5200 Elementary Education  
5250 Reading  
5300 Secondary Education  
5400 Technical and Vocational Education  
5550 Physical Education  
5560 Outdoor Education  
5570 Health Education  
5600 Educational Guidance and Counseling  
5610 Special Education  
5620 School Psychology  
5630 Inner-city Education  
5700 School Administration  
5800 Special Educational Programs  
5850 Educational Technology

### The College of Business Administration

6200 Accounting  
6400 Finance  
6500 Management  
6600 Marketing

### The College of Fine and Applied Arts

7100 Art  
7400 Home Economics and Family Ecology  
7500 Music  
7510 Musical Organizations  
7520 Applied Music  
7600 Mass Media-Communication  
7700 Speech Pathology and Audiology  
7750 Social Work  
7800 Theatre Arts and Dance

### The College of Nursing

8200 Nursing

### The School of Law

9200 Law

\*A more detailed explanation of the numbering system can be found in "Course Numbering Systems," Section 3 of this *Bulletin*.

# The Department of Developmental Programs

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## 1020: Developmental Programs

### 1020:041 DEVELOPMENTAL ENGLISH

Provides basic instruction in composition skills: grammar, sentence structure, sentence combining and punctuation. Develops skills necessary to enable student to write expository paragraphs.

### 1020:042 DEVELOPMENTAL ENGLISH

Reviews essential areas of sentence structure, sentence combining and punctuation necessary for composition writing, but concentrates on writing expository paragraphs.

### 1020:051-052 DEVELOPMENTAL MATHEMATICS

Designed to review and strengthen skills needed for credit mathematics courses. Study focuses on arithmetical operations and elementary algebra. Students may enroll for a second semester.

### 1020:061 DEVELOPMENTAL READING

Designed to develop students' general reading abilities. Emphasis given to increasing vocabulary, and understanding and remembering written material. Lectures, discussion and individual study.

### 1020:062 COLLEGE READING AND STUDY SKILLS

Designed to develop students' ability to understand and remember information in textbooks, and to use effective study techniques. Lectures, discussion and individual study.

### 1020:071-072 DEVELOPMENTAL NATURAL SCIENCE: CHEMISTRY

Review of mathematics as applied in chemistry; fundamental principles in scientific approach to solving problems; basic principles of general chemistry. Students may enroll for a second semester.

### 1020:299 SPECIAL TOPICS IN DEVELOPMENTAL PROGRAMS

Selected topics and subject areas of interest in developmental education.

# The General College

## 1100: General Studies

### 1100:105 INTRODUCTION TO PUBLIC SPEAKING

3 credits

Students introduced to principles and practice of speaking by reading examples of speeches, studying techniques and methods employed and applying them in a variety of speaking situations.

### 1100:108 EFFECTIVE ORAL COMMUNICATION

3 credits

Students learn principles of communication in speaker-audience, group and informal settings, and apply the principles in speeches, group discussions and other oral and written assignments.

### 1100:111-112 ENGLISH COMPOSITION

4 credits each

Sequential. Intended to enable students to obtain proficiency in reading and writing of English. Reading materials used are literary works of our Western tradition.

### 1100:115-118 INSTITUTIONS IN THE U.S.

3 credits each

Nonsequential. Descriptive and comparative study of development of modern American institutions. Covers various aspects of growth and elaboration of American governmental, social and economic institutions.

### 1100:120-190 PHYSICAL EDUCATION

1 credit each

Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Two periods each week.

*NOTE: When two activities are listed, the first is taught the first half of semester, and the second taught the second half of semester.*

### 1100:120 ARCHERY/GYMNASTICS

### 1100:121 ARCHERY/VOLLEYBALL

### 1100:122 BADMINTON/SQUARE AND FOLK DANCE

### 1100:123 BASKETBALL/INDOOR SOCCER

### 1100:124 BASKETBALL/VOLLEYBALL

### 1100:125 BOWLING/FITNESS

### 1100:128 BOWLING/MODERN DANCE

### 1100:127 BOWLING/SQUARE AND FOLK DANCE

### 1100:128 BOWLING/SWIMMING (INTERMEDIATE)

### 1100:129 CANOEING/BOWLING

### 1100:130 CANOEING/SOCCER

### 1100:131 CANOEING/SWIMMING (ADVANCED)

### 1100:132 CANOEING/TENNIS

### 1100:133 FITNESS/TENNIS

### 1100:134 GOLF/INDOOR SOCCER

### 1100:135 GOLF/VOLLEYBALL

### 1100:136 GYMNASTICS/BADMINTON

### 1100:137 GYMNASTICS/VOLLEYBALL

### 1100:138 INDOOR SOCCER/HANDBALL

### 1100:139 LIFE SAVING

### 1100:140 MODERN DANCE/ARCHERY

### 1100:141 SAILING/BOWLING

### 1100:142 SCUBA/SWIMMING (ADVANCED)

### 1100:143 SKIING/CANOEING

### 1100:144 SKIING/TENNIS

### 1100:145 SOCCER/BOWLING

### 1100:146 SOCCER/FITNESS

### 1100:147 SOCCER/SWIMMING (INTERMEDIATE)

### 1100:148 SQUARE DANCE/SWIMMING (INTERMEDIATE)

### 1100:149 SQUARE AND FOLK DANCE/ARCHERY

### 1100:150 SPEEDBALL/BOWLING

### 1100:151 SPEEDBALL/FITNESS

### 1100:152 SPEEDBALL/SWIMMING (INTERMEDIATE)

### 1100:153 SPEEDBALL/WRESTLING

### 1100:154 SWIMMING (ADVANCED)/DIVING

### 1100:155 SWIMMING (BEGINNING, I OR II)

### 1100:156 SWIMMING (INTERMEDIATE)/FITNESS

### 1100:157 SWIMMING (INTERMEDIATE)/SQUARE AND FOLK DANCE

### 1100:158 HANDBALL/BASKETBALL

### 1100:159 HANDBALL/FLOOR HOCKEY

### 1100:160 TENNIS/BOWLING

### 1100:161 TENNIS/FITNESS

### 1100:162 TENNIS/MODERN DANCE

### 1100:163 TENNIS/SOCCER

### 1100:164 TENNIS/SQUARE AND FOLK DANCE

### 1100:165 TENNIS/SWIMMING (INTERMEDIATE)

### 1100:166 TENNIS/WRESTLING

### 1100:167 VOLLEYBALL/BADMINTON

### 1100:168 VOLLEYBALL/GOLF

### 1100:169 VOLLEYBALL/SQUARE AND FOLK DANCE

### 1100:170 WATER POLO/SOCCER

### 1100:171 WATER POLO/SWIMMING (ADVANCED)

### 1100:172 WRESTLING/BOWLING

### 1100:173 SELF DEFENSE

### 1100:174 KARATE

### 1100:175 SKIN AND SCUBA DIVING

### 1100:176 VARSITY BASEBALL

### 1100:177 VARSITY BASKETBALL

### 1100:178 VARSITY CROSS COUNTRY

### 1100:179 VARSITY FOOTBALL

### 1100:180 VARSITY GOLF

### 1100:181 VARSITY SOCCER

### 1100:182 VARSITY TENNIS

### 1100:183 VARSITY TRACK

**1100:184 VARSITY WRESTLING****1100:185 VARSITY SWIMMING****1100:188 VARSITY INDOOR TRACK****1100:187 VARSITY VOLLEYBALL (WOMENS)****1100:188 VARSITY SOFTBALL (WOMENS)****1100:189 VARSITY BASKETBALL (WOMENS)****1100:190 VARSITY TENNIS (WOMENS)****1100:191 SPECIAL TOPICS IN GENERAL STUDIES***1-4 credits*

Prerequisite: permission. Selected topics or subject areas of interest in general studies.

**1100:221 NATURAL SCIENCE: BIOLOGY***3 credits*

Designed for nonscience majors to illustrate fundamental concepts of living organisms with emphasis on man's position in, and influence on, the environment.

**1100:222 NATURAL SCIENCE: CHEMISTRY***3 credits*

Designed for nonscience majors. Introduction to chemical principles at work in man and in his environment.

**1100:223 NATURAL SCIENCE: GEOLOGY***3 credits*

Study of basic principles and investigative techniques in various fields of geology with emphasis on relationship of geological processes to society.

**1100:224 NATURAL SCIENCE: PHYSICS***3 credits*

Introduction to, and commentary upon, some of the most significant principles, perspectives and developments in contemporary physics. Intended for nonscience majors.

**1100:291 SPECIAL TOPICS IN GENERAL STUDIES***1-4 credits*

Prerequisite: permission. Selected topics or subject areas of interest in general studies.

**1100:320-321 WESTERN CULTURAL TRADITIONS***4 credits each*

Sequential. Prerequisite: 64 credits or permission. Students are introduced to human experiences of the past as manifested in the ideas, music and visual arts of Western Civilization, the Greeks to the present. Two lectures/two discussions per week.

*Courses 1100:330-336 are designed to give students a basic knowledge of past human experiences and an understanding of current events in some key areas of the non-Western World.***1100:330 EASTERN CIVILIZATIONS: CHINA***2 credits*

Prerequisite: 64 credits.

**1100:331 EASTERN CIVILIZATIONS: JAPAN***2 credits*

Prerequisite: 64 credits.

**1100:332 EASTERN CIVILIZATIONS: SOUTHEAST ASIA***2 credits*

Prerequisite: 64 credits.

**1100:333 EASTERN CIVILIZATIONS: INDIA***2 credits*

Prerequisite: 64 credits.

**1100:334 EASTERN CIVILIZATIONS: NEAR EAST***2 credits*

Prerequisite: 64 credits.

**1100:335 EASTERN CIVILIZATIONS: AFRICA***2 credits*

Prerequisite: 64 credits.

**1100:336 EASTERN CIVILIZATIONS: LATIN AMERICA***2 credits*

Prerequisite: 64 credits.

**1100:391 SPECIAL TOPICS IN GENERAL STUDIES***1-4 credits*

Prerequisite: permission. Selected topics or subject areas of interest in general studies.



## U.S. Air Force R.O.T.C.

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### 1500: Aerospace Studies

#### 1500:113-114 FIRST YEAR AEROSPACE STUDIES

1.5 credits each

(AS100), General Military Course.

Missions and organizations of Air Force and current events discussed to show how the military contributes to national defense. Laboratory develops leadership skills.

#### 1500:253-254 SECOND YEAR AEROSPACE STUDIES

1.5 credits each

(AS200), General Military Course.

Emphasis on air power history. Films, lectures, and class discussions. The politico-military environment is presented. Leadership Lab.

#### 1500:303-304 THIRD YEAR AEROSPACE STUDIES

3 credits each

(AS300), Professional Officer Course.

Focuses attention on the military profession, civil-military interactions and the framework and formulation of defense policy. Communicative skills are developed. Leadership Lab.

#### 1500:453-454 FOURTH YEAR AEROSPACE STUDIES

3 credits each

(AS400), Professional Officer Course.

Management concepts in the military. Military justice systems; leadership theory, functions and practices; professionalism; and responsibilities. Communicative skills are developed. Leadership Lab.

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## U.S. Army R.O.T.C.

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### 1600: Military Science

#### Military Science I

##### 1600:100 INTRODUCTION TO MILITARY SCIENCE

1.5 credits

Orientation and overview of Army ROTC program and career opportunities for ROTC graduates. Familiarization with organization and capabilities of Army and its missions. Development of leadership fundamentals, mountaineering techniques, marksmanship.

##### 1600:101 MAP READING AND ORIENTEERING

1.5 credits

Fundamentals of map reading and orienteering to include topographic analysis, navigation techniques and applicatory work in use of maps, aerial photographs and competitive orienteering. Student selects two modules for practical exercise lab.

#### Military Science II

##### 1600:200 SMALL UNIT OPERATIONS

1.5 credits

Fundamentals and techniques of tactics and small unit operations to include analysis of associated leadership and management problems. Discussion and application of problem-solving process. Student selects two modules for practical exercise lab.

##### 1600:201 BASIC MILITARY LEADERSHIP

1.5 credits

Study of functions, duties and responsibilities of junior leaders. Operations of basic military teams. Study of leadership techniques in community, business and academic environment. Emphasis on communicative skills. Student selects two modules for practical exercise lab.

#### Military Science III

##### 1600:300 ADVANCED LEADERSHIP I

3 credits

Prerequisite: meet requirements for enrollment\* and/or permission of instructor. Development of an understanding of leadership process to include applicatory work emphasizing officer leadership duties and responsibilities. Methods and techniques of military instruction.

##### 1600:301 ADVANCED LEADERSHIP II

3 credits

Prerequisite: meet requirements for enrollment\* and/or permission of instructor. Review of fundamentals and principles of small unit leadership and tactics stressing application and problem-solving processes. Familiarization with weapons, communications equipment, and review of fundamentals of map reading.

#### Military Science IV

##### 1600:400 MILITARY MANAGEMENT I

3 credits

Prerequisite: 300-301; and/or permission of instructor. Principles and practices of administrative and operational staff executives, their roles and responsibilities in support of the manager. Study of formal and informal organizations, communication, job satisfaction, authority and leadership.

##### 1600:401 MILITARY MANAGEMENT II

3 credits

Prerequisite: 300-301; and/or permission of instructor. Concepts and implications of military judicial system for executive decision maker. Analysis of decision making under a high stress condition including planning, organizing, directing and controlling functions of the manager. Familiarization with historical growth and development of Army.

\*Requirements for enrollment: Completion of three years of high school ROTC or two years of college ROTC (Army, Navy or Air Force); or at least one year active service or the active Reserve service; or by successful completion of basic camp or campus summer program between sophomore and junior years.

# Interdisciplinary Programs

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## 1810: Afro-American Studies

### 1810:401 GENERAL SEMINAR IN AFRO-AMERICAN STUDIES

3 credits

Prerequisite: 3400:220 or permission. Exploration and intensive examination of variety of issues related to role and minority group relations which normally stand outside the compass of any one subject matter area.

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## 1830: Environmental Studies

### 1830:201 MAN AND THE ENVIRONMENT

2 credits

Study of man's relationship with nature, his dependence upon his environment, and his control over it. An interdisciplinary approach, with lecturers from various University departments, government and industry describing their approaches to the environment. This course will not apply toward the student's major.

### 1830:401 SEMINAR IN ENVIRONMENTAL STUDIES

2 credits

Covers specific environmental topic or topics from interdisciplinary viewpoint each semester. Topics of current interest studied from varying viewpoints. The Director of Environmental Studies coordinates course; resource persons are drawn from the University and surrounding community.

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## 1850: Institute for Life-Span Development and Gerontology

### 1850:450 INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY

1 credit

(May be repeated for a total of 2 credits)

Prerequisite: certificate program students only. Guest speakers from various disciplines and services which have life-span development and gerontological components and from government and community facilities and services. Certificate program students must complete two semesters of this course.

### 1850:490 WORKSHOP

1-3 credits

(May be repeated)

Group studies of special topics in life-span development and gerontology. May not be used to meet certificate requirements. May be used for elective credit only.

### 1850:495 PRACTICUM IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY

1-3 credits

(May be repeated)

Prerequisite: permission. Supervised experience in research or community agency work.

## Graduate Courses

### 1850:880 INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY

1 credit

Prerequisite: permission. Certificate program students only. Explores interdisciplinary issues in life-span development and gerontology. Guest speakers from various disciplines and services which have life-span development and gerontological components and from government and community facilities and services.

### 1850:890 WORKSHOP

1-3 credits

(May be repeated)

Group studies of special topics in life-span development and gerontology. May be used as elective credit but not as part of certificate required courses.

### 1850:895 PRACTICUM IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY

3 credits

Prerequisite: permission. Supervised experience in research or community agency work.

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## 1860: Peace Studies

### 1860:300 TOPICS IN PEACE STUDIES

1-3 credits

(May be repeated for a total of 3 credits)

Interdisciplinary topics related to peace studies.

### 1860:301 VALUE CONCEPTS ON PEACE AND WAR

3 credits

Interdisciplinary study of attitudes, concepts and realities regarding war and peace issues.

### 1860:350 INDEPENDENT STUDY

1-3 credits

(May be repeated for a total of 3 credits)

Detailed study on selected topics related to peace.

### 1860:378 INTRODUCTION TO HUMAN RIGHTS CONCEPTS

3 credits

Interdisciplinary and cross-cultural survey of basic concepts of human rights as recognized by international law. Limitations and future issues are raised.

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## 1870: Honors Program

### 1870:250-350-450 HONORS COLLOQUIUM: HUMANITIES

2 credits each

Prerequisite: admission to University Honors Program. Interdisciplinary colloquium on important issues in humanities.

### 1870:280-380-480 HONORS COLLOQUIUM: SOCIAL SCIENCES

2 credits each

Prerequisite: admission to University Honors Program. Interdisciplinary colloquium on important issues in social sciences.

### 1870:270-370-470 HONORS COLLOQUIUM: NATURAL SCIENCES

2 credits each

Prerequisite: admission to University Honors Program. Interdisciplinary colloquium on important issues in natural sciences.

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## 1880: Medical Studies

### 1880:201 MEDICAL SEMINAR AND PRACTICUM I

*3 credits*

Prerequisite: 3100:191 and permission. Provides field experiences in health care delivery in geographic area served by Northeastern Ohio Universities College of Medicine and The University of Akron. Students are directed in supervised roles of professional and paraprofessional in meeting health care needs of community. Open to first-year students in Phase 1 of BS/MD program, others by permission.

### 1880:301 MEDICAL SEMINAR AND PRACTICUM II

*3 credits*

Prerequisite: 201 and permission. Continuation of 201 offered at an advanced level of professional involvement. Open to second-year students in Phase 1 of BS/MD program, others by permission.

### 1880:310 SEMINAR ON HUMANITIES IN MEDICAL EDUCATION

*3 credits*

Prerequisite: junior standing in BS/MD program; other students involved in health care delivery programs by permission. Introduction to the humanities as they bear upon history and practice of medicine. Seminar draws upon lecturers from the University and community, and includes performances, field trips, films and tapes appropriate to topics discussed.

# The Community and Technical College

## 2020: Associate Studies

### 2020:121 ENGLISH

4 credits

Employs various techniques including art, films, personal journals and critical reading, leading from pre-writing to development of structured expository essays.

### 2020:130 MATHEMATICS FOR PUBLIC SERVICE/HEALTH TECHNOLOGY

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 meet General Studies math requirement.

### 2020:131 MATHEMATICAL ANALYSIS I

4 credits

Prerequisite: 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.

### 2020:132 MATHEMATICAL ANALYSIS II

3 credits

Prerequisite: 131 or equivalent. Exponents and radicals, exponential equations, logarithms, vectors, graphs of trigonometric formulas and identities, complex numbers.

### 2020:135 MATHEMATICS FOR DATA PROCESSING

3 credits

Prerequisite: 131 or equivalent. Sets and logic, basic probability and statistics, matrix algebra and business applications.

### 2020:222 TECHNICAL REPORT WRITING

3 credits

Prerequisite: 121 or equivalent. Prepares student to write the types of reports most often required of engineers, scientists, and technicians. Includes types of reports, memoranda, letters, techniques of research, documentation and writing of reports.

### 2020:233 MATHEMATICAL ANALYSIS III

3 credits

Prerequisite: 132. Analytic geometry of the conics, introduction to differentiation, the derivative, application of the derivative, integration, differentiation and integration of transcendental functions.

### 2020:240 HUMAN RELATIONS

3 credits

Examination of principles and methods which aid in understanding the individual's response to his society and relationship between society and individual.

### 2020:241 MAN AND TECHNOLOGY

2 credits

Examination of impact of scientific and technical change upon man, his values and his institution arrangements. Topics include biomedical technology, automation, economic growth, natural environment and technology and quality of life.

### 2020:242 AMERICAN URBAN SOCIETY

3 credits

Multidisciplinary treatment of urban processes and problems. Concerns historical, political, social, economic and other environmental forces which impact upon the individual in an urban setting.

### 2020:247 SURVEY OF BASIC ECONOMICS

3 credits

Introduction to economic analysis and issues designed for those students taking only one course in economics. Coverage includes economic systems, exchange, money and banking, national income, employment, fiscal policy and current domestic economic problems.

### 2020:251 WORK RELATIONSHIPS

2 credits

Examination of relationship between man and the work organization. Emphasis on involvement, sense of job satisfaction, supervision and goals of the organization.

### 2020:254 THE BLACK AMERICAN

2 credits

Examination of the Black American including origins, historical achievements and present striving to achieve first-class citizenship in American society. Emphasis on analysis of forces in American society that create racial separation.

### 2020:290 SPECIAL TOPICS IN ASSOCIATE STUDIES

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission. Selected topics on subject areas of interest in associate studies.

### 2020:334 MATHEMATICS FOR TECHNICAL APPLICATIONS

3 credits

Prerequisite: 233. Applications of integration, methods of integration, series (including Fourier), numerical methods of approximation, introduction to differential equations, second-order differential equations, Laplace transforms.

## 2200: Educational Technology

### 2200:100 INTRODUCTION TO LIBRARY TECHNOLOGY

3 credits

Introduces students to library technology program and career opportunities available as library technologists. Includes discussions, field observations, guest speakers, lecturers, readings, and extensive practical hands-on experience.

### 2200:201 CATALOGING, CLASSIFYING AND PROCESSING MATERIALS

3 credits

Prerequisite: 100. Study of principles of descriptive cataloging, Dewey decimal system, Library of Congress classifications and subject headings. Problems and practice in areas such as typing catalog cards and filing.

### 2200:202 ORGANIZING AND OPERATING LIBRARY/MEDIA CENTERS

3 credits

Prerequisite: 100. Includes functional aspects of facility, ordering and processing materials, circulation procedures and other control systems. Operational functions include program development and implementation, services of library/media centers and public relations.

### 2200:203 MATERIALS SELECTION

2 credits

Prerequisite: 100. Introduction to tools used in selecting print and non-print materials for libraries/media centers. Problems of censorship, intellectual freedom and academic freedom discussed as they relate to evaluation selection process.

### 2200:204 REFERENCE PROCEDURES

3 credits

Prerequisite: 100. Introduction to study and use of basic information tools including almanacs, encyclopedias, dictionaries, bibliographies, yearbooks and specialized reference tools. Actual reference practices and procedures used.

**2200:205 INFORMATION RETRIEVAL SYSTEMS IN LIBRARY TECHNOLOGY***3 credits*

Prerequisites: 201, 202 and 204; or permission. Practical introduction to information retrieval systems and their application. Emphasis on Ohio College Library Center network and its impact on library technical and public services. Hands-on experience with OCLC and other on-line terminal operations.

**2200:245 INFANT/TODDLER DAY CARE PROGRAMS***3 credits*

Survey of infant/toddler development. Principles of infant/toddler care-giving. Design of environment and curriculum based on child's needs. Includes observation of children.

**2200:250 OBSERVING AND RECORDING CHILDREN'S BEHAVIOR***3 credits*

Prerequisite: 7400:265 or permission. Develops observing and recording skills using different types of records and assesses children's development and behavior. One-half of total hours spent in classroom and one-half on site in field.

**2200:290 SPECIAL TOPICS IN EDUCATIONAL TECHNOLOGY***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in educational technology.

**2200:297 INDEPENDENT STUDY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission. Selected topics and special areas of study under supervision and evaluation of selected faculty member with whom specific arrangements have been made.

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## 2220: Criminal Justice Technology

**2220:100 INTRODUCTION TO CRIMINAL JUSTICE***3 credits*

Overview of criminal justice system, its history, development and evolution within U.S. including subsystems of police, courts, corrections. Constitutional limitations, current criminal justice practices — human relations, professionalization, prevention.

**2220:102 CRIMINAL LAW FOR POLICE***3 credits*

Prerequisite: 100. Historical development and philosophy of the law. Thorough study of modern Criminal Law including Ohio Criminal Code and defenses to particular crimes.

**2220:104 EVIDENCE AND CRIMINAL LEGAL PROCESS***3 credits*

Prerequisite: 100. Study of evidence law, constitutional perspectives, and law enforcement officer's relationship thereto. Court procedures from arrest to incarceration.

**2220:106 JUVENILE JUSTICE PROCESS***3 credits*

Prerequisite: 100. Examination of juvenile justice system, functions of its various components; adolescent subculture, legislation, causative factors, prevention and treatment methodologies and programs.

**2220:110 SOCIAL VALUES 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.

**2220:150 CRIMINAL JUSTICE ADMINISTRATION AND SUPERVISION***3 credits*

Prerequisite: 100. Examination and analysis of basic concepts of administration, supervision and policy formulation in criminal justice system. Organizational function, structure processes and behavior. Theory related to administrative practice.

**2220:200 CRIMINAL JUSTICE THEORY AND PRACTICE***3 credits*

Prerequisites: 100, 150. In-depth examination of criminal justice administrative problems in areas of personnel selection, training, advancement and personnel utilization. Consolidation and cooperation between agencies. Advanced concepts for change within criminal justice system.

**2220:240 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. Provides knowledge concerning issues involved in consensual acts. Impact on society of physical and psychological results of substance abuse.

**2220:250 CRIMINAL CASE MANAGEMENT***6 credits*

Prerequisites: 100, 2840:100 and permission. Reconstruction of chronological sequence of a crime including searching, collection, preserving and evaluation of physical and oral evidence. Scientific approach to criminal investigation.

**2220:290 SPECIAL TOPICS IN CRIMINAL JUSTICE***1-4 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission. Workshops and special programs in selected areas of criminal justice such as community relations, crime statistics, ethics, survival.

**2220:294 CRIMINAL JUSTICE INTERNSHIP EVALUATION***1 credit*

Prerequisites: 100, 30 credits, and permission; corequisite: 295. Analysis by student and instructor of internship experience. A sharing of knowledge gained by students during their internships.

**2220:295 CRIMINAL JUSTICE INTERNSHIP***3 credits*

Prerequisites: 100, 30 credits, and permission. Supervised work experience in criminal justice agency for purpose of increasing student understanding of criminal justice process.

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## 2230: Fire Science Technology

**2230:100 INTRODUCTION TO FIRE SCIENCE***2 credits*

History and philosophy of fire protection; introduction to agencies involved in fire protection; current legislative developments; discussion of current related problems, expanding future of fire protection and career orientation.

**2230:102 FIRE PREVENTION AND BUILDING CONSTRUCTION***2 credits*

Exploration of building construction and design with emphasis on fire protection concerns; review of related statutory and suggested guidelines — local, state, and national in scope.

**2230:140 FIRE INVESTIGATION METHODS***2 credits*

History of fire investigation; gathering of evidence and development of technical reports; fundamentals of arson investigation; processing of criminal evidence and procedures related to local and state statutes.

**2230:200 FIRE DETECTION AND SUPPRESSION SYSTEMS***2 credits*

Study of protection systems; automatic sprinklers and special extinguishing systems; analysis of various automatic detection and signaling systems.

**2230:202 FIRE-FIGHTING TACTICS AND STRATEGY***2 credits*

Efficient and effective utilization of manpower, equipment and apparatus. Emphasis on preplanning, fireground organization problem solving related to fireground decision making and attack tactics and strategy.

**2230:204 FIRE PREVENTION PRACTICES***2 credits*

Inspection techniques and procedures; setting up a fire prevention bureau. Recognition and correction of fire hazards. Public relations and code enforcement.

**2230:240 FIRE DEPARTMENT ADMINISTRATION AND SUPERVISION***2 credits*

Study of methods and principles of fire department organization, both formal and informal, line and staff. Emphasis on supervisory responsibilities and functions.

**2230:250 HAZARDOUS MATERIALS***2 credits*

Prerequisite: 2840:100. Study of chemical characteristics and reactions related to storage, transportation and handling of hazardous materials. Emphasis on emergency situations, fire fighting and control.

**2230:252 FIRE HYDRAULICS AND EQUIPMENT***2 credits*

Basic hydraulics as used in fire service.

**2230:254 LEGAL ASPECTS OF FIRE PROTECTION***2 credits*

Prerequisite: 104. Study of legal rights and duties, liabilities and responsibilities of fire department organizations.

**2230:256 FIRE SAFETY CODES (OSHA)***2 credits*

History and development of codes with emphasis on nature and scope of legal statutes and related codes in fire protection control.

**2230:290 SPECIAL TOPICS IN FIRE SCIENCE TECHNOLOGY***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in fire science technology.

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**2240: Commercial Art****2240:124 DESIGN IN COMMERCIAL ART***3 credits*

Projects in visual design fundamentals. Analysis of design/research process applied to advertising layout and composition. Design constructions in pattern and self-contained forms.

**2240:140 TYPOGRAPHY AND LETTERING***3 credits*

Prerequisite: 124. 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 type faces.

**2240:222 ADVERTISING PHOTOGRAPHY***3 credits*

Prerequisite: 7100:275. Creative commercial use of photographic materials and equipment. Photography studied for its use in advertising and creative photo-illustration. Student must own or have use of camera with controllable shutter, lens diaphragm and focus.

**2240:242 ADVERTISING LAYOUT DESIGN***3 credits*

Prerequisite: 140. Problems in commercial graphic design, analysis, research, visual experimentation and finished art. Emphasis on visual problem solving in advertising and communications.

**2240:243 PUBLICATION DESIGN***3 credits*

Prerequisites: 242 and 7100:275. Study of publications and design of promotional brochures, annual reports and other multi-paged communication devices. Emphasis on total design systems from concept to camera-ready art. Portfolio development.

**2240:245 DESIGNING FOR PRODUCTION***3 credits*

Prerequisite: 140. Analysis of design process as applied to commercial printing processes. Design projects taken to camera-ready art. Color separation systems, key-line, mechanicals, and preparation of finished art procedures.

**2240:247 PACKAGING DESIGN***3 credits*

Prerequisites: 242 and 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.

**2240:290 SPECIAL TOPICS IN COMMERCIAL ART***1-3 credits*

Prerequisite: permission of instructor. Selected topics or subject areas of interest in commercial art.

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**2260: Community Services Technology****2260:117 EXPLORATORY EXPERIENCE IN A SOCIAL AGENCY***2 credits*

Prerequisite: permission. Experiential course designed to introduce student to social service delivery. Minimum of six hours per week as volunteer in social service agency plus one hour per week in class.

**2260:150 INTRODUCTION TO GERONTOLOGICAL SERVICES***3 credits*

Basic orientation to gerontology and role of community service technician in service delivery to aged. Topics include social, biological, economical and psychological aspects of aging; national and state legislation; services and service provider.

**2260:260 ALCOHOL USE AND ABUSE***3 credits*

Survey of use and abuse of alcohol in our society with particular emphasis on replacing common stereotypes, myths and attitudes with improved understanding.

**2260:261 ALCOHOLISM TREATMENT***3 credits*

Prerequisite: 260. Survey of theory and practices in treatment of alcohol problems. Special emphasis on applicability and effectiveness of various resources and approaches.

**2260:262 BASIC HELPING SKILLS IN ALCOHOL PROBLEMS***4 credits*

Introduces students to basic concepts of helping skills; provides opportunity to help; develops 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.

**2260:276 TECHNIQUES OF COMMUNITY WORK***4 credits*

For those intending to work at community organization and outreach assignments in inner city and other poverty areas in United States and for others desiring an understanding of these newly developing technical community service roles.

**2280:279 TECHNICAL EXPERIENCE IN COMMUNITY AND SOCIAL SERVICES***2-4 credits*

Prerequisite: 278 or permission. Individual placement in selected community and social service agencies for educationally supervised experience in community and social services technician position. Does not substitute for 7750:421 or 495.

**2280:280 FUNDAMENTALS OF VOLUNTEER MANAGEMENT***3 credits*

Prerequisite: permission. For persons wishing to increase professional skills in volunteer administration. Includes setting goals, developing work plans, evaluating volunteer performance, recruiting volunteers, writing job descriptions, handling human relations problems, developing office procedures, keeping records and evaluating volunteer program.

**2280:290 SPECIAL TOPICS IN COMMUNITY SERVICES TECHNOLOGY***1-3 credits*

Prerequisite: permission. Selected topics or subject areas of interest in community services technology.

**2280:294 COMMUNITY SERVICES TECHNICAL EXPERIENCE EVALUATION***1 credit*

Coresquisite: 279. Designed to integrate on-the-job community and social service experience in 279 with fundamental concepts and skills of prior academic study.

**2270:241 UNION LEADERSHIP***2 credits*

Prerequisite: 101. Specific skills related to administration of Local Unions including structure of Local Unions and duties and responsibility of officers.

**2270:251 PROBLEMS IN LABOR STUDIES***3 credits*

Prerequisite: final semester or permission. 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.

**2270:290 SPECIAL TOPICS IN LABOR STUDIES***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or workshops of interest in labor studies.

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## 2270: 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 affecting growth of unions. Rise of industrial unionism as alternative to craft unions. Trade Union movements in other countries examined for their influence on American unions.

**2270:111 COLLECTIVE BARGAINING I***3 credits*

Prerequisite: 101. Review of collective bargaining dealing with wages, fringes and working conditions. Examination of contract content. Development of bargaining proposals. Skills required in negotiations and union/management responsibilities to community in collective bargaining. Strikes and impasse resolution.

**2270:121 LABOR AND THE LAW***3 credits*

Prerequisite: 101. Traces development of federal law which directly affects labor/management relations. Study commences with early Supreme Court opinions and applications of such laws as Sherman Antitrust Act.

**2270:212 COLLECTIVE BARGAINING II***3 credits*

Prerequisite: 111. Mechanics and skills of formal grievance procedures in industrial, craft and public setting. Investigation, record keeping and presentation of grievance, as well as study of arbitration process and preparation and presentation of arbitration cases.

**2270:221 OCCUPATIONAL HEALTH AND SAFETY STANDARDS***3 credits*

Examination of William-Steiger Occupational Safety and Health Act and rights and responsibilities conferred on unions by this act. Includes not only workings of the law but also hazards recognition study.

**2270:231 FAIR PRACTICES AND EQUAL OPPORTUNITY***2 credits*

Rights and responsibilities of unions and union members as related to Title VII of the Civil Rights Act, the Voting Rights Act and development of EEOC.

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## 2280: Food Service Management

**2280:121 FUNDAMENTALS OF FOOD PREPARATION***4 credits*

Develops skills and working knowledge of food preparation in laboratory situation. Involved merchandising and evaluation of food products and instills positive attitudes in food sanitation.

**2280:135 FOOD PURCHASING***3 credits*

Food purchasing for various types of food services; storing and handling. Emphasis on specification requirements and selection for major foods purchased for food services.

**2280:233 QUANTITY FOOD SERVICE***4 credits*

Introduction to large quantity food service procedures with emphasis on sound principles of food handling service and sanitation in large quantity operations. Gourmet meals served in simulated restaurant atmosphere.

**2280:236 MENU PLANNING AND COST CONTROLS***3 credits*

Menu planning for various types of commercial, industrial, school and institutional food services; basic factors influencing planning; merchandising techniques. Special emphasis on catering and vending services. Food cost control.

**2280:237 FOOD SERVICE INTERNSHIP***2 credits*

Prerequisite: 233. Food service experience under commercial operating conditions.

**2280:240 FOOD SERVICE MANAGEMENT***3 credits*

Introduction to management principles pertinent to organization and administration of food service systems: supervisory development, personnel selection and training, labor relations, cost control structures and evaluation of current procedures.

**2280:243 FOOD EQUIPMENT AND PLANT OPERATIONS***3 credits*

Acquaints student with available food service equipment, its selection, use and care. Field trips taken to wholesale outlets and food service establishments to see food service equipment demonstrated and in operation.

**2280:290 SPECIAL TOPICS IN FOOD SERVICE MANAGEMENT***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in food service management.

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## 2420: Business Management Technology

### 2420:101 ELEMENTS OF DISTRIBUTION

3 credits

Study of basic principles and methods in distribution. Presentation of marketing process as it relates to consumer and industrial products. Emphasis on pricing, product, promotion, as well as distribution.

### 2420:103 THE ROLE OF SUPERVISION IN MANAGEMENT

3 credits

Presentation of basic management techniques; motivation, planning, organizing, leading and controlling. Elements of group behavior, communication, and employee compensation.

### 2420:104 INTRODUCTION TO BUSINESS

3 credits

Survey course of business in its entirety including production, distribution, finance, control and personnel functions. Emphasis on descriptive materials, technical vocabulary, and career opportunities and responsibilities in various business fields.

### 2420:111 PUBLIC RELATIONS

2 credits

Study of philosophy, techniques and ethics of the management function known as public relations. Defines variety of publics and methods of communication.

### 2420:113 INTRODUCTION TO BANKING

2 credits

Covers fundamentals of banking in operational perspective. Emphasis on bank functions, types of accounts, relationship to depositors, loans, investments trust, safe deposit operations, internal and external control, public service obligations.

### 2420:123 FEDERAL REGULATION OF BANKING

2 credits

Prerequisite: 113. Study of agencies regulating banks, bank charters, bank reports and examinations, federal limitations on banking operations and regulation of bank expansion. Supervision of employees to conform with regulation.

### 2420:170 BUSINESS MATHEMATICS

3 credits

Review of fundamentals of math applicable to business, trade prices, retail pricing, interest and discounts, compound interest and annuities, consumer credit, payroll, income taxes, depreciation methods, financial statements, and elementary statistics.

### 2420:202 PERSONNEL PRACTICES

3 credits

Provides information necessary to develop policies and programs that attract, retain and motivate employees. Includes staffing, human resources development, compensation plans, labor and management relations, appraisal systems and career planning.

### 2420:211 BASIC ACCOUNTING I

3 credits

Accounting for sole proprietorships and partnerships. Service and merchandising concerns. Journals, ledgers, work sheets and financial statements. Includes handling of cash, accounts receivable, notes, inventories, plant and equipment, and payroll.

### 2420:212 BASIC ACCOUNTING II

3 credits

Prerequisite: 211. Study of accounting principles as applied to corporate form of business, and of manufacturing accounting for job order and process costing, budgeting and standard costs.

### 2420:221 ADMINISTRATIVE OFFICE SUPERVISION

2 credits

Aids student in developing supervisory leadership skills and includes basic concepts of function of office work, management of information, control of office services and work simplification.

### 2420:233 INSTALLMENT CREDIT

2 credits

Prerequisite: 113. Pragmatic course emphasizing evaluation, maintenance of consumer, commercial credit. Covers evaluation, legal aspects, collection, direct and indirect installment lending, leasing and other special situations, credit department management.

### 2420:243 SURVEY IN FINANCE

3 credits

Prerequisites: three credits of economics and three credits of accounting. Survey of field including instruments, procedures, practices and institutions. Emphasis on basic principles.

### 2420:253 ELEMENTS OF BANK MANAGEMENT

2 credits

Prerequisite: 113. Applied course in bank operation and management. Bank case studies utilized to focus on objectives, planning, structure, control, and interrelationship of bank functions and departments.

### 2420:273 MONETARY SYSTEMS AND THE PAYMENTS MECHANISM

3 credits

Prerequisite: 280. Structure of banking system, Federal Reserve System policies and operations, Article IV of the 4CC, paperless electronic payments mechanism, bank responsibilities in deposit, collection, dishonor and return, payment of checks.

### 2420:280 ESSENTIALS OF LAW

3 credits

Brief history of law and judicial system, study of contracts with emphasis on sales, agency, commercial paper and bailments.

### 2420:290 SPECIAL TOPICS IN BUSINESS MANAGEMENT TECHNOLOGY

1-2 credits

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in business management technology.

## 2430: Real Estate

### 2430:105 REAL ESTATE PRINCIPLES

2 credits

Introduction to real estate as a profession, process, product, and measurement of its productivity. Students are responsible for reading and discussions relative to real estate and the American system.

### 2430:115 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.

### 2430:125 ELEMENTS OF LAND AND REAL ESTATE DEVELOPMENT

2 credits

Prerequisites: 105, 185. Students learn and apply step-by-step processes needed by professional developer in producing real estate for consumption.

### 2430:185 REAL ESTATE LAW

2 credits

Prerequisite: 105. Study of contents of contemporary real estate law. Students are responsible for readings covering units on estates, property rights, license laws, contracts, deeds, mortgages, civil rights and zoning.

### 2430:205 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.



**2430:215 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.

**2430:225 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.

**2430:235 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.

**2430:245 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, governmental influence on finance and risk analysis and mortgage lending.

**2430:255 VALUATION OF RESIDENTIAL PROPERTY***2 credits*

Prerequisites: 105, 185. Study of methods used to estimate value in residential property including cost of reproduction, market data, and income approach. Student prepares an appraisal on a residential property.

**2430:265 REAL ESTATE BROKERAGE***2 credits*

Prerequisites: 105, 185. Study of application of management functions of planning, organizing, directing, controlling, and staffing to real estate brokerage office. Student activities include reading, discussion and research.

**2430:275 SPECIAL PROJECT IN REAL ESTATE***2 credits*

Prerequisites: 105, 185. Student demonstrates knowledge of real estate by preparing a written report covering brokerage process as it relates to a parcel of property.

**2430:285 APPLIED REAL ESTATE MATHEMATICS***2 credits*

Prerequisites: 105, 185. Student learns and applies mathematics necessary to profession of real estate. Topics include proration of taxes, area calculations, appraising math, mortgage math and closing statements.

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## 2440: Data Processing

**2440:120 INTRODUCTION TO INFORMATION PROCESSING***2 credits*

General overview of data processing techniques providing fundamentals necessary for subsequent computer-oriented courses.

**2440:131 INTRODUCTION TO PROGRAMMING***2 credits*

Prerequisite: 120. Illustrates basic functions of computers and provides specific information about third-generation computers, including programming in actual and assembly language.

**2440:132 ASSEMBLER PROGRAMMING AND JCL***4 credits*

Prerequisite: 131. Involves in-depth coverage of basic assembler language including linkage conventions and macro construction. Fixed-point and decimal instruction set included.

**2440:133 COBOL PROGRAMMING***2 credits*

Prerequisite: 131. Introduction to Cobol with specific orientation toward the IBM system/370.

**2440:234 ADVANCED COBOL PROGRAMMING***3 credits*

Prerequisite: 133. Continuation of 133 including detailed applications in areas such as payroll and inventory. Disk concepts emphasized.

**2440:235 CURRENT PROGRAMMING TOPICS***2 credits*

Prerequisite: 234. Emphasizes topics varied to fit needs of students at the time. Such topics as APL programming, teleprocessing and PL/1 programming may be included.

**2440:239 RPG II PROGRAMMING***1 credit*

Prerequisite: 133. Study of Report Program Generator II (RPG II) programming. Includes training in RPG II coding and logical debugging as well as discussion of applications which lend themselves to the use of RPG II.

**2440:241 DATA PROCESSING SYSTEMS***3 credits*

Prerequisite: 132. Covers all phases of business systems analysis, design, development and implementation. Such principles as system and program flowcharting, and file and document design emphasized.

**2440:251 DATA PROCESSING PROJECTS***5 credits*

Prerequisite: 241. Provides workshop for accomplished students to thoroughly apply what they have learned. Projects involve systems design and implementation using Cobol.

**2440:290 SPECIAL TOPICS: DATA PROCESSING***1-3 credits*

Prerequisite: permission. Seminar in topics of current interest in data processing or special individual student projects in data processing.

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## 2520: Sales and Merchandising

**2520:103 PRINCIPLES OF ADVERTISING***3 credits*

Review of basic principles and functions of current advertising practice. Includes overview of related distributive institutions, media types and economic functions of advertising.

**2520:104 VISUAL MERCHANDISING***2 credits*

Basic studio course in retail display techniques. Includes window, interior and point-of-purchase display categories.

**2520:105 SALES PROMOTION***3 credits*

Prerequisite: 104. Principles of design as applied to commercial art. Function in visual design, elements of design, color theory, lettering, printing processes, layout to camera-ready art. No credit toward commercial art major.

**2520:201 PRINCIPLES OF WHOLESALING***2 credits*

Examination of wholesaler and wholesaling function. Attention given to buying process and relationship of ultimate consumer to wholesaler.

**2520:202 RETAILING FUNDAMENTALS***4 credits*

Presents basic principles and practices of retailing operations, including site selection, buying, pricing and promotion practices. Use is made of extensive projects and investigations and actual retail operations.

**2520:210 CONSUMER SERVICE FUNDAMENTALS***2 credits*

Prerequisite: 2420:101. Discussion of problems facing business today created by social issues in society. Emphasis on understanding viewpoints of all groups involved.

**2520:211 MATHEMATICS OF RETAIL DISTRIBUTION***3 credits*

Prerequisite: 2420:170. Basic skills course dealing with merchandising mathematics. Includes an understanding of types of markups, retail method of inventory, sales and stock planning and open-to-buy computations.

**2520:212 PRINCIPLES OF SALESMANSHIP***4 credits*

Study of basic principles of selling, emphasizing individual demonstrations and sales projects. Includes review of sales function as integral part of marketing process.

**2520:290 SPECIAL TOPICS IN SALES AND MERCHANDISING***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in sales and merchandising.

**2540:173 SHORTHAND AND TRANSCRIPTION***3 credits*

Prerequisite: 171 or equivalent. Typewriting prerequisite or corequisite: 151 or equivalent. Emphasis on developing skill in taking shorthand dictation and transcribing at typewriter. Minimum speed attainment of 70 wam for 5 minutes on new material required.

**2540:241 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.

**2540:253 ADVANCED TYPEWRITING***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.

**2540:254 LEGAL TYPEWRITING***2 credits*

Prerequisite: 151. Develops skill in typing of legal documents and printed legal forms from rough draft materials as well as from straight-copy material.

**2540:257 SECRETARIAL MACHINES***3 credits*

Prerequisites: 253. Demonstration and laboratory practice in machines used to process data in modern office, including machines used in transcription, duplicating, automated typing and statistical typing.

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**2540: Secretarial Science****2540:119 BUSINESS ENGLISH***3 credits*

Fundamentals of English language with emphasis on grammatical correctness, acceptable usage, spelling and punctuation. Limited writing primarily involves choice of precise words and effective sentence structure with some attention to paragraph development.

**2540:121 OFFICE PROBLEMS***3 credits*

Introduction to concepts regarding role of office worker, human relations, communications, productivity, reference materials, technological advances in processing information and employment opportunities.

**2540:125 BUSINESS MACHINES***2 credits*

Basic operations of 10-key electronic calculators. Applied business problems in depreciation, retailing, payroll, interest, taxes, metrics, pro-rata, expense reports, percentages, inventories and basic statistics.

**2540:150 BEGINNING TYPEWRITING***3 credits*

For beginning students or those who desire a review of fundamentals. Includes basic keyboard, letters, tables and manuscripts. Minimum requirement: 30 wam with a maximum of 5 errors for 3 minutes.

**2540:151 INTERMEDIATE TYPEWRITING***3 credits*

Prerequisite: 150 or equivalent. For further development of typewriting skill. Includes advanced letter styles, forms, reports and shortcuts. Minimum requirement: 40 wam with a maximum of 5 errors for 5 minutes.

**2540:171 SHORTHAND PRINCIPLES***4 credits*

Gregg shorthand theory is taught. Minimum attainments: reading from notes at 100 wam and taking dictation from new material at 50 wam for 3 minutes. Credit not allowed if taken after 172.

**2540:172 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.

**2540:263 BUSINESS COMMUNICATIONS***3 credits*

Prerequisites: 119 and 2020:121 or equivalent. Business writing with emphasis on communicating in typical business situations and expressing ideas effectively to achieve specific purposes. Includes business letters, memoranda, application letters, resumes and a business report.

**2540:274 ADVANCED DICTATION AND TRANSCRIPTION***4 credits*

Prerequisite: 173 or equivalent. Emphasis on building dictation speed, producing mailable transcripts, increasing business and shorthand vocabulary and reviewing theory and expert shortcuts. Minimum speed attainment: 90 wam for 5 minutes.

**2540:276 EXECUTIVE DICTATION AND TRANSCRIPTION***4 credits*

Prerequisite: 274. Final shorthand course in Executive Secretarial program. Development of skills to level of employability in business office. Emphasis on vocabulary building in specialized areas of modern business and technology. Speed range 100-140 wam.

**2540:277 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.

**2540:279 LEGAL OFFICE PROCEDURES***3 credits*

Prerequisites or corequisites: 254 and 277 or equivalent. Introduction to the most common legal situations students will face on the job. Simulated office situations with cassette material, work papers and projects in noncourt and court documents and actions.

**2540:290 SPECIAL TOPICS IN SECRETARIAL SCIENCE***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in secretarial science.

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## 2560: Transportation

**2560:110 TRANSPORTATION ECONOMIC POLICY***3 credits*

Analysis of role of transportation in nation's economic development. Survey of historical development and economic aspects of rail, highway, water, air and pipeline.

**2560:115 TRANSPORTATION: COMMERCIAL MOTOR***3 credits*

Study of economic characteristics of commercial motor industry with emphasis on problems, practices, rates, regulations, fares, tariffs, operations, equipment and financial aspects.

**2560:116 TRANSPORTATION: COMMERCIAL AIR***2 credits*

Analysis of economic characteristics of commercial air industry. Study of its problems, practices, regulations, rates, fares, tariffs and services.

**2560:117 TRANSPORTATION: COMMERCIAL WATER***2 credits*

Analysis of theories, practices and regulations of inland and ocean-going water transportation including classification, rates, practices and tariffs.

**2560:118 TRANSPORTATION: FREIGHT RATES***3 credits*

Analysis of freight rates, tariffs and classifications with particular attention to their application in motor transport field and extensive study through progressive problem solving.

**2560:220 TRANSPORTATION: TERMINAL MANAGEMENT AND SAFETY OPERATIONS***2 credits*

Study of management problems, practices and decision making pertaining to location of facilities, personnel programs, operations, organization and control. Attention directed to safety aspects of transportation operations.

**2560:221 TRANSPORTATION TRAFFIC PRINCIPLES AND PRACTICES***3 credits*

Principles and practices applicable to industrial traffic management and factors affecting transportation decisions. Some items analyzed are operations, services, warehousing, privileges and documentation.

**2560:225 TRANSPORTATION INTERSTATE REGULATION I***3 credits*

Thorough review of the Interstate Commerce Commission; Interstate Commerce Act; their functions with emphasis on their application to each mode of transportation.

**2560:226 TRANSPORTATION INTERSTATE REGULATION II***3 credits*

Prerequisite: 225. Continuing analysis of Interstate Commerce Commission regulations, related acts and practitioner procedure. State regulations, case studies and transportation code of ethics included.

**2560:290 SPECIAL TOPICS IN TRANSPORTATION***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in transportation.

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## 2740: Medical Assisting

**2740:120 MEDICAL TERMINOLOGY***3 credits*

Prerequisites: 3100:106, 2840:100. Designed for novice entering medical assistant field. Emphasis on vocabulary and medical terms: prefixes, stems, suffixes, combining forms, abbreviations, pronunciation, spelling and application of these terms.

**2740:130 OFFICE NURSING TECHNIQUES I***2 credits*

Corequisite: 120. Theory and practice in nursing duties most often performed in a physician's office: vital signs, examining room procedures, care of instruments and methods of sterilization; orientation to disease.

**2740:231 OFFICE NURSING TECHNIQUES II***2 credits*

Prerequisite: 130. Laboratory techniques; orientation to urinalysis, hematology, roentgen rays, electrocardiograms, dentology terms; principles of medication, metric system and administration of injections.

**2740:232 OFFICE NURSING TECHNIQUES III***2 credits*

Prerequisite: 231. Theory and practice in taking vital signs, giving parenteral injections, and orientation to pharmacology and metric system.

**2740:240 MEDICAL MACHINE TRANSCRIPTIONS***2 credits*

Prerequisites: 231 and 2540:257. Correlates medical terminology with secretarial skills and includes practice in various machines used in dictation and transcription found in medical offices.

**2740:250 MEDICAL ASSISTING SPECIALTIES***3 credits*

Prerequisites: 231, graduate of the program, or special permission. Provides student with more precise knowledge in the field of medical specialties.

**2740:290 SPECIAL TOPICS: MEDICAL ASSISTING***1-2 credits*

Prerequisite: permission. Selected topics or workshops of interest in medical assisting technology.

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## 2760: Radiologic Technology

**2760:101 INTRODUCTION TO RADIOLOGIC TECHNOLOGY***2 credits*

Prerequisite: admission to the program. Introduction to field of radiology including history of medicine and radiology. Ethical and professional responsibilities of radiologic technologist. Basic protection and basic skills. Orientation to radiology departments of affiliated hospitals. General patient care.

**2760:106-107 ANATOMY FOR RADIOLOGIC TECHNOLOGY I, II***3 credits each*

Prerequisite: admission to the program. Study of human structure and function approached and visualized through a number of imaging techniques and prepared specimens in the laboratory.

**2760:140 MEDICAL AND SURGICAL DISEASES, RADIOLOGY***3 credits*

Prerequisites: 101 and 161. Study of fundamental principles of disease processes and functional derangements. Background in pathology needed for radiographer will be provided by lecture and demonstrations.

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**2760:161 BASIC PHYSICAL SCIENCE FOR RADIOLOGIC TECHNOLOGY***2 credits*

Prerequisite: 2020:131 and permission. Introduction to systems of measurement. Matter, force, motion, work, power, energy, basic electricity and magnetism.

**2760:165-166 RADIOGRAPHIC PRINCIPLES I, II***3 credits, 2 credits*

Sequential. Prerequisite: 161. Elementary principles of ionizing radiation and their application in medical setting. Radiographic accessories and chemical processing of exposed x-ray film.

**2760:170 RADIOGRAPHIC POSITIONING I***3 credits*

Corequisite: 101. Introductory course in instructing student in basic positioning nomenclature and radiologic positions. Positioning laboratory experience included.

**2760:171 RADIOGRAPHIC POSITIONING II***3 credits*

Prerequisite: 170. Continuation of 170. Includes additional positioning and refinement of positioning strategies. Laboratory experience included.

**2760:184 CLINICAL APPLICATION I***4 credits*

Corequisites: 101 and 170. Introduction to clinical procedures including clinical experience in hospital radiology departments. Lectures and laboratory experience correlated and clinical experience closely supervised. Film critique stressed. Observation rotation through nuclear medicine, therapy and diagnostic techniques. Largely student observation.

**2760:185 CLINICAL APPLICATION II***4 credits*

Prerequisite: 184. Continuation of 184 with more involvement by student continuing under close supervision. Special procedures introduced. Student observations and student participation.

**2760:230 RADIOGRAPHIC TECHNIQUE AND CONTROL***3 credits*

Prerequisite: 261. Technique and control as related to basic positioning procedures for various parts of body. Relationship among electricity, time, distance, films and contrast on radiograph. Students perform experiments to demonstrate effects of these factors. Energized but nonclinical equipment utilized.

**2760:261 PHYSICAL SCIENCE FOR RADIOLOGIC TECHNOLOGY***3 credits*

Prerequisite: 161. Fundamentals of electricity and radiation physics. Principles of x-ray equipment and other radiation sources used in medical setting.

**2760:272 RADIOGRAPHIC POSITIONING III***3 credits*

Prerequisite: 171. Continuation of 171. Includes additional positioning and refinement of positioning strategies. Laboratory experience included.

**2760:273 RADIOGRAPHIC POSITIONING IV***3 credits*

Prerequisite: 272. Continuation of 272 utilizing advanced techniques and providing concentration of different age groups in positioning care and special techniques for pediatric and geriatric patients. Laboratory experience included.

**2760:286 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.

**2760:287 CLINICAL APPLICATION IV***4 credits*

Prerequisites: 286 and permission. Clinical performance with supervision. Application at an advanced level. Special techniques, nuclear medicine, therapy, medical surgical pathology, film examination and critique. Maintenance of equipment, department administration, ethical,

legal and professional responsibilities. Clinical experience in hospital radiology departments.

**2760:288 CLINICAL APPLICATION V***4 credits*

Prerequisite: 287. Clinical experience and minimally supervised clinical procedures of diagnostic radiography.

**2760:289 CLINICAL APPLICATION VI***5 credits*

Prerequisite: 288. Continuation of 288; final internship. Terminal course including review, lecture on correlation and interpretation of radiologic technology. Prepares student for certification examination.

**2760:290 SPECIAL TOPICS IN RADIOLOGIC SCIENCE***1-3 credits*

Prerequisite: permission. More advanced study in one or more topics in radiological sciences. Emphasis and topics vary from year to year but will be in areas where a formal course is not otherwise available. May be repeated for credit with a change in topic.

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**2770: 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 and ethical responsibilities defined.

**2770:121 SURGICAL ASSISTING PROCEDURES I***4 credits*

Prerequisite: 100. Didactic and laboratory practice in principles and practices of surgical asepsis, the surgical patient, surgical procedures, care and maintenance of equipment and materials, immediate postoperative responsibilities and emergency situations in operating room.

**2770:131 CLINICAL APPLICATION I***3 credits*

Prerequisite: permission. Application of learned skills in care of patients in operating room of an affiliated hospital.

**2770:222 SURGICAL ASSISTING PROCEDURES II***4 credits*

Prerequisite: 121. Continuation of 121.

**2770:232 CLINICAL APPLICATION II***3 credits*

Prerequisite: 131. Application of learned skills in care of patients in operating room of an affiliated hospital.

**2770:233 CLINICAL APPLICATION III***3 credits*

Prerequisite: 232. Application of learned skills in care of patients in operating room of an affiliated hospital.

**2770:290 SPECIAL TOPICS: SURGICAL ASSISTING***1-2 credits*

Prerequisite: permission. Selected topics or workshops of interest in surgical assisting technology.

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**2780: Allied Health****2780:101 INTRODUCTION TO PHYSICAL THERAPY***2 credits*

History of physical therapy and survey of treatment procedures. Role and rationale for physical therapist assistant. Legal and ethical responsibilities.

**2780:290 SPECIAL TOPICS IN ALLIED HEALTH**

1-3 credits

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in allied health.

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**2790: Respiratory Therapy****2790:121 INTRODUCTION TO RESPIRATORY THERAPY TECHNOLOGY**

3 credits

Prerequisite: admission to program. Basic science and laws governing gases as well as appliances to administer and monitor oxygen. Covers equipment used to generate and give aerosol therapy, including I.P.P.B. therapy. Lecture/Laboratory.

**2790:122 PATIENT CARE IN RESPIRATORY THERAPY**

3 credits

Prerequisite: 121. Covers basic hospital practices in sterile technique, suctioning and postural drainage. Lecture/Laboratory.

**2790:123 PULMONARY FUNCTION AND VENTILATORS**

3 credits

Prerequisite: 122. Introduction to different brands of ventilators and their functions. Airway and airway complications.

**2790:131 CLINICAL APPLICATIONS I**

3 credits

Prerequisites: admission to program and 121. Introduction to work in hospital and hand-on experience on hospital equipment. Laboratory.

**2790:132 CLINICAL APPLICATIONS II**

2 credits

Prerequisites: 122, 131. First of several rotations through hospitals. Specialty area of each hospital covered at that hospital. Laboratory.

**2790:133 CLINICAL APPLICATIONS III**

5 credits

Prerequisites: 123, 132, 141, 201. Semester is broken into three, five-week rotations, one at each hospital to cover specialty area for that site. Laboratory.

**2790:134 CLINICAL APPLICATIONS IV**

5 credits

Prerequisites: 133, 142, 223. Semester has three, five-week sessions. They will be spent at different clinical sites working on their specialty areas. Laboratory.

**2790:141 PHARMACOLOGY**

2 credits

Prerequisites: 2840:100 and 3100:103. Drugs administered by respiratory therapy and their effect and route of action in the body. Lecture.

**2790:142 PATHOLOGY FOR RESPIRATORY THERAPY**

2 credits

Prerequisites: 201 and 3100:103. Discussion of disease processes and diseases of lung and heart, and their effect on field of respiratory therapy.

**2790:201 ANATOMY AND PHYSIOLOGY OF CARDIOPULMONARY SYSTEMS**

3 credits

Prerequisite: 3100:106; corequisite: 3100:107. Study of normal anatomy and physiology of heart and lungs. Lecture/Laboratory.

**2790:223 ADVANCED RESPIRATORY THERAPY**

3 credits

Prerequisites: 123, 141. Covers blood gas analysis, and machines, drawing arterial gases, pulmonary functions research studies and radioactive pulmonary function studies. Lecture/Laboratory.

**2790:224 PULMONARY REHABILITATION AND THE RESPIRATORY THERAPY DEPARTMENT**

2 credits

Prerequisites: 141, 142, 223. Covers area of pulmonary rehabilitation of chronic lung. Includes essentials of establishing a respiratory therapy department. Lecture/Laboratory.

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**2840: Chemical Technology****2840:100 BASIC CHEMISTRY**

3 credits

Elementary treatment of facts and principles of chemistry emphasizing biological application. Elements and compounds important in everyday life, biological processes and medicine. Introduction to laboratory techniques. Primarily for medical assistant, criminal justice and allied health students. Laboratory.

**2840:101 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.

**2840:102 INTRODUCTORY AND ANALYTICAL CHEMISTRY**

3 credits

Prerequisite: 101 or permission. Chemical equilibria, ionization, radioactivity. Properties of selected metals and nonmetals. Introduction to organic chemistry. Basic concepts of qualitative analysis. Identifications of cations and anions. Laboratory.

**2840:103 CHEMICAL CALCULATIONS**

2 credits

Prerequisite: permission. Review of mathematics as applied to problems in introductory chemistry and other science courses. Topics include unit conversions, percentages, concentrations, pH, gas laws, chemical equilibria, solubility products. Suitable as a refresher course.

**2840:121 ORGANIC PRINCIPLES**

4 credits

Structure, nomenclature and classification of simple organic compounds: their physical and chemical properties, methods of separation, analysis and synthesis. Laboratory.

**2840:151 BASIC PHYSICS: MECHANICS**

3 credits

Corequisite, 2020:131. Principles of mechanics. Topics include force and motion, work and energy, properties of fluids and gases and introduction to atomic physics. Laboratory.

**2840:152 BASIC PHYSICS: ELECTRICITY AND MAGNETISM**

2 credits

Prerequisites: 151 and 2020:131. Principles of electricity and magnetism. Topics include electrostatics, basic direct current circuits, magnetism and electromagnetism, alternating currents and basic AC circuits. Laboratory.

**2840:153 BASIC PHYSICS: HEAT, LIGHT AND SOUND**

2 credits

Prerequisites: 151 and 2020:131. Principles of heat, light and sound. Topics include thermal behavior of matter, wave motion, sound waves, light and illumination, reflection and refraction, mirrors and lenses, interference and diffraction. Laboratory.

**2840:201 QUANTITATIVE ANALYSIS**

4 credits

Prerequisite: 102. Theory of quantitative analytical chemistry including gravimetric, volumetric and electrochemical procedures. Laboratory.

**2840:202 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.

**2840:210 SCIENTIFIC GLASS BLOWING****1 credit**

Laboratory instruction in art of glass blowing. Fabrication and blowing of scientific glassware and chemical apparatus.

**2840:250 ELEMENTS OF PHYSICAL CHEMISTRY****3 credits**

Prerequisites: 102, 153, 2020:132. Physical principles governing behavior of chemical systems. Introductory thermodynamics, solution properties, chemical equilibrium, phase rule, chemical kinetics and structure of matter. Laboratory.

**2840:255 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.

**2840:260 COMPOUNDING METHODS****2 credits**

Prerequisite: 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.

**2840:270 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.

**2840:290 SPECIAL TOPICS IN CHEMICAL TECHNOLOGY****1-2 credits**

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in chemical technology.

**2880:227 MEASUREMENTS****3 credits**

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.

**2880:237 DIGITAL CIRCUITS I****3 credits**

Prerequisites: 123 or 271. Introduction to devices and techniques used in design of combinational logic circuits. Topics include number systems, binary arithmetic, codes, Boolean algebra, Karnaugh mapping and integrated circuits.

**2880:238 DIGITAL CIRCUITS II****3 credits**

Prerequisite: 237. Continuation of combinational logic design plus introduction to sequential logic design and microcomputer. Integrated circuit information continually presented and extended into MOS and DMOS devices. Survey of microprocessors included.

**2880:242 MACHINERY AND CONTROLS****4 credits**

Prerequisite: 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 unijunctions, SCRs, triac, diacs. Laboratory practice with industrial machines in practical industrial circuits.

**2880:251 COMMUNICATIONS CIRCUITS****3 credits**

Prerequisite: 225. Principles of radio-wave propagation, modulation and demodulation. Fundamentals, components and circuits of communication systems. Electric and magnetic fields, antennas and propagation.

**2880:255 ELECTRONIC DESIGN AND CONSTRUCTION****2 credits**

Prerequisite: 123. Electronic drafting fundamentals emphasizing printed circuits. Shop safety practices, usage of hand and power tools. Chassis and printed circuit board fabrication. Metal finishing and packaging. Performance testing and troubleshooting.

**2880:280 ELECTRONIC PROJECT****2 credits**

Prerequisites: final semester or permission, and 255. Design, construction and test by students of an electronic circuit of their choice. Progress reports, oral and written reports required. Discussion of electronic design and fabrication techniques.

**2880:270 SURVEY OF ELECTRONICS I****3 credits**

Corequisite: 2020:131. Fundamentals of electrical circuits. Surveys of electromechanical devices emphasizing electrical/mechanical interface. For nonelectronic technology majors.

**2880:271 SURVEY OF ELECTRONICS II****2 credits**

Prerequisite: 270; corequisite: 2020:132. Survey of most commonly used solid-state circuit components including typical applications. For nonelectronic technology majors.

**2880:290 SPECIAL TOPICS: ELECTRONIC TECHNOLOGY****1-2 credits**

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in electronic technology.

**2880:350 ADVANCED CIRCUITS****3 credits**

Prerequisites: 123, 242 and 2020:334. Analysis of linear circuits in frequency and time domain. Loop analysis by matrix methods, Fourier analysis of nonsinusoidal waveforms, Laplace transformations, power and power-factor correction, polyphase systems and mutual inductance.

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**2860: Electronic Technology****2860:120 DC CIRCUITS****4 credits**

Corequisite: 2020:131. Nature of electricity, current and voltage, Ohm's Law, network analysis, DC instruments, magnetism, inductance, capacitance, transients and time constants.

**2860:122 AC CIRCUITS****3 credits**

Prerequisite: 120; Corequisite: 2020:132. Sinusoidal voltage and currents, reactance and impedance, methods of AC circuit analysis, AC power, transformers, resonance, polyphase circuits.

**2860:123 ELECTRONICS I****4 credits**

Corequisite: 122. Physical theory, characteristics, operational parameters and incircuit consideration of solid-state electronic devices.

**2860:225 ELECTRONICS II****4 credits**

Prerequisite: 123. Study of application of active devices. Topics include power amplifiers, heat sinks, transistor interfacing, differential amplifiers, DC power supplies, time delay circuits, feedback circuits and operational amplifiers.

**2880:351 INDUSTRIAL ELECTRICAL SYSTEMS***3 credits*

Prerequisites: 350 and 4450:206. Power system single-phase and three-phase analysis, balanced and unbalanced systems, fault calculations, symmetrical components with industrial applications.

**2880:352 DIGITAL SYSTEMS***3 credits*

Prerequisites: 238 and 350. Detailed study of several digital computing systems including topics in architecture, software and I/O. Specific systems studied include the PDP-8 minicomputer and the 6100 and 8080 based microcomputers. Survey and comparison of microprocessors included.

**2880:353 CONTROL SYSTEMS***3 credits*

Prerequisites: 350 and 2900:231. System analysis and design using Laplace transform, frequency response, Bode diagram and root locus. Design of control of industrial process variables. Introduction to AC, discrete and digital control systems.

**2880:400 DATA ANALYSIS***3 credits*

Prerequisites: 4450:206 and 3470:252. Application of statistics to electronic data. Problems include quality control, failure estimating and synthesizing equations of dependence. Analysis methods include hypothesis estimation, curve fitting regression, correlation and analysis of variance.

**2880:402 INSPECTION TRIPS***1 credit*

Prerequisite: senior standing or permission. Guided tours through area industrial plants and technical facilities, with emphasis on their electrical/electronic aspects. Class limited to 15 students.

**2880:406 COMMUNICATION SYSTEMS***3 credits*

Prerequisites: 351 and 350. Antennas, transmission lines, matching networks, modulation systems, propagation, noise, radar and microwaves. Problems encountered in communication systems.

**2880:410 TECHNOLOGY PROJECT***1 credit*

Prerequisite: senior standing. Detailed study of problem selected by student. Includes problem definition, literature search, comparison of solutions and formal report.

**2880:497 SENIOR HONORS PROJECT IN ELECTRONIC TECHNOLOGY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program, permission of department honors preceptor and major in electronic technology. Independent research work leading to completion of Senior Honors Thesis or other original work.

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**2880: Industrial Technology****2880:100 INTRODUCTION TO MANUFACTURING MANAGEMENT***3 credits*

Introduction to functions of major sections of manufacturing concern. Departmental purposes identified with major emphasis on their sequential relationship with each other. Intended to identify and relate major functions encountered later in individual courses.

**2880:130 WORK MEASUREMENT PROCEDURES I***2 credits*

Prerequisite: 100. Familiarizes student with procedures for handwork and techniques for choosing the best method for accomplishing such tasks.

**2880:141 SAFETY PROCEDURES***3 credits*

Corequisite: 100. Sources and causes of accidents. Philosophy of accident prevention. Appraisal of cost of accidents. Elements of an effective safety program. Human factors in safety, safety promotion and enforcement.

Prerequisite: 100 and 2420:211. Profit defined. Cost analysis and control studied. Control of price and profit within market limitations discussed.

**2880:200 MANUFACTURING PROFITABILITY***3 credits*

Prerequisite: 100 and 2420:211. Profit defined. Cost analysis and control studied. Control of price and profit within market limitations discussed.

**2880:210 CONTROLLING AND SCHEDULING PRODUCTION***2 credits*

Prerequisite: 100. Production order followed from sales order through requisitioning, plant loading, expediting, scheduling and shipping. Also covers material control and inventory record keeping. Critical path, linear programming and EDP techniques discussed.

**2880:231 PLANT LAYOUT***3 credits*

Prerequisite: 100. Solution of activities for a production facility. Optimum arrangements of factors of production: manpower, materials and equipment.

**2880:232 LABOR MANAGEMENT RELATIONS***3 credits*

Prerequisite: 100. Study of historical background of labor movement, management viewpoints, legal framework for modern labor organizations and collective bargaining process.

**2880:235 WORK MEASUREMENT PROCEDURES II***2 credits*

Prerequisite: 130. Continuation of 130. Work measurement techniques and establishment of production standards for optimization of lowered costs.

**2880:241 QUALITY CONTROL PROCEDURES***3 credits*

Prerequisites: 100 and 2020:132. Theory and practice of inspection and sampling techniques for measurement of quality, QC charts, sampling plans, mill specs, checking machine capabilities and setting tolerances.

**2880:290 SPECIAL TOPICS IN INDUSTRIAL TECHNOLOGY***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in industrial technology.

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**2900: Instrumentation Technology****2900:121 FUNDAMENTALS OF INSTRUMENTATION***4 credits*

Prerequisites: 2840:151 and 2860:123 or 270. Study of variables encountered in process instrumentation, indicating and recording devices, and applications of physical principles affecting measurement and control.

**2900:231 CONTROL PRINCIPLES***3 credits*

Prerequisite: 2860:225 or 271; corequisite: 2020:233. Principles and design of control of physical systems. Mathematical and analog computer modeling of physical systems. Principles of closed-loop control systems. Methods of analysis to predict performance. Design of simple servomechanisms.

**2900:232 PROCESS CONTROL***3 credits*

Prerequisite: 231. Study of analysis and design of process control systems with emphasis on techniques and instrumentation used in process control. Digital control fundamentals introduced.

**2900:239 PULSE CIRCUIT TESTING***3 credits*

Prerequisite: 2860:237. General study and analysis of digital circuits and systems. Analog-to-digital and digital-to-analog conversion. Digital troubleshooting and analysis of digital interface.

**2900:240 CALIBRATION AND STANDARDIZATION***1 credit*

Prerequisite: 231. Laboratory experience in calibration and standardization of electrical, electronic and mechanical systems. Instrument theory, maintenance, troubleshooting, specifications, performance and safe working practices included.

**2900:241 INSTRUMENTATION PROJECT***2 credits*

Prerequisite: final semester or permission. Design construction and 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.

**2900:290 SPECIAL TOPICS: INSTRUMENTATION TECHNOLOGY***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in instrumentation technology.

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## 2920: Mechanical Technology

**2920:121 TECHNICAL DRAWING I***3 credits*

Lettering and proper use of drawing instruments; freehand sketching; geometric drawing; orthographic projection; pictorials; introduction to basic descriptive geometry.

**2920:122 TECHNICAL DRAWING II***3 credits*

Prerequisite: 121. Sections and conventions; dimensioning; allowances and tolerances; threads and fasteners; descriptive geometry; intersections; developments.

**2920:242 DESIGN MATERIALS***3 credits*

Prerequisite: 2980:125; corequisite: 2980:241. Fundamental properties of materials. Material testing. Applications of methods to control material properties.

**2920:243 KINEMATICS***2 credits*

Prerequisite: 2980:241. Study of rigid-body motions of simple linkages, cams, gears, and gear trains. Graphical vector solutions emphasized. Industrial applications presented.

**2920:244 DYNAMICS***2 credits*

Prerequisites: 243, 2020:233 and 2980:125. Introduction to particle dynamics, displacement, velocity and acceleration of a constrained rigid body in plane motion. Kinetics of particles and rigid bodies; work and energy, mechanical vibrations.

**2920:245 MECHANICAL DESIGN I***5 credits*

Prerequisites: 122, 2980:241; corequisite: 242. Design of machine elements: springs, shafts, fasteners, welded joints. Combined stress and fatigue analysis. Design projects. Experimental stress analysis.

**2920:247 SHOP METHODS AND PRACTICES***3 credits*

Setup and operation of tool room machines: Lathe, drill press, shaper, milling machine and tool grinder. Planning operations and layout.

**2920:249 APPLIED THERMAL ENERGY***2 credits*

Prerequisites: 2020:233, 2840:153. Thermodynamic principles. Study of power cycles. Applications in I.C. engines, compressors, steam power cycles, refrigeration.

**2920:251 FLUID POWER***2 credits*

Prerequisites: 2020:233, 2840:153. Statics and dynamics of fluids. Viscosity, energy and momentum relationships. Fluid machinery and measurements.

**2920:252 THERMO-FLUIDS LABORATORY***1 credit*

Prerequisite: 249; corequisite: 251. Laboratory experiments in applied thermal energy and fluid power.

**2920:290 SPECIAL TOPICS IN MECHANICAL TECHNOLOGY***1-3 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Selected topics or subject areas of interest in mechanical technology.

**2920:310 ECONOMICS OF TECHNOLOGY***3 credits*

Prerequisite: 64 credits or permission. Economic principles as they pertain to technology. Equivalence, alternatives, costs, depreciation, valuation. Project studies.

**2920:335 WELDING, THEORY AND PRACTICE***3 credits*

Prerequisite: 242. Design of weldments and welding processes. Welding of ferrous, nonferrous and plastic materials.

**2920:336 WELDING PROJECTS***1 credit*

Prerequisite: 335. Individual projects containing elements of analysis, design and laboratory implementation.

**2920:339 ADVANCED SHOP METHODS AND PRACTICES***2 credits*

Prerequisite: 247; corequisite: 242. Selected topics dealing with sophisticated metal cutting techniques.

**2920:346 MECHANICAL DESIGN II***3 credits*

Prerequisite: 245. Continuation of design of machine components. Bearings, gears, brakes, clutches. Machine vibrations and dynamic loads.

**2920:347 PRODUCTION MACHINERY AND PROCESSES***2 credits*

Prerequisites: 247, 2020:344. Study of modern production machines, processes and techniques. Casting, forging, rolling, welding, powder metallurgy, plastics molding.

**2920:348 INTRODUCTION TO NUMERICAL CONTROL***3 credits*

Prerequisites: 121, 2020:132. Introduction to numerical control (N/C) of operation of machine tools and other processing machines. Includes programming, types of N/C systems, economic evaluation.

**2920:402 MECHANICAL PROJECTS***1 credit*

Prerequisite: senior standing. Individual projects emphasizing creative technical design.

**2920:448 NUMERICAL CONTROL PROGRAMMING***3 credits*

Prerequisite: 348. Introduction to computer-assisted interactive part programming system. Writing of milling and drilling programs.

**2920:495 INSPECTION TOURS***1 credit*

Prerequisite: senior standing. Trips through area industrial plants and technical facilities.



**2920:497 SENIOR HONORS PROJECT IN MECHANICAL TECHNOLOGY**

1-3 credits

(May be repeated for a total of 6 credits)

Prerequisite: 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.

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## 2980: 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.

**2980:123 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.

**2980:125 STATICS**

3 credits

Prerequisites: 2840:151 and 2020:132. Forces, resultants and couples. Equilibrium of force systems. Trusses, frames, first and second moment of areas, friction.

**2980:222 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.

**2980:224 LAND SURVEYING**

3 credits

Prerequisite: 122 or permission. Historical development of boundaries, rectangular system of public land surveys, systems used to describe property, working and interpretation of deed descriptions, surveyor's rights, duties and responsibilities.

**2980:225 ADVANCED SURVEYING**

4 credits

Prerequisite: 122. Introductory to theory of errors, precise leveling, baseline measurements, triangulation, trilateration and bearings from celestial observation. Photogrammetry. Field practice.

**2980:228 SUBDIVISION DESIGN**

2 credits

Prerequisite: 222; corequisite: 224. Site analysis, land use controls and plotting procedures. Laboratory includes preparation of various types of projects leading to a complete subdivision.

**2980:231 BUILDING CONSTRUCTION**

2 credits

Materials and types of construction used in heavy construction. Encompasses buildings constructed with heavy timber, steel, concrete, or a combination of these materials.

**2980:232 CONSTRUCTION**

3 credits

Prerequisite: 222 or permission. Planning of construction operations. Construction equipment and selection for typical jobs. Emphasis on heavy construction.

**2980:233 CONSTRUCTION ADMINISTRATION**

2 credits

Construction specifications. Office organization, preparation of construction documents. Bidding, bonds. Construction management and supervision. Agreements and contracts.

**2980:234 ELEMENTS OF STRUCTURES**

3 credits

Prerequisite: 241. Principles of stress and structural analysis. Members in steel, timber and concrete connections.

**2980:237 MATERIALS TESTING I**

2 credits

Laboratory testing of soils with emphasis on physical properties of soil. Laboratory and field procedures used for quality control. Testing of concrete mixes.

**2980:238 MATERIALS TESTING II**

2 credits

Corequisite: 241. Mix design of concrete. Laboratory testing of ferrous and nonferrous metals, woods and concrete. Experiments demonstrate physical properties as related to design.

**2980:241 STRENGTH OF MATERIALS**

3 credits

Prerequisite: 125. Stress, strain and stress-strain relationships. Tension, compression, torsion, beams. Shear and moment diagrams.

**2980:245 COST ANALYSIS AND ESTIMATING**

3 credits

Quantity surveys in construction. Elements of cost in construction, determination of unit costs, analysis of cost records.

**2980:250 STRUCTURAL DRAFTING**

2 credits

Prerequisite: 2920:121. Duties of structural draftsman in preparation of detailed working drawings for steel, concrete and wood members. Emphasis on portrayal, dimensions and notes on a working drawing.

**2980:290 SPECIAL TOPICS IN SURVEYING AND CONSTRUCTION TECHNOLOGY**

1-2 credits

Prerequisite: permission. Selected topics or subject areas of interest in surveying and construction technology.

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# The Buchtel College of Arts and Sciences

## 3100: Biology

### 3100:100 NATURE STUDY: PLANTS

3 credits

Identification and biology of common plants of this region. Recommended for teachers of nature study. Not available for credit toward a degree in biology. Laboratory.

### 3100:101 NATURE STUDY: ANIMALS

3 credits

Identification and biology of common animals of this region. Recommended for teachers of nature study. Not available for credit toward a degree in biology. Laboratory.

### 3100:103 INTRODUCTION TO MICROBIOLOGY

3 credits

Basic microbiology; destruction, removal and inhibition of microorganisms; immunity and allergy; common pathogens. Not available for credit toward a degree in biology. Laboratory.

### 3100:105 ECOLOGY AND BIOLOGICAL RESOURCES

2 credits

Basic principles governing structure and function of natural ecosystems. Various options for managing natural resources, human populations, biotic communities and industrial technologies at global level emphasized. Not available for credit toward a degree in biology.

### 3100:106-107 ANATOMY AND PHYSIOLOGY

3 credits each

Sequential. Structure and function of human body with emphasis on physiological processes. Background of high school chemistry or equivalent strongly recommended. Not open to biology or B.S.M.T. majors. Laboratory.

### 3100:111 PRINCIPLES OF BIOLOGY

4 credits

Molecular and cellular basis of life; energy transformations and metabolism; nutrient procurement, gas exchange, internal transport, homeostatic mechanisms and control systems in plants and animals. Laboratory.

### 3100:112 PRINCIPLES OF BIOLOGY

4 credits

Cell reproduction, genetics, development, evolution, classification, behavior and ecology of plants and animals. (111-112 constitute an integrated course designed for majors in biology and related fields.) Laboratory.

### 3100:130 PRINCIPLES OF MICROBIOLOGY

3 credits

Basic principles and terminology of microbiology; cultivation and control of microorganisms; relationships of microorganisms to man and his environment; medical microbiology. Laboratory.

### \*3100:190-191 HEALTH CARE DELIVERY SYSTEMS

1 credit each

Health care principles and practices. Restricted to students in NEUUCOM, 6-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.

### 3100:192 BIOLOGY OF AGING

3 credits

Prerequisite: 112; or 265 or equivalent. Introduction to anatomical and physiological changes occurring in organ systems of man during aging

process; cellular basis for these changes; biological theories of aging. This course will not satisfy the Natural Science requirement.

### 3100:211 GENERAL GENETICS

3 credits

Prerequisite: 112. Principles of heredity, fundamental principles of genetics.

### 3100:212 GENETICS LABORATORY

1 credit

Prerequisite or corequisite: 211. Fundamental principles of genetics illustrated by experiments with *Drosophila* and other organisms.

### 3100:214 ORGANIC EVOLUTION

3 credits

Prerequisite: 112 or permission. Early concepts of evolution; Darwinian theory and supporting evidence; mechanisms of evolution; molecular evolution; evolutionary trends in plants and animals.

### 3100:215 ORGANIC EVOLUTION DISCUSSION

1 credit

Corequisite: 214. Informal discussions of various aspects of organic evolution of general or special interest.

### 3100:217 GENERAL ECOLOGY

3 credits

Prerequisite: 112 or permission. Study of interrelationships between organisms and environment.

### 3100:264 ANATOMY AND PHYSIOLOGY OF SPEECH AND HEARING

3 credits

Prerequisite: 265. Study of anatomy and physiology of organs directly and indirectly responsible for sound perception and production of speech. Laboratory.

### 3100:265 INTRODUCTORY HUMAN PHYSIOLOGY

4 credits

Study of physiological processes in human body, particularly at organ systems level. Not open to preprofessional majors. Laboratory.

### 3100:311 CELL BIOLOGY

3 credits

Prerequisites: 112 and 3150:202 (Organic and Biochemistry); corequisite: 384. Study of structure and function of cells using microbial and animal cells for demonstration of common tenets.

### 3100:331 MICROBIOLOGY

4 credits

Prerequisites: 112 and 3150:202 or equivalent. Survey of protists with emphasis on the bacteria: their morphology, cultivation and chemical characteristics. Relationships of microorganisms to man and his environment. Laboratory.

### 3100:332 MICROBIOLOGY

4 credits

Prerequisite: 331 or equivalent. Basic elements of microbial genetics, and temporary variation in the bacteria. Classification and identification of major groups of bacteria. Laboratory.

### \*3100:341 FLORA AND TAXONOMY I

3 credits

Prerequisite: 112. Collection-identification of autumn-flowering plants, their family characteristics and discussion of methods used to determine their relationships. Plants used by man discussed and plant collection required. Laboratory.

### \*3100:342 FLORA AND TAXONOMY II

3 credits

Prerequisite: 112. Classification systems, international rules governing application of names and collection-identification of spring-flowering plants. Family characteristics discussed and plant collection required. Laboratory.

### \*3100:351 INVERTEBRATE ZOOLOGY

4 credits

Prerequisite: 112. Invertebrate groups, their classification, anatomy and life history of representative forms. Laboratory.

\*Field trips involved; minor transportation costs.

\*Field trips involved; minor transportation costs.

**\*3100:353 GENERAL ENTOMOLOGY**

4 credits

Prerequisite: 112. Structure, physiology, life cycles and economic importance of insects; survey of orders and major families. An insect collection is made. Laboratory.

**3100:355 PARASITOLOGY**

4 credits

Prerequisite: 112. Principles of parasitism; survey of the more important human and veterinary parasitic diseases. Laboratory.

**\*3100:356 ORNITHOLOGY**

3 credits

Prerequisite: 112. Introduction to biology of birds: classification, anatomy, physiology, behavior, ecology, evolution, natural history and field identification. Laboratory.

**3100:361-362 HUMAN ANATOMY AND PHYSIOLOGY**

3 credits each

Sequential. Prerequisite: one year of college chemistry. Study of structure and function of the human body. Laboratory.

**3100:365 HISTOLOGY I**

3 credits

Prerequisite: 311. Microscopic study of animal tissue preparations and histochemical stains; emphasis on functional differences. Laboratory.

**3100:366 HISTOLOGY II**

3 credits

Prerequisite: 365. Study of cellular structure of organs in relation to their functional activity, life history and comparative development. Laboratory.

**3100:361 HUMAN GENETICS**

2 credits

Prerequisite: 112 or 362. Principles of genetics in the human, immunogenetics, mutation, genetics of population, selection and eugenics. Not open to biology majors.

**3100:363 LABORATORY TECHNIQUES AND INSTRUMENTATION IN BIOLOGY**

2 credits

Prerequisite: 112; corequisite: 384. Instruction in techniques and instrumentation used in biological laboratories.

**3100:364 TECHNIQUES AND INSTRUMENTATION LABORATORY IN BIOLOGY**

1 credit

Corequisite: 311 or 383. Application of biological techniques and instrumentation with emphasis on isolation and identification of cellular components and metabolites; also includes enzymology, use of radioisotopes and light and electron microscopy.

**\*3100:422/522 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.

**\*3100:424/524 LIMNOLOGY**

3 credits

Prerequisite: 217. Field and laboratory study of lake ecosystems. Species composition of selected biotic communities, community energetics and nutrient cycling emphasized. Limnological survey of a local lake. Laboratory.

**\*3100:426/526 APPLIED AQUATIC ECOLOGY**

3 credits

Prerequisite: permission. Biological methods for assessing quality of natural waterways. Emphasis given to use of benthic invertebrates as indices of water quality. Laboratory.

**3100:426/528 BIOLOGY OF BEHAVIOR**

2 credits

Prerequisite: 14 credits in biology and/or psychology. Biological basis of behavior: ethological theory; function, causation, significance, evolution and adaptiveness of behavior.

\*Field trips involved; minor transportation costs.

**3100:431/531 BACTERIAL PHYSIOLOGY**

3 credits

Prerequisites: 332 and 3150:202 (Organic and Biochemistry). Biochemical activities in bacterial cell, emphasizing enzymatic mechanisms of metabolic transformations. Energy relationships in catabolic and biosynthetic pathways stressed.

**3100:433/533 PATHOGENIC BACTERIOLOGY**

4 credits

Prerequisite: 332. Study of major groups of bacteria which produce infections in man. Biochemical properties of microorganisms which engender virulence, and nature of host resistance. Laboratory.

**3100:435/535 VIROLOGY**

4 credits

Prerequisite: 332. Physical, chemical and biological properties of viruses including mechanisms of infection, genetics and tumor formation; methods of cultivation and identification. Laboratory.

**3100:437/537 IMMUNOLOGY**

4 credits

Prerequisite: 332; recommended: 433. Nature of antigens, antibody response and antigen-antibody reactions. Site and mechanism of antibody formations, hypersensitivity, immunologic tolerance and immune diseases considered. Laboratory.

**3100:438/538 HEMATOLOGY**

4 credits

Prerequisite: 437/537 or permission of instructor. Quantitative and qualitative evaluation and interpretation of formed elements of blood including study of hereditary, metabolic, nutritional, inflammatory, immunologic and neoplastic diseases encountered in field of hematology. Lecture/Laboratory.

**3100:441/541 PLANT DEVELOPMENT**

4 credits

Prerequisites: 112 and one year of organic chemistry. Embryology and morphogenesis of plants in relation to physical, chemical, genetic and spatial factors. Laboratory.

**3100:442/542 PLANT ANATOMY**

3 credits

Prerequisite: 112. Structure and development of cells, tissues, organs and organ systems of seed plants. Laboratory.

**\*3100:444/544 BIOLOGY OF THE THALLOPHYTES**

4 credits

Prerequisite: 311. Designed to give insight into phylogeny, taxonomy, morphology and ecology of major groups of fungi and algae. Includes field and laboratory study of vegetative and reproductive structures of local flora. Laboratory.

**\*3100:455/545 PLANT MORPHOLOGY**

4 credits

Prerequisite: 112. Structure, reproduction, life cycles, ecology, evolution and economic significance of land plants including bryophytes, club-mosses, whisk ferns, horsetails, ferns and seed plants. Laboratory.

**3100:447/547 PLANT PHYSIOLOGY**

3 credits

Prerequisites: 112 and one year of organic chemistry. Water, soil and mineral requirements of plants, and their metabolism, growth and response to internal and external stimuli. Laboratory.

**3100:449/549 PLANT BIOSYSTEMATICS**

2 credits

Prerequisite: 4 credits of botany at 400 level. Current research methods and theories in plant phylogeny and taxonomy. Includes study of original publications, discussion of experimental methods and use of herbarium in research.

**\*3100:458/558 VERTEBRATE ZOOLOGY**

4 credits

Prerequisite: 217 or permission. Biology of vertebrates, except birds — evolution, ecology, behavior, systematics and anatomy. Laboratory with field trips.

\*Field trips involved; minor transportation costs.

**3100:461-462/561-562 HUMAN PHYSIOLOGY***4 credits each*

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

**3100:464/564 GENERAL AND COMPARATIVE PHYSIOLOGY***4 credits*

Prerequisites: 112 and one year of organic chemistry. Study of cellular, osmoregulatory, respiratory, cardiovascular, endocrine and neural mechanisms involved in understanding physiology of variety of invertebrate and vertebrate animals. Laboratory.

**3100:466-467/566-567 DEVELOPMENTAL ANATOMY***4 credits each*

Prerequisite: 112. Sequence designed to introduce process of vertebrate development. Lecture and laboratory work includes descriptive and experimental embryology, phylogenetic development of major vertebrate orders and individual study research. Laboratory.

**\*3100:460/560 RADIATION BIOLOGY***3 credits*

Prerequisite: permission. Principles of radioactivity, interaction with matter, particularly its effects on biological systems. Detection devices, radiation safety and dosimetry, use of radiolabeled compounds in laboratory. Laboratory.

**3100:481/581 ADVANCED GENETICS***3 credits*

Prerequisite: 211. Nature of the gene; genetic codes; hereditary determinants; mutagenesis and genes in population. Lecture and seminar.

**3100:484/584 PHARMACOLOGY***3 credits*

Prerequisite: 311; recommended: college-level physiology. Interactions of drugs and living systems with emphasis on molecular and cellular mechanisms of action, drug metabolism and excretion, and selected aspects of environmental toxicology. Clinical aspects and specific drug therapies not considered in detail.

**\*3100:485/585 LABORATORY ANIMAL MANAGEMENT***3 credits*

Prerequisites: 112 and permission. Principles involved in maintaining laboratory animals. Emphasis on selection of animal models, proper care, nutrition and legal aspects of animal use. Laboratory.

**3100:494/594 WORKSHOP IN BIOLOGY***1-3 credits*

Prerequisite: permission of instructor. Group studies of special topics in biology. May not be used to meet undergraduate or graduate major requirements in biology. May be used for elective credit only. May be repeated.

**3100:495 SPECIAL TOPICS IN BIOLOGY***1-3 credits*

Prerequisite: permission. Special courses offered once or only occasionally in areas where no formal course exists. May be repeated. A maximum of 6 credits may be applied to requirements for a major.

**3100:497-498/597-598 BIOLOGICAL PROBLEMS***1-2 credits each*

Prerequisite: permission. Honors-level work, usually consisting of laboratory investigations.

**3100:499 SENIOR HONORS PROGRAM IN BIOLOGY***1-3 credits*

(May be repeated for a total of 5 credits)

Prerequisite: senior standing in Honors Program and approval of Honors preceptor. Open only to biology majors in Honors Program. Independent study leading to completion of approved Senior Honors.

\*Field trips involved; minor transportation costs.

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**Graduate Courses****3100:631 EXPERIMENTAL BACTERIAL PHYSIOLOGY***4 credits*

Prerequisite: 531 or permission of instructor. Basic techniques peculiar to study of microbial physiology and modification of selected biochemical techniques for application to microbial systems. Laboratory.

**3100:660 ENVIRONMENTAL PHYSIOLOGY***3 credits*

Prerequisites: 561-562. Study of physiological reactions of healthy mammals to natural changes or extremes of physical environment.

**3100:667 EXPERIMENTAL EMBRYOLOGY***3 credits*

Prerequisite: permission. Principles and experimental methods of developmental biology. Practical application to oncology, drug interaction and inductive mechanisms. Laboratory.

**3100:661 CYTOLOGY***3 credits*

Prerequisite: 311. Structure and functional organization of cells at ultrastructural level. Three lecture hours a week.

**3100:665 ANIMAL TISSUE CULTURE***3 credits*

Prerequisite: 332. Tissue culture techniques; biology and physiology of animal cells and tissues under in vitro conditions; application of these techniques to radiobiology, cancer chemotherapy and animal cell genetics. Laboratory.

**3100:686-687 RESEARCH IN THE BIOLOGY OF AGING***3 credits each*

Sequential. Prerequisite: graduate standing in biology, or by approval in related fields. Introduction to research techniques in study of biological aspects of aging and experience in special research project in the field.

**3100:688 PRINCIPLES OF TRANSMISSION ELECTRON MICROSCOPY***3 credits*

Prerequisite: 311 or 681 or equivalent. Introduction of modern cytological methods using transmission electron microscope. Portfolio required to demonstrate proficiency in fixation techniques, use of ultramicrotome, light and electron microscopes and related darkroom techniques.

**3100:695 SPECIAL TOPICS IN BIOLOGY***1-3 credits*

(May be repeated)

Prerequisite: permission. Special courses offered once or only occasionally in areas where no formal course exists.

**3100:697-698 SEMINAR IN BIOLOGY***1 credit each*

Prerequisite: permission. Attendance at all departmental seminars and presentation of seminar based on original research by student. Required of all thesis option students who shall present their thesis research. May be repeated.

**3100:699 MASTERS RESEARCH***1-6 credits*

A minimum of 6 credits is required for thesis option students. May be repeated.

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**3120: Medical Technology****3120:401 SPECIAL TOPICS LABORATORY MANAGEMENT, EDUCATION, AND SAFETY***1-4 credits*

Seminars, lectures, and workshops in areas of medical technology not included in formal clinical courses. Minimum of 1 credit required for graduation.

**3120:410 CLINICAL ANALYSIS OF URINE AND OTHER BODY FLUIDS I***1 credit*

Prerequisite: 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.

**3120:411 CLINICAL ANALYSIS OF URINE AND OTHER BODY FLUIDS II PRACTICUM***1 credit*

Prerequisite: 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.

**3120:420 CLINICAL CHEMISTRY AND BIOCHEMISTRY I***4 credits*

Prerequisites: 3100:383, 384 or equivalent; 3150:201, 202, 335, 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.

**3120:421 CLINICAL CHEMISTRY AND BIOCHEMISTRY II PRACTICUM***4 credits*

Prerequisites: 3100:383, 384 or equivalent; 3150:201, 202, 335, 336 or equivalent. Clinical application by various analytical techniques; clinical correlation of results with disease states.

**3120:430 CLINICAL HEMATOLOGY I***2 credits*

Prerequisites: 3100:311 and 3100:361, 362 or equivalent. Theory of blood cell formation; identification of blood and bone marrow cells; differentiation of erythrocytes, leukocytes and morphology in health and disease.

**3120:431 CLINICAL HEMATOLOGY II PRACTICUM***2 credits*

Prerequisites: 3100:311 and 3100:361, 362 or equivalent. Clinical application and practice of blood cell mounting procedures using automated and manual techniques.

**3120:432 CLINICAL COAGULATION***1 credit*

Prerequisites: 3100:311 and 3100:361, 362 or equivalent. Theory of coagulation mechanisms and their relationship to disease states. Emphasis on identification of coagulation deficiencies and abnormalities.

**3120:440 CLINICAL IMMUNOHEMATOLOGY I***2 credits*

Prerequisites: 3100:437, 211 or equivalent. Theory of principles of immunology as applied to blood grouping and cross matching; blood components; transfusion; principles of blood collection, processing and preservation.

**3120:441 CLINICAL IMMUNOHEMATOLOGY II PRACTICUM***2 credits*

Prerequisites: 3100:437, 211 or equivalent. Clinical application of theory; crossmatching; blood donors; blood bank management.

**3120:450 CLINICAL IMMUNOLOGY I***1 credit*

Prerequisite: 3100:437 or equivalent. Antigens and antibodies and their interaction in disease states.

**3120:451 CLINICAL IMMUNOLOGY II PRACTICUM***1 credit*

Prerequisite: 3100:437 or equivalent. Qualitative and quantitative serological laboratory procedures in immunology.

**3150:480 CLINICAL MICROBIOLOGY I***4 credits*

Prerequisites: 3100:331, 332 or equivalent. Theory of diagnosis of medical microbiology with emphasis on pathogenic bacteria and their relationship to disease.

**3120:481 CLINICAL MICROBIOLOGY II PRACTICUM***4 credits*

Prerequisites: 3100:331, 332 or equivalent. Isolation and identification of pathogenic bacteria, media making, sensitivity and antimicrobial agents, principles of sterilization and asepsis.

**3120:482 CLINICAL MYCOLOGY***1 credit*

Study of pathogenic fungi, basic methods of cultivation and identification, treatment and safety precautions.

**3120:482 CLINICAL PARASITOLOGY***1 credit*

Prerequisite: 3100:355 or equivalent. Study of parasites common to man, life cycles, and relationship to man, procedure for handling and examining, identification by morphological characteristics.

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## 3150: Chemistry

**3150:121-122 INORGANIC CHEMISTRY I, II***3 credits each*

Sequential. Designed primarily for students in medical technology. Fundamental laws and theories of chemistry; the more important elements and their components. Laboratory.

**3150:124 CHEMISTRY***3 credits*

Fundamentals of organic, inorganic and physiological chemistry. Discussion.

**3150:129-130 GENERAL CHEMISTRY I, II***4 credits each*

Sequential. Introduction to principles of chemistry and fundamentals of inorganic and biochemistry. Structure and chemistry of carbohydrates, lipids, proteins; biochemistry of enzymes, metabolism, body fluids and radiation effects.

**3150:132 PRINCIPLES OF CHEMISTRY I***4 credits*

Introduction to basic facts and principles of chemistry including atomic and molecular structure, states of matter and thermodynamics. For chemistry majors, premedical students and most other science majors. Laboratory.

**3150:133 PRINCIPLES OF CHEMISTRY II***3 credits*

Prerequisite: 132. Continuation of 132, including aqueous solution theory, chemical kinetics, equilibrium, electrochemistry and nuclear chemistry. For chemistry majors, premedical students and most other science majors.

**3150:134 QUALITATIVE ANALYSIS***2 credits*

Corequisite: 133. Laboratory course applying principles of chemical equilibrium to inorganic qualitative analysis.

**3150:201-202 ORGANIC CHEMISTRY AND BIOCHEMISTRY I, II***3 credits each*

Sequential. Prerequisite: 122. Designed especially for students in medical technology. Principles of organic chemistry with emphasis on biological systems. Laboratory.

**3150:203 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, atherosclerosis, and dietary treatment of these diseases. May not be used to meet undergraduate major requirements in chemistry.

**3150:283-284 ORGANIC CHEMISTRY LECTURE I, II***3 credits each*

Sequential. Prerequisite: 134 or permission. Structure and reactions of organic compounds, mechanism of reactions.

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**3150:265-266 ORGANIC CHEMISTRY LABORATORY I, II***2 credits each*

Sequential. Corequisites: 263, 264. Laboratory experiments to develop techniques in organic chemistry and illustrate principles.

**3150:303, 304 ELEMENTARY PHYSICAL CHEMISTRY I, II***3 credits each*

Sequential. Prerequisites: 264, 3650:232, 262 or 292, 3450:222, or permission of instructor. Chemical thermodynamics and kinetics (I) and molecular structure and spectra (II). Not accepted for credit toward B.S. degree in chemistry or chemical engineering.

**3150:313-314 PHYSICAL CHEMISTRY LECTURE I, II***3 credits each*

Sequential. Prerequisites: 264, 3450:235, 3650:292, or permission of instructor. Gases, thermodynamics, thermochemistry, solutions, dilute solutions, chemical equilibrium, phase rule, chemical kinetics, electrochemistry, electrolytic equilibria, atomic and molecular structure.

**3150:315-316 PHYSICAL CHEMISTRY LABORATORY I, II***2 credits each*

Sequential. Corequisite for 315 is 314. Laboratory designed for illustrating techniques and equipment used in physical chemical investigations.

**3150:335-336 ANALYTICAL CHEMISTRY FOR LABORATORY TECHNICIANS I, II***4 credits each*

Sequential. Prerequisites: 133 and 134 or 122. Intended primarily for students preparing to become laboratory or hospital technicians. Theory and calculations in qualitative and quantitative analysis, laboratory, methods used in hospital laboratories.

**3150:401/501 BIOCHEMISTRY LECTURE I***3 credits*

Prerequisite: 264. Biochemistry of amino acids and proteins, enzymes and their role as biocatalysts, structure and biochemistry of nucleotides, nucleic acids, carbohydrates and lipids, energy storage and utilization.

**3150:402/502 BIOCHEMISTRY LECTURE II***3 credits*

Prerequisite: 401/501. Carbohydrate, lipid and amino acid metabolism, protein, nucleotide and nucleic acid biosynthesis and gene function.

**3150:404/504 BIOCHEMISTRY LABORATORY I***1 credit*

Corequisite: 401/501. Investigation of amino acids, proteins, carbohydrates, lipids and nucleic acids. Chromatography, oxygen measurements, spectrophotometry and use of radioisotopes.

**3150:405/505 BIOCHEMISTRY LABORATORY II***1 credit*

Prerequisite: 404/504; corequisite: 402/502. Biological synthesis and degradation; role of enzymes, their characteristics and utilization of energy released during oxidation of biological compounds.

**3150:408/508 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 nonchemical aspects of a chemist's profession.

**3150:411/511 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.

**3150:415/515 CHEMICAL INSTRUMENTATION***3 credits*

Prerequisites: 424, 426 or permission. Principles and applications of electrical and electronic devices and various transducers for chemical analysis. Laboratory.

**3150:416/516 INSTRUMENTAL METHODS OF ANALYSIS***3 credits*

Prerequisite: 415/515. Principles and applications of analytical chemical techniques based on physical measurements. Laboratory.

**3150:421/521 QUALITATIVE ORGANIC ANALYSIS***4 credits*

Prerequisite: 266. Identification and characterization of organic substances, separation and identification of components of organic mixtures. Laboratory.

**3150:423-424 ANALYTICAL CHEMISTRY LECTURE I, II***3 credits each*

Prerequisite: 133. Theoretical principles of quantitative analysis. Techniques and calculations, gravimetric and volumetric methods. Instrumental analysis with emphasis on newer analytical tools and methods.

**3150:425-426 ANALYTICAL CHEMISTRY LABORATORY I, II***2 credits each*

Sequential. Corequisites: 423, 424. Laboratory techniques employed in gravimetric, volumetric and instrumental analysis.

**3150:463/563 ADVANCED ORGANIC CHEMISTRY***3 credits*

Prerequisite: 264. Introduction to study of mechanisms of organic reactions.

**3150:472/572 ADVANCED INORGANIC CHEMISTRY***3 credits*

Prerequisite: 314. Concepts of atomic structure integrated in systematic classification of elements. Periodic table. Chemistry of the representative elements. Transition elements including coordination compounds, organometallics and metal carbonyls.

**3150:490/590 WORKSHOP IN CHEMISTRY***1-3 credits*

Group studies of special topics in chemistry. May not be used to meet undergraduate or graduate major requirements in chemistry. May be repeated.

**3150:498 SPECIAL TOPICS***1-3 credits***3150:499 RESEARCH PROBLEMS***2 credits*

(May be repeated for a total of 8 credits)

Prerequisite: permission. Assignment of special problems to student, designed as an introduction to research problems.

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**Graduate Courses**
**3150:601-602 CHEMISTRY OF POLYMERS I, II***2 credits each*

Sequential. Prerequisites: 264 and 266 or permission of instructor. History, classification and nomenclature; natural polymers. Types and methods of polymerization. Ring vs. chain stability. Natural and synthetic polypeptides, nucleic acids.

**3150:604-605 CHEMISTRY OF POLYMERS LABORATORY I, II***2 credits each*

Sequential. Prerequisites: 264, 266. Preparation and identification of polymers to illustrate methods of polymerization discussed in 601, 602, and 649.

**3150:609 MICROQUANTITATIVE ORGANIC ANALYSIS***2 credits*

Prerequisites: 266, 426 and permission. Microquantitative analytical methods for determination of carbon, hydrogen, nitrogen, sulfur and halogens in organic substances. Laboratory.

**3150:310 BASIC QUANTUM CHEMISTRY***2 credits*

Prerequisite: 314. Discussion of quantum mechanics with applications to molecular systems. Topics include angular momentum, molecular hamiltonians, variation and perturbation methods and molecular orbital theories.

**3150:611 CHEMICAL BONDING AND SPECTROSCOPY***2 credits*

Prerequisite: 610. Application of quantum chemistry to elucidation of chemical bonding, structure, and interpretation of molecular spectra.

**3150:613 SYNTHETIC METHODS OF ORGANIC CHEMISTRY***2 credits*

Prerequisite: 264. Discussion of synthetic organic chemistry. Standard synthesis of organic compounds as well as newer techniques.

**3150:621-622 ADVANCED PREPARATIONS I, II***1-2 credits each*

Prerequisite: permission. Methods for preparing and purifying organic and inorganic compounds. Laboratory.

**3150:625 COLLOID CHEMISTRY***2 credits*

Prerequisites: 424, 426. Thermodynamic and kinetic approach to interfacial, electrokinetic and colligative phenomena. Application of Schlieren optics. Debye double layer concept and colloid stability. Micelles. Adsorption and related phenomena.

**3150:629-630 THEORETICAL INORGANIC CHEMISTRY I, II***2 credits each*

Sequential. Prerequisites: 314, 472 or permission. Detailed treatment of chemistry of transition elements. Group theoretical applications, ligand field theory, kinetics and mechanism, magnetism, electronic spectra, molecular orbital theory.

**3150:635 THERMODYNAMICS, STATISTICAL THERMODYNAMICS, AND KINETICS I***2 credits*

Prerequisites: 313, 314. Rigorous treatment of laws of thermodynamics and application to selected chemical systems — gases, solutions and surfaces. Fundamentals of statistical thermodynamics.

**3150:636 THERMODYNAMICS, STATISTICAL THERMODYNAMICS, AND KINETICS II***2 credits*

Prerequisite: 635. Applications of statistical thermodynamics to chemical systems in equilibrium. Theories of rate processes. Fundamentals of chemical kinetics; methods of investigation and interpretation of data.

**3150:638-639 ADVANCED PHYSICAL CHEMISTRY LABORATORY I, II***1 credit each*

Prerequisite: permission. Laboratory experiments in physical chemistry.

**3150:649 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.

**3150:651-652 QUANTUM CHEMISTRY I, II***3 credits each*

Sequential. Prerequisite: 3450:236 or permission. Wave mechanics: exactly soluble problems and approximation methods in many-particle systems; structure, properties, symmetry and spectroscopy of molecules; self-consistent field techniques.

**3150:660 BIO-ORGANIC REACTIONS***2 credits*

Prerequisites: 264, 313, 314, 402 or permission. Bioorganic mechanisms, including nucleophilic displacements on carbonyl and phosphorus; hydration and redox reactions; chemistry of cofactors; enzyme catalysis and models.

**3150:665 BIOENERGETICS***2 credits*

Prerequisites: 313, 314, 402 or permission. Energy production and utilization in living systems including historical aspects, thermodynamics, glycolysis, phosphorylation, citric acid cycle, respiratory chain, electron transport, metabolic control, active transport and muscle contraction.

**3150:667 ADVANCED BIOCHEMISTRY TECHNIQUES***2 credits*

Prerequisites: 402, 405, 426 or permission. Advanced analytical course in biochemistry laboratory; purification and characterization of DNA, RNA and chromatin; study of metabolic pathways in bacteria using advanced biochemistry techniques.

**3150:670 CHEMICAL MICROSCOPY AND MICROCHEMICAL ANALYSIS***2 credits*

Prerequisite: 462 and permission. Microscale titrations and physical measurements, phase studies, identifications, microchemical procedures.

**3150:671 THERMOANALYTICAL 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.

**3150:672 ADVANCED ANALYTICAL CHEMISTRY***2 credits*

Prerequisite: 426 or equivalent. Advanced techniques for separation, determination and identification; classical as well as recent techniques. One lecture, one laboratory period.

**3150:673 STEREOCHEMISTRY OF ORGANIC COMPOUNDS***2 credits*

Prerequisite: 264. Stereochemistry and its application to reactions of organic chemistry.

**3150:674-675 PHYSICAL CHEMISTRY OF POLYMERS I, II***2 credits each*

Sequential. Prerequisite: 314 or permission of instructor. Basic statistical ideas. Molecular weights, distributions, sizes and shapes. Kinetics and mechanism of polymerization. Copolymerization. Degradation. Thermodynamics of polymer solutions.

**3150:665-666 EXPERIMENTAL PHYSICAL CHEMISTRY OF POLYMERS I, II***2 credits for 665; 2-3 credits for 666*

Sequential. Prerequisite or corequisite: 674, 675, respectively. Laboratory experiments to illustrate methods and principles discussed in 674 and 675.

**3150:688 ADVANCED CHEMICAL THERMODYNAMICS***2 credits*

Prerequisite: 636. Thermodynamics of solutions, fluctuation theory, generalized thermodynamic potential, irreversible thermodynamics.

**3150:691 ADVANCED INSTRUMENTAL ANALYSIS***2 credits*

Prerequisite: 416/516. Modern instruments.

**3150:692 ADVANCED INSTRUMENTATION***2 credits*

Prerequisites: 316, 426. Theory and application of instrumental measurements. Interpretation of data.

**3150:699 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.

**3150:710 SPECIAL TOPICS IN 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, thermoanalytical methods, separations, standards, sampling, recent developments.

**3150:711 SPECIAL TOPICS IN 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, nonaqueous solvents, organometallic compounds, homogeneous catalysis.

**3150:712 SPECIAL TOPICS IN ORGANIC CHEMISTRY**

1-2 credits

(May be repeated)

Prerequisite: permission. Topics in advanced organic chemistry such as natural products, heterocyclic compounds, photochemistry.

**3150:713 SPECIAL TOPICS IN PHYSICAL CHEMISTRY**

1-2 credits

(May be repeated)

Prerequisite: permission. Subject matter from areas of modern physical chemistry.

**3150:714 SPECIAL TOPICS IN POLYMER CHEMISTRY**

1-2 credits

(May be repeated)

Prerequisites: 264, 266, 314, 316 or permission. Study of topical subjects of current interest. Chemistry of macromolecules encompassing organic, inorganic or physical chemistry aspects and including laboratory work where applicable. Lectures and/or laboratory.

**3150:715 SPECIAL TOPICS IN BIOCHEMISTRY**

1-2 credits

(May be repeated)

Prerequisite: permission. Consideration of topics in biochemistry such as isoenzymes and disease, genetic engineering, membrane structure and functions and recent developments in field.

**3150:783-784 PHYSICAL ORGANIC CHEMISTRY I, II**

3 credits each

Sequential. Prerequisites: 264 and 314 completed recently, or permission of instructor. Corequisite for 783:610. Consideration of physical-chemical principles that determine course of an organic chemical reaction; discussion of reactive intermediates.

**3150:786 THEORETICAL ORGANIC CHEMISTRY**

2 credits

Prerequisite: 784. Application of modern quantum chemistry and thermodynamics to problems of organic chemistry.

**3150:899 DOCTORAL RESEARCH CHEMISTRY**

1-16 credits

Open to properly qualified students accepted as candidates for degree of Doctor of Philosophy in chemistry. Supervised original research may be undertaken in organic, inorganic, physical, analytical or biochemistry.

**3200:401-402/501-502 EGYPTOLOGY**

3 credits each

Prerequisite: permission of instructor. Classical Egyptian (standard hieroglyphic of 18th Dynasty); history and antiquities of Egypt as far as Roman occupation. May be repeated for credit with change of subject.

**3200:404-405/504-505 ASSYRIOLOGY**

3 credits each

Prerequisite: permission of instructor. The Akkadian language; history and antiquities of Mesopotamia. May be repeated for credit with another cuneiform language.

**3200:407-408/507-508 ANCIENT NEAR EASTERN ARCHAEOLOGY**

3 credits each

Prerequisite: permission of instructor. Palestine, Mesopotamia, Asia Minor and adjacent lands; Old Testament reviewed in light of material evidence. May be repeated for credit with change of subject.

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**3210: Greek****3210:121-122 ELEMENTARY GREEK**

4 credits each

Sequential. Standard language of Hellenistic times with some attention to Modern Greek.

**3210:223-224 SECOND YEAR GREEK**

3 credits each

Prerequisite: 121-122 or equivalent. Xenophon or New Testament.

**3210:497-498/597-598 GREEK READING AND RESEARCH**

3 credits each

Prerequisite: permission of instructor. Homer, Sophocles, Plato or the like. May be repeated for credit with change of subject.

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**3220: Latin****3220:121-122 ELEMENTARY LATIN**

4 credits each

Sequential. Some attention to development of Romance languages, especially Italian.

**3220:243-244 SECOND YEAR LATIN**

3 credits each

Prerequisite: 121-122 or equivalent. Selections from Virgil, Pliny, Nepos or other material.

**3220:303-304 LATIN LITERATURE**

3 credits each

Prerequisite: 243-244 or equivalent. Sequence by semesters: satirists, dramatists, historians, philosophical and religious writers, mediaeval writers, lyric and elegiac poets, novelists. May be repeated for credit with change of subject.

**3220:497-498/597-598 LATIN READING AND RESEARCH**

3 credits each

Prerequisite: permission of instructor. Generally Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered. May be repeated for credit with change of subject.

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**3200: Classics****3200:161-162 COMPARATIVE LITERATURE**

3 credits each

Major writers of Greece and Rome; their influence on later European literature. No foreign language necessary. Required of majors.

**3200:189 CLASSICAL MYTHOLOGY**

3 credits

Myths, legends and folklore of Greece and Rome; some attention to history of religion. No foreign language necessary.

**3200:313-314 CLASSICAL ARCHAEOLOGY**

3 credits each

Ruins and monuments of Greece and Rome; history reconstructed by examination of material remains. No foreign language necessary. Required of majors.



## 3250: Economics

### 3250:100 INTRODUCTION TO ECONOMICS

3 credits

May not be substituted for 201-202, 244. Economics primarily considered in a broad social science context. Adequate amount of basic theory introduced.

### 3250:201-202 PRINCIPLES OF ECONOMICS

3 credits each

Sequential. Economic activity in modern industrial society, preparation for responsible participation in process of shaping public policy. No credit to students who have received credit in 244.

### 3250:244 INTRODUCTION TO ECONOMIC ANALYSIS

3 credits

For engineering majors. Intensive introduction to analysis of modern industrial society and formulation of economic policy. Structure of economic theory and its relation to economic reality. No credit to students who have completed 201-202.

### 3250:248 CONSUMER ECONOMICS

3 credits

Spending habits of American consumers; influences affecting their spending decisions, personal finance, budget planning, saving programs, installment buying, insurance, investments, housing finance.

### 3250:330 LABOR PROBLEMS

3 credits

Prerequisite: 201-202. Labor economics, principles and public policy. Study of structure of labor market and impact unions have on labor management relations.

### 3250:333 LABOR ECONOMICS

3 credits

Prerequisite: 330. Theoretical tools used in analysis of problems of labor in any modern economic system. Emphasis given to examination of determinants of demand for and supply of labor.

### 3250:380 INDUSTRIAL ORGANIZATION AND PUBLIC POLICY

3 credits

Prerequisites: 201-202. Role of industrial structure and firm conduct in performance of industry and way in which antitrust policy is designed to provide remedies where performance is unsatisfactory.

### 3250:380 MONEY AND BANKING

3 credits

Prerequisite: 202. Institutions of money, banking and credit, monetary expansion and contraction, public policies affecting this process, development of our money and banking system.

### 3250:385 ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT

3 credits

Prerequisites: 100, 202, 244 or permission. Introduction to economic analysis of use of natural resources and economics of environment. Problems of water and air pollution, natural environments, natural resource scarcity, conservation, economic growth.

### 3250:400 MACROECONOMICS

3 credits

Prerequisites: 201-202. Changes in national income, production, employment, price levels, long-range economic growth, short-term fluctuations of economic activity.

### 3250:405 PUBLIC FINANCE

3 credits

Prerequisites: 201-202. Tax systems and other sources of revenue of federal, state and local governments; changing patterns of public expenditures; fiscal policy and debt management; economic effects of public policy.

### 3250:406/506 STATE AND LOCAL PUBLIC FINANCE

3 credits

Prerequisite: 410; recommended: 405. Examines economic rationale and problems for provision of goods and services by different governmental units. Considers alternative revenue sources and special topics.

### 3250:410 MICROECONOMICS

3 credits

Prerequisites: 201-202. Advanced analysis of consumer demand, production costs, market structures, determinants of factor income.

### 3250:420/520 MATHEMATICAL ECONOMICS I

3 credits

Prerequisites: 201, math modules or permission. Mathematical treatment of economic theory in framework of comparative statics. Emphasis on theory of the firm, theory of consumer behavior, general equilibrium analysis and welfare analysis.

### 3250:421/521 MATHEMATICAL ECONOMICS II

3 credits

Prerequisite: 420/520 or permission. Use of calculus and linear algebra to dynamic economic analysis; solution techniques; some significant dynamic models from literature.

### 3250:426/526 STATISTICAL APPLICATIONS IN ECONOMICS

3 credits

Prerequisites: 201-202, 6500:321-322, or the equivalent, or permission. Techniques of making forecasts as basis for decisions in business and government as well as for verification of hypotheses.

### 3250:430/530 HUMAN RESOURCE POLICY

3 credits

Prerequisite: 330. Comprehensive overview of dimensions of human resource policy; issues in human resource development, allocation, maintenance and utilization.

### 3250:431/531 LABOR AND THE GOVERNMENT

3 credits

Prerequisites: 201-202, 330. Development of public policy for control of industrial relations, from judicial control of 19th century to statutory and administrative controls of World War II and postwar periods.

### 3250:432 THE ECONOMICS AND PRACTICE OF COLLECTIVE BARGAINING

3 credits

Prerequisites: 201-202, 330. 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.

### 3250:435/535 THE DEVELOPMENT OF AMERICAN CORPORATE STRUCTURE

3 credits

Traces evolution of American corporate structure from late 19th century to present. Explains and analyzes changing dimensions of corporate structure and response of government. Case studies analyzed.

### 3250:440/540 SPECIAL TOPICS IN ECONOMICS

3 credits

Prerequisite: permission. Opportunity for students to study special topics and current issues in economics.

### 3250:450 COMPARATIVE ECONOMIC SYSTEMS

3 credits

Prerequisites: 201-202. Systems of economic organization, ranging from theoretical extreme of unregulated private enterprise to that of Marxian communism.

### 3250:460/560 ECONOMIC DEVELOPMENT AND PLANNING FOR UNDERDEVELOPED COUNTRIES

3 credits

Prerequisites: 201-202. Basic problems in economic development. Theories of development. Government planning for development. Trade and development of underdeveloped countries. No credit for graduate majors in economics.

**3250:461 PRINCIPLES OF INTERNATIONAL ECONOMICS***3 credits*

Prerequisites: 201-202. Theory of international trade and foreign exchange, policies of free and controlled trade, international monetary problems.

**3250:475/575 DEVELOPMENT OF ECONOMIC THOUGHT***3 credits*

Prerequisites: 201-202. Evolution of theory and method, relation of ideas of economists to contemporary conditions.

**3250:481/581 MONETARY AND BANKING POLICY***3 credits*

Prerequisites: 380, 400. Control over currency and credit, policies of control by central banks and governments, U.S. Treasury and Federal Reserve System.

**3250:486 GHETTO ECONOMIC DEVELOPMENT***3 credits*

Prerequisites: 201-202. Stresses careful study of question of economic planning and development at urban level, in response to pervasive phenomena of urban ghetto structures.

**3250:487 URBAN ECONOMICS: THEORY AND POLICY***3 credits*

Prerequisite: 410. Theoretical and empirical analyses of allocation, growth and structure in urban economy. Urban problems. Special attention given to resource allocation in urban public sector.

**3250:490 INDEPENDENT STUDY IN ECONOMICS***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Independent study in economics under supervision and evaluation of selected faculty member.

**3250:491/591 WORKSHOP IN ECONOMICS***1-3 credits*

Group studies of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only. May be repeated.

**3250:497 HONORS PROJECT***1-3 credits*

(May be repeated for a total of 6 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.

**3250:606 PUBLIC FINANCE***3 credits*

Examination of public sector economies with emphasis on public revenues and public expenditures. Develops objectives of taxation, welfare aspects of the public sector and theory of public goods. Considers specific taxes, cost-benefit analysis, expenditures analysis and fiscal federalism.

**3250:610 FRAMEWORK OF ECONOMICS ANALYSIS***3 credits*

Prerequisite: graduate standing. Development of theoretical and analytical framework for decision making. Discussion of applications of the framework to situations concerning demand, cost, supply, production, price, employment and wage.

**3250:611 MICROECONOMIC THEORY I***3 credits*

Modern theory of consumer behavior and of the firm. Determination of market prices. Optimization models, establishment of criteria for productive, allocative and distributive efficiency.

**3250:612 MICROECONOMIC THEORY II***3 credits*

Prerequisite: 611. Continuation of 611. Covers multimarket equilibrium, general equilibrium and welfare economic theory, and applications in public choice and applied welfare theory.

**3250:615 INDUSTRIAL ORGANIZATION***3 credits*

Prerequisite: 611 or permission. Examines link between market structure, firm conduct and economic performance. Measurement and effects of monopoly power, industrial concentration, and their changes over time.

**3250:616 ANTITRUST ECONOMICS***3 credits*

Prerequisite: 615 or permission of instructor. Examines economic rationale behind legislative and judicial decisions affecting mergers, vertical and horizontal restraints, monopolization, collusion and price discrimination.

**3250:617 THE ECONOMICS OF REGULATION***3 credits*

Prerequisite: 615 or permission of instructor. Examines rationale, methods and success of government regulation of public utility, transportation and communications industries.

**3250:627 ECONOMETRICS***3 credits*

Prerequisite: 526 or equivalent. Formulation of functional relations among economic variables suitable for statistical estimation from observational data and construction of multiequation econometric models and methods of estimation.

**3250:633 THEORY OF WAGES AND EMPLOYMENT***3 credits*

Analytical approach to integration of economic theory with observed labor market phenomena. Discussion of wage and employment theories, effects of unions, collective bargaining theories and effects of government regulation.

**3250:634 COLLECTIVE BARGAINING***3 credits*

Economic issues and implications involved in hours of work, employment and unemployment, and the impact of trade unions upon basic institutions of a free private enterprise economy.

**3250:635 LABOR LAW***3 credits*

Evaluation of labor relations laws. Public policy affecting both public and private worker organizations, collective bargaining, strikes and picketing.

**3250:636 COLLECTIVE BARGAINING II***3 credits*

Prerequisite: 635 or permission of instructor. Examination of process of negotiation. Course core is an actual contract negotiation. Students decide on issues, positions and tactics, then negotiate contract.

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## Graduate Courses

**3250:600 FOUNDATIONS OF ECONOMIC ANALYSIS***3 credits*

Prerequisite: graduate standing. Determination of national income, employment and price level; aggregate consumption, investment and asset holding; decision problems faced by household and firm. Partial equilibrium analysis of competition and monopoly and general equilibrium analysis. May not be substituted for 602, 603, 611, or applied toward the 30 graduate credits required for M.A. in economics.

**3250:602 MACROECONOMIC ANALYSIS I***3 credits*

Construction of static macroeconomic models. Analysis predominantly in terms of comparative statics with only relatively brief mention of dynamic models.

**3250:603 MACROECONOMIC ANALYSIS II***3 credits*

Prerequisite: 602. Macrodynamics economics and stability analysis of closed and open Keynesian systems. Inclusive coverage of post-Keynesian theories of economic growth.

**3250:837 LABOR LAW II***3 credits*

Intensive study of selected aspects of current labor legislation affecting employer-employee relationship. Special focus on arbitration law, public sector bargaining law and employment discrimination.

**3250:839 PUBLIC EMPLOYEE COLLECTIVE BARGAINING***3 credits*

Prerequisite: 635 or permission of instructor. Examination of unique problem of public employees under collective bargaining agreements. Focus on legal framework, tripartite nature of negotiations and special situations facing public employees.

**3250:864 SEMINAR ON ECONOMIC GROWTH AND DEVELOPMENT***3 credits*

Review of main theories of economic growth since age of classical economics. Problems in development of emerging countries. Discussion of aggregative macro models of capital formation, investment, technology and external trade.

**3250:865 SEMINAR ON ECONOMIC PLANNING***3 credits*

Types, methods and applications of planning. Planning for growth. Application of Input-Output, linear programming, computer simulations and other statistical and mathematical methods of planometrics.

**3250:866 SEMINAR ON REGIONAL ECONOMIC ANALYSIS AND DEVELOPMENT***3 credits*

Study of a particular national or international regional development. Any one or a combination of following regions may be considered. Middle East, North Africa, areas within Latin America, Southern Europe, Southeast Asia or Eastern Europe.

**3250:870 INTERNATIONAL MONETARY ECONOMICS***3 credits*

International financial relations. Foreign exchange market and exchange rate adjustments. Balance of payments adjustment policies. International monetary system.

**3250:871 INTERNATIONAL TRADE***3 credits*

Traditional trade theory. Recent developments in trade theory and their policy implications in trade relations among developed and developing economics.

**3250:863 MONETARY ECONOMICS***3 credits*

Intensive study of important areas of monetary theory. Emphasis on integration of money and value theory among other areas, plus some pressing policy issues.

**3250:697-698 READING IN ADVANCED ECONOMICS***1-4 credits each*

(A maximum of 6 credits may be applied toward the master's degree in economics.)

Intensive investigation of selected problem area in advanced economics under supervision of instructor. Since the subject matter is decided upon in each case, the course may be taken repeatedly for credit.

**3250:899 RESEARCH AND THESIS***3 credits*

(May be repeated for a total of 6 credits)

**3300:219 ENGLISH LITERATURE***4 credits*

Readings in major and minor writers in English literature from Old English to 1800, emphasizing specific representative works and cultural and intellectual backgrounds which produced them.

**3300:220 ENGLISH LITERATURE***4 credits*

Readings in major and minor writers from 1800 to present, emphasizing cultural backgrounds which produced them.

**3300:249 REPRESENTATIVE AMERICAN WRITERS BEFORE 1865***3 credits*

Study of major American writers to 1865 including selected readings in Cooper, Poe, Emerson, Thoreau, Hawthorne, Melville and Whitman.

**3300:250 REPRESENTATIVE AMERICAN WRITERS 1865 TO PRESENT***3 credits*

Development of American literature from 1865 to present, including readings in Twain, James, Dickinson, Crane, Dreiser, Hemingway, Fitzgerald, Frost and Faulkner.

**3300:270 INTRODUCTION TO LINGUISTICS***3 credits*

Broad range of topics on language and introduction to its scientific study. Topics include language origins and history, dialects, sound systems, syntax, semantics, animal language, writing systems and language universals.

**3300:275 SPECIALIZED WRITING***3 credits*

Principles and practice of style, structure and purpose in writing, with special applications to writing demands of a specific career area. May be repeated for different topics, with permission.

**3300:277 INTRODUCTION TO POETRY WRITING***3 credits*

Practice in writing poems. Study of various techniques in poetry, using contemporary poems as models. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

**3300:278 INTRODUCTION TO FICTION WRITING***3 credits*

Practice in writing short stories. Study of various techniques in fiction, using contemporary stories as models. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

**3300:279 INTRODUCTION TO SCRIPT WRITING***3 credits*

Practice in writing scripts. Study of various techniques in script writing, using contemporary models for study. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

**3300:280 POETRY APPRECIATION***3 credits*

Close reading of wide selection of British and American poems with emphasis on dramatic situation, description, tone, analogical language, theme and meaning.

**3300:281 FICTION APPRECIATION***3 credits*

Focus on some modern masters of short story and novel: Conrad, Faulkner, Joyce, Lawrence, Malamud, Bellow and Barth, approaching fiction as experience and as art.

**3300:282 DRAMA APPRECIATION***3 credits*

Explores dramatic material in terms of theme, characterization and style. Offered either as a text course or as film appreciation. Both may be taken for separate credit.

**3300:283 FILM APPRECIATION***3 credits*

Introduction to 1) dramatic choices made by filmmakers in scripting, directing, editing and photographing narrative films; and 2) qualities of reliable film reviews.

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## 3300: English

**3300:150-155 FRESHMAN ENGLISH***4 credits each*

A sequence of courses in Freshman English with special emphasis on writing. The sequence, taken by special arrangement, will count in lieu of General College requirements, 1100:111-112.

**3300:289 STUDIES IN LITERATURE***3 credits*

Concentrated, in-depth study of thematically-grouped fiction, drama, poetry and/or exposition. May be repeated for credit, with permission, as different topics are offered, but not for credit toward an English major.

**3300:315 SHAKESPEARE: THE EARLY PLAYS***3 credits*

Introduction to early drama of Shakespeare with close reading of eight to 10 plays including tragedies, histories and comedies. Includes explanatory lectures of both the plays and their backgrounds.

**3300:316 SHAKESPEARE: THE MATURE PLAYS***3 credits*

Study of eight to ten of Shakespeare's plays after 1598, beginning with mature comedies. Concentration on major tragedies and romances.

**3300:319 ENGLISH DRAMA TO 1642***3 credits*

Development of non-Shakespearean drama from earliest Mystery plays to death of Queen Elizabeth, 1603.

**3300:320 ENGLISH DRAMA: 1660-1800***3 credits*

Study of major dramatic works from reopening of English theatre in 1660 to end of 18th century.

**3300:329 THE ENGLISH NOVEL BEFORE 1830***3 credits*

Development of English novel before 1830. Focus on works of Defoe, Richardson, Fielding, Smollett, Sterne, Austen and Scott.

**3300:330 THE ENGLISH NOVEL: 1830-1900***3 credits*

Reading of at least five major novels of Victorian era, of varying length, by Emily Bronte, Dickens, Eliot, Thackeray and Hardy. Characterization, theme and attitude toward life emphasized.

**3300:350 BLACK AMERICAN LITERATURE***3 credits*

Survey of representative Black American writers from 19th century to present, with particular attention to historical and social backgrounds.

**3300:360 THE OLD TESTAMENT AS LITERATURE***3 credits*

History of Hebrews to 586 B.C., as revealed through epic, fiction, saga and poetry, viewed against background of the Oriental World.

**3300:361 THE NEW TESTAMENT AND APOCRYPHA AS LITERATURE***3 credits*

These two bodies of literature read with emphasis on form of gospel and epistle, and concept of apocalypse. Both are viewed against their historical and social backgrounds.

**3300:365 CONTINENTAL DRAMA***3 credits*

Study of masterpieces of European drama emphasizing evolution of dramatic forms, styles and subjects from Greek, Roman, Italian, Spanish, French, German, Scandinavian and Russian playwrights.

**3300:366 EUROPEAN BACKGROUNDS OF ENGLISH LITERATURE***3 credits*

Representative French, German, Italian and Spanish works from Middle Ages, Renaissance, Enlightenment and romantic period, read in translation.

**3300:367 MODERN EUROPEAN LITERATURE***3 credits*

Representative European writers from about 1850 to present, in translation. Focus on fiction of such writers as Zola, Tolstoy, Dostoyevsky, Mann, Proust, Kafka and Solzhenitsyn.

**3300:370 INTERMEDIATE LINGUISTICS***3 credits*

Prerequisite: 270 or permission. In-depth scientific look at language structure, especially the relation of sentences and their meanings. The variety of the English language's methods for constructing complex sentences from simple ideas is investigated.

**3300:377 ADVANCED POETRY WRITING***3 credits*

Prerequisite: 277 or permission. Advanced practice in writing poems, with emphasis on shaping publishable works. Survey of poetry market. Class discussion of student poems; individual conference with instructor.

**3300:378 ADVANCED FICTION WRITING***3 credits*

Prerequisite: 278 or permission. Advanced practice in writing short stories, with emphasis on shaping publishable works. Survey of fiction market. Class discussion of student stories; individual conference with instructor.

**3300:389 SPECIAL TOPICS IN LITERATURE AND LANGUAGES***3 credits*

Prerequisite: 1100:112. Traditional and nontraditional topics in English literature and language, supplementing courses listed in University Bulletin, generally constructed around theme, genre and language study. May be repeated for credit as different topics are offered.

**3300:400/500 ANGLO SAXON***3 credits*

Studies in Old English language and Old English prose and poetry, including Beowulf.

**3300:406/506 CHAUCER***3 credits*

Close study of Chaucer's major works — *The Canterbury Tales* and *Troilus and Criseyde* in Middle English.

**3300:407/507 MIDDLE ENGLISH LITERATURE***3 credits*

Study of genres, topics, styles and writers of Middle English literary works from 12th to 15th century. Readings in Middle English.

**3300:410/510 16TH CENTURY LITERATURE***3 credits*

Prose and poetry from early Tudor period to later Elizabethan period, excluding drama. Literature studied in context of general intellectual and artistic movements of the age.

**3300:417/517 17TH CENTURY LITERATURE***3 credits*

Overview of major authors of earlier 17th century, especially Bacon, Donne, Bunyan, Jonson and several fiction writers. Involves genre study, historical and cultural perspectives and new critical analysis.

**3300:418/518 MILTON***3 credits*

Emphasis on Milton's major poems and prose works: *Paradise Lost*, *Paradise Regained*, *Areopagitica*, the divorce tracts, and poems of the 1645 edition. Students become acquainted with Milton the man and Milton the artist.

**3300:420/520 THE 18TH CENTURY***3 credits*

First half of course examines satire as major mode in work of Butler, Dryden, Pope, Swift, and among others. Second half emphasizes Johnson and Boswell.

**3300:425/525 LITERATURE OF THE ROMANTIC PERIOD***3 credits*

Literary, philosophical, psychological and social revolutions of romantic period as reflected in works of such major writers as Wordsworth, Byron and Keats.

**3300:430/530 LITERATURE OF THE VICTORIAN PERIOD***3 credits*

Poetry and prose of later 19th century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers.

**3300:435/535 20TH CENTURY BRITISH POETRY***3 credits*

Concentrated study of major poems of Yeats, Eliot and Auden, with attention also to Hardy, Housman, Spender, C. Day Lewis, Dylan Thomas and others.

**3300:437/537 BRITISH FICTION SINCE 1925***3 credits*

Study of important British novelists since 1925, excluding Lawrence, Joyce and Woolf. Attention to development of British short story from 1925 to present.

**3300:439/539 MODERN BRITISH AND IRISH DRAMA***3 credits*

Study of major British dramatists, principally those of post-World War II. Focal figures are Shaw, Galsworthy, O'Casey, Osborne, Arden and Pinter.

**3300:447/547 AMERICAN NONFICTION***3 credits*

Study of nonfictional writing including journals, notebooks, autobiographical writings, biographies and essays of major American writers.

**3300:448/548 AMERICAN FICTION: TO 1885***3 credits*

Examination of early American fiction, tracing its genesis, romantic period and germinal movements toward realism. Writers discussed include Cooper, Poe, Hawthorne, Melville and Twain.

**3300:449/549 AMERICAN FICTION: 1885-1918***3 credits*

Examination of American writers of realistic and naturalistic fiction (e.g., Howells, James, Crane, Dreiser), tracing developments in American fiction against background of cultural and historical change.

**3300:450/550 AMERICAN FICTION SINCE 1918***3 credits*

Study of significant American short and long fiction from Sherwood Anderson to Kurt Vonnegut.

**3300:451/551 AMERICAN POETRY TO 1900***3 credits*

Survey of American poetry, 17th, 18th and 19th centuries, beginning with Anne Bradstreet and ending with Stephen Crane.

**3300:452/552 AMERICAN POETRY FROM 1900 TO PRESENT***3 credits*

Survey of 20th century American poetry beginning with Edwin Arlington Robinson and ending with contemporary poets.

**3300:454/554 20TH CENTURY AMERICAN DRAMA***3 credits*

Examination of major, established playwrights and sampling of new and rising ones. Includes O'Neill, Miller, Williams, Albee and Rabe.

**3300:470/570 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.

**3300:475/575 THEORY OF RHETORIC***2 credits*

Ancient and modern theories of rhetoric, with attention to classical oration, "topics" of rhetoric, and their application to teaching of English.

**3300:480 HONORS IN ENGLISH***2 credits*

Prerequisites: senior standing and permission. Directed studies in individual and group sessions to encourage independent reading and thought, based on series of readings arranged by instructor.

**3300:481 HONORS IN ENGLISH***2 credits*

Prerequisites: senior standing and permission. Directed studies in individual and group sessions to encourage independent reading and thought, based on series of readings arranged by instructor. 480 and 481 may be taken once each.

**3300:482 SENIOR HONORS PROJECT IN ENGLISH***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program and approval of Honors preceptor; open only to English majors enrolled in Honors Program. Independent study leading to completion of Senior Honors Thesis or other original work.

**3300:489/589 SEMINAR IN ENGLISH***2-3 credits*

Special studies, and methods of literary research, in selected areas of English and American literature and language. May be repeated with different topics.

**3300:490/590 WORKSHOP IN ENGLISH***1-3 credits*

Group studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English; for elective credit only. May be repeated with different topics.

**3300:498 INDEPENDENT STUDY***1-3 credits*

Prerequisite: permission of instructor. Directed study in a special field of interest chosen by student in consultation with instructor.

**Graduate Courses****3300:615 SHAKESPEAREAN DRAMA***3 credits*

Concentrated study of several Shakespearean plays with emphasis on historical, critical and dramatic documents pertinent to development of Shakespeare's art.

**3300:616 SHAKESPEARE'S CONTEMPORARIES IN ENGLISH DRAMA***3 credits*

Readings in such playwrights as Lyly, Greene, Marlowe, Jonson, Beaumont, Fletcher, Webster, Middleton and Ford and in contemporary writings relevant to theory and practice of drama.

**3300:827 KEATS AND HIS CONTEMPORARIES***3 credits*

Writings of John Keats, studied against background of romantic poetic theory and poetry of Keat's contemporaries.

**3300:832 VICTORIAN POETS***3 credits*

Study of major poems of Tennyson, Browning, Arnold and Hopkins, in light of Victorian intellectual currents and theories of poetry. Brief attention to Swinburne, D. G. Rossetti and later Victorian poets.

**3300:839 THEORY AND PRACTICE OF MODERN POETRY***3 credits*

Study of modern prosody, critical theories of modern poetry, and relation between writer's theory and practice, with particular attention to Frost, Stevens, Yeats and Eliot.

**3300:645 AMERICAN ROMANTIC FICTION***3 credits*

Intensive exploration of American romantic fiction, focusing especially on writings of Poe, Hawthorne and Melville.

**3300:649 REALISM AND NATURALISM IN AMERICAN FICTION***3 credits*

Analysis of relevant works of J.W. DeForest, Stephen Crane, Theodore Dreiser, Harold Frederic, W.D. Howells, Frank Norris and selected writers of local color and native honor.

**3300:665 LITERARY CRITICISM***3 credits*

Inquiry into nature and value of literature and problems of practical criticism as represented in major statements of ancient and modern critics.

**3300:870 MODERN LINGUISTICS***3 credits*

Introductory examination of methods and results of modern grammatical research in syntax, semantics, phonology and dialects. Goals include understanding of language variation and background preparation for linguistic studies of literature.

**3300:673 THEORIES OF COMPOSITION***3 credits*

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

**3300:679 SCHOLARLY WRITING***2 credits*

Study of theories of good and bad writing styles and forms of scholarly writing, with special attention to thesis and dissertation writing and scholarly essay, and to special requirements of journal articles. Class discussion and demonstration, drawn from scholarly and dissertation writing and from student's own writing.

**3300:689 SEMINAR IN ENGLISH***2-3 credits*

Special topics within the general field of literature and language, usually focusing on major figures or themes. Can be repeated as different topics are offered.

**3300:691 BIBLIOGRAPHY AND LITERARY RESEARCH***2 credits*

Examines choosing research topics, typical problems in literary scholarship, abstracting of scholarly material and bibliographic sources for literary research. Bibliographic exercises are done and models of literary scholarship read.

**3300:696 INDIVIDUAL READING IN ENGLISH***1-2 credits*

Individual study under guidance of professor who directs and coordinates student's reading and research.

**3300:699 RESEARCH ENGLISH: THESIS***3 credits*

Original work in the field of literature and language and completion of graduate student's required thesis.

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## 3350: Geography

**3350:100 INTRODUCTION TO GEOGRAPHY***3 credits*

Analysis of world patterns of population characteristics, economic activities, settlement features, landforms and climate as an interrelated complex.

**3350:210 PHYSICAL AND ENVIRONMENTAL GEOGRAPHY***3 credits*

Landforms, weather and climate, soils and vegetation and natural hazards. Nature and distribution of these environmental elements and their significance to man. Laboratory.

**3350:220 ECONOMIC GEOGRAPHY***3 credits*

Geographical basis for production, exchange and consumption of goods. Effect of economic patterns on man's cultural and political relationships.

**3350:230 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.

**3350:240 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.

**3350:314 CLIMATOLOGY***3 credits*

Prerequisite: 210 or permission. Analysis and classification of climates, with emphasis on regional distribution. Basic techniques in handling climatic data.

**3350:326 ENERGY AND ECOLOGY***3 credits*

Prerequisite: 220 or permission. Traditional fossil fuels and recently developed alternative sources of energy studied along with electricity production. Production and consumption patterns, effects of conservation and environmental damage and energy policy considered.

**3350:335 RECREATION RESOURCE PLANNING***3 credits*

Prerequisite: 230 or permission. Effect of physical and economic environment on recreational patterns. Case studies of important recreational activities and areas in which tourism contributes significantly to the area economy.

**3350:340 CARTOGRAPHY***3 credits*

Use of graphic/cartographic principles and techniques as a means of presenting information.

**3350:350 ANGLO AMERICA***3 credits*

Prerequisite: 100 or permission. Regional and topical study of U.S. and Canada, with emphasis on environmental, economic and cultural patterns and their interrelationships.

**3350:353 LATIN AMERICA***3 credits*

Prerequisite: 100 or permission. Analysis of relationship of cultural and economic patterns to physical environment in Mexico, Central America, the Caribbean and South America.

**3350:356 EUROPE***3 credits*

Prerequisite: 100 or permission. Regional and topical analysis of cultural, economic and environmental patterns, excluding U.S.S.R.

**3350:358 U.S.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.

**3350:360 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.

**3350:363 AFRICA SOUTH OF THE SAHARA***3 credits*

Prerequisite: 100 or permission. Environmental and human bases of regional contrasts. Emphasis on tropical environmental systems and changing patterns of resource utilization.

**3350:385 PLANNING SEMINAR***1 credit*

Prerequisite: permission of instructor. Development of planning studies including completion of paper covering a planning topic in depth. Projects are presented by students and critically analyzed.

**3350:397 SPECIAL PROBLEMS***1-3 credits*

(May be repeated for a total of 5 credits)

Prerequisite: permission of instructor. Directed reading and research in special field of interest.

**3350:428/528 INDUSTRIAL AND COMMERCIAL SITE LOCATION***3 credits*

Prerequisite: 220 or permission. Relationship between land, resources, population, transportation and industrial and commercial location process.

**3350:433/533 URBAN, REGIONAL AND RESOURCE PLANNING**

3 credits

Prerequisite: 230 or permission. Role of geographic investigation in city, regional and resource planning.

**3350:436/536 URBAN LAND USE ANALYSIS**

3 credits

Prerequisite: 230 or permission. Land use classification systems and their spatial variation in urban areas. Land use data are collected by students by field work and analyzed to identify the associations and structure of subregions.

**3350:438/538 WORLD METROPOLITAN AREAS**

3 credits

Prerequisite: 230 or permission. Comparative analysis of selected metropolitan regions of the world. Urbanism, land use, housing, transportation, population and role of cities in economic development in different cultures.

**3350:442/542 THEMATIC CARTOGRAPHY**

3 credits

Prerequisite: 240 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.

**3350:444/544 MAP COMPILATION AND REPRODUCTION**

3 credits

Prerequisite: 240 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.

**3350:447/547 INTRODUCTION TO REMOTE SENSING**

3 credits

Prerequisite: 240 or permission. Study of aerial photography and non-photographic imagery developed by radar, thermal, multispectral and satellite scanners. Emphasis on use in geographical, geological, biological and engineering research.

**3350:448/548 AUTOMATED COMPUTER MAPPING**

3 credits

Prerequisite: 240 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 students.

**3350:449/549 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.

**3350:481/581 INTRODUCTION TO GEOGRAPHIC RESEARCH**

2 credits

Prerequisite: 12 credits in geography. Techniques in geographic research. Library resources and techniques of professional writing stressed.

**3350:483/583 INTRODUCTION TO SPATIAL ANALYSIS**

2 credits

Prerequisite: 481/581 or permission. Analysis of mapped statistical surfaces (assumptions, properties, appropriate uses). Principles for use of map as model for statistical evidence, prediction and hypothesis testing.

**3350:490/590 WORKSHOP IN GEOGRAPHY**

1-3 credits

(May be repeated for a total of 6 credits)

Group studies of special topics in geography.

**3350:495/595 SOIL AND WATER FIELD STUDIES**

3 credits

Prerequisite: 210 or permission. Properties, origins and uses of major soil and water regime landscapes. Stresses relationships between soil and the hydrological cycle, urbanization, suburbanization and agriculture. Field trips required.

**3350:496/596 FIELD RESEARCH METHODS**

3 credits

Prerequisite: 481/581 or permission. Field work enabling student to become competent in collecting, organizing and analysis of data while carrying out field research projects.

**3350:496 HONORS RESEARCH IN GEOGRAPHY**

1-3 credits

(May be repeated for a total of 6 credits)

Prerequisite: permission of department Honors preceptor, open to Honors students only. Exploration of research topics and issues in contemporary geography. Selection of research topic and writing of research paper in proper scholarly form under direction of faculty member.

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**Graduate Courses**
**3350:800-801-802 SEMINAR**

3 credits each

Prerequisite: permission. Investigation and analysis of selected topics in particular fields of geography. Specialization indicated by second portion of title. Each may be repeated for a maximum of 8 credits.

**3350:880 ADVANCED SPATIAL ANALYSIS**

4 credits

Prerequisite: 483/583 or permission. Advanced concepts and methodologies in geographic research. Emphasis on quantitative revolution in geographical analysis including multivariate procedures as factor, discriminant and economical analysis, and multidimensional scaling.

**3350:885 PLANNING: FIELD EXPERIENCE**

2 credits

Prerequisite: permission. Individual experience in selected planning agencies for supervised performance in professional planning work.

**3350:887 HISTORY OF GEOGRAPHIC THOUGHT**

3 credits

Prerequisite: 481/581 or permission. Critical review of major developments in geographic concepts from ancient times to present.

**3350:898 INDIVIDUAL READING AND RESEARCH**

1-3 credits

(May be repeated for a total of 5 credits)

Prerequisite: permission of instructor. Intensive investigation of selected topics under guidance of faculty member.

**3350:899 THESIS RESEARCH**

2 credits

Prerequisite: permission of department head. Supervised original research. May be repeated twice.

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**3370: Geology**
**3370:100 EARTH SCIENCE**

3 credits

Introduction to earth science for nonscience majors. Survey of earth in relation to its physical composition, structure, history, atmosphere, oceans; and relation to solar system and universe.

**3370:101 INTRODUCTORY PHYSICAL GEOLOGY**

4 credits

Comprehensive survey of minerals, rocks, structures and geologic processes of solid earth. Laboratory.

**3370:102 INTRODUCTORY HISTORICAL GEOLOGY**

4 credits

Prerequisite: 101. Geologic history of earth and succession of major groups of plants and animals as interpreted from rocks and fossils. Laboratory.

**3370:200 ENVIRONMENTAL GEOLOGY***3 credits*

Analysis of geologic aspects of man's environment with emphasis on geologic hazards and environmental impact of society's demand for water, minerals and energy.

**3370:201 EXERCISES IN ENVIRONMENTAL GEOLOGY***1 credit*

Prerequisite or corequisite: 200. Recognition and evaluation of environmental problems related to geologic setting through field and laboratory exercises and demonstrations which apply concepts from course 200.

**3370:202 GEOLOGY OF THE NATIONAL PARKS***2 credits*

Prerequisite: 100 or 101. Geologic setting of major national parks, interpreted in terms of geological principles and processes which shaped them in past and/or currently affect them, including the rock cycle, evolution of landscapes and plate tectonics.

**3370:210 GEOMORPHOLOGY***3 credits*

Prerequisite: 101. Landforms of the earth. Emphasis on origins, geologic processes and distributions. Laboratory.

**3370:230 MINERALOGY***3 credits each semester*

Prerequisites: 101 and 3150:132. Study of morphological crystallography and general mineralogy. Laboratory emphasis on mineral recognition. Concentration in either "A" Crystallography, or "B" Physical-Chemical-Descriptive Mineralogy. Student may earn credit for both "A" and "B," a maximum of 6 credits. Laboratory.

**3370:233 PETROLOGY***2 credits*

Prerequisite: 230. Megascopic identification, classification and concepts of origin of igneous, sedimentary and metamorphic rocks. Laboratory.

**3370:271 OCEANOGRAPHY***3 credits*

Prerequisite: 101. Introduction to physical processes, geologic history and development of marine areas.

**3370:324 SEDIMENTATION AND STRATIGRAPHY***3 credits*

Prerequisite: 102. Introduction to processes and environments of sedimentation and stratigraphic principles employed in examination of sedimentary strata. Hand specimens and sequences of sedimentary strata studied. Laboratory.

**3370:350 STRUCTURAL GEOLOGY***4 credits*

Prerequisite: 101 or permission. Origins and characteristics of folds, faults, joints and rock cleavage. Structural features of sedimentary, igneous and metamorphic rocks. Laboratory.

**3370:360 INTRODUCTORY INVERTEBRATE PALEONTOLOGY***4 credits*

Prerequisite: 102 or permission. Introductory course emphasizing morphology and evolution of major invertebrate groups with consideration of practical applications of paleontology. Laboratory.

**3370:395 FIELD METHODS IN GEOLOGY***2 credits*

Prerequisites: 101 and 102 or permission. Use of geologic field equipment including Brunton compasses, alidades and plane tables, stereoscopes and aerial photographs.

**3370:404/504 ASTROGEOLOGY***3 credits*

Prerequisites: 433; 3150:134; 3650:232 or 262 or 292 or permission. Relations of planet earth to the solar system and universe. Analysis and implications of data from lunar and space probes.

**3370:410/510 REGIONAL GEOMORPHOLOGY OF NORTH AMERICA***3 credits*

Prerequisites: 101, 102, 210, or permission; recommended: 350. Examination of physiographic provinces of North America emphasizing structure, tectonic setting, stratigraphy and processes responsible for landforms in each province. Laboratory.

**3370:411/511 GLACIAL GEOLOGY***2 credits*

Prerequisite: 210 or permission. Causes and effects of Pleistocene expansion of polar ice masses with emphasis on glacial deposits and world climactic changes.

**3370:425/525 STRATIGRAPHY***3 credits*

Prerequisites or corequisites: 360, 324 or permission. Principles of nomenclature; sedimentary facies; fossils in subdivision of the rock record and correlation; geologic time, time-rock and rock units. Field studies.

**3370:432/532 OPTICAL MINERALOGY***3 credits*

Prerequisite: 230 or equivalent. Introduction to petrographic microscope. Optical properties and identification of minerals in thin section and as crushed fragments. Laboratory.

**3370:433/533 PETROGRAPHY***3 credits*

Prerequisite: 432/532. Origin and petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and mineral assemblages in thin section.

**3370:435/535 PETROLEUM GEOLOGY***3 credits*

Prerequisite: 350 or permission; recommended: 324. Natural occurrences of petroleum. Characteristics, origin, entrapment and exploration methods.

**3370:437/537 ECONOMIC GEOLOGY***3 credits*

Prerequisites: 350 and 433. Study of metallic and nonmetallic mineral deposits emphasizing paragenesis and exploration. Laboratory.

**3370:441/541 FUNDAMENTALS OF GEOPHYSICS***3 credits*

Prerequisites: 3450:223 or permission and 3650:292. Fundamental concepts in solid earth geophysics, planetary physics, geodesy, and geomagnetism. Contributions of geophysics to recent major developments in geoscience.

**3370:446/546 EXPLORATION GEOPHYSICS***3 credits*

Prerequisites: 3450:223, 3650:292. Basic principles and techniques of geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical methods and application to geological problems. Laboratory.

**3370:450/550 ADVANCED STRUCTURAL GEOLOGY***2 credits*

Prerequisite: 350 or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory.

**3370:463/563 MICROPALAEONTOLOGY***3 credits*

Prerequisite: 360 or permission. Introduction to techniques of micropaleontology evolution and paleoecology of selected microfossil groups. Laboratory.

**3370:470/570 GEOCHEMISTRY***3 credits*

Prerequisites: minimum of 12 credits in chemistry and geology or permission. Chemical systems of the earth, both open and closed, with emphasis on mineral-water relationships. Laboratory.



**3370:474/574 GROUNDWATER HYDROLOGY***3 credits*

Prerequisite: 101. Origin, occurrence, regimen and utilization of groundwater. Qualitative and quantitative presentation of geological and geochemical aspects of groundwater hydrology. Laboratory.

**3370:490/590 WORKSHOP***1-3 credits*

Group studies of special topics in geology. May not be used to meet undergraduate or graduate major requirements in geology. May be used for elective credit only. May be repeated.

**3370:495 FIELD STUDIES IN GEOLOGICAL STRUCTURES AND PROCESSES***1 credit*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Field trip course emphasizing phases of geology not readily studied in Ohio. Includes pretrip preparation and post-trip examination. Students will bear trip expenses.

**3370:496/596 GEOLOGY FIELD CAMP***6 credits*

Prerequisites: 350 and permission; recommended: 230, 324, 395. Emphasis on collection, recording and interpretation of field data; detailed structural and stratigraphic field study.

**3370:497 SENIOR HONORS PROJECT IN GEOLOGY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program, permission of department Honors preceptor 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.

**3370:499 RESEARCH PROBLEMS***1 credit*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.

**3370:633 METAMORPHIC PETROLOGY***3 credits*

Prerequisite: 433/533. Textures, chemistry of metamorphic reactions, phase diagrams and occurrences of metamorphic rocks. Selected rock suites studied. Laboratory.

**3370:634 CLAY MINERALOGY***3 credits*

Prerequisite: 432/532. Classification, identification and genesis of clay minerals and clay rocks, their use and exploitation. Laboratory stresses methods of identification of clay minerals and analysis and petrogenetic interpretation of clay materials in suites of samples from the rock record. Laboratory.

**3370:636 COAL GEOLOGY***3 credits*

Prerequisites: 101, 102; recommended: 324. Origin, composition and occurrence of coal with emphasis on depositional environments, coalification processes, exploration, evaluation and exploitation. Laboratory.

**3370:636 ORE MICROSCOPY***3 credits*

Prerequisites: 432/532, 437/537. Identification and study of ore minerals and their textures using reflected-light microscope. Discussion of diagnostic physical and optical properties of opaque minerals. Laboratory.

**3370:643 GEOSTATISTICS***3 credits*

Prerequisites: 101, 3470:461/561, or an equivalent course in statistics. Application of statistical methods to geology and geophysics including tests of hypotheses, trend surface analysis, analysis of variance, nonparametric statistics and time series analysis.

**3370:645 TERRESTRIAL HEAT FLOW***3 credits*

Prerequisites: 101, and 3450:235, or permission. Techniques of measuring terrestrial heat flow, solutions of heat conduction equation, results of heat flow measurements, geophysical deductions and future of geothermal energy.

**3370:656 GLOBAL TECTONICS***3 credits*

Prerequisites: 350, 441/541, or permission. Theoretical study of physical forces involved in formation and deformation of earth's crust with emphasis on plate tectonics and associated diastrophic features.

**3370:660 EVOLUTION AND THE FOSSIL RECORD***2 credits*

Prerequisite: 360. Major features of evolution including rates and extinction using selected fossil groups as examples.

**3370:674 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.

**3370:675 GEOCHEMICAL METHODS OF PROSPECTING***2 credits*

Prerequisites: 9 credits of chemistry, 9 credits of mineralogy and/or 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.

**3370:676 URBAN GEOLOGY***3 credits*

Prerequisites: 210, 230 or permission. Problems of urbanization related to our finite resources and creation of wastes. Geologic hazards. Case histories demonstrate application of geologic data to urban development.

**3370:680 SEMINAR IN GEOLOGY***2 credits*

(May be repeated for a total of 6 credits)

Discussion of selected topics with reference material from original sources.

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## Graduate Courses

**3370:608 REMOTE SENSING IN GEOLOGY***3 credits*

Prerequisite: 3350:447/547 or equivalent. Techniques for analysis and processing of remotely sensed data from conventional and satellite sensing systems. Applications to local, regional and global geologic and environmental geology problems. Laboratory.

**3370:610 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.

**3370:623 SEDIMENTARY PETROLOGY***3 credits*

Prerequisites: 324 and 432/532 or permission. Detailed hand specimen and thin section examination of selected sedimentary suites, particularly with respect to mineralogy and texture. Laboratory.

**3370:631 ROCKS AND MINERALS***4 credits*

Prerequisites: 101 and permission. Intensive course integrating crystallography, mineralogy and petrology for science teachers and graduate students from disciplines other than geology. Laboratory.

**3370:632 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.

**3370:684 SELECTED TOPICS IN GEOLOGY***1-3 credits*

(May be repeated for a total of 8 credits)

Prerequisite: permission. Topics not regularly offered as formal courses, generally of classic or current importance. Entails lectures, readings, discussions and/or guided laboratory work.

**3370:695 ADVANCED FIELD STUDIES***1 credit*

(May be repeated for a total of 4 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. Students will bear trip expenses.

**3370:698 GRADUATE RESEARCH PROBLEMS.***1 credit*

(May be repeated for a total of 6 credits)

Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.

**3370:699 THESIS RESEARCH***1-6 credits*

Embodies an independent and original investigation. Must be successfully completed, report written and defended before a thesis committee.

**3400:337 THE WEST IN THE DEVELOPMENT OF THE UNITED STATES***3 credits*

Examination of westward movement from Revolution to closing of frontier; types of frontiers; impact of the West as a section on nation's development.

**3400:338 WOMEN IN THE UNITED STATES***3 credits*

Changing roles, status, self-images and activities of women in context of American social, economic, political and intellectual movements.

**3400:339 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.

**3400:340 PEACE, WAR AND MANKIND***3 credits*

Historical examination of theories of war and peace, including study of leaders, groups and ideas for peace.

**3400:350 SELECTED TOPICS IN HISTORY***3 credits*

Includes experimental offerings such as those crossing subject or chronological lines, and subjects not listed in this Bulletin. See departmental office for current subject.

**3400:397 INDIVIDUAL STUDY OR RESEARCH IN HISTORY***1-3 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. For individual study or research in history, including special projects, summer study tours or specialized training.

**3400:401 HONORS SEMINAR***3 credits*

Prerequisite: permission of department head or instructor. Selected readings; writing of research paper. For students seeking to graduate with honors in history and for students in Honors Program.

**3400:403/503 U.S. SOCIAL-CULTURAL HISTORY 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.

**3400:404/504 U.S. SOCIAL-CULTURAL HISTORY SINCE 1877***3 credits*

Concepts and attitudes; emphasis on business; agrarianism; self-made man; progressivism; impact of world wars; social-economic planning; trends in literature and art; social structure and change; black Americans; women's movements.

**3400:405/505 HISTORICAL METHODS***2 credits*

Practice in historical research and writing. Required for history majors, and for graduate majors who have not taken equivalent course elsewhere but does not count for graduate credit requirements.

**3400:407/507 UNITED STATES DIPLOMACY TO 1919***3 credits*

Establishment of basic policies, diplomacy of expansion, and emergence of a world power.

**3400:408/508 UNITED STATES DIPLOMACY SINCE 1914***3 credits*

Responses of government and public to challenges of war, peacemaking and power politics.

**3400:413 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.

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## 3400: History

**3400:201 U.S. HISTORY TO THE CIVIL WAR***4 credits*

Survey of American history from Age of Discovery through colonization, and nation building to Civil War Era.

**3400:202 U.S. HISTORY SINCE THE CIVIL WAR***4 credits*

Survey of U.S. history from Civil War era to present.

**3400:207 EUROPE: RENAISSANCE THROUGH THE 18TH CENTURY***4 credits*

Survey of European history from Renaissance and Reformation; development of nation states, religious wars, Age of Louis XIV and Enlightenment.

**3400:208 EUROPE: 19TH AND 20TH CENTURIES***4 credits*

Survey of European history from French Revolution and Napoleon; 19th-century "isms," formation of Germany and Italy, the two world wars, totalitarian dictatorship and postwar age.

**3400:220 BLACK PEOPLE OF THE UNITED STATES***3 credits*

Survey of social, economic, political and cultural history of Afro-Americans from 17th century to present.

**3400:340 THE ANCIENT NEAR EAST***3 credits*

Mesopotamia and Egypt; Israel and her neighbors to time of Persian Empire.

**3400:305 GREECE***3 credits*

Minoans and Mycenaeans; classical Greece to triumph of Macedon.

**3400:306 ROME***3 credits*

Rome and Hellenistic East to end of classical times.

**3400:307 THE EASTERN ROMAN EMPIRE (324-1453)***3 credits*

Byzantine culture and history from 324 to the fall of 1453.

**3400:415/515 LATIN AMERICA: ORIGINS OF NATIONALITY**

3 credits

Pre-Columbian civilizations, discovery and conquests; colonialism, struggle for independence and formation of new societies.

**3400:416/516 LATIN AMERICA: THE 20TH CENTURY**

3 credits

Social revolution, political ideology and contemporary problems.

**3400:417/517 THE U.S., LATIN AMERICA AND IMPERIALISM**

3 credits

Inter-American relations, militarism, dependency, Marxism and recent international and ideological trends.

**3400:418/516 MEXICO**

3 credits

History of Mexico from Indian civilizations to present with emphasis on relations with United States; social and political ramifications of the 20th-century Mexican revolution.

**3400:420/520 COLONIAL AMERICA**

3 credits

Establishment of European colonies in North America with special emphasis on English settlements and evolution of first British Empire to 1713.

**3400:421/521 AMERICAN COLONIES FROM EMPIRE TO INDEPENDENCE**

3 credits

Colonial life between the Glorious Revolution and War of Independence. Anglo-French struggle for control of North America, development of British colonial institutions and of American independence.

**3400:422/522 FOUNDING OF THE UNITED STATES**

3 credits

The revolution and struggle for independence; creating a new nation from the Confederation to the Constitution and Federalist era.

**3400:424/524 NEW NATION AND THE JACKSONIAN ERA, 1801-1846**

3 credits

Party formation and Jeffersonian politics; War of 1812 and Era of Good Feelings; westward expansion, Jacksonian Democracy, Whigs and Age of Reform.

**3400:425/525 THE CIVIL WAR**

3 credits

Slavery and causes of Civil War; politics and conduct of the war.

**3400:426/526 THE CIVIL WAR AND RECONSTRUCTION**

3 credits

Politics and conduct of the war. Reconstruction and the roots of Jim Crow mentality; emergence of an industrialized society.

**3400:428/528 THE ORIGINS OF MODERN AMERICA**

3 credits

United States from Reconstruction era to World War I (1877-1920); emphasis on political responses to rise of an industrialized-urbanized society, the populist and progressive movements.

**3400:429/529 THE UNITED STATES BETWEEN THE WORLD WARS**

3 credits

World War I and Versailles; the 1920s, the Great Depression and the New Deal; World War II.

**3400:430/530 RECENT AMERICA: THE UNITED STATES SINCE WORLD WAR II**

3 credits

Nuclear age, cold war, foreign policy and domestic affairs to present. Social, political, constitutional, diplomatic, cultural and economic changes since 1945.

**3400:432/532 AMERICAN ECONOMY TO 1900**

3 credits

Survey of economic developments from colonial era to 1900, including agriculture, commerce and labor. Special emphasis on business and labor.

**3400:433/533 AMERICAN ECONOMY SINCE 1900**

3 credits

Survey of economic developments since 1900; topics include agriculture, business and labor. Special emphasis on role of big business and evolution of monetary and fiscal policy.

**3400:434/534 AMERICAN ENVIRONMENTAL HISTORY**

3 credits

Utilization and conservation of natural resources from beginnings of American society to present; a combination of economic and technological history of extensive treatment of public policy and environmental issues.

**3400:435/535 OHIO**

3 credits

Political, social, economic and intellectual history of Ohio, with special emphasis on Ohio's relationship to Old Northwest and to the nation.

**3400:436/536 THE AMERICAN CITY**

3 credits

Development of urbanization and its consequences from colonial period to present.

**3400:437/537 AMERICAN FAMILY HISTORY**

3 credits

Evolution of American family, colonial times to present, including developments in structure and roles of family members, and status of the aged. Exploration of methods for historical study of the family.

**3400:442/542 EUROPE IN THE BAROQUE ERA**

3 credits

Constitutional, diplomatic, cultural, intellectual and social developments of 17th-century Europe.

**3400:444/544 EUROPE IN THE FRENCH REVOLUTIONARY ERA**

3 credits

Development of French Revolution; Napoleon's regime and satellite kingdoms.

**3400:445/545 MEDIEVAL EUROPE, 400-1200**

3 credits

Migration of peoples, Carolingian revival, renewed invasions; social, economic and intellectual stirrings leading to "birth of Europe."

**3400:446/546 MEDIEVAL EUROPE, 1200-1500**

3 credits

Middle Ages and the middle class; economic and political change, international wars, social unrest and religious crosscurrents.

**3400:449/549 THE RENAISSANCE**

3 credits

The European renaissance (1350-1600). Economic and political trends with special emphasis on intellectual and artistic developments.

**3400:450/550 THE REFORMATION**

3 credits

Europe in 16th century; its religious, cultural, political and diplomatic development, with special emphasis on Protestant, Anglican and Catholic reformations.

**3400:451/551 19TH CENTURY EUROPE, 1815-1871**

3 credits

Europe in the century of change; revolution, romanticism, industrialization, democratization, first wars of the industrial age.

**3400:452/552 19TH CENTURY EUROPE, 1871-1914**

3 credits

Socialism, imperialism, nationalism and the great war. The *belle époque* and contemporary artistic and intellectual currents.

**3400:454/554 20TH CENTURY EUROPE, 1914-1939**

3 credits

Europe between world wars; Russian revolution, fascism and national socialism; plight of democracies.

**3400:455/555 20TH CENTURY EUROPE SINCE 1939**

3 credits

Europe in World War II, the cold war and attempts at unity.

**3400:458/558 RUSSIA TO 1801***3 credits*

Survey of Russian history from Kievan period to death of Paul I, emphasizing development of autocratic government, Russia culture, reigns of Peter and Catherine.

**3400:459/559 RUSSIA SINCE 1801***3 credits*

Survey of 19th and 20th centuries. Special emphasis on problems of modernization, the revolution and development of communism.

**3400:460/560 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.

**3400:470/570 ANGLO-SAXON AND MEDIEVAL ENGLAND***3 credits*

Anglo-Saxon life, thought and institutions; the Norman Conquest; medieval life, thought and institutions to 1471.

**3400:471/571 EARLY MODERN ENGLAND TO 1640***3 credits*

Yorkists and Tudors, transition from medieval to early modern times; Elizabeth and early Stuarts.

**3400:472/572 EARLY MODERN ENGLAND, 1640-1763***3 credits*

Conflict under the Stuarts and civil war; Restoration, Sensible Revolution and early Hanoverians. Politics, religion and society in Age of Aristocracy.

**3400:473/573 ENGLAND SINCE 1763***3 credits*

Agricultural and first industrial revolution; politics of reform and transition; the welfare state, society and war.

**3400:477/577 WESTERN SCIENCE AND TECHNOLOGY TO 1800***4 credits*

Science and technology in Greek, Roman, Islamic and European societies. Scientific, technological developments related to one another and to cultures of these societies; scientific and industrial revolutions.

**3400:478/578 WESTERN SCIENCE AND TECHNOLOGY SINCE 1800***4 credits*

Continuing development of physical and biological sciences and technology in Western European and American societies. Second industrial revolution, atomic physics and weapons, evolution, genetics and chemical basis of life.

**3400:480/580 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 culture.

**3400:481/581 MODERN CHINA***3 credits*

Survey of China since 18th century with focus on process of modernization. Background of contemporary scene stressed.

**3400:485/585 JAPAN***3 credits*

Survey of history of Japan from antiquity to present; emphasis on developments since 1800, impact of the west and modernization process.

**3400:490/590 WORKSHOP IN HISTORY***1-3 credits*

Group studies of special subjects pertaining to history. May be used for elective credit only, may be repeated. May not be used to meet undergraduate or graduate major requirements in history.

**Graduate Courses****3400:622 PROSEMINAR IN ANCIENT HISTORY***4 credits*

Study of historical literature, sources of materials and major interpretations of ancient history, especially Greek and Roman periods.

**3400:623 SEMINAR IN ANCIENT HISTORY***4 credits*

Prerequisite: 622. Research and writing in selected topics of ancient history, particularly Greek and Roman eras.

**3400:625 PROSEMINAR IN MEDIEVAL HISTORY***4 credits*

Study of historical literature, sources of materials and major interpretations of medieval European history.

**3400:626 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.

**3400:631 PROSEMINAR IN MODERN EUROPEAN HISTORY TO 1815***4 credits*

Study of historical literature, sources of materials and major interpretations of early modern European history from Renaissance to Napoleonic era.

**3400:632 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.

**3400:634 PROSEMINAR 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.

**3400:635 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.

**3400:640 PROSEMINAR IN HISTORY OF SCIENCE***4 credits*

Study of historical literature, sources of materials and major interpretations in history of science.

**3400:641 SEMINAR IN HISTORY OF SCIENCE***4 credits*

Research and writing in selected topics in history of science.

**3400:651 PROSEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE***4 credits*

Study of historical literature, sources of materials and major interpretations of English and British imperial history.

**3400:652 SEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE***4 credits*

Prerequisite: 651. Research and writing in selected topics of English and British imperial history.

**3400:666 PROSEMINAR IN AMERICAN HISTORY TO 1865***4 credits*

Study of historical literature, sources of materials and major interpretations of American colonial and U.S. history to Civil War.

**3400:667 SEMINAR IN AMERICAN HISTORY TO 1865***4 credits*

Prerequisite: 666. Research and writing in selected topics of American history from colonial period to Civil War.

**3400:669 PROSEMINAR IN AMERICAN HISTORY SINCE 1865**

4 credits

Study of historical literature, sources of materials and major interpretations of U.S. history since Civil War.

**3400:670 SEMINAR IN AMERICAN HISTORY SINCE 1865**

4 credits

Prerequisite: 669. Research and writing in selected topics of U.S. history since Civil War.

**3400:677 PROSEMINAR IN LATIN AMERICAN HISTORY**

4 credits

Prerequisite: two courses in Latin American studies, or permission of instructor. Study of historical literature, sources of materials and major interpretations of Latin American history.

**3400:678 SEMINAR IN LATIN AMERICAN HISTORY**

4 credits

Prerequisite: 677. Research and writing in selected topics in social, cultural, diplomatic, intellectual and political history of Latin America.

**3400:689 HISTORIOGRAPHY**

3 credits

Study of historians, historical writings and interpretations through the ages. Required for master's degree if candidate has not had equivalent undergraduate or graduate course elsewhere.

**3400:694 THESIS RESEARCH**

3 credits

Research for Master of Arts degree thesis.

**3400:697-698 INDIVIDUAL READING FOR M.A. STUDENTS**

1-3 credits each

(May be repeated for a total of 6 credits)

Directed reading to fit individual student programs. Written permission of instructor required.

**3400:699 THESIS WRITING**

3 credits

Prerequisite: 694. Writing of Master of Arts degree thesis.

**3400:797-798 INDIVIDUAL READING FOR PH.D. STUDENTS**

1-4 credits each

(May be repeated for a total of 12 credits)

Directed reading to fit individual student programs. Written permission of instructor required.

**3400:898 DISSERTATION RESEARCH**

1-12 credits

Research for Doctor of Philosophy degree dissertation.

**3400:899 DISSERTATION WRITING**

1-12 credits

Prerequisite: 898. Writing of Doctor of Philosophy degree dissertation.

**3450:112 ALGEBRAIC FUNCTIONS AND GRAPHING**

1 credit

Prerequisite: 111. Linear and quadratic functions and equations, complex numbers, inequalities, absolute value, ratio and proportions, graphing functions and inequalities.

**3450:113 COMBINATORICS AND PROBABILITY**

1 credit

Prerequisite: 112. Permutations, combinations, sample spaces, events; simple, compound, and conditional probability; Bernoulli trials, expectation and odds.

**3450:114 MATRICES**

1 credit

Prerequisite: 112. Nomenclature, operations, inverse, solution of  $m$  linear equations in  $n$  variables using elementary row operations.

**3450:115 LINEAR PROGRAMMING**

1 credit

Prerequisite: 114. Minimizing and/or maximizing a linear function subject to a system of linear inequalities (geometrically and simplex method); introduction to game theory.

**3450:117 INTRODUCTION TO TRIGONOMETRY**

1 credit

Prerequisite: 112. Definitions of trigonometric functions, identities, solving right triangles, applications.

**3450:118 TRIGONOMETRIC FUNCTIONS AND GRAPHING**

1 credit

Prerequisite: 117. Graphing, identities, solving triangles, applications.

**3450:121 ANALYTIC GEOMETRY**

1 credit

Prerequisite: 112. Cartesian coordinate system; rational, logarithmic and exponential functions; sequences and series, limits and definition of series.

**3450:122 DIFFERENTIAL CALCULUS**

1 credit

Prerequisite: 121. Differentiation of algebraic, logarithmic and exponential functions, higher derivatives, partial derivatives, applications.

**3450:123 INTEGRAL CALCULUS**

1 credit

Prerequisite: 122. Indefinite and definite integral differentials, change of variable, numerical integration, improper integrals, double integral.

**3450:124 CALCULUS WITH TRIGONOMETRY**

1 credit

Prerequisites: 118, 123. Differentiation and integration of trigonometric functions, trigonometric substitution, applications.

**3450:127 COMPUTER SCIENCE TOPICS I**

1 credit

Prerequisite: permission. Selected topics or subject areas of interest in computer science.

**3450:128 COMPUTER SCIENCE TOPICS II**

1 credit

Prerequisite: permission. Selected topics or subject areas of interest in computer science.

**3450:131 NUMBER SYSTEMS**

1 credit

Prerequisite: 112. Ancient number systems, number bases, Euclidean algorithm, modular arithmetic.

**3450:132 ELEMENTARY GEOMETRY**

1 credit

Prerequisite: 112. Definitions and measure of line segments, angles and triangles in Euclidean plane geometry; Hilbert's axioms.

**3450:136 SYSTEMS OF MEASUREMENT**

1 credit

English and metric systems of weights and measures. Troy, avoirdupois and apothecaries' systems.

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## 3450: Mathematics

**3450:101-139 MODERN UNIVERSITY MATHEMATICS**

1 credit each

A series of modules designed primarily for the non-physical science major to be taken after consultation with an adviser.

**3450:101 ELEMENTARY ALGEBRA**

1 credit

Prerequisite: permission of instructor. Real numbers, review of arithmetic operations, symbolism, word problems, linear and quadratic equations.

**3450:111 ALGEBRA**

1 credit

Prerequisite: one year of high school algebra or equivalent. Sets, signed numbers, algebraic expressions, factoring, exponents, radicals, binomial theorem.

**3450:138 MATHEMATICS OF FINANCE***1 credit*

Prerequisite: 112. Simple and compound interest; bank discount, ordinary annuities (present value, amount and rate), amortization, annuities, perpetuities.

**3450:147 ELEMENTARY FUNCTIONS I***2 credits*

Prerequisites: high school algebra and trigonometry. Real numbers, equations and inequalities, radicals, absolute value, relations and functions, linear and quadratic functions, system of equations, matrices and determinants, complex numbers.

**3450:148 ELEMENTARY FUNCTIONS II***2 credits*

Prerequisites: high school algebra and trigonometry. Exponential and logarithmic functions, exponential and logarithmic equations, trigonometric functions, reduction formulas; trigonometric identities, arithmetic and geometric sequences and series, mathematical induction.

**3450:149 PRE-CALCULUS MATHEMATICS***3 credits*

Prerequisite: three years of high school mathematics. Sets, number systems, absolute value, relations, functions, polynomial functions, determinants, systems of equations and inequalities, trigonometric functions, trigonometric identities, exponential and logarithmic functions, complex numbers, infinite sequences, binomial theorem, mathematical induction.

**3450:221 ANALYTIC GEOMETRY-CALCULUS I***4 credits*

Prerequisite: 148 or 149. Real numbers, analytic geometry, limits, continuity, derivatives of algebraic functions, tangent and normal lines, extrema of functions, Rolle's theorem, mean value theorem, related rates, antiderivatives, definite integrals, areas, volumes, arc length.

**3450:222 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.

**3450:223 ANALYTIC GEOMETRY-CALCULUS III***4 credits*

Prerequisite: 222. Sequences, series, power series, Taylor and Maclaurin series, binomial series, functions of several variables, limit, continuity, partial derivatives, differentials, directional derivatives, maxima and minima, double and triple integrals, surface area.

**3450:235 DIFFERENTIAL EQUATIONS***3 credits*

Prerequisite: 223. 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.

**3450:289 SELECTED TOPICS IN MATHEMATICS***1-3 credits*

Prerequisite: permission. Selected topics or subject areas of interest in mathematics.

**3450:301 HISTORY OF MATHEMATICS***2 credits*

Prerequisite: 222. Origin and development of mathematical ideas.

**3450:311 ABSTRACT ALGEBRA***3 credits*

Prerequisite: 221. Introduction to groups, rings, integral domains; axiomatic foundation of natural, integer, rational, real and complex number systems.

**3450:312 LINEAR ALGEBRA***3 credits*

Prerequisite: 222. Study of vector spaces, linear transformations, matrices, determinants, inner products, the eigenvalue problem, quadratic forms and canonical forms.

**3450:327 INTRODUCTION TO NUMERICAL METHODS***3 credits*

Prerequisites: 115 and 123 and 3460:201. Introduction to numerical methods with applications to business, behavioral and social sciences. Topics include root finding, interpolation, quadrature and differentiation, numerical linear algebra, optimization. Does not meet major requirements.

**3450:413/513 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.

**3450:414/514 VECTOR AND TENSOR ANALYSIS***3 credits*

Prerequisite: 223. Vector algebra, calculus of scalar-vector, vector-scalar and vector-vector functions; integral theorems; coordinate transformations; cartesian, contravariant, covariant vectors and tensors; fundamental operations with tensors: differentiation of tensors; applications.

**3450:415/515 COMBINATORICS AND GRAPH THEORY***3 credits*

Prerequisite: 222 or permission. Introduction to basic ideas and techniques of mathematical counting; properties of structure of systems.

**3450:417/517 COMPUTATIONAL LINEAR ALGEBRA***3 credits*

Prerequisite: 312 or equivalent. Computational techniques related to linear algebra. Topics include direct and iterative methods for solving eigenvalue problems and consideration of questions concerning stability of solutions.

**3450:421-422/521-522 ADVANCED CALCULUS I, II***3 credits each*

Sequential. Prerequisite: 235. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals.

**3450:425/525 COMPLEX VARIABLES***3 credits*

Prerequisite: 235. 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 transform.

**3450:427/527 NUMERICAL ANALYSIS I***3 credits*

Nonsequential. Prerequisites: 235 and either 3460:201 or 4450:206. Mathematical analysis of numerical methods for interpolation, solution of algebraic equations, differentiation and integration, solution of ordinary differential equations and boundary value problems.

**3450:428/528 NUMERICAL ANALYSIS II***3 credits*

Nonsequential. Prerequisites: 223 and either 3460:201 or 4450:206. Mathematical analysis of numerical methods for approximation of functions, solution of systems of linear equations and eigenvalue problems, solution of systems of nonlinear equations, optimization of functions and solution of partial differential equations.

**3450:431/531 SPECIAL FUNCTIONS AND OPERATIONAL CALCULUS***3 credits*

Prerequisite: 235. Series solutions to differential equations; Bessel functions; orthogonal polynomials; self-adjoint boundary value problems and Fourier series; Laplace transforms; Fourier transforms.

**3450:432/532 PARTIAL DIFFERENTIAL EQUATIONS***3 credits*

Prerequisite: 235. First-order linear and quasi-linear equations; classical problems of mathematical physics; uniqueness of solutions; methods of solution using Fourier series and integral transforms.

**3450:435/535 INTERMEDIATE DIFFERENTIAL EQUATIONS***3 credits*

Prerequisite: 235. Analysis and solution of systems of equations, both linear and nonlinear. Topics include stability theory, perturbation methods, asymptotic methods and applications from physical and social sciences.

**3450:436/536 MATHEMATICAL MODELS***3 credits*

Prerequisite: 235. 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.

**3450:441/541 CONCEPTS IN GEOMETRY***4 credits*

Prerequisite: 222 or permission of instructor. Axiomatic treatment of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, constructions and inversions.

**3450:442/542 PROJECTIVE GEOMETRY***3 credits*

Prerequisite: 222 or permission. Complex projective planes, duality, homogeneous coordinates, 1-1 correspondence, cross ratios, harmonic ranges, conics, quadrilaterals, quadrangles, applications to Euclidean geometry, quadric surfaces.

**3450:445/545 INTRODUCTION TO TOPOLOGY***3 credits*

Prerequisite: 312 or permission. Introduction to topological spaces and topologies, mappings, cardinality, homeomorphisms, connected spaces, metric spaces.

**3450:481/581 NUMERICAL METHODS FOR SCIENTIFIC COMPUTATIONS***3 credits*

Prerequisites: 235, 4450:206. Mathematical techniques for representing functions, approximating integrals and solving ordinary differential equations presented and implemented for the computer.

**3450:489/589 TOPICS IN MATHEMATICS***1 credit*

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Selected topics in mathematics and applied mathematics at an advanced level.

**3450:491/591 WORKSHOP IN MATHEMATICS***1-3 credits*

Group studies of special topics in mathematics and statistics. May not be used to meet undergraduate or graduate major requirements in mathematics and statistics. May be used for elective credit only. May be repeated.

**3450:497 INDIVIDUAL READING***1-2 credits*

Prerequisites: senior standing and permission. Mathematics majors only. Directed studies designed as an introduction to research problems, under guidance of selected faculty member.

**3450:621-622 FUNCTIONS OF A REAL VARIABLE I, II***3 credits each*

Sequential. Prerequisite: 422/522. Real number system, sets, limit theorems, continuous and semicontinuous functions, derivatives of functions, Borel sets and Baire functions, measure; measurable sets, measurable functions. Riemann and Lebesgue integration, multiple integration.

**3450:625 ANALYTIC FUNCTION THEORY***3 credits*

Prerequisite: 422/522. Complex number system, holomorphic functions, continuity, differentiability, power series complex integration, residue theory, singularities, analytic continuation, asymptotic expansion.

**3450:627-628 ADVANCED NUMERICAL ANALYSIS I, II***3 credits each*

Sequential. Prerequisite: 422/522. Theoretical analysis of numerical methods in linear algebra, polynomial interpolation and approximation, integration and ordinary differential equations.

**3450:631 CALCULUS OF VARIATIONS***3 credits*

Prerequisite: 235. Problems with fixed and movable endpoints, problems with constraints, generalization to several variables, the maximality principle, linear time-optimal problems, the connective between classical theory and the maximality principle.

**3450:632 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS***3 credits*

Prerequisite: 432/532 or permission. Existence, uniqueness and stability of solutions to general classes of partial differential equations. Methods for solving these classes introduced, emphasizing both analytical and numerical techniques.

**3450:633-634 CONTINUOUS SYSTEMS I, II***3 credits each*

Sequential. Prerequisite: 422/522 or permission of instructor. Boundary value problems formulated as ordinary differential equations, partial differential equations and integral equations analyzed as linear operator equations on function spaces using tools of generalized functions, Green's functions and spectral theory. Particular attention paid to evolution and potential equations as well as variational methods.

**3450:635-636 DISCRETE SYSTEMS I, II***3 credits each*

Sequential. Prerequisite: 422/522 or permission of instructor. Mathematical programming combinatorics and stochastic processes presented and applied to problems in social and management sciences.

**3450:642 DIFFERENTIAL GEOMETRY***3 credits*

Prerequisite: 422/522. Analytic representation of space curves and surfaces, intrinsic geometry of a surface and geometry of surfaces in the large.

**3450:645 TOPOLOGY***3 credits*

Prerequisite: 422/522. Set theory, ordinal and cardinal numbers, topological spaces, filters and nets, separation, coverings, metric spaces, homotopy, related topics.

**3450:689 ADVANCED TOPICS IN MATHEMATICS***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Topics within research interests of faculty members in mathematics and applied mathematics.

**3450:692 MATHEMATICS AND STATISTICS SEMINAR***2 credits*

(May be repeated for a total of 4 credits)

For properly qualified candidates for Master's degree in mathematics and statistics. Seminar-type discussions involving special problems dealing with mathematics and statistics. Includes a supervised research project.

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**Graduate Courses****3450:610 MATRIX ALGEBRA***3 credits*

Prerequisite: 235. Study of matrix theory and techniques concerning inverses, linear systems of equations, vector spaces, transformations, quadratic forms, and the eigenvalue problem and canonical forms.

**3450:611-612 ALGEBRAIC THEORIES I, II***3 credits each*

Sequential. Prerequisites: 311, 312 or 610. In-depth analysis of algebraic theory — monoids, groups, rings, modules, vector spaces, lattices and algebras.

**3450:695 PRACTICUM IN MATHEMATICS AND STATISTICS**

1-3 credits

Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of mathematics and statistics. May not be used to meet degree requirements.

**3450:697 INDIVIDUAL READING**

1-2 credits

(May be repeated for a total of 4 credits)

Prerequisites: graduate standing and permission. Directed studies in mathematics at graduate level under guidance of selected faculty member.

**3450:699 RESEARCH AND THESIS**

2 credits

(May be repeated for a total of 4 credits)

Prerequisite: permission. Properly qualified candidates for master's degree may obtain 4 credits for research experience which culminates in presentation of faculty-supervised thesis.

**3460:307 APPLIED SYSTEMS PROGRAMMING**

3 credits

Prerequisite: 4450:306. Introduction to systems programming using OS/370, Job Control Language, loaders and compilers, utilities. Stresses actual systems programming.

**3460:416/516 INTRODUCTION TO DATA STRUCTURES**

3 credits

Prerequisite: 201. Introduction to standard data structures: stacks, queues, deques, trees, graphs, vectors, arrays and files; searching, sorting.

**3460:418/518 INTRODUCTION TO DISCRETE STRUCTURES**

3 credits

Prerequisites: 3450:312 and 4450:206 or 3450:114 and 3460:201. Introduction to a number of structures in algebra of particular use to students in computer science. Topics include algorithms and flow chart language, graphs and digraphs, trees, lattices and codes.

**3460:420/520 STRUCTURED PROGRAMMING**

3 credits

Prerequisite: 416. Techniques of block programming using a structured programming language, program readability, program verification and program design.

**3460:425/525 INTRODUCTION TO SOFTWARE SYSTEMS**

3 credits

Prerequisite: 210. Introduction to software systems: operating systems, input/output systems, languages and their processors; memory management; software engineering principles.

**3460:426/526 OPERATING SYSTEMS**

3 credits

Prerequisite: 210. Introduction to various types of operating systems: batch processing systems, multiprogramming systems and interacting processes; storage management; process and resource control; deadlock problem. Course is independent of any particular operating system.

**3460:430/530 THEORY OF PROGRAMMING LANGUAGES**

3 credits

Prerequisite: 416. More advanced concepts underlying programming languages and their applications, formal definitions of programming languages, Backus Normal Form, semantics, compiler design.

**3460:435/535 ANALYSIS OF ALGORITHMS**

3 credits

Prerequisite: 416. Design and analysis of efficient algorithms for random access machines; derivation of pattern classification algorithms.

**3460:455/555 DATA COMMUNICATIONS**

3 credits

Prerequisite: 210. Introduction to data communications and teleprocessing networks including codes, modes of transmission, errors, protocol.

**3460:457/557 COMPUTER GRAPHICS**

3 credits

Prerequisite: 210. Topics in vector graphics, scan line graphics, representations and languages for graphics.

**3460:460/560 ARTIFICIAL INTELLIGENCE AND HEURISTIC PROGRAMMING**

3 credits

Prerequisites: 210, 416. Study of various programs which have displayed some intelligent behavior. Exploration of level at which computers can display intelligence.

**3460:470/570 AUTOMATA, COMPUTABILITY, AND FORMAL LANGUAGES**

3 credits

Prerequisite: 418. Presentation of theory of formal languages and their relation to automata. Topics include description of languages; regular context-free and context-sensitive grammars; finite, pushdown and linear-bounded automata; turing machines; closure properties; computational complexity, stack automata and decidability.

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## 3460: Computer Science

**3460:125 DESCRIPTIVE COMPUTER SCIENCE**

1 credit

Computer literacy: terminology, methods and media for data representation and storage, elements of a computing system and data organization.

**3460:126 INTRODUCTION TO BASIC PROGRAMMING**

1 credit

Prerequisites: 125, 3450:112. Introduction to syntax and semantics of Basic language: assignment statement and arithmetic, control statements and loops, input/output.

**3460:127 COMPUTERS IN TODAY'S WORLD**

3 credits

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 nonmajors.

**3460:201-205 INTRODUCTION TO PROGRAMMING LANGUAGES**

2 credits each

Introduction to syntax and semantics of programming languages: assignment statement and arithmetic, control statements and loops, input/output, subprograms.

**3460:201 INTRODUCTION TO FORTRAN PROGRAMMING**

2 credits

Prerequisites: 3450:111, 112, 113 or equivalent.

**3460:202 INTRODUCTION TO COBOL PROGRAMMING**

2 credits

Prerequisites: 201; and 3450:111, 112, 113 or equivalent.

**3460:203 INTRODUCTION TO APL PROGRAMMING**

2 credits

Prerequisites: 201; and 3450:111, 112, 113 or equivalent.

**3460:204 INTRODUCTION TO PL/1 PROGRAMMING**

2 credits

Prerequisites: 201; and 3450:111, 112, 113 or equivalent.

**3460:205 INTRODUCTION TO ALGOL PROGRAMMING**

2 credits

Prerequisites: 201; and 3450:111, 112, 113 or equivalent.

**3460:210 INTRODUCTION TO COMPUTER CONCEPTS**

3 credits

Prerequisite: 201. Introduction to method of representation of information on a digital computer: character representation, fixed point-floating point numbers; introduction to computer organization, algorithms and machine language programming; Boolean algebra and computer circuits.



**3460:475/575 DATA BASE MANAGEMENT**

3 credits

Prerequisite: 210. Fundamentals of data base organization, data manipulations and representation, data integrity, privacy.

**3460:489/589 TOPICS IN COMPUTER SCIENCE**

1-3 credits

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Selected topics in computer science at an advanced level.

**3460:491/591 WORKSHOP IN COMPUTER SCIENCE**

1-3 credits

Group studies of special topics in computer science. May not be used to meet graduate or undergraduate requirements in mathematics, statistics or computer science.

**3460:497/597 INDIVIDUAL READING IN COMPUTER SCIENCE**

1-3 credits

Prerequisite: permission. Computer science majors only. Directed studies designed as introduction to research problems, under guidance of designated faculty member. May be repeated.

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## 3470: Statistics

**3470:251-257 INTRODUCTION TO STATISTICS**

Introduction to fundamental ideas of statistics at precalculus level including topics from the following:

**3470:251 DESCRIPTIVE STATISTICS AND PROBABILITY**

1 credit

Prerequisite: one semester of college algebra or equivalent.

**3470:252 DISTRIBUTIONS**

1 credit

Prerequisite: 251

**3470:253 HYPOTHESIS TESTING (PARAMETRIC)**

1 credit

Prerequisite: 252

**3470:254 HYPOTHESIS TESTING (NONPARAMETRIC)**

1 credit

Prerequisite: 253

**3470:255 REGRESSION AND CORRELATION**

1 credit

Prerequisite: 253

**3470:256 EXPERIMENTAL DESIGN**

1 credit

Prerequisite: 253

**3470:257 TIME SERIES AND INDEX NUMBERS**

1 credit

Prerequisite: 255

**3470:450/550 PROBABILITY**

3 credits

Prerequisite: 3450:221. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes.

**3470:451-452/551-552 THEORETICAL STATISTICS I, II**

3 credits each

Sequential. Prerequisite: 3450:223. Elementary combinatorial probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, introduction to experimental designs.

**3470:461/561 APPLIED STATISTICS**

4 credits

Prerequisite: 3450:223. Applications of statistical theory to natural and physical sciences and engineering, including hypotheses tests, regression, correlation, analysis of variance, nonparametric statistics, sampling, quality control and other selected topics.

**3470:463/563 EXPERIMENTAL DESIGN I**

3 credits

Prerequisite: 451 or 461. Fundamental principles of analysis of variance, crossed and nested designs, multiple comparisons, power considerations, randomized blocks, repeated measure designs, applications.

**3470:464/564 EXPERIMENTAL DESIGN II**

2 credits

Prerequisite: 463/563. Principles of confounding, Latin squares, fractional designs, analysis of covariance, split plot designs, applications to problems in applied fields.

**3470:480/580 STATISTICAL COMPUTER APPLICATIONS**

3 credits

Prerequisites: 3450:223 and one semester course in statistics or permission. Translation of statistical operations into computer languages, iterative procedures, generating data, Monte Carlo techniques, use of statistical packages.

**3470:469/569 TOPICS IN STATISTICS**

1-3 credits

(May be repeated for a total of 6 credits)

Prerequisite: permission. Selected topics in advanced statistics, including quality control, reliability, sampling techniques, decision theory, advanced inference, stochastic processes and others.

**3470:491/591 WORKSHOP IN STATISTICS**

1-3 credits

Group studies of special topics in statistics. May not be used to meet undergraduate or graduate major requirements in mathematics and statistics. May be used for elective credit only. May be repeated with change of topic.

**3470:497 INDIVIDUAL READING**

1-2 credits

(May be repeated for a total of 4 credits)

Prerequisites: senior standing and permission. Directed studies in statistics designed as introduction to research problems under guidance of selected faculty member.

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## Graduate Courses

**3470:650 ADVANCED PROBABILITY**

3 credits

Prerequisite: 651. Random walk, distributions, unlimited sequence of trials, laws of large numbers, convolutions, branching processes, renewal theory, Markov chains, time-dependent stochastic processes.

**3470:651-652 MATHEMATICAL STATISTICS I, II**

3 credits each

Sequential. Prerequisite: permission. Probability theory, random variables, probability distributions, expectation, limit theorems, large and small sample theory, theory of tests of hypotheses, point and interval estimation, nonparametric statistics theory, regression and correlation.

**3470:655 LINEAR MODELS**

3 credits

Corequisite: 652. General linear model in matrix notation, general linear hypothesis, regression models, experimental design models, analysis of variance and covariance, variance components.

**3470:661-662 ADVANCED BEHAVIORAL STATISTICS I, II**

3 credits each

Sequential. Prerequisite: college-level algebra or equivalent. Descriptive statistics, probability distributions, hypothesis testing, estimation, nonparametric statistics, correlation, simple and multiple regression, experimental designs, factorial experiments, comparisons, nested designs, repeat-measure designs, randomized blocks, analysis of covariance, applications.

**3470:665 REGRESSION AND CORRELATION***3 credits*

Prerequisite: 4 credits of sequential statistics courses or equivalent. Analytical theory of least squares using matrix notation and methodology, multiple regression, orthogonal polynomials, correlation, partial correlation, stepwise regression, model building, response surfaces.

**3470:666 NONPARAMETRIC STATISTICS-METHODS***2 credits*

Prerequisites: 256, 662, or permission. Theoretical bases and relationships among various nonparametric techniques compared with parametric ones.

**3470:667 FACTOR ANALYSIS***2 credits*

Prerequisite: 661 or permission. Theory and techniques in identifying variables through use of factor analysis.

**3470:688 MULTIVARIATE STATISTICAL METHODS***3 credits*

Prerequisites: 463/563, 662. Multivariate techniques including distance concept, Hotelling T<sup>2</sup>, multivariate ANOVA, regression and correlation, linear contrasts, factorial experiments, nested and repeat measure designs, Bonferroni X<sup>2</sup> tests, linear discrimination analysis, canonical correlation, application.

**3470:869 ADVANCED TOPICS IN STATISTICS***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: 652. Selected topics in statistics including concepts in order, statistics, advanced inference, sequential analysis, stochastic processes, reliability theory, Bayesian statistics and regression.

**3470:897 INDIVIDUAL READING***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisites: graduate standing and permission. Directed studies in statistics under guidance of selected faculty member.

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**3500: Modern Languages****PLACEMENT PROCEDURES FOR NEW STUDENTS**

Students who have taken one year or less of a foreign language in high school should enroll in 101. Those who have taken more than one year of a foreign language in high school should take the placement test (Testing and Counseling, Ayer Hall 305). For placement in third year courses or higher, department permission is required.

**3500:101-102 BEGINNING MODERN LANGUAGE I, 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. May be repeated for a different language.

**3500:201-202 INTERMEDIATE MODERN LANGUAGE I, II***3 credits each*

Sequential. Prerequisite: 102 or equivalent. Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level. May be repeated for a different language.

**3500:490/590 WORKSHOP***2 credits*

Group studies of special topics in modern languages. May be repeated.

**3500:498 SENIOR HONORS PROJECT IN MODERN LANGUAGES***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program and approval of Honors preceptor. Open only to language majors enrolled in Honors Program. Independent study leading to completion of Senior Honors Thesis or other original work.

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**3520:French****3520:101-102 BEGINNING FRENCH I, II***4 credits each*

Sequential. Thorough study of sound system and basic structural patterns of French language, including oral practice and reading of simple prose. A placement test is required.

**3520:201-202 INTERMEDIATE FRENCH I, II***3 credits each*

Audio-oral sections. Sequential. Prerequisite, 102 or equivalent. Practice in reading, writing, speaking and listening comprehension. Grammar review, short stories, plays and novels on intermediate level. A placement test is required.

**3520:207-208 INTERMEDIATE FRENCH I, II READING OPTION***3 credits each*

Sequential. Prerequisite: 102 or equivalent. Reading and translation of texts dealing with contrasting French and American customs, values and attitudes.

**3520:301-302 FRENCH COMPOSITION AND CONVERSATION***3 credits each*

Prerequisite: 202 or equivalent. Free composition, special attention to vocabulary and idioms, development of oral expression and conversational ability.

**3520:305-306 INTRODUCTION TO FRENCH LITERATURE***3 credits each*

Prerequisite: 202 or equivalent. Survey of French literature from its origins to present, with lectures, reading and class discussion of representative works.

**3520:309-310 FRENCH CULTURE AND CIVILIZATION***3 credits each*

Prerequisite: 302 or 306 or permission. Audiovisual presentation with class discussions of French cultural heritage from its origins to present. Conducted in French.

**3520:312 INDIVIDUAL SUMMER STUDY ABROAD***2 credits*

Prerequisites: 202 or equivalent and permission of instructor.

**3520:313 FRENCH CIVILIZATION AS SEEN IN THE MOVIES***3 credits*

Study and discussion of various aspects of French culture and civilization as characterized in movies.

**3520:351-352 TRANSLATION: FRENCH***3 credits each***3520:401 FRENCH PHONETICS***3 credits*

Prerequisite: 202 or equivalent. Intensive drill in pronunciation with correction and improvement of student's accent, emphasis on articulation, intonation and rhythm.

**3520:403-404 ADVANCED FRENCH COMPOSITION AND CONVERSATION***3 credits each*

Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

**3520:407/507 FRENCH LITERATURE OF THE MIDDLE AGES AND THE RENAISSANCE***4 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of selected Medieval and Renaissance literary works. Conducted in French.

**3520:411/511 17TH CENTURY FRENCH LITERATURE***4 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of selected works in poetry, drama and novels. Conducted in French.

**3520:415/515 16TH CENTURY FRENCH LITERATURE***4 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of selected authors with special emphasis on the *Philosophies*. Conducted in French.

**3520:419/519 19TH CENTURY FRENCH LITERATURE***4 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of selected works pertaining to romantic, realistic and naturalistic movements. Conducted in French.

**3520:427/527 20TH CENTURY FRENCH LITERATURE***4 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of the most representative works of period. Conducted in French.

**3520:450 EXPLICATION DE TEXTES***2 credits*

Prerequisite: 302 or 306 or permission. Study of traditional French method of literary analysis based on passages of representative authors from selected periods of French literary history.

**3520:471/571 FRENCH LANGUAGE READING PROFICIENCY***4 credits*

Designed to develop proficiency in reading comprehension.

**3520:497-498 INDIVIDUAL READING IN FRENCH***1-3 credits each***Graduate Courses****3520:601 ADVANCED FRENCH GRAMMAR***4 credits*

Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.

**3520:603-604 ROMANCE AND APPLIED LINGUISTICS***4 credits each*

History of French language from 842 to present. Second semester deals with application of linguistic research to teaching of French.

**3520:607-608 SELECTED TOPICS IN THE MOVEMENT OF IDEAS IN FRENCH LITERATURE***4 credits each*

Study of ideas instrumental in shaping French thought and culture.

**3520:619-620 FRENCH CULTURE EXPRESSED IN LITERATURE***4 credits each*

Anthropological approach to French culture emphasizing social and civic institutions, education, music and arts, value systems and national characteristics.

**3520:641 SEMINAR: FRANCOPHONE LITERATURE, CULTURE AND CIVILIZATION***2 credits*

Study of various aspects of culture, civilization and literature of French expression outside of France.

**3520:642 SEMINAR: THE IMAGE OF THE WOMAN IN FRENCH LITERATURE***2 credits*

Study of the woman as characterized in French literature from Middle Ages to present.

**3520:661 FRENCH TEACHING PRACTICUM***2 credits*

Prerequisite: teaching assistantship or permission. Orientation and practice of particular aspects of teaching language and culture. Periodical review and evaluation. Credits may not be applied toward degree requirement.

**3520:697-698 INDIVIDUAL READING AND RESEARCH SEMINAR***1-4 credits each*

Prerequisite: permission. Independent study and research in specific areas. Considerable reading and writing required.

**3520:699 THESIS WRITING***4 credits***3530: German****3530:101-102 BEGINNING GERMAN I, 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.

**3530:201-202 INTERMEDIATE GERMAN I, II***3 credits each*

Sequential. Prerequisite: 102 or equivalent. Grammar review, reading, writing, speaking, listening comprehension; short stories, plays, novels on intermediate level; outside reading and supplementary work in Language Laboratory.

**3530:207-208 INTERMEDIATE GERMAN I, II READING OPTIONS***3 credits each*

Sequential. Prerequisites: 102 or equivalent and permission. Reading of German texts in culture and civilization, discussion in English, translation and grammatical analysis where appropriate. Not open to majors.

**3530:250 20TH CENTURY GERMAN LITERATURE IN TRANSLATION***2 credits*

Reading and discussion of works of Mann, Rilke, Hesse, Kafka, Benn, Brecht, Frisch, Durrenmatt, Borchert and Grass. May not be taken for credit toward the major in German.

**3530:251 19TH CENTURY GERMAN LITERATURE IN TRANSLATION***2 credits*

Reading and discussion of works of Kleist, Heine, Hebbel, Keller, Storm, Meyer and Hauptmann. May not be taken for credit toward the German major.

**3530:252 AGE OF GOETHE IN TRANSLATION***2 credits*

Reading and discussion of representative drama, prose and poetry of Lessing, Goethe and Schiller. May not be taken for credit toward the German major.

**3530:301-302 GERMAN CONVERSATION AND COMPOSITION***3 credits each*

Prerequisite: 202 or equivalent. Advanced composition using German models, special attention to words and idioms, development of oral expression and conversational ability.

**3530:305-306 INTRODUCTION TO GERMAN LITERATURE***3 credits each*

Prerequisite: 202 or equivalent. Introduction to study of German literature. Reading and class discussion of representative works. Conducted in German.

**3530:351-352 TRANSLATION: GERMAN***3 credits each***3530:403-404 ADVANCED GERMAN CONVERSATION AND COMPOSITION***3 credits each*

Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

**3530:406-407 GERMAN CULTURE AND CIVILIZATION***3 credits each*

Prerequisite: 302 or 306 or equivalent. Particular emphasis on customs, traditions, literary trends and artistic tendencies that constitute Germany's contribution to Western Civilization.

**3530:419/519 THE AGE OF GOETHE I***3 credits*

Prerequisite: 302 or 306 or permission. Enlightenment and generation of Sturm und Drang, including works of Wieland, Lessing, Klopstock, Herder, the young Goethe and others. Conducted in German.

**3530:420/520 THE AGE OF GOETHE II***3 credits*

Prerequisite: 302, 306 or permission. Faust, selections from parts I and II. Ballads of Goethe and Schiller. Conducted in German.

**3530:431/531 200 YEARS OF GERMAN DRAMA***3 credits*

Prerequisite: 302 or 306 or permission. Representative works of major classical dramatists including Lessing, Goethe, Schiller, Kleist, Grillparzer. Conducted in German.

**3530:432/532 200 YEARS OF GERMAN DRAMA***3 credits*

Prerequisite: 302 or 306 or permission. Representative works of the major dramatists, Buchner, Hebbel, Hauptmann and Wedekind. Conducted in German.

**3530:435/535 GERMAN SHORT STORY***3 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of representative works of German romanticism, including those of Tieck, Kleist, E.T.A. Hoffman, Brentano, Eichendorff. Conducted in German.

**3530:436/536 GERMAN SHORT STORY***3 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of works representative of the period, including those of Droste-Hulshoff, Stifter, Keller, Meyer, Storm. Conducted in German.

**3530:439/539 20TH CENTURY GERMAN LITERATURE I***3 credits*

Prerequisite: 302 or 306 or permission. Clash of the old and the new at the turn of the century. Works of T. Mann, Hauptmann, Kaiser, Hofmannsthal, Rilke, Wedekind and others. Conducted in German.

**3530:440/540 20TH CENTURY GERMAN LITERATURE II***3 credits*

Prerequisite: 302 or 306 or permission. Impact of modernity. Reading and discussion of writings of Hesse, Kafka, Doblin, Werfel and others. Conducted in German.

**3530:471/571 GERMAN LANGUAGE READING PROFICIENCY***4 credits*

Designed to develop proficiency in reading comprehension.

**3530:497-498 INDIVIDUAL READING IN GERMAN***1-3 credits each*

Prerequisite: permission.

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**3550: Italian****3550:101-102 BEGINNING ITALIAN I, 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.

**3550:201-202 INTERMEDIATE ITALIAN I, II***3 credits each*

Sequential. Prerequisite: 102 or equivalent. Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level; outside reading and supplementary work in Language Laboratory.

**3550:207-208 INTERMEDIATE ITALIAN I, II READING OPTION***3 credits each*

Sequential. Prerequisite: 102 or equivalent. Readings cover various aspects of Italian culture through the centuries, with particular emphasis on history, literature, art and contemporary Italian way of life as compared with American one.

**3550:250 GENIUS OF ITALIAN LITERATURE IN TRANSLATION***2 credits*

Reading and discussion of works of Dante, Petrarca, Boccaccio, Ariosto, Machiavelli, Cellini, Tasso, Bruno, Pirandello De Filippo.

**3550:301-302 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.

**3550:305-306 INTRODUCTION TO LITERATURE***3 credits each*

Prerequisite: 202 or equivalent. Introduction to study of Italian literature. Reading and class discussion in Italian of representative works.

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**3570: Russian****3570:101-102 BEGINNING RUSSIAN I, II***4 credits each*

Reading, speaking, writing, and understanding; intensive drill in pronunciation and supplementary work in Language Laboratory.

**3570:201-202 INTERMEDIATE RUSSIAN I, 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.

**3570:207-208 INTERMEDIATE RUSSIAN I, II, READING OPTION***3 credits each*

Sequential. Prerequisite: 102 or equivalent. Reading of texts in Russian dealing with culture of Russian-speaking people. Discussion of content of these texts in English along with review of grammar to extent necessary for accurate understanding of texts. Not open to majors.

**3570:301-302 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.

**3570:305-306 INTRODUCTION TO RUSSIAN LITERATURE***3 credits each*

Prerequisite: 202 or equivalent. Reading and class discussion in Russian of representative works.

**3570:309-310 RUSSIAN CIVILIZATION AND CULTURE***3 credits each*

Prerequisite: 202 or equivalent. Reading and discussion of Russian texts relating to important developments in Russian civilization and culture.

**3570:351-352 TRANSLATION: RUSSIAN***3 credits each***3570:403-404 ADVANCED RUSSIAN COMPOSITION AND CONVERSATION***3 credits each*

Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

**3570:411-412 SCIENTIFIC RUSSIAN***3 credits each*

Prerequisite: 202 or equivalent. Intensive reading of scientific articles in chemistry, physics, mathematics, biology and medicine.

**3570:420-421 RUSSIAN LITERATURE OF THE 19TH CENTURY: ROMANTICISM AND REALISM***3 credits each*

Prerequisites: 301 or 302 or permission. Readings from representative authors such as Pushkin, Lermontov, Gogol, Turgenev, Dostoyevsky, Tolstoy, Goncharov and others.

**3570:427-428 RUSSIAN LITERATURE OF THE 20TH CENTURY***3 credits each*

Prerequisite: 202 or equivalent. Reading and discussion of selected literary works from Gorky to Solzhenitsyn.

**3570:439 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.

**3570:497-498 INDIVIDUAL READING IN RUSSIAN***1-3 credits each*

Prerequisite: permission

## 3580: Spanish

**3580:101-102 BEGINNING SPANISH I, 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.

**3580:201-202 INTERMEDIATE SPANISH I, II***3 credits each*

Sequential. Prerequisite: 102 or equivalent. Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level; outside reading and supplementary work in Language Laboratory.

**3580:207-208 INTERMEDIATE SPANISH I, II, READING OPTION***3 credits each*

Sequential. Prerequisite: 102 or equivalent. By permission only. Reading of texts in Spanish dealing with culture of Spanish-speaking people. Not open to majors.

**3580:251 CONTEMPORARY SPANISH LITERATURE IN TRANSLATION***3 credits*

Reading and discussion of representative works from Spain and Spanish America's leading novelists, dramatists and thinkers. May not be taken for credit toward the Spanish major.

**3580:301-302 SPANISH COMPOSITION AND CONVERSATION***3 credits each*

Prerequisite: 202 or equivalent. Advanced composition using Spanish models, special attention to words and idioms, development of oral expression and conversational ability.

**3580:305-308 INTRODUCTION TO SPANISH AND SPANISH-AMERICAN LITERATURE***3 credits each*

Prerequisite: 202 or equivalent. Directed reading and discussion, in Spanish, of novels, short stories and drama in modern idiom of Spain, Puerto Rico and the 17 Spanish-American republics.

**3580:311 SPANISH/SPANISH-AMERICAN CULTURAL EXPERIENCE***1-2 credits*

Prerequisite: permission. Student's residence and/or independent study in Spanish-speaking country which results in demonstrable assimilation of country's culture may earn a maximum of 2 credits.

**3580:351-352 TRANSLATION: SPANISH***3 credits each***3580:403-404 ADVANCED GRAMMAR AND COMPOSITION***3 credits each*

Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

**3580:407/507 MEDIEVAL AND RENAISSANCE SPANISH LITERATURE***4 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of representative works that mark beginnings of Spanish literature in poetry, prose, and drama, with emphasis given to the major works: *Cantar de Mio Cid*, *El Libro de Buen Amor*, *La Celestina*, and the ballads. Conducted in Spanish.

**3580:409-410 LINGUISTICS***3 credits each*

Prerequisite: 302 or permission. Introduction to linguistics focusing on Spanish; includes phonetics; comparative and historical linguistics; traditional, structuralist and transformationalist theories of grammar, together with practical applications for Spanish majors.

**3580:411/511 SPANISH LITERATURE OF THE GOLDEN AGE***4 credits*

Prerequisite: 302 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 16th and 17th centuries studied. Conducted in Spanish.

**3580:415/515 18TH AND 19TH CENTURIES SPANISH LITERATURE***4 credits*

Prerequisite: 302 or 306 or permission. Reading, discussion, and lectures. Study of Neoclassicismo, Romanticismo, Realismo, Naturalismo, le generacion of 1898. Conducted in Spanish.

**3580:419/519 20TH CENTURY SPANISH LITERATURE***4 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of the most representative writers of 20th-century Spain. Representative poetry, drama, novels and short stories studied. Conducted in Spanish.

**3580:422/522 SPECIAL TOPICS IN HISPANIC CULTURE***4 credits*

Reading and discussion of significant works in literature or culture in Spain and Latin America not studied in other courses. May be repeated.

**3580:423/523 SPANISH-AMERICAN LITERATURE***4 credits*

Prerequisite: 302 or 306 or permission. Reading and discussion of representative Spanish-American literature from discovery to present time. Oral and written reports. Conducted in Spanish.

**3580:427-428/527-528 SPANISH AND SPANISH-AMERICAN CULTURE AND CIVILIZATION***4 credits each*

Prerequisite: 302 or 306 or permission. Emphasis on customs, traditions, literary trends and artistic tendencies that constitute Spain's specific contribution to Western Civilization. Study of Spanish-speaking world. Conducted in Spanish.

**3580:471/571 SPANISH LANGUAGE READING PROFICIENCY***4 credits*

Designed to develop proficiency in reading comprehension.

**3580:497 INDIVIDUAL READING IN SPANISH***1-3 credits*

Prerequisite: permission

## Graduate Courses

**3580:601 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.

**3580:805-808 SEMINAR IN HISPANIC LINGUISTICS***4 credits each*

Advanced topics in comparative, historical and descriptive Hispanic linguistics studied from contemporary theoretical perspectives; includes practical applications.

**3580:809-810 SEMINAR ON SPANISH LITERATURE OF THE GOLDEN AGE; SEMINAR ON 18TH AND 19TH CENTURIES SPANISH LITERATURE***4 credits each*

Reading and discussion of representative writers from Renaissance to late baroque period. Studies in essay, novel, theater, poetry and philosophic writings. Conducted in Spanish.

**3580:813 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.

**3580:817 SEMINAR ON 20TH CENTURY SPANISH-AMERICAN LITERATURE***4 credits*

Reading and discussion of contemporary writers with emphasis on theater, novel and short story. Conducted in Spanish.

**3580:821 SEMINAR ON 20TH CENTURY SPANISH LITERATURE***4 credits*

Studies in representative present-day writers with analyses and discussions of novel, theater, poetry and short stories. Conducted in Spanish.

**3580:861 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.

**3580:897-898 INDIVIDUAL READINGS IN SPANISH***1-4 credits each*

Content of given individual reading program taken from course contents approved for graduate work in Spanish.

**3580:899 THESIS WRITING***4 credits*

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**3600: Philosophy****3600:101 INTRODUCTION TO PHILOSOPHY***3 credits*

Introduction to philosophic problems and attitudes through acquaintance with thoughts of some leading thinkers of Western tradition.

**3600:120 INTRODUCTION TO ETHICS***3 credits*

Prerequisite: 101. Introduction to problems of moral conduct through readings from the tradition and class discussions; nature of "good," "right," "ought," and "freedom."

**3600:131 COMPARATIVE RELIGIONS I: EASTERN***3 credits*

Introduction to Hinduism, Buddhism, Jainism, Confucianism, Taoism and Shinto.

**3600:132 COMPARATIVE RELIGIONS II: MAJOR WESTERN RELIGIONS***3 credits*

Introduction to Zoroastrianism, Judaism, Christianity and Islam.

**3600:170 INTRODUCTION TO LOGIC***3 credits*

Introduction to logic and critical thinking. Includes such topics as meaning, informal fallacies, propositional logic, predicate and syllogistic logic and nature of induction.

**3600:211 HISTORY OF ANCIENT PHILOSOPHY***3 credits*

History and development of ancient Greek philosophy from pre-Socrates to Aristotle. Readings of primary sources in translation.

**3600:212 HISTORY OF MEDIEVAL PHILOSOPHY***3 credits*

History of Western philosophy from end of Roman Empire to Renaissance. Major philosophers studied include St. Augustine, St. Anselm, Peter Abelard, St. Thomas Aquinas, Duns Scotus and William of Ockham. Readings from primary sources.

**3600:216 AMERICAN PHILOSOPHY***3 credits*

Prerequisite: one course in philosophy or permission of instructor. Movement of ideas in America from Royce to present.

**3600:223 VALUE THEORY***3 credits*

Inquiry into man as an evaluator. Study of some principles and theories of value and their implications.

**3600:224 SOCIAL AND POLITICAL PHILOSOPHY***3 credits*

Prerequisite: one course in philosophy or permission of instructor. Examination of images of man implied in major social and political philosophies in Western history. Special attention devoted to epistemological, methodological, ontological and axiological assumptions and consequences of these theories.

**3600:232 PHILOSOPHY OF RELIGION***3 credits*

Prerequisite: two courses in philosophy. Discussion and analysis of problems of theology and nature of religious experience; God's nature and existence; immortality, sin, faith and reason; holy revelation and redemption.

**3600:250 PHILOSOPHY OF ART***3 credits*

Prerequisite: 101 or permission. Introduction to major theories of nature of art and art object with readings and discussions of examples. Such thinkers as Plato, Aristotle, Schopenhauer, Lessing, Pater and Freud examined.

**3600:280 SOPHOMORE TOPICS IN PHILOSOPHY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Selected topics in philosophy at the sophomore level.

**3600:313 HISTORY OF MODERN PHILOSOPHY***3 credits*

Analysis of major philosophical issues of 17th and 18th centuries from Descartes through Kant. Readings of primary sources in translation.

**3600:314 19TH CENTURY PHILOSOPHY***3 credits*

Prerequisite: one course in philosophy or permission of instructor. Inquiry into philosophically significant ideas of Hegel, Marx, Schopenhauer, Mill, Kierkegaard and Nietzsche.

**3600:332 DIALECTICAL MATERIALISM***3 credits*

Prerequisite: 224 or permission of instructor. Includes attention to 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 and aesthetics.

**3600:374 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.

**3600:360 JUNIOR TOPICS IN PHILOSOPHY**

1-3 credits

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Selected topics in philosophy at the junior level.

**3600:390 JUNIOR HONORS COLLOQUIUM**

3 credits

Prerequisite: junior standing in Honors Program or junior honors standing as philosophy major or permission of instructor or nomination by department faculty member. Selected readings, research, writing and defense of one or more philosophical projects. Preparation and foundation for Senior Honors Project in philosophy.

**3600:411/511 LATER DIALOGUES OF PLATO**

3 credits

Prerequisites: one introductory course and 211 or permission of instructor. Readings of Platonic dialogues in translation, commencing with Theatetus and including Parmenides, Sophist, Statesman, Philebus.

**3600:416/516 ANALYTIC PHILOSOPHY**

3 credits

Prerequisites: 211, 212, 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 Austen.

**3600:419/519 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.

**3600:421/521 PHILOSOPHY OF LAW**

3 credits

Prerequisite: one course in philosophy or permission of instructor. Philosophical inquiry into the nature of law and legal institutions.

**3600:422/522 CONTINENTAL RATIONALISM**

3 credits

Prerequisites: one introductory course and 313 or permission of instructor. Intensive analysis of selected major writings of Descartes, Spinoza and Leibniz.

**3600:424/524 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, Tillich and other existentialists with their concern for man and his human condition.

**3600:426/526 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.

**3600:432/532 ARISTOTLE**

3 credits

Prerequisites: 211, 212 and 313, or permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of man and ethics. Taught in alternate years.

**3600:434/534 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 philosophic works.

**3600:444/544 PROBLEMS IN PHILOSOPHY**

3 credits

Prerequisites: two courses in philosophy or permission of instructor. Thorough, critical examination of one major philosophical problem.

**3600:462/562 THEORY OF KNOWLEDGE**

3 credits

Prerequisite: three courses in philosophy. Examination of nature of knowledge; theories of perception, conception and truth, problem of induction and relation of language to knowledge.

**3600:464/564 PHILOSOPHY OF SCIENCE**

3 credits

Prerequisites: 101, 170, or permission of instructor. Nature of scientific inquiry, types of explanation, laws and causality, theoretical concepts and reality. Also considers critics of hypothetical-deductive view of science, e.g., Hanson and Kuhn.

**3600:471/571 METAPHYSICS**

3 credits

Prerequisites: 211, 212, and 313, or permission of instructor. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.

**3600:480/580 SEMINAR**

3 credits

Prerequisite: permission of instructor. May be repeated.

**3600:481/581 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.

**3600:490 SENIOR HONORS PROJECT IN PHILOSOPHY**

1-6 credits

(May be repeated for a total of 6 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 guidance of faculty member.

**3600:497/597 INDIVIDUAL STUDY**

1-3 credits

(May be repeated for a total of 6 credits)

Prerequisite: completion of required courses for philosophy major or permission of instructor and department head. Directed independent study of philosopher, philosophy or philosophical problem under guidance of selected faculty member. Subject matter determined by selected faculty member in consultation with student. Graduate credit requires significant additional work which may include an additional research paper.

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**Graduate Courses****3600:615 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.

**3600:626 ETHICAL THEORY**

3 credits

Examination of problems related to human conduct and decision making in light of the Western tradition as well as contemporary insights of positivism, phenomenology, existentialism, logical analysis, naturalism and pragmatism.

**3600:676 LOGICAL THEORY**

3 credits

Advanced topics in logic such as modal logics and axiomatics. Recommended for law students, as logic of normative systems is treated. It is suggested that graduate students be familiar with material covered in a course like 374 before taking this course.

**3600:680 SEMINAR**

3 credits

(May be repeated for a total of 9 credits)

**3600:699 SEMINAR: THESIS SUPERVISION**

2 credits

May be repeated.

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**3650: Physics****3650:130 DESCRIPTIVE ASTRONOMY**

3 credits

Qualitative and nonmathematical introduction to subjects of astronomy and astrophysics, intended primarily as a first science course for students not majoring in physical science.

**3650:133 MUSIC, SOUND AND PHYSICS**

3 credits

Qualitative introduction to sound production, perception and reproduction, with emphasis on music.

**3650:137 LIGHT: COLORS, CAMERAS AND PERCEPTION**

3 credits

Introductory, qualitative course dealing with nature of light, and interaction of light with material objects to produce common visual effects.

**3650:138 PROPERTIES OF LIGHT LABORATORY**

1 credit

Prerequisite or corequisite: 137 or permission. Introductory laboratory dealing qualitatively and quantitatively with properties of light and interaction of light with material objects.

**3650:141 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.

**3650:231 CONCEPTS OF PHYSICS I**

4 credits

Prerequisites: high school algebra and trigonometry, or 3450:149 as corequisite. General physics; emphasizing unifying concepts of physics such as conservation laws and symmetry principles. Newtonian mechanics, oscillations, waves.

**3650:232 CONCEPTS OF PHYSICS II**

4 credits

Prerequisite: 231. Electricity and magnetism; interference and diffraction of waves; nature of heat; space and time in theory of relativity; quantum mechanics of atomic phenomena; recent developments in study of elementary particles.

**3650:261 PHYSICS FOR THE LIFE SCIENCES I**

4 credits

Prerequisites: high school algebra and trigonometry or 3450:149 as corequisite, or permission. Introductory course to prepare for professional work in biology and health professions and services. Emphasizes life science applications. Mechanics: laws of motion, force, torque, work, energy, power; properties of matter: gases, liquids, solids, fluid mechanics.

**3650:262 PHYSICS FOR THE LIFE SCIENCES II**

4 credits

Prerequisite: 261. Laws of thermodynamics, kinetic theory. Wave phenomena: sound, light, optics; electricity and magnetism; atomic and nuclear physics; radioactivity.

**3650:267-268 LIFE SCIENCE PHYSICS COMPUTATIONS I, II**

1 credit each

Corequisites: 261 (with 267); 262 (with 268). Optional companion courses to 261-262 provides additional computational experience in applications of physics to life sciences, emphasizing use of algebra and trigonometry. Particularly recommended for students with modest mathematical preparation.

**3650:291 ELEMENTARY CLASSICAL PHYSICS I**

4 credits

Corequisite: 3450:221. Introductory physics for students of science and engineering. Classical statics, kinematics and dynamics, as related to contemporary physics. Oscillations, waves; fluid mechanics. Vectors and some calculus introduced as needed.

**3650:292 ELEMENTARY CLASSICAL PHYSICS II**

4 credits

Prerequisite: 291. Thermodynamics from atomic point of view; basic laws of electromagnetism; mechanical and electromagnetic waves. Interference and diffraction; coherence; geometrical and physical optics.

**3650:293-294 PHYSICS COMPUTATIONS I, II**

1 credit each

Corequisites: 291 (with 293); 292 (with 294). Optional companion courses to 291-292 provides experience in problem solving, and elaborates application of calculus to simple physical phenomena. Particularly recommended for freshmen, and for students with modest preparation in mathematics or physical sciences.

**3650:301 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.

**3650:321 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.

**3650:331-332 ASTROPHYSICS I, II**

3 credits each

Prerequisite: 232, 262 or 292. One-year comprehensive, qualitative course recommended for students majoring in physics or natural science, and for secondary school teachers and others desiring comprehensive survey of astronomy and astrophysics at intermediate level.

**3650:399 UNDERGRADUATE RESEARCH**

1-6 credits

Prerequisite: permission of instructor. Participation in current research project in department under supervision of faculty member. May be repeated.

**3650:400/500 HISTORY OF PHYSICS**

3 credits

Prerequisite: 232, 262 or 292. Study of origin and evolution of major principles and concepts characterizing contemporary physics.

**3650:404/504 ENERGY AND THE ENVIRONMENT**

3 credits

Prerequisite: 232, 262 or 292. Physics of macroscopic energy sources and techniques of their use, with emphasis on thermodynamic efficiencies, storage, transport, side effects and prospective availability.

**3650:406/506 WAVES**

3 credits

Prerequisite: 232, 262 or 292. Analysis of phenomena common to all waves, including free oscillations, forced oscillations, traveling waves, reflection, polarization, interference and diffraction. Water, sound, electromagnetic, seismic and deBroglie waves examined.

**3650:407/507 QUANTUM PHYSICS**

3 credits

Prerequisite: 232, 262 or 292. Quantum physics at intermediate level. Energy levels, photons, material particles, Uncertainty Principle, Schrodinger wave mechanics, theory of stationary states and elementary particles.

**3650:410/510 ELECTRONICS**

3 credits

Prerequisite: 232, 262 or 292. Electron tubes, semiconductors, and their utilization in circuits. Introduction to mathematical analysis of these circuits.



**3650:411-412/511-512 INTERMEDIATE LABORATORY I, II***2 credits each*

Corequisite: 410. Experiments involving measurements of physical properties of various systems most readily made with electronic instruments and circuits. Amplifiers, oscillators, bridges, special circuits. Detection and counting of nuclear radiations. Thermal and electrical properties of metals, semiconductors and other materials. Photoelectric effect. Charge on the electron.

**3650:420/520 OPTICS***3 credits*

Prerequisites: 232, 262, or 292 and 3450:223. Reflection, refraction; prisms, thin lenses, thick lenses, mirrors; waves and their propagation; interference and diffraction; diffraction gratings; polarization; emission of light; velocity of light; photometry; lasers.

**3650:421/521 APPLIED PHYSICS LABORATORY***2 credits*

Prerequisite: 411 or permission of instructor. Laboratory course stressing measurement and evaluation techniques as performed in industry and research. Mechanical, optical, thermal, electric and electronic measurements done, experimental design, calibration and reporting emphasized.

**3650:430/530 STATISTICAL PHYSICS***3 credits*

Prerequisite: 232, 262 or 292. Kinetic theory of gases, temperature; thermodynamic systems; work; ideal gases; real gases; laws of thermodynamics; entropy, reversibility and irreversibility; Carnot cycle; Kelvin temperature scale; change of phase.

**3650:431/531 MECHANICS***3 credits*

Prerequisite: 292. Newtonian mechanics, conservation laws, planar statics and dynamics, motion of a particle or rigid body, universal gravitation, planetary orbits, Kepler's laws, orbit perturbations, vibrational motions, moving frames of reference.

**3650:436/536 ELECTRICITY AND MAGNETISM***3 credits*

Prerequisite: 292 or permission of instructor. Electricity and magnetism at intermediate level. Electric and magnetic fields, electric potential, vector potential. Gauss's law, divergence theorem, Stoke's theorem, introductory vector analysis. Development of Maxwell's equations.

**3650:438/538 METHODS OF APPLIED PHYSICS***3 credits*

Prerequisite or corequisite: 421. Topics in design, performance, interpretation and reporting of physical measurements: the scientific method, measurements and their uncertainties, principles of experimentation, measurement devices, data resolution and analysis, inference.

**3650:445/545 THEORETICAL MECHANICS***4 credits*

Prerequisite: 431. Introductory vector analysis, motion of a system of particles, mechanics of continuous media, Lagrange's equations, Hamilton's equations, inertia and stress tensors, rigid body rotation, Euler's equations, small vibration theory.

**3650:446/546 ELECTROMAGNETIC THEORY***4 credits*

Prerequisite: 436. Electromagnetic theory at advanced level including electrostatic fields, dielectrics, magnetic fields of steady currents, induction, magnetic energy, Maxwell's equations, electromagnetic waves, electromagnetic fields of moving charges, radiation.

**3650:451-452/551-552 ADVANCED LABORATORY I, II***2 credits each*

Prerequisite: 412 or permission of instructor. Applications of electronic and solid-state devices and techniques to research-type projects in contemporary physics. Introduction to resonance techniques; nuclear magnetic resonance, electron spin resonance, nuclear quadrupole resonance. Scintillation spectroscopy. Alpha- and beta-ray spectroscopy.

**3650:470/570 INTRODUCTION TO SOLID-STATE PHYSICS***3 credits*

Prerequisite: 407 or permission of instructor. Account of basic physical processes occurring in solids, with emphasis on fundamental relation between these processes and periodicity of crystalline lattice.

**3650:471-472/571-572 NMR SPECTROSCOPY I, II***2 credits each*

Prerequisite: 292 or permission of instructor. Theoretical basis and experimental techniques of NMR spectroscopy. Classical concepts and quantum mechanical treatments of NMR. Bloch equations; spin-spin and spin-lattice relaxation times. Steady state and transient phenomena. General features of broadline and high-resolution NMR spectra. NMR instrumentation and operating principles. Theory and analysis of high-resolution NMR spectra. Quantitative applications of broadline and high-resolution NMR spectra and determination of physical and chemical structures.

**3650:481-482/581-582 METHODS OF MATHEMATICAL PHYSICS I, II***3 credits each*

Prerequisites: 292; 3450:235 and senior or graduate standing in a physical science or engineering. Consideration of mathematical methods useful in science and engineering. Elliptic integrals, perturbation theory, conformal mapping, variational methods, potential equation; diffusion equation, wave equation, Fourier transform, eigenfunctions and eigenvalues, solution of boundary value problems using Green's function, inertia tensor.

**3650:487/587 LABORATORY PROJECTS***1-3 credits*

Prerequisite: permission. Design of laboratory apparatus experiments, techniques or demonstrations. May be repeated.

**3650:486/586 SELECTED TOPICS***1-4 credits*

Prerequisite: permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics. May be repeated.

**3650:490/590 WORKSHOP***1-4 credits*

Group studies of special topics in physics. May not be used to meet undergraduate or graduate major requirements in physics. May be used for elective credit only. May be repeated.

**3650:497/597 INDEPENDENT STUDY***1-4 credits*

Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member. May be repeated.

**Graduate Courses****3650:601 ATOMIC AND NUCLEAR PHYSICS I***3 credits*

Prerequisites: 301 or 407 and 3450:235, or permission of instructor. Expository and analytical treatment of fundamental principles which operate to yield observed complex behavior of matter. Introductory quantum mechanics, free particle quantum mechanics, one-electron atom.

**3650:602 ATOMIC AND NUCLEAR PHYSICS II***3 credits*

Prerequisite: 601 or permission. Special theory of relativity, radiation and radiative transitions. Pauli principle and exchange asymmetry. Atomic spectroscopy, quantum statistics. Band theory of solids. Basic properties of nuclei. Particle scattering and nuclear forces.

**3650:605 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICAL PROBLEMS I***2 credits*

Prerequisite: permission. Review of Fortran and properties of digital computers. Computer solutions to physical problems, including Newton's, Schrodinger's and Laplace's equations. Data reduction, curve fitting, plotting.

**3650:606 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICAL PROBLEMS II***2 credits*

Prerequisite: permission. Numerical methods elaborated along with applications; problems solved on central computer. This semester may accommodate scientific problems of individual interest.

**3650:611 PHYSICAL PROPERTIES OF MATTER I***3 credits*

Prerequisite: 293. Experimental stress-strain relations of real materials, simple stress-strain analysis, brittle and ductile fracture, phenomenological theories for fracture, discussion of mechanical properties in terms of atomic and molecular structure.

**3650:612 PHYSICAL PROPERTIES OF MATTER II***3 credits*

Prerequisite: 611 or permission. Measurement and analysis of friction and adhesion of real materials, surface tension of liquids and solids, thermodynamics of spreading and wetting, viscosity.

**3650:621 ATOMIC AND MOLECULAR SPECTRA I***3 credits*

Prerequisites: 301, 3450:235 or permission of instructor. Elements of atomic theory; line spectra; electron spin and multiplet structure; building-up principle and periodic system of elements; special intensities; hyperfine structure; isotope effect, nuclear spin.

**3650:622 ATOMIC AND MOLECULAR SPECTRA II***3 credits*

Prerequisite: 621 or permission of instructor. Molecular bands, and development of theory; rotational, vibrational and electronic bands; Raman effect, isotopic effect, intensity of bands; methods of determining molecular constants from wave number measurements.

**3650:631 PHYSICS OF POLYMERS I***2 credits*

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.

**3650:632 PHYSICS OF POLYMERS II***2 credits*

Prerequisite: 631 or permission. Phase transitions, temperature dependence of mechanical and electrical properties, crystalline polymers, kinetics of crystallization, fracture, adhesion, wear. Applications of NMR spectroscopy to polymers.

**3650:635-636 PHYSICS OF POLYMERS LABORATORY I, II***2 credits each*

Prerequisite: 291, corequisites: 631-632. Selected laboratory experiments illustrating principles and methods discussed in 631-632.

**3650:651 THEORETICAL CLASSICAL PHYSICS I***3 credits*

Prerequisites: 445 and 446 or permission. Inertial reference frames, generalized coordinates, Lagrange's equations, theory of small vibrations, Hamilton-Jacobi method and theory of relativity.

**3650:652 THEORETICAL CLASSICAL PHYSICS II***3 credits*

Prerequisite: 651. Maxwell's equations, space-time symmetry of field equations, field vectors in moving systems, field energy and momentum, electrodynamics, electromagnetic forces on charges and currents.

**3650:661 THERMODYNAMICS AND STATISTICAL MECHANICS I***3 credits*

Prerequisites: 430 and 3450:235. Introduction to basic statistical concepts. Application of statistical ideas to systems of particles in equilibrium to develop basic notions of statistical mechanics.

**3650:662 THERMODYNAMICS AND STATISTICAL MECHANICS II***3 credits*

Prerequisite: 661. Illustration and discussion of macroscopic and microscopic aspects of the theory. Phase transitions and quantum gases. Nonequilibrium situations and transport theory.

**3650:661 QUANTUM MECHANICS I***3 credits*

Prerequisites: 3450:235 and permission of instructor; recommended: 602. Thorough development of ordinary wave mechanics; matrix formulation and unification in the more abstract Dirac formulation.

**3650:662 QUANTUM MECHANICS II***3 credits*

Prerequisites: 681. Angular momentum, spin, Pauli matrices, Clebsch-Gordan coefficients, spin-orbit interaction, scattering theory, Born approximation, perturbation theory; time independent and time dependent, sudden and adiabatic approximations.

**3650:664 ADVANCED NUCLEAR PHYSICS***3 credits*

Prerequisites: 602, 682. Quantum mechanics applied to nucleus. Interaction of radiation with nucleus, nuclear scattering, nuclear reactions; energy levels of nuclei.

**3650:685 SOLID-STATE PHYSICS I***3 credits*

Prerequisites: 470, 681 or permission of instructor. Theory of physics of crystalline solids. Properties of reciprocal lattice and Bloch's theorem. Lattice dynamics and specific heat. Electron states; cellular method, tight-binding method, Green's function method.

**3650:686 SOLID-STATE PHYSICS II***3 credits*

Prerequisite: 685. Orthogonalized plane and pseudo potentials. Electron-electron interaction; screening by impurities, Friedel sum rule, and plasma oscillations. Dynamics of electrons, transport properties and Fermi surface.

**3650:689 SPECIAL PROBLEMS IN THEORETICAL PHYSICS***1-4 credits*

Prerequisite: permission. Intended to facilitate expansion of particular areas of interest in theoretical physics, by consultation with faculty member and independent study beyond available coursework. May be repeated.

**3650:690 SPECIAL PROBLEMS IN EXPERIMENTAL PHYSICS***1-4 credits*

Prerequisite: permission. Intended to encourage development of experimental techniques in selected areas, under supervision of faculty member. May be repeated.

**3650:691 SEMINAR IN THEORETICAL PHYSICS***1-3 credits*

Prerequisite: permission. May be repeated.

**3650:692 SEMINAR IN NMR SPECTROSCOPY***1-3 credits*

Prerequisite: permission. May be repeated.

**3650:693 SEMINAR IN SOLID-STATE PHYSICS***1-3 credits*

Prerequisite: permission. May be repeated.

**3650:697 GRADUATE RESEARCH***1-5 credits*

Prerequisite: permission. Candidates for M.S. degree may obtain up to 5 credits for faculty supervised research projects. Grades and credit received at completion of such projects.

**3650:698 SPECIAL TOPICS IN PHYSICS***1-4 credits*

Prerequisite: permission. Enables students who need information in special areas, in which no formal course is offered, to acquire knowledge in these areas.

**3650:699 MASTER'S THESIS RESEARCH***1 credit*

Prerequisite: permission. With approval of department, one credit may be earned by candidates for M.S. degree upon satisfactory completion of a master's thesis.

## 3700: Political Science

### 3700:100 GOVERNMENT AND POLITICS IN THE U.S.

3 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).

### 3700:110 CIVIL LIBERTIES IN AMERICA

2 credits

Not open to political science majors and cannot be used for credit toward a major in political science. Study of civil liberties issues in the U.S.

### 3700:120 CURRENT POLICY ISSUES

2 credits

Cannot be used for credit toward major in political science. Survey of major political issues and problems confronting nation; environment in which public policies are formed and executed.

### 3700:200 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.

### 3700:201 INTRODUCTION TO POLITICAL SCIENCE

3 credits

Introduction to use of contemporary approaches and techniques employed in political analysis. Required of political science majors and recommended for others with good social science backgrounds.

### 3700:210 STATE AND LOCAL GOVERNMENT AND POLITICS

3 credits

Examination of institutions, processes and intergovernmental relations at state and local levels.

### 3700:220 AMERICAN FOREIGN POLICY

3 credits

Examination of American foreign policymaking process; public opinion and other limitations on policy; specific contemporary problems in selected areas.

### 3700:302 AMERICAN POLITICAL IDEAS

3 credits

Study of major thinkers and writers of American political thought.

### 3700:303 INTRODUCTION TO POLITICAL THOUGHT

3 credits

Survey of major ideas and concepts of Western political theory; from pre-Socrates through period of Enlightenment.

### 3700:304 MODERN POLITICAL THOUGHT

3 credits

Examination of central concepts of political thought from 19th century to present. Modern liberalism, communism, fascism and totalitarianism emphasized.

### 3700:310 INTERNATIONAL POLITICS AND INSTITUTIONS

4 credits

Relations among nations examined in political context.

### 3700:320 BRITAIN AND THE COMMONWEALTH

3 credits

Description and analysis of government and politics of Great Britain and leading nations of the Commonwealth.

### 3700:321 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.

### 3700:322 SOVIET AND EAST EUROPEAN POLITICS

3 credits

Theory and practice of government and politics in Soviet Union; comparison with selected communist systems of Eastern Europe.

### 3700:323 POLITICS OF CHINA AND JAPAN

3 credits

Examination of governmental structures and political processes of China and Japan.

### 3700:326 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.

### 3700:327 AFRICAN POLITICS

3 credits

Examination of patterns of government and politics of nations south of Sahara.

### 3700:340 AMERICAN POLITICAL PARTIES AND INTEREST GROUPS

3 credits

Role of political parties and interest groups in political process. Development, structure and function of parties; patterns of party allegiance and voting behavior; interest groups and their effect on government.

### 3700:341 THE AMERICAN CONGRESS

4 credits

Examination of structure and function of Congress, with comparative materials on legislative process on all levels. Presidential and congressional conflict examined.

### 3700:342 MINORITY GROUP POLITICS

3 credits

Examination of political behavior of racial, religious and ethnic minority groups in U.S.

### 3700:350 THE AMERICAN PRESIDENCY

3 credits

The Presidency as focal point of politics, policy and leadership in American political system.

### 3700:360 THE JUDICIAL PROCESS

3 credits

Role of police, lawyers, courts and judges in context of American political process. Structure and process of judicial policymaking and limitations on judicial power.

### 3700:370 THE AMERICAN BUREAUCRACY

4 credits

Examination of implementation of public policy. Administrative organization and principles stressed.

### 3700:380 METROPOLITAN POLITICS

4 credits

Examination of problems emerging from urban and regional complexes in U.S. Structure and processes of political decision making at this level analyzed.

### 3700:381 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 legislators, administrators, parties and interest groups.

### 3700:391 HONORS IN POLITICAL SCIENCE

3 credits

Prerequisite: at least 17 credits and a 3.25 average in political science and permission of adviser.

### 3700:392 SELECTED TOPICS IN POLITICAL SCIENCE

1-3 credits

(May be repeated, but no more than 3 credits can be applied to major in political science.) Topics of substantial current importance, specialized topics within political science, or experimental courses.

**3700:394 PROSEMINAR FOR POLITICAL SCIENCE MAJORS***3 credits*

Prerequisite: 10 credits in political science. Group study and research; discussion of recent trends and developments in political science.

**3700:395 INTERNSHIP IN GOVERNMENT AND POLITICS***2-3 credits*

(May be repeated for total of 6 credits. No more than 4 credits may be applied toward major in political science).

Prerequisite: two courses in political science or permission of instructor. Individual placement with political officeholders, party groups, governmental agencies and interest groups for supervised field experience.

**3700:397 INDEPENDENT STUDY***1-4 credits*

(May be repeated for a total of 4 credits)

Prerequisites: senior standing, 3.0 grade point average, and permission of adviser.

**3700:402 POLITICS AND THE MEDIA***3 credits*

Examination of relationships between the press, the news media and political decision makers.

**3700:415/515 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.

**3700:420/520 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.

**3700:425/525 LATIN AMERICAN POLITICS***3 credits*

Prerequisite: 200 or permission of instructor. Examination of patterns of government and politics in Latin American area.

**3700:440/540 PUBLIC OPINION AND POLITICAL BEHAVIOR***4 credits*

Prerequisite: 100 or 201 or permission. Nature and role of public opinion in political process; historical development, current methods of measurement. Political behavior of American electorate.

**3700:441/541 THE POLICY PROCESS***3 credits*

Prerequisite: 8 credits in political science. Intensive study of policymaking process, emphasizing roles of various participants in executive and legislative branches as well as private individuals and groups.

**3700:461/561 THE SUPREME COURT AND CONSTITUTIONAL LAW***4 credits*

Prerequisite: 100 or 201 or permission. Interpretation of U.S. Constitution by Supreme Court; judicial review in democratic political process. Special emphasis on judicial policymaking in areas of civil rights and liberties.

**3700:460/560 URBAN POLICY PROBLEMS***3 credits*

Prerequisite: 380 or permission. Intensive study of selected problems in urban policy.

**3700:490/590 WORKSHOP***1-3 credits*

Group studies of special topics in political science. May not be used to meet undergraduate or graduate requirements in political science. Elective credit only. May be repeated.

**3700:497 SENIOR HONORS PROJECT IN POLITICAL SCIENCE***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: senior standing in Honors Program and approval of Honors preceptor. Open only to political science majors in Honors Program. Independent study leading to completion of Senior Honors Thesis or other original work.

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## Graduate Courses

**3700:600 SEMINAR IN POLITICAL THEORY***3 credits*

Prerequisite: 6 credits of political science or permission. Selected topics in political theory investigated in depth.

**3700:610 SEMINAR IN INTERNATIONAL POLITICS***3 credits*

Prerequisite: 6 credits of political science or permission. Analysis of current problems in theory and practice of international politics and organization.

**3700:620 SEMINAR IN COMPARATIVE POLITICS***3 credits*

Prerequisite: 6 credits of political science or permission. Research on selected topics in comparative politics. Comparative method in political science.

**3700:626 SEMINAR IN POLITICS OF DEVELOPING NATIONS***3 credits*

Prerequisite: 6 credits of political science or permission. Selected topics investigated in depth. Emphasis on theories of political development.

**3700:630 SEMINAR IN NATIONAL POLITICS***3 credits*

Prerequisite: 6 credits of political science or permission. Readings and research on formulation, development and implementation of national policy in one or more areas of contemporary significance.

**3700:640 SEMINAR IN POLITICAL BEHAVIOR***3 credits*

Prerequisite: 6 credits of political science, including 440, or permission. Techniques of quantitative research in political science; utility and limitations of quantitative analysis.

**3700:641 SEMINAR IN INTERGOVERNMENTAL RELATIONS***3 credits*

Prerequisite: 6 credits of political science or permission. Graduate-level examination of problems resulting from changing relations between levels of government in U.S.; comparisons with other federal systems.

**3700:660 SEMINAR IN CIVIL LIBERTIES AND THE JUDICIAL PROCESS***3 credits*

Prerequisite: 6 credits of political science or permission. Civil liberties and judicial process viewed in political context. Readings and research on selected topics.

**3700:670 SEMINAR IN THE ADMINISTRATIVE PROCESS***3 credits*

Prerequisite: 6 credits of political science or permission. Intensive examination of administrative implementation of public policies. Readings and research on selected topics.

**3700:680 SEMINAR IN URBAN AND REGIONAL POLITICS***3 credits*

Prerequisite: 6 credits of political science or permission. Focus on processes of policy formulation and execution in modern metropolitan community, with emphasis on structural functional context.

**3700:690 SPECIAL TOPICS IN POLITICAL SCIENCE***1-3 credits*

Prerequisite: 6 credits or permission. Graduate level examination of selected topics in American politics, comparative politics, international politics or political theory.

**3700:695 INTERNSHIP IN POLITICAL SCIENCE***3 credits*

Prerequisite: permission of graduate adviser. Field experience in which student is placed with office-holders, government agencies or political groups for research or practical experience of relevance to student's program.

**3700:697 INDEPENDENT RESEARCH AND READINGS***1-4 credits*

Prerequisite: permission. May be taken repeatedly, but no more than 6 credits can be applied toward the master's degree in political science.

**3700:699 THESIS***2-6 credits***3750: 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.

**3750:110 QUANTITATIVE METHODS IN PSYCHOLOGY***3 credits*

Prerequisite or corequisite: 100. Presentation of data, descriptive statistics, correlation, hypothesis testing and introduction to quantitative methodologies in psychology.

**3750:120 INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY***4 credits*

Prerequisites: 100 and 110. Lectures plus laboratory experience concerning problems in scientific bases of psychology such as experimental design, methods and apparatus, collection and analysis of data and interpretation of results.

**3750:130 DEVELOPMENTAL PSYCHOLOGY***4 credits*

Prerequisite: 100. Determinants and nature of behavioral changes from conception to death.

**3750:140 INTRODUCTION TO 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.

**3750:300 ADVANCED EXPERIMENTAL PSYCHOLOGY***4 credits*

Prerequisite: 120. Scientific methods and design in experimental investigation of human and animal behavior. Emphasis on exposure to and performance on all aspects of a single, in-depth research project in which students apply the lecture information.

**3750:310 SENSORY AND PERCEPTUAL EXPERIENCE***4 credits*

Prerequisite: 100. Survey of basic sensory and perceptual phenomena covering physical and psychological bases of each. Overview of major theoretical treatments and empirical findings included, plus discussion of implications for behavior.

**3750:320 PHYSIOLOGICAL PSYCHOLOGY***4 credits*

Prerequisite: 100. Relationship between behavior of organisms and physiological processes mediating the behavior. Brain structure and function, motivation, etc. 3100:265 desirable as background.

**3750:330 MOTIVATION AND THE DYNAMICS OF BEHAVIOR***3 credits*

Prerequisite: 100. Survey of behavioristic, psychoanalytic, cognitive and consistency theories to explain arousal, direction and persistence of behavior including empirical evidence for achievement, motivation, aggression and other behaviors.

**3750:340 SOCIAL PSYCHOLOGY***4 credits*

Prerequisite: 100. Examination of individual's response to his social environment and social interaction process. Social perception, attitude formation and change, affiliation and attraction, altruism, group processes and nonverbal behavior.

**3750:350 THE PSYCHOLOGY OF SMALL GROUP BEHAVIOR***3 credits*

Prerequisite: 100. Intensive investigation of factors affecting behavior in groups. Covers joint effects of personality, social structures, task and situational variables in effecting group behavior.

**3750:360 CROSS-CULTURAL PSYCHOLOGY***3 credits*

Prerequisite: 100. Influence of culture upon development of individual psychological processes including functioning, social motives, sex roles and values.

**3750:370 RESEARCH DESIGN AND ANALYSIS IN PSYCHOLOGY***3 credits*

Prerequisites: 100 and 110 or 3470:251-257 as alternate prerequisite for 110. Review of research design and methodology for psychology covering basic concepts, empirical research designs, internal and external validity and specific analytical techniques as applied to psychology.

**3750:400/500 PERSONALITY***3 credits*

Prerequisite: 100. Consideration of current conceptualizations of the normal personality with emphasis on methods of measurement, experimental findings and research techniques.

**3750:410/510 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, attitudes and opinion analysis.

**3750:420/520 ABNORMAL PSYCHOLOGY***3 credits*

Prerequisites: 100 plus 3 credits in psychology. Syndromes, etiology, diagnosis and treatment of major psychological conditions ranging from transient maladjustments to psychoses.

**3750:430/530 PSYCHOLOGICAL DISORDERS OF CHILDREN***4 credits*

Prerequisites: 100 and 130 or permission. Survey of syndromes, etiologies and treatments of behavioral disorders in children from standpoint of developmental psychologist. Behavioral data and treatment approaches emphasized.

**3750:440/540 INTRODUCTION TO CLINICAL METHOD***3 credits*

Prerequisites: 100 and 420. Review of tests, interviews and personal data in human assessment.

**3750:450/550 LEARNING AND COGNITION***4 credits*

Prerequisite: 120. Topics include basic conditioning and learning processes, verbal learning, memory and transfer of training, as well as review of higher-order mental processes such as human conceptual behavior, problem solving and thinking.

**3750:460/560 HISTORY OF PSYCHOLOGY***3 credits*

Prerequisite: 100. Psychology in prescientific period and details of development of systematic viewpoints in 19th and 20th centuries.

**3750:470 ADVANCED INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY***4 credits*

Prerequisite: 140 or permission. Application of psychology to organizational theory, leadership, management, personnel selection, engineering psychology, man-machine systems and consumer behavior.

**3750:480 SPECIAL TOPICS IN PSYCHOLOGY***1-4 credits*

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. May be repeated.

**3750:488-489 HONORS SEMINAR IN PSYCHOLOGY***3 credits each*

Prerequisites: senior standing, psychology major, and permission. 488-Selection of research topic, review of relevant literature, research design and data collection. 489-Analysis and write-up of research project in journal or thesis style.

**3750:490/590 WORKSHOP IN PSYCHOLOGY***1-3 credits*

Group studies of special topics in psychology. May not be used to meet undergraduate or graduate major requirements in psychology. May be repeated.

**3750:497 INDEPENDENT READING, RESEARCH AND/OR PRACTICUM IN PSYCHOLOGY***1-3 credits*

Prerequisite: departmental permission. Independent reading, research and/or practicum in an area of psychology under supervision and evaluation of selected faculty member. May be repeated.

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**Graduate Courses**
**3750:600 ADVANCED GENERAL PSYCHOLOGY***4 credits*

Selective review of contemporary status in various specialty areas in psychology. Emphasis on current problems, new developments and changing concepts.

**3750:610 INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY***4 credits*

Application of industrial/organizational psychology to industry, business and government including organizational theory, differential psychology, personnel selection and training, consumer behavior and engineering psychology.

**3750:620 METHODS AND THEORIES OF HUMAN DEVELOPMENT***4 credits*

Survey of current research methodology and theoretical approaches to human development with a life-span emphasis. Reviews of major theoretical perspectives include stimulus-response behavior theory, cognitive-organismic, information processing and psychoanalytic approaches.

**3750:630 CLINICAL PSYCHOLOGY***4 credits*

Clinical techniques and approaches to study, evaluation and treatment of abnormal behavior.

**3750:695 PRACTICUM IN PSYCHOLOGICAL ASSESSMENT AND INTERPRETATION***1-4 credits*

Prerequisites: 14 credits of graduate psychology and permission. Supervised work experience in application of psychological techniques to human assessments and interpretations. May be repeated.

**3750:699 THESIS RESEARCH***1-4 credits*

Prerequisite: departmental permission. Research analysis of data and preparation of thesis for master's degree. May be repeated.

**3750:700 SURVEY OF PROJECTIVE TECHNIQUES***2 credits*

Prerequisite: 420 or permission; recommended: 400, 410, 630. Introduction to rationale assumptions and ethics of projective testing. Elementary administration, scoring and interpretation of Rorschach and survey of other important contemporary projective instruments.

**3750:701 ADVANCED PROJECTIVE TECHNIQUES***2 credits*

Prerequisite: 700. Application of projective testing to problems of diagnosis and evaluation. Practical experience in administration, scoring and interpretation. Integration of projective data with other assessment techniques in variety of settings.

**3750:702 PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING***4 credits*

Prerequisite: permission of instructor. History, principles and methodology of intelligence testing, practice in administration, scoring and interpretation of individual intelligence tests for children and adults.

**3750:703 THEORIES OF PSYCHOTHERAPY***3 credits*

Prerequisite: 630 recommended. Contemporary theories of psychotherapy including Freudian, Jungian, Adlerian, Rogerian and other major systems. Consideration given to research evaluation and ancillary therapeutic techniques.

**3750:704 THEORIES OF PERSONALITY***3 credits*

Prerequisite: 630 recommended. Historical consideration of personality. Psychoanalysis and deviations from it. Contemporary theoretical formulations; personality dynamics, structure and organization.

**3750:705 VOCATIONAL BEHAVIOR***3 credits*

Prerequisite: permission. Theories and research on vocational behavior and vocational counseling. Topics include major theories of vocational behavior, empirical research on these theories, applied work in vocational counseling and applied research.

**3750:725 DEVELOPMENTAL PSYCHOLOGY: PRENATAL, INFANCY AND EARLY EXPERIENCE***4 credits*

Prerequisite: 620 or permission. Survey of psychological aspects of prenatal period, infancy and early experience. Emphasis on understanding how early experience structures adult behavior.

**3750:726 EXPERIMENTAL CHILD PSYCHOLOGY***4 credits*

Prerequisite: 620 or permission. Current research in child psychology covered with some emphasis on cognitive development. Topics include language, memory, intelligence, hyperactivity and selected aspects of social development.

**3750:727 PSYCHOLOGY OF ADULTHOOD AND AGING***4 credits*

Prerequisite: 620 or permission. Psychological aspects of development and aging with emphasis on life-span methodology and research design including age-related changes in intelligence, personality, sensation, perception, learning, memory and socialization and intervention approaches.

**3750:728 SOCIAL DEVELOPMENTAL PSYCHOLOGY***4 credits*

Prerequisite: 620 or permission. Examination 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, nonverbal behavior and cultural effects.

**3750:729 FUNCTIONAL ANALYSIS OF BEHAVIOR***4 credits*

Prerequisite: 620 or permission. Behavioral approaches to treatment of maladaptive behavior. Emphasis on application of learning theory to specific topics such as development of self-control, enuresis and self-destructive behavior.

**3750:730 THEORIES OF LEARNING***4 credits*

Prerequisite: 600 or permission. Includes a comparative discussion of major traditional theories of learning, as well as analysis of contemporary issues and developments as reflected in review of selected areas of recent research.

**3750:731 COGNITIVE DEVELOPMENT**

4 credits

Prerequisite: 730 or permission. Theory and research concerning development of cognitive activities including concept formation, problem solving and thinking. Topics include major theories, research paradigms and methods of investigation and review of empirical findings.

**3750:732 HUMAN MEMORY AND LANGUAGE**

4 credits

Prerequisite: 600 or permission. Contemporary review of research and theory in language and memory. Process-oriented approach adopted with emphasis on developmental issues.

**3750:733 DEVELOPMENTAL BIOPSYCHOLOGY**

4 credits

Prerequisites: 600 and 620 recommended. Survey of behavioral changes over life span with emphasis on physical, biological and physiological correlates of such changes. Topics include central nervous system, skeletal and circulatory changes; metabolic and nutritional processes and endocrine mechanisms.

**3750:734 ENVIRONMENTAL PSYCHOLOGY**

4 credits

Prerequisites: 600 and 620 recommended. Study of major questions concerned with environmental management and control and relationship of these areas to developmental psychology, motivation, learning and animal behavior.

**3750:735 PERCEPTUAL DEVELOPMENT**

4 credits

Prerequisite: 600 or permission. Analysis of developmental characteristics of perceptual and sensory processes. Topics include major theories of perception, methods of investigation used and review of empirical findings.

**3750:740 INDUSTRIAL GERONTOLOGY**

4 credits

Prerequisites: 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.

**3750:750 ADVANCED PSYCHOLOGICAL TESTS AND MEASUREMENTS**

4 credits

Prerequisite: 610. Analysis of test construction techniques and statistical analyses of tests with a review of published tests and measurements used in industrial/organizational psychology. Students administer and evaluate actual tests.

**3750:751 ORGANIZATIONAL PSYCHOLOGY**

4 credits

Prerequisite: 610. Study of relationships between organizational characteristics and human behavior.

**3750:752 PERSONNEL SELECTION AND PERFORMANCE EVALUATION**

4 credits

Prerequisite: 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.

**3750:753 TRAINING AND ORGANIZATIONAL DEVELOPMENT**

4 credits

Prerequisite: 610. Review of industrial training methods and techniques in terms of learning theory, with consideration of techniques to evaluate these training and organizational development programs.

**3750:754 RESEARCH METHODS IN PSYCHOLOGY**

4 credits

Prerequisites: 610, 620. Scientific method and its specific application to psychology. Topics include data collection, validity, reliability, use of general linear model and its alternatives and power analysis.

**3750:755 COMPUTER APPLICATIONS IN PSYCHOLOGICAL RESEARCH**

4 credits

Prerequisite: 610. Practicum in application of computers to psychological research including data collection, analysis and interpretation. Also covers computer simulation of decision making including use of different models.

**3750:756 ROLE OF ATTITUDES AND VALUES IN INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY**

4 credits

Prerequisite: 610. Consideration of role of attitudes and values on cross-cultural issues of comparative management, selection, training, work motivation and consumer behavior.

**3750:757 ORGANIZATIONAL MOTIVATION AND LEADERSHIP**

4 credits

Prerequisite: 610. Identification, description, analysis and techniques for implementation of intrinsic and extrinsic incentives during work activity. Leadership process and its relation to motivation and group performance also analyzed.

**3750:758 ENGINEERING PSYCHOLOGY AND JOB DESIGN**

4 credits

Prerequisite: 610. Survey of field of engineering psychology. Covers such topics as job design, task analysis, man-machine systems analysis, working conditions and accidents.

**3750:780 GRADUATE SEMINAR IN PSYCHOLOGY**

1-4 credits

Prerequisite: permission. Special topics in psychology. May be repeated.

**3750:797 INDEPENDENT READING AND/OR RESEARCH**

1-3 credits

Prerequisite: permission. Individual readings and/or research on a topic under supervision of faculty member with whom specific arrangements have been made. May be repeated.

**3750:899 DISSERTATION RESEARCH**

1-12 credits

Prerequisite: open to properly qualified students. Required minimum 12 credits; maximum subject to departmental approval. Supervised research on topic deemed suitable by the dissertation committee.

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## 3850: Sociology

**3850:100 INTRODUCTION TO SOCIOLOGY**

4 credits

Basic terminology, concepts and approaches in sociology, including introduction to analysis of social groups and application of sociological concepts to the understanding of social systems. Required of majors. Lecture/Discussion.

**3850:104 SOCIAL PROBLEMS**

3 credits

Prerequisite: 100 or permission. Analysis of selected contemporary problems in society; application of sociological concepts and research as tools for understanding sources of such problems. Lecture.

**3850:220 SOCIAL ORGANIZATION**

3 credits

Prerequisite: 100 or permission. Nature of social organization and social control; organizational typologies; theories of organizational structure and functions; analysis of complex organizations in a social system. Lecture.

**3850:301 METHODS OF SOCIAL RESEARCH I**

3 credits

Prerequisites: 100 and 3450:111, 112, 113 or permission. Combination lecture and laboratory course requiring at least five laboratory hours per week. Research design, data gathering techniques and statistical procedures. Required of majors. Lecture/Laboratory.

**3850:302 METHODS OF SOCIAL RESEARCH II***3 credits*

Prerequisite: 301. Continuation of 301. Required of majors. Lecture/Laboratory.

**3850:320 SOCIAL STRATIFICATION***3 credits*

Prerequisite: 100 or permission. Study of the way social rankings occur in societies and how particular rankings affect individual behavior, group relations and social structures. Lecture.

**3850:321 POPULATION***3 credits*

Prerequisite: 100 or permission. Introduction to theory, methods and trends in birth, death, illness, migration, and selected social characteristics. Also, population growth and distribution in relation to societal and environmental problems. Lecture.

**3850:323 SOCIAL CHANGE***3 credits*

Prerequisite: 100 or permission. Introduction to theories and processes of social change, dimensions of change in contemporary, traditional and urban-industrial societies; projection and prediction of selected trends and forms. Lecture.

**3850:324 SOCIAL MOVEMENTS***3 credits*

Prerequisite: 100 or permission. Social movements as distinguished from other forms of collective behavior; analysis of social situations which produce social movements; focus on development of social movements and their role in social change. Lecture.

**3850:330 CRIMINOLOGY***3 credits*

Prerequisite: 100. Major focus on interrelationships and analysis of crimes, criminals, criminal justice systems and society. Lecture.

**3850:340 THE FAMILY***3 credits*

Prerequisite: 100 or permission. Analysis of family as a social system; historical, comparative and contemporary sociological approaches examined in relation to family structure and functions. Lecture.

**3850:341 POLITICAL SOCIOLOGY***3 credits*

Prerequisite: 100 or permission. Survey of theory and empirical research dealing with relationship between political phenomena and the larger network of social processes in human societies. Lecture.

**3850:342 SOCIOLOGY OF HEALTH AND ILLNESS***3 credits*

Prerequisite: 100 or permission. General survey of sociological perspectives, concepts and research on health, illness and health care delivery systems. Lecture.

**3850:343 THE SOCIOLOGY OF AGING***3 credits*

Prerequisite: 100 or permission. Examination of process of aging from perspective of behavioral and sociological aspects. Lecture.

**3850:344 THE SOCIOLOGY OF SEX ROLES***3 credits*

Prerequisite: 100 or permission. Examination of differentiation in roles and behaviors in women and men including theory and evidence on origins and determinants of differences and on stability and change in sex roles.

**3850:365 SPECIAL TOPICS IN SOCIOLOGY***1-3 credits*

Prerequisite: permission. Special topics of interest to sociology majors and nonmajors not covered in regular course offerings. May be repeated.

**3850:397 SOCIOLOGICAL READINGS AND RESEARCH***1-3 credits*

Prerequisite: permission. Individual study of problem area of specific interest to individual student under guidance of department member. Preparation of a research paper.

**3850:403/503 HISTORY OF SOCIOLOGICAL THOUGHT***3 credits*

Prerequisite: 100 or permission. Examination of major scholars in the classical sociological tradition. Lecture.

**3850:404/504 CONTEMPORARY SOCIOLOGICAL THEORIES***3 credits*

Prerequisite: 403 or permission. Examination and critical evaluation of works of modern sociological theorists, emphasizing current theoretical approaches to issues of social order and social change. Lecture.

**3850:410/510 SOCIAL STRUCTURES AND PERSONALITY***3 credits*

Prerequisite: 100 or permission. Examination of interrelationships between position in society and personality characteristics. Personality treated as both result and determinant of social structure and process. Lecture.

**3850:411/511 SOCIAL INTERACTION***3 credits*

Prerequisite: 100 or permission. Intensive study of advanced theory and research in social psychology, particularly how social interaction and self-conception affect one another. Lecture.

**3850:412/512 SOCIALIZATION: CHILD TO ADULT***3 credits*

Prerequisite: 100 or permission. Theoretical and empirical analyses of process by which infant, child, adolescent and adult learn social and cultural requirements necessary to function in new roles, changing roles and society in general.

**3850:421/521 RACIAL AND CULTURAL INTERGROUP RELATIONS***3 credits*

Prerequisite: 100 or permission. Analysis of social forces which created and sustain modern race relations. Macro level: emphasis on Marxian analysis of colonialism and imperialism. Micro level: analysis of social psychological processes of dominance/subordination and struggle/liberation. Lecture.

**3850:425/525 SOCIOLOGY OF URBAN LIFE***3 credits*

Prerequisite: 100 or permission. Emergence and development of urban society. Examination of urban social structure from neighborhood to metropolis, the problems and prospects. Emphasis on various life-styles of urban subcultures. Lecture/Discussion.

**3850:430/530 JUVENILE DELINQUENCY***3 credits*

Prerequisite: 100 or permission. Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/Discussion.

**3850:431/531 CORRECTIONS***3 credits*

Prerequisite: 330 or 430. Theories, belief systems, correctional practices and effectiveness as related to offender groups. Lecture.

**3850:432/532 PROBATION AND PAROLE***3 credits*

Prerequisite: 330 or 430 or permission. Analysis of how probationers and parolees are selected, supervised, and then released into private life. Emphasis on current and past social research. Lecture/Discussion.

**3850:433/533 SOCIOLOGY OF DEVIANT BEHAVIOR***3 credits*

Prerequisites: 100 and at least 6 additional credits of sociology courses or permission. Survey of theories of deviant behavior and relevant empirical research. Special emphasis given to interaction processes and social control. Lecture.

**3850:440/540 SOCIOLOGY OF RELIGION***3 credits*

Prerequisite: 100 or permission. Study of forms of religion and their social functions with emphasis on religion in American society. Lecture.



**3850:441/541 SOCIOLOGY OF LAW***3 credits*

Prerequisites: 100 and at least 6 additional credits of sociology courses, or permission. Social origins and consequences of law and legal processes. Emphasis on uses of law, social change and aspects of legal professions. Lecture.

**3850:442/542 SOCIOLOGY OF EDUCATION***3 credits*

Prerequisite: 100 or permission. Analysis of education from an organizational and social psychological perspective. Topics include: desegregation; busing; neighborhood schools; impact of family, peers and teachers on learning; school organization. Lecture.

**3850:443/543 INDUSTRIAL SOCIOLOGY***3 credits*

Prerequisite: 6 credits of sociology or industrial management. Comparison of formal and informal structures in industrial organizations; analysis of work roles and status systems; communication processes; relation of work plant to community and society. Lecture.

**3850:494/594 WORKSHOP IN SOCIOLOGY***1-3 credits*

Group studies of special topics in sociology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only. May be repeated.

**3850:495 RESEARCH INTERNSHIP***2-4 credits*

Prerequisites: 302, 321; 3.0 average in sociology and overall; or permission. Placement in selected community organization for supervised experience in all phases of a social research project. Student must receive permission from instructor during semester prior to enrollment. May be repeated for credit.

**3850:496 SENIOR HONORS PROJECT***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: enrollment in Honors Program and senior standing, and major in sociology or sociology/anthropology. Thesis or original creative work appropriate to student's area of interest. Requirements and evaluation of project determined by departmental Honors preceptor and student's Honors project adviser.

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**Graduate Courses**
**3850:600 FUNDAMENTALS OF SOCIOLOGY***3 credits*

Accelerated introduction to sociology for graduate students deficient in sociological background or from other disciplines who intend to take further graduate courses in sociology. Lecture.

**3850:803 SOCIOLOGICAL RESEARCH METHODS***3 credits*

Advanced research methods including advanced statistical techniques. (Same as KSU 72211) Lecture/Laboratory.

**3850:804 SOCIAL RESEARCH DESIGN***3 credits*

Intensive analysis of problems in a research design similar to those encountered in preparation of a thesis. (Same as KSU 72212) Seminar or dissertation.

**3850:805 THEORY AND MEASUREMENT OF SOCIAL ATTITUDES***3 credits*

Prerequisites: 603 and 604, or permission. Seminar in theories of social attitudes and techniques for their measurement. (Same as KSU 72213) Seminar.

**3850:806 MULTIVARIATE TECHNIQUES IN SOCIOLOGY***3 credits*

Prerequisites: 603 and 604, or permission; sociology graduate students 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 82120)

**3850:807 COMPUTER APPLICATIONS IN SOCIAL SCIENCES***3 credits*

Prerequisite: elementary statistics course or permission of instructor. Introduction to computers and their applications in social sciences. (Same as KSU 72214) Seminar.

**3850:808 ADVANCED TECHNIQUES IN RESEARCH***1-3 credits*

Prerequisite: permission. Selected topics in advanced, multivariate statistical analysis and in strategies of sociological research. Emphasis on current trends and innovations in research techniques. (Same as KSU 82119) Seminar.

**3850:809 ANALYSIS OF SOCIOLOGICAL DATA***3 credits*

Prerequisite: 606 or permission. Critical examination of data analytic techniques having particular relevance to research problems in sociology. (Same as KSU 82121) Seminar.

**3850:811 SURVEY RESEARCH METHODS***3 credits*

Prerequisites: 603 and 604, or permission. In-depth study of design and administration of social surveys. (Same as KSU 82123) Seminar.

**3850:812 EXPERIMENTAL AND QUASI-EXPERIMENTAL RESEARCH IN SOCIOLOGY***3 credits*

Prerequisites: 603 and 604, or permission. Application of experimental and quasi-experimental methods in sociological research with special attention given to appropriate designs, statistical analyses and empirical literature. Seminar.

**3850:813 SOCIOLOGY OF PROGRAM EVALUATION AND PROGRAM IMPROVEMENT***3 credits*

Prerequisite: permission. Program evaluation as it occurs in different social programs. Topics include history of evaluation, value assumptions, political dimensions, ethical issues, social change, use of experimentation and alternatives and the use for program development. (Same as KSU 82119) Seminar.

**3850:817 SOCIOLOGICAL THEORY***3 credits*

Examination of major theoretical frameworks and concepts that form the foundation of sociological thought. Emphasis on contemporary sociological theory and its debt to classic works. (Same as KSU 72106) Seminar.

**3850:818 THEORY CONSTRUCTION***3 credits*

Study of rules and methods for constructing scientific theory. Emphasis on writings of scientists and philosophers of science and application of these ideas to development of sociological theories. (Same as KSU 72107) Seminar.

**3850:819 ADVANCED CONCEPTUAL ANALYSIS***3 credits*

Critical examination of concepts held fundamental in sociological diagnoses. Evaluation of them from logical, semantical and operational perspectives. Assessment of their utility to development of sociological theories. (Same as KSU 82106) Seminar.

**3850:820 GENERAL SYSTEMS THEORY***3 credits*

Prerequisite: 618. Analysis of general systems theory as basis for a model of society and as heuristic framework for theory and research. (Same as KSU 82107) Seminar.

**3850:821 SPECIAL TOPICS IN SOCIOLOGICAL THEORY***1-3 credits*

Open course to cover content area not readily subsumable under other headings. Content of course to be determined by instructor. (Same as KSU 82109) Seminar.

**3850:622 EARLY SOCIOLOGICAL THOUGHT***3 credits*

Prerequisite: 617 or permission. Two to four major sociological thinkers prior to 1930 examined in depth. Specific persons considered will be chosen by instructor, but will be announced well in advance of beginning of class. (Same as KSU 82110) Seminar.

**3850:631 SOCIAL PSYCHOLOGY***3 credits*

Intensive examination of social psychological theory and research, both classic and contemporary. Provides students with background and working knowledge of social psychological aspects of social phenomena. (Same as KSU 72430) Seminar.

**3850:632 SMALL GROUP THEORY***3 credits*

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 72432) Seminar.

**3850:633 SMALL GROUP RESEARCH TECHNIQUES***3 credits*

Prerequisite: 632. Application and implications of research in small groups. Focus on both laboratory and field studies. Seminar/Laboratory.

**3850:634 PERSONALITY AND SOCIAL SYSTEMS***3 credits*

Examination of contemporary theory and research on linkages between personality and society. Some applications in studies of modernization, social class and occupations and sex roles. (Same as KSU 72433) Seminar.

**3850:635 SOCIOLOGY OF COMMUNICATION***3 credits*

Examination of communication media, content, audiences and impact within sociological context. (Same as KSU 72434) Seminar.

**3850:636 CRITIQUE OF MASS COMMUNICATIONS RESEARCH***3 credits*

Prerequisite: permission. Systematic evaluation of theoretical, methodological and empirical aspects of significant studies of mass communication. (Same as KSU 72876) Seminar.

**3850:637 CONTEMPORARY TRENDS IN SOCIAL PSYCHOLOGY***1-3 credits*

Selected topics on significant contemporary issues, theories and methodological developments in social psychology. (Same as KSU 82439) Seminar.

**3850:638 RESEARCH IN SOCIAL PSYCHOLOGY***1 credit*

Prerequisite: 631. Design and development of a research project oriented to empirically examining selected concepts in social psychology or to testing selected propositions in social psychology. (Same as KSU 72431) Research.

**3850:639 SOCIOLOGY OF SEX ROLES***3 credits*

Prerequisite: permission. Advanced review of theories and research on origins, characteristics and changes in sex roles. Emphasis on recent empirical research on sex role patterns and processes in Western industrial societies. Seminar.

**3850:645 SOCIAL ORGANIZATION***3 credits*

General survey of major theories, concepts and problems pertaining to creation, alteration and dissolution of social organization at various levels of size and complexity. (Same as KSU 72540) Seminar.

**3850:646 SOCIAL STRATIFICATION***3 credits*

Prerequisite: permission. Seminar dealing with social class and castes with special reference to American social structure. (Same as KSU 72546) Seminar.

**3850:647 URBAN SOCIOLOGY***3 credits*

Analysis of theories of urban process and review of major contributions to empirical analysis of urban life. (Same as KSU 72652) Seminar.

**3850:648 COMPLEX ORGANIZATIONS***3 credits*

Prerequisite: permission. Organizations as social systems; their effect on individuals. Problems of professionals in bureaucracies. (Same as KSU 72545) Seminar.

**3850:649 SOCIOLOGY OF WORK***3 credits*

Examination of work as behavioral phenomenon in human societies; contrasts with nonwork and leisure; significance of occupations, professions and work types in organization of work. (Same as KSU 72542) Seminar.

**3850:650 RESEARCH IN COMMUNITY AND AREA PROBLEMS***3 credits*

Prerequisite: permission. Special investigation of community, area or regional problems; design and execution of small projects. (Same as KSU 72655) Seminar.

**3850:651 RACE RELATIONS***3 credits*

Prerequisite: permission. Analysis of social forces which created and sustain modern race relations. Macro level: emphasis on Marxian analysis of colonialism and imperialism. Micro level: analysis of social psychological processes of dominance/subordination and struggle/liberation. (Same as KSU 72870) Seminar.

**3850:652 CONFLICT***3 credits*

Prerequisite: permission. Current conceptions of human conflict. Discussion of vital concepts and principles for understanding conflict phenomena. Power, values, ideology, riots, revolution and war. (Same as KSU 72875) Seminar.

**3850:653 SPECIAL TOPICS IN SOCIAL ORGANIZATION***1-3 credits*

Open course to cover content area not readily consumable under other headings. Content of course to be determined by instructor. (Same as KSU 82549) Seminar.

**3850:654 ISSUES IN URBAN ANALYSIS***1-3 credits*

Special topics seminar dealing with current and special topics in urban process and its analysis. (Same as KSU 82659) Seminar.

**3850:655 RESEARCH IN SOCIAL ORGANIZATION***1 credit*

Prerequisite: 645. Design and development of a research project oriented to empirically examining selected concepts in social organization or to testing selected propositions in social organization. (Same as KSU 72541) Research.

**3850:656 SEMINAR IN URBAN PROCESSES***3 credits*

Prerequisite: Ph.D. standing in sociology or permission. Critical examination of current research and theory related to urban life; special emphasis on social change in urban environment. (Same as KSU 82660) Seminar.

**3850:657 URBAN HEALTH CARE***3 credits*

Prerequisite: permission. Relationships between urban social structures and processes and organization and functioning of health care delivery systems in urbanized nations. Seminar.

**3850:658 FIELD RESEARCH IN URBAN LIFE-STYLES***3 credits*

Prerequisite: permission. Examination of various life-styles in contemporary urban society. Explores issues of theory and methodology in urban life-styles research through evaluation of both classic and contemporary studies. Includes application of concepts and techniques in actual field research. Seminar.

**3850:863 DEVIANCE AND DISORGANIZATION***3 credits*

Prerequisite: permission. Examination of nature and types of deviance. Problems and issues in theory and research. (Same as KSU 72780) Seminar.

**3850:864 SOCIOLOGY OF CRIMINAL BEHAVIOR***3 credits*

Analysis of relationship of crime and delinquency to social structure and social processes. Responses by criminal justice agencies. (Same as KSU 72783) Seminar.

**3850:865 JUVENILE DELINQUENCY: THEORY AND RESEARCH***3 credits*

Prerequisite: permission. Analysis of theories of delinquency; ecological, class structural, substructural, etc. Review of relevant research also presented. (Same as KSU 72762) Seminar.

**3850:868 SOCIOLOGY OF CORRECTIONS***3 credits*

Prerequisite: permission. Analysis of correctional institution as social system; its formal structure and informal dynamics. Analysis of present state of corrections research. (Same as KSU 72764) Seminar.

**3850:867 SPECIAL TOPICS IN DEVIANCE AND DISORGANIZATION***1-3 credits*

Designed to meet needs of students with interests in selected topics in deviance and disorganization. (Same as KSU 82769) Seminar.

**3850:866 RESEARCH IN DEVIANCE AND DISORGANIZATION***1 credit*

Prerequisite: 663. Provides for analysis of research problems in deviance and disorganization and for development of research project in above area. (Same as KSU 72761) Research.

**3850:877 FAMILY ANALYSIS***3 credits*

Analysis and evaluation of sociological theory and research in the family. Concentration on techniques of theory construction and research design in sociological study of the family. (Same as KSU 72543) Seminar.

**3850:876 SOCIAL GERONTOLOGY***3 credits*

Prerequisite: permission. Impact of aging upon individuals and society. Reactions of individuals and society to aging. (Same as KSU 72877) Seminar.

**3850:879 POLITICAL SOCIOLOGY***3 credits*

Description, analysis and interpretation of political behavior through application of sociological concepts. (Same as KSU 72544) Seminar.

**3850:880 SOCIOLOGY OF EDUCATION***3 credits*

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 72547) Seminar.

**3850:886 POPULATION***3 credits*

Analysis of basic population theory and methods. Trends and differentials in fertility, mortality, migration and selected social demographic variables also considered. (Same as KSU 72656) Seminar.

**3850:867 SOCIAL CHANGE***3 credits*

Advanced seminar in theories of social change. (Same as KSU 73220) Seminar.

**3850:886 HUMAN ECOLOGY***3 credits*

Selected problems in analysis of social behavior in relation to physical environment. Overview of theory, methods and applications of human ecology. (Same as KSU 72650) Seminar.

**3850:889 URBAN ECOLOGY***3 credits*

Seminar in theory and measurement of social ecology of urban areas. Emphasis on trends and differentials in distribution of social and organizational behavior in urban America. Seminar.

**3850:890 CONTEMPORARY ISSUES IN SOCIAL CHANGE***1-3 credits*

Prerequisite: 687 or permission. Varying topics focusing on current research and theory in field of social change. Advanced notice on specific content will be provided by instructor. (Same as KSU 82329) Seminar.

**3850:891 RESEARCH IN SOCIAL CHANGE***1 credit*

Prerequisite: 687. Continuation of 687. Student prepares a major research paper based on theoretical material covered in 690 and presents it for discussion to the seminar. (Same as KSU 72321) Research.

**3850:892 RESEARCH IN HUMAN ECOLOGY***1 credit*

Prerequisite: 688. Intensive research on selected aspect of human ecology by individual students with previous training in this area. Topic to be arranged between student and instructor. (Same as KSU 72651) Research.

**3850:897 READINGS IN CONTEMPORARY SOCIOLOGICAL LITERATURE***1-3 credits*

Prerequisites: 7 credits of sociology and permission of adviser, instructor and head of department. Intensive reading and interpretation of written material in student's chosen field of interest. Regular conferences with instructor.

**3850:899 THESIS***2-6 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission. Supervised thesis writing.

**3850:700 COLLEGE TEACHING OF SOCIOLOGY***2 credits*

Prerequisite: teaching assistant or permission. Training and experience in college teaching of sociology. Not approved as credit toward a degree. Seminar.

**3850:797-798 INDIVIDUAL INVESTIGATION***1-3 credits each*

Prerequisites: one semester of graduate work, permission of instructor, adviser, and head of department. Readings and/or research supervised by member of graduate faculty. (Same as KSU 72896).

**3850:899 DISSERTATION***1-10 credits*

Dissertation. (Must be repeated for a minimum of 30 credits.) (Same as KSU 82899).

## 3870: Anthropology

**3870:150 CULTURAL ANTHROPOLOGY***4 credits*

Introduction to anthropological study of culture; cross-cultural view of human adaptation through technology, social organization and ideology. Lecture.

**3870:151 PHYSICAL ANTHROPOLOGY***3 credits*

Biological and cultural evolution of *Homo sapiens*; comparative study of Primates; human variation; Old World archaeology. Lecture.

**3870:257 INDIANS OF SOUTH AMERICA***3 credits*

Prerequisite: 150 or 3850:100, or permission. Survey of aboriginal peoples of South America, with emphasis on culture areas and continuity of culture patterns. Lecture.

**3870:258 INDIANS OF NORTH AMERICA**

3 credits

Prerequisite: 150 or permission. Ethnographic survey of native cultures of North America, with emphasis of variations in ecological adaptations, social organization and modern American Indians in anthropological perspective. Lecture.

**3870:356 NEW WORLD PREHISTORY**

3 credits

Prerequisite: 150 or 3850:100, or permission. Survey of historic cultures of North, Middle and South America; beginning with peopling of Western Hemisphere and ending with European contact. Lecture.

**3870:357 MAGIC, MYTH AND RELIGION**

3 credits

Prerequisite: 150 or 3850:100. Evolutionary transformations of magic and ritual into science and technology. Examination of animism, totemism and other forms of preliterate religions. Mana, taboo and other religious and social symbols. Lecture.

**3870:455/555 CULTURE AND PERSONALITY**

3 credits

Prerequisite: 150 or permission. Examination of functional and casual relationships between culture and individual cognition and behavior. Lecture.

**3870:461/561 LANGUAGE AND CULTURE**

3 credits

Prerequisite: 150 or permission. Examination of language structure and interaction of language, cognition and culture. Lecture.

**3870:463/563 TYPES OF KINSHIP AND SOCIAL ORGANIZATION**

3 credits

Prerequisite: 150 or permission. Comparative structural analysis of non-Western systems of kinship and social organization in terms of status, role, reciprocal expectation, nomenclature, nuclear and extended households and other kinship groupings. Lecture.

**3870:472/572 SPECIAL TOPICS IN ANTHROPOLOGY**

3 credits

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 coursework not presently offered by department on regular basis. May be repeated.

**3870:494/594 WORKSHOP IN ANTHROPOLOGY**

1-3 credits

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. May be repeated.

**3940:402 INTRODUCTION TO PLASTICS**

2 credits

Prerequisite: 401 or permission. Plastics industry and its manufacturing methods discussed. Plastics compounding for both thermoplastic and thermosetting materials discussed with emphasis on processing and testing as illustrated by laboratory experiments.

**3940:407 POLYMER SCIENCE**

4 credits

Prerequisite: 3150:314 or 3650:301, or permission. Principles of polymerization processes and relationships between molecular structures and physical behavior of polymers. Molecular weight distributions of macromolecules discussed and methods of determining molecular weights utilized.

**3940:411/511 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS I**

2 credits

Prerequisite: 401 or 402 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.

**3940:412/512 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS II**

2 credits

Prerequisite: 411/511 or permission. Mechanical characterization of polymeric materials, the Boltzmann superposition principle and fracture. Experimental techniques involving stress-strain behavior, stress relaxation, creep, forced and free vibrations discussed.

**3940:413/513 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS III**

2 credits

Prerequisite: 412/512 or permission. Deformation of bonded rubber units, the correspondence principle, time-dependent failure, mechanical properties of polymeric foams and design considerations discussed.

**3940:414 SEMINAR IN POLYMER SCIENCE**

1-2 credits

New and unsolved problems of polymer science discussed from interdisciplinary view of material sciences. Students prepare one or more formal technical presentations related to chemical aspects of field.

**3940:490/590 WORKSHOP IN POLYMER SCIENCE**

1-3 credits

Group studies on selected topics involving polymers. May not be used to meet undergraduate or graduate major requirements in polymer science. May be used for elective credit only. May be repeated with permission.

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**Graduate Courses****3870:651 SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS**

3 credits

Major theoretical viewpoints in cultural anthropology. Nature and scope of research problems in anthropology. Survey of methods in field work. Seminar.

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**3940: Polymer Science****3940:401 INTRODUCTION TO ELASTOMERS**

2 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.

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**Graduate Courses****3940:604 SPECIAL PROJECTS IN POLYMER SCIENCE**

1-3 credits

Prerequisite: permission. Research projects of limited nature assigned to students entering polymer science program. Intended to familiarize student with typical problems and techniques in this field.

**3940:610 INORGANIC POLYMERS**

2 credits

Prerequisite: 3150:472/572 or 601 or permission. Survey course designed to broaden outlook of typical graduate student beyond chemistry and physics of carbon chains.

**3940:613 POLYMER SCIENCE LABORATORY**

2 credits

Prerequisite or corequisite: 701, 3150:601, or permission of instructor. Laboratory experiments in synthesis, characterization, physical properties and processing and testing of polymers.

**3940:699 MASTERS RESEARCH**

1-6 credits

Prerequisite: permission. For properly qualified candidates for master's degree. Supervised original research in polymer science, under direction of faculty member, followed by submission of thesis.

**3940:701 POLYMER TECHNOLOGY I***2 credits*

Principles of compounding and testing, processing principles and types of operation, design principles.

**3940:702 POLYMER TECHNOLOGY II***2 credits*

Prerequisite: 701 or permission of instructor. Rubber industry, rubber compounding and processing, vulcanization methods, physical testing, plastics preparation and compounding, manufacturing processes. Lecture/Laboratory.

**3940:703 POLYMER TECHNOLOGY III***2 credits*

Prerequisite: 702 or permission of instructor. Flow properties, extrusion, calendaring and milling, molding, mixing, bond operations, engineering properties, rubber springs, viscoelastic analysis design consideration. Lecture/Laboratory.

**3940:708 MACROMOLECULAR CHAIN STRUCTURE***3 credits*

Prerequisites: either 3150:314, 3650:301 or 4200:305 or permission. Chain-like structure of large molecules, fundamental theories of chemical conformation and statistical mechanics developed to degree that their applications to polymeric problems can be discussed.

**3940:709 MACROMOLECULAR CHAIN STRUCTURE***3 credits*

Prerequisite: 708 or permission. Continuation of topics discussed in 708 including experimental techniques used in elucidation of chain structure.

**3940:711 SPECIAL TOPICS IN POLYMER SCIENCE***2 credits*

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.

**3940:712 SPECIAL TOPICS IN POLYMER SCIENCE***2 credits*

Prerequisite: permission. Topics of current interest in polymer science, encompassing chemistry, physics or engineering aspects of macromolecular science.

**3940:713 CHAIN STRUCTURE LABORATORY***2 credits*

Prerequisite or corequisite: 708 or permission of instructor. Designed to apply principles discussed in 708 to laboratory determination of polymer structure.

**3940:899 DOCTORAL RESEARCH IN POLYMER SCIENCE***2-16 credits*

Open to properly qualified students accepted as candidates for degree of Doctor of Philosophy in polymer science, depending on availability of staff and facilities.

**3980:601 ADVANCED RESEARCH AND STATISTICAL METHODS***3 credits*

Prerequisite: 600. Extends study of social science to include more advanced research designs and multivariate statistical techniques.

**3980:802 AMERICAN URBAN DEVELOPMENT***3 credits*

Examination of major literature on processes of urbanization in U.S. and selected facets of urban institutional development.

**3980:810 URBAN POLITICS***4 credits*

Prerequisite: permission. Empirical analysis of urban political structure and major political problems.

**3980:811 URBAN ADMINISTRATION***4 credits*

Prerequisite: permission. Organization and management characteristics of various types of governmental units examined within framework of organization and management theory.

**3980:812 NATIONAL URBAN POLICY***4 credits*

Prerequisite: permission. Major federal policies that relate to urban problems examined in regard to policymaking processes, implementation and impact.

**3980:820 SOCIAL SERVICES PLANNING***3 credits*

Prerequisite: permission. In-depth analysis of total social services requirements and various ways in which social services planning function is carried out in urban communities.

**3980:821 URBAN SOCIETY AND SERVICE SYSTEMS***4 credits*

Prerequisite: permission. Analysis of social bases of urban society and hierarchies, social problems and relationships to planning and public services.

**3980:830 PLANNING CONCEPTS AND METHODS***3 credits*

Prerequisite: permission. Examination of types, forms, approaches and nature of planning at various levels and critical appraisal of development and redevelopment process.

**3980:831 URBAN FACILITIES PLANNING***3 credits*

Study of need, process and limitation of urban facilities planning.

**3980:840 FISCAL ANALYSIS***3 credits*

Prerequisite: permission. Study of revenue and expenditure patterns of the city's government.

**3980:841 URBAN ECONOMIC GROWTH AND DEVELOPMENT***4 credits*

Prerequisite: permission. Examination of urban economic unit and its susceptibility to social, economic, political and physical change.

**3980:850 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.

**3980:870 APPLIED RESEARCH DESIGN***3 credits*

Prerequisites: statistical methods and completion of 8 credits of core curriculum or permission. Emphasizes advanced work in problems of definition, conceptual logic or urban research, sampling, questionnaire design, planning report development and writing and advanced quantitative procedure.

**3980:880-881 SELECTED TOPICS IN URBAN STUDIES***1-3 credits each*

Prerequisite: permission. Selected topics in specific areas of urban planning, in various developmental processes of cities, or in various urban policy and administrative issues. (A maximum of 27 credits may be earned in 880 and 881.)

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## 3980: Urban Studies

### Graduate Courses

**3980:590 WORKSHOP***1-3 credits*

Group studies of special topics in urban studies. May not be used to meet graduate major requirements in urban studies. May be used for elective credit only. May be repeated.

**3980:800 BASIC ANALYTICAL RESEARCH***3 credits*

Prerequisite: permission. Examines basic framework of social science research methodologies and basic complementary statistical techniques, including probability and sampling most useful in urban studies.

**3980:690 URBAN STUDIES SEMINAR***3 credits*

Prerequisite: 18 credits of urban studies core plus quantitative methods. Urban research methods applied to specific urban research area. Comprehensive paper required.

**3980:695 INTERNSHIP***1-3 credits*

(May be repeated for a total of 3 credits)

Prerequisite: permission. Faculty-supervised work experience program in which student participates in policy planning and administrative operations in selected urban, state and federal governments and urban agencies.

**3980:697 INDIVIDUAL STUDIES***1-3 credits*

(May be repeated for a total of 4 credits)

Directed individual readings or research focused on specific area or topic.

**3980:700 ADVANCED RESEARCH METHODS***3 credits*

Prerequisite: demonstrated use of statistical techniques at master's level or permission. Statistical methodologies used in doctoral and postdoctoral research. Examples drawn from both social and natural scientific methodologies with emphasis on urban problems. Independent and original research leading to better understanding of our complex urban environment. Attempts to develop new theories of urbanization encouraged.

**3980:701 URBAN THOUGHT***3 credits*

Prerequisite: permission. Critical examination of major ideas about the city from Aristotle to 20th century and of impact of urbanization on society and public policy.

**3980:702 BUREAUCRACY AND THE PUBLIC INTEREST***3 credits*

Prerequisite: permission. Seminar designed to analyze public bureaucracy and public interest as central phenomena of contemporary public administration in urban America.

**3980:703 PROGRAM EVALUATION***3 credits*

Prerequisite: permission. Provides concepts for students in evaluation of programs, both external and internal, to work settings.

**3980:704 IMPLEMENTATION OF PUBLIC POLICY***3 credits*

Analysis of administrative process within context of public organizations, federal, state and local, in United States, with emphasis on urban community.

**3980:705 PLANNING STRATEGIES AND EVALUATION OF PLANS***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.

**3980:706 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. In no case will a student enroll in more than 3 credits per term.

**3980:899 DISSERTATION RESEARCH***3-15 credits*

(May be repeated)

Open to properly qualified students accepted as candidates for Doctor of Philosophy degree. Student must register for at least 3 credits each semester until dissertation is accepted. Minimum of 15 credits required.

# The College of Engineering

## 4100: General Engineering

### 4100:180 ENGINEERING DESIGN

1 credit

Introduction of freshman engineering student to problem-solving techniques in engineering design. Required of all entering engineering freshmen in Evening College.

### 4100:201 ENERGY AND ENVIRONMENT

2 credits

Interactions between energy production, consumption and environment. Case studies. Not for engineering, chemistry or physics majors.

### 4100:202 ATMOSPHERIC POLLUTION

2 credits

Causes of atmospheric pollution and technical economic and social problems. Technical solutions. Case studies. Not for engineering, chemistry or physics majors.

### 4100:301 COOPERATIVE WORK PERIOD I

0 credit

For Cooperative Program students only. Practice in industry and comprehensive written reports of this experience.

### 4100:302 COOPERATIVE WORK PERIOD II

0 credit

For Cooperative Program students only. Practice in industry and comprehensive written reports of this experience.

### 4100:403 COOPERATIVE WORK PERIOD III

0 credit

For Cooperative Program students only. Practice in industry and comprehensive written reports of this experience.

## 4200 Chemical Engineering

### 4200:120 ENGINEERING FUNDAMENTALS

1 credit

Prerequisite: 3150:132. Introduction to engineering, problem solving and format, computational exercise, dimensions, units physical measurements.

### 4200:200 MATERIAL AND ENERGY BALANCES

4 credits

Prerequisites: 3450:221 and 3150:134. Introduction to material and energy balance calculations applied to solution of chemical engineering problems.

### 4200:305 MATERIALS SCIENCE

2 credits

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.

### 4200:321 FLUID, THERMAL TRANSFER THEORY

3 credits

Prerequisite: 200. Constitutive equations for momentum and energy transfer. Development of microscopic and macroscopic momentum and energy equations. Analogy and dimensions correlations. Problems and applications in unit operations of chemical engineering.

### 4200:322 THERMAL, MASS TRANSFER THEORY

3 credits

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.

### 4200:325 EQUILIBRIUM THERMODYNAMICS

4 credits

Prerequisite: 200. Second law of thermodynamics, entropy, applications, comprehensive treatment of pure and mixed fluids. Phase and chemical equilibria, flow processes, power production and refrigeration processes covered.

### 4200:351 FLUID AND THERMAL OPERATIONS

3 credits

Prerequisite: 321. Applications of fluid mechanics including piping, pumping, compression, metering, agitation and separations. Applications of heat transfer by conduction, convection and radiation to design of process equipment.

### 4200:352 TRANSPORT LABORATORY

2 credits

Prerequisite: 322. Experiments in fluid, heat and mass transfer. Data collection, analysis and reporting in various formats. Relationships to theory emphasized.

### 4200:353 MASS TRANSFER OPERATIONS

3 credits

Prerequisites: 322, 325. Theory and design of staged operations including distillation, extraction, absorption. Theory and design of continuous mass transfer devices.

### 4200:354 OPERATIONS LABORATORY

1 credit

Prerequisite: 353. Comprehensive experiments and analysis in combined heat and mass transfer, thermodynamics and reaction kinetics. Comprehensive reports.

### 4200:408 POLYMER ENGINEERING

3 credits

Prerequisite: permission or senior standing. Commercial polymerization, materials selection and property modification, polymer processing, applied rheology and classification of polymer industry.

### 4200:430 CHEMICAL REACTION ENGINEERING

3 credits

Prerequisite: 325. Nonequilibrium processes including chemical reaction mechanisms, rate equations and ideal reactor design applied to homogeneous and heterogeneous systems.

### 4200:435 PROCESS ANALYSIS AND CONTROL

3 credits

Prerequisite: 353 or 430. Response of simple chemical processes and design of appropriate control systems.

### 4200:441 PROCESS ECONOMICS AND DESIGN

4 credits

Prerequisite: 353. Economic evaluation of chemical plants including justification, profitability, capital investment and operating costs. Design of chemical process equipment.

### 4200:442 PLANT DESIGN

4 credits

Prerequisite: 441. Integration of process and equipment design for a total plant including justification, site selection and plant layout. Culminates with a case study or A.I.Ch.E. Student Contest Problem.

### 4200:461/561 SOLIDS PROCESSING

3 credits

Prerequisites: 321 and 353 or permission. Comprehensive problems in sedimentation, fluidization, drying and other operations involving mechanics of particulate solids in liquid and gas continua.

### 4200:463/563 POLLUTION CONTROL

3 credits

Prerequisite: 353 or permission. Air and water pollution sources and problems. Engineering aspects and methodology.

**4200:466/566 DIGITIZED DATA AND SIMULATION**

3 credits

Prerequisite: permission. Data acquisition and analysis by digital devices, digital control applications and design.

**4200:497 HONORS PROJECT**

1 to 3 credits

(May be repeated for a total of 6 credits)

Prerequisite: special permission. Individual creative project pertinent to chemical engineering culminating in undergraduate thesis, supervised by faculty member of the department.

**4200:499 RESEARCH PROJECT**

1 to 3 credits

(May be repeated for a total of 6 credits)

Prerequisite: permission. Individual research project pertinent to chemical engineering under faculty supervision. Report required.

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**Graduate Courses**
**4200:600 TRANSPORT PHENOMENA**

3 credits

Prerequisite: 322 or permission. Systematic presentation of conservation of momentum, energy and mass at microscopic and macroscopic levels in conjunction with illustrative examples and analogies.

**4200:605 CHEMICAL REACTION ENGINEERING**

3 credits

Prerequisite: 430 or permission. Kinetics of homogeneous and heterogeneous systems. Reactor design for ideal and nonideal flow systems.

**4200:610 CLASSICAL THERMODYNAMICS**

3 credits

Prerequisite: 325. Discussion of laws of thermodynamics and their application. Prediction and correlation of thermodynamic data. Phase and reaction equilibria.

**4200:630 CHEMICAL PROCESS DYNAMICS**

3 credits

Prerequisite: 600. Development and solutions of mathematical models for chemical processes including models based on transport phenomena principles, population balance methods and system analysis.

**4200:635 ADVANCED POLYMER ENGINEERING**

3 credits

Prerequisite: 322 or 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer rheology.

**4200:640 ADVANCED PLANT DESIGN**

3 credits

Prerequisite: permission. Topical treatment of process and equipment design, scale-up, optimization, process syntheses, process economics. Case problems.

**4200:698 SPECIAL PROBLEMS**

1-4 credits

(May be repeated for a total of 4 credits)

Prerequisite: permission of department head. For qualified candidates for M.S.Ch.E. degree. Designed to allow student to expand a particular area of interest by consultation with a faculty member and independent study beyond available coursework. Credit dependent upon nature and extent of project as determined by faculty member and department head.

**4200:699 MASTERS RESEARCH**

1-6 credits

(May be taken more than once)

For properly qualified candidates for master's degree. Supervised original research in specific area of chemical engineering selected on basis of availability of staff and facilities.

**4200:701 ADVANCED TRANSPORT PHENOMENA**

2 credits

Prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multicomponent reactive transport and multiphase transport. Illustrative practical examples presented.

**4200:706 ADVANCED REACTION ENGINEERING**

2 credits

Prerequisite: 605. Kinetics of heterogeneous systems, fluidized reactors, immobilized enzymes, etc., with additional topics drawn from current literature.

**4200:711 NONEQUILIBRIUM THERMODYNAMICS**

2 credits

Prerequisite: 610. Thermodynamic-phenomenological theory of irreversible processes and its applications.

**4200:715 MOMENTUM TRANSPORT**

3 credits

Prerequisite: 600. Discussion of potential flow, boundary layer formation and turbulent flow phenomena for Newtonian fluids.

**4200:716 NON-NEWTONIAN FLOW**

2 credits

Prerequisite: 600. Rheological behavior of non-Newtonian fluids. Development of fluid constitutive equations. Viscometric methods.

**4200:720 ENERGY TRANSPORT**

3 credits

Prerequisite: 600. Conduction, natural and forced convection, and radiation heat transfer starting with equations of continuity, motion and energy.

**4200:721 TOPICS IN ENERGY TRANSPORT**

2 credits

Prerequisite: 720. Advanced analytical and graphical methods for solving complex heat transfer problems found in chemical engineering.

**4200:725 MASS TRANSFER**

3 credits

Prerequisite: 600. Theory of mass transfer with applications to absorption, adsorption, distillation and heterogeneous catalysis.

**4200:731 PROCESS CONTROL**

3 credits

Prerequisite: 630. Introduction to modern control theory of chemical processes including cascade control, multivariate control and data sampled control.

**4200:736 POLYMER ENGINEERING TOPICS**

2 credits

Prerequisite: permission. Selected topics of current interest in polymer engineering, such as modeling of reactors or processes, multiphase materials, multiphase flow, artificial fiber engineering, etc.

**4200:750 POLLUTION CONTROL ENGINEERING**

2 credits

Prerequisite: 463 or permission. Advanced waste treatment methods as applied to chemical process industries.

**4200:794 ADVANCED SEMINAR**

1-4 credits

(May be repeated for a total of 6 credits)

Prerequisite: permission of department head. Advanced projects, readings and other studies in various areas of chemical engineering. Intended for students seeking Ph.D. in Engineering degree.

**4200:898 PRELIMINARY RESEARCH**

1-15 credits

(May be repeated for a total of 15 credits)

Prerequisite: approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

**4200:899 DOCTORAL DISSERTATION**

1-15 credits

Prerequisite: completion of preliminary examination and approval of Advisory Committee. Original research by Ph.D. candidate.

May be taken more than once.



## 4300: Civil Engineering

### 4300:130 INTRODUCTION TO ENGINEERING

1 credit

Introduction to civil engineering for freshman engineering student. Tasks and opportunities of civil engineer. Introduction to engineering problem-solving techniques. Required of all civil engineering freshmen.

### 4300:201 STATICS

3 credits

Corequisites: 3450:222 and 3650:291. Forces, resultants, couples; equilibrium of force systems; distributed forces; centers of gravity; analysis of simple structures; moments of inertia; kinematics.

### 4300:202 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 shearing stress; compound stresses.

### 4300:230 SURVEYING

4 credits

Principles of route, construction and land surveying. Use of tape, level, transit and electronic surveying equipment. Computation of land areas and earthwork quantities.

### 4300:306 THEORY OF STRUCTURES

3 credits

Prerequisite: 202. Stability and determinacy; statically determinate trusses and frames; approximate frame analysis influence lines; moving loads; virtual work analysis; moment area theorem; theorem of three moments; moment distribution for continuous beams and frames.

### 4300:311 GEOTECHNICAL ENGINEERING

5 credits

Prerequisite: 202 or permission. Physical properties of soils. Soil water and groundwater flow. Stresses, displacements, volume changes, settlements and consolidation within a soil mass. Soil strength and limiting equilibrium. Slope stability. Design of foundation systems, retaining walls and sheet piling. Laboratory study of soil properties and behavior.

### 4300:323 WATER SUPPLY AND WASTEWATER DISPOSAL

3 credits

Prerequisites: 3150:133, 4600:310. Quality of water supplies. Study of water treatment processes and methods. Characteristics of wastewater, wastewater treatment, wastewater filtration, sludge treatment and disposal. Construction, finance, maintenance and operation of treatment facilities.

### 4300:341 HYDRAULICS AND HYDROLOGY

4 credits

Prerequisite: 4600:310. Flow in closed conduits and open channels. Design of pipe networks and pumping stations. Groundwater hydraulics. Surface water hydrology. Statistical analysis of rainfalls and floods.

### 4300:361 TRANSPORTATION ENGINEERING

3 credits

Prerequisite: junior standing. Introductory survey of transportation topics including transportation planning requirements and techniques, introduction to design of highways, airports and railroads, and introduction to traffic engineering.

### 4300:380 ENGINEERING MATERIALS LABORATORY

1 credit

Prerequisite: 202. Study of laboratory instrumentation and standard techniques in testing of engineering materials. Data analysis.

### 4300:401 STEEL DESIGN

2 credits

Prerequisite: 306. Tension members; compression members; open-web joists; beams; bearing plates; beam-columns; bolted and welded connections.

### 4300:403 REINFORCED CONCRETE DESIGN

3 credits

Prerequisite: 306. Ultimate strength analysis and design; compression steel; diagonal tension; stirrups; development length; one-way slab; T-beams; two-way slabs; columns; isolated and combined footings.

### 4300:404 ADVANCED STRUCTURAL DESIGN

3 credits

Prerequisites: 401 and 403. Composite design; plate girders; plastic design; cantilever retaining walls; torsion in R/C members; deflection of R/C members; continuous girder bridge design.

### 4300:407 ADVANCED MECHANICS OF SOLIDS

3 credits

Prerequisite: 202. Inelastic torsion analysis twisting of noncircular bars and hollow members; bending of unsymmetrical sections; inelastic beam bending; beams of two materials; curved beams; shear center; strain transformation; yield criteria, skew bending; Castigliano's theorem; conjugate beam.

### 4300:414 DESIGN OF EARTH STRUCTURES

3 credits

Prerequisite: 311 or permission. Criteria for design of earth structures including dams, highway fills, cofferdams, etc. Embankment construction techniques and quality control. Analysis of embankment and foundation stability. Instrumentation for monitoring soil movement and stability. Stabilization of foundation soils. Seepage analysis and control methods.

### 4300:418/518 SOIL AND ROCK EXPLORATION

3 credits

Prerequisite: 311 or permission. Site exploration criteria and planning. Conventional boring, sampling and in situ testing methods. Theory and application of geophysics and geophysical methods including seismic, electrical resistivity, gravity, magnetic and radioactive measurements. Air photo interpretation.

### 4300:421 ENVIRONMENTAL ENGINEERING

3 credits

Prerequisite: 323. Engineering aspects involved in control of environment of citizens. Includes communicable disease control, air pollution, industrial hygiene, milk and food sanitation, radiological health, solid waste disposal.

### 4300:424 WATER-WASTEWATER LABORATORY

1 credit

Corequisite: 323 or permission. Laboratory analysis of water and wastewater.

### 4300:425 ENVIRONMENTAL ENGINEERING LABORATORY

2 credits

Selected physical, chemical and bacteriological analysis of raw and treated water and wastewaters.

### 4300:426/526 ENVIRONMENTAL ENGINEERING DESIGN

2 credits

Analysis of various environmental control systems for water and wastewater treatment. Economic analysis with use of computer programming for evaluation of various regional, metropolitan and urban areas to determine most economical system for water supply and pollution control.

### 4300:441 HYDRAULIC DESIGN

3 credits

Prerequisite: 341. Collection and critical evaluation of hydraulic data related to actual design problem selected by instructor. Development and analysis of design alternatives. Preparation of reports.

### 4300:443/543 APPLIED HYDRAULICS

3 credits

Prerequisite: 341. Review of design principles related to urban hydraulic, steam channel mechanics, sedimentation and coastal engineering.

### 4300:448 HYDRAULICS LABORATORY

1 credit

Prerequisite: 341. Introduction to laboratory and field devices for hydraulic measurements. Reduction and presentation of hydraulic data. Individual assignments of model studies of hydraulic structures.

**4300:450 URBAN PLANNING***2 credits*

Historical developments in urban planning; urban planning techniques and patterns; comprehensive master planning studies; planning regulations; design problems; class projects; class project presentation.

**4300:451 MATRIX ANALYSIS OF STRUCTURES***3 credits*

Elementary concepts of structural analysis. Static and kinematic indeterminacy. Flexibility and stiffness matrices. Flexibility analysis of structures. Stiffness analysis of structures. Effects of temperature prestrain and support displacements. Computer formulation of stiffness analysis.

**4300:452 STRUCTURAL VIBRATIONS AND EARTHQUAKES***3 credits*

Prerequisite: 306. Vibration and dynamic analysis of structural systems with one, two, or more degrees of freedom; beams, frames, buildings and bridges. Numerical methods of analysis. Elastic-plastic systems. Earthquake analysis and design. Earthquake codes.

**4300:463 TRANSPORTATION PLANNING***2 credits*

Prerequisite: 361. Theory and techniques for development, analysis and evaluation of transportation system plans. Emphasis on understanding and using tools and professional methods available to solve transportation planning problems, especially in urban areas.

**4300:464 HIGHWAY DESIGN***3 credits*

Prerequisite: 361. Step-by-step study of modern highway design techniques and construction practice.

**4300:471 CONSTRUCTION ADMINISTRATION***2 credits*

Prerequisite: senior standing or permission. Organization for construction, construction contracts, bidding, bonds and insurance. Construction management and supervision, including introduction to critical path method.

**4300:472 CONSTRUCTION ENGINEERING***3 credits*

Prerequisite: senior standing or permission. Construction equipment selection and management. Techniques of various engineering construction operations including blasting, tunnelling, concrete framework and dewatering.

**4300:473 CONSTRUCTION MATERIALS***2 credits*

Prerequisites: 380, 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.

**4300:474/574 UNDERGROUND CONSTRUCTION***2 credits*

Prerequisite: 311. Description of practices and techniques of underground construction. Selection of proper method for individual job. Design of underground openings, support systems and linings.

**4300:481 CIVIL ENGINEERING SYSTEMS***2 credits*

Prerequisite: senior standing. Systems approach to civil engineering problems. Mathematical programming; project planning, scheduling and cost analysis; basic operations research methods; decision analysis. Management of engineering design of complex civil engineering projects.

**4300:482 SPECIAL PROJECTS***1-2 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.

**4300:497 HONORS PROJECT***1-3 credits*

(May be repeated for a total of 6 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****4300:601 ADVANCED MECHANICS OF MATERIALS***3 credits*

Prerequisite: 202. Three-dimensional stress states. Strain transformations. Theories of failure. Shear center. Unsymmetrical bending. Curved beams. Beams on elastic foundations. Torsion of noncircular sections. Castigliano's theorems. Analytical and numerical solutions to column buckling and beam-column problems.

**4300:602 FUNDAMENTALS OF ELASTICITY, PLASTICITY AND VISCOELASTICITY***3 credits*

Prerequisite: 202. Analysis of stress and strain. Equilibrium equations. Constitutive equations for isotropic, orthotropic and anisotropic materials. Formulation of boundary value problems. Plasticity and viscoelasticity concepts of yield, strain-hardening and flow. Mathematical modeling of plastic and viscoelastic behavior of metals, polymers, concrete, soils and composites. Methods of material characterization.

**4300:603 MATRIX ANALYSIS OF FRAMED STRUCTURES***3 credits*

Prerequisite: 306. Matrix algebra and solution of simultaneous equations. Flexibility analysis of structures. Stiffness analysis of structures. Local and global stiffness matrices for space structures. Automatic dead load analyses. Direct computation of member end-actions. Nonrigid joints. Inclined supports. Nonprismatic members. Computer program implementation.

**4300:604 DYNAMICS OF STRUCTURES***3 credits*

Prerequisite: 306. Approximate and rigorous dynamic analysis of one, two, multiple and infinite degrees of freedom structural systems. Elastoplastic and plastic analysis. Equivalent systems and dynamic hinge concept. Modal analysis. Transfer matrices. Fourier and Laplace transforms.

**4300:605 STRUCTURAL STABILITY***3 credits*

Prerequisite: 601. Buckling of bars, beam-columns and frames. Lateral buckling of beams. Double and tangent modulus theories. Energy methods. Compressed rings and curved bars. Torsional buckling. Buckling of plates and shells. Inelastic buckling.

**4300:606 ENERGY METHODS AND ELASTICITY***3 credits*

Prerequisite: 202. Work and complementary work. Strain energy and complementary strain energy. Virtual work and Castigliano's theorems. Variational methods. Applications. Formulation of boundary value problems in elasticity. Selected topics in energy methods and elasticity.

**4300:607 PRESTRESSED CONCRETE***3 credits*

Prerequisite: 404. Basic concepts. Design of double-tee roof girder; shear; development length; columns; piles; design of highway bridge girder: pretensioned, posttensioned; continuous girders; corbels; volume-change forces; connections.

**4300:608 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.

**4300:609 FINITE ELEMENT ANALYSIS I***3 credits*

Prerequisite: 602. Introductory development of finite element method as applied to various topics from continuum mechanics. Such areas as plane, axisymmetric and 3-D stress analysis; conduction, fluid mechanics; transient problems and geometric and material nonlinearity covered.

**4300:611 FUNDAMENTALS OF SOIL BEHAVIOR***2 credits*

Prerequisite: 311. In-depth examination of structure and fundamental physico-chemical and mechanical properties of engineering soils viewed as particulate matter.

**4300:612 ADVANCED SOIL MECHANICS***3 credits*

Prerequisite: 311. Study of mechanics of behavior of soil as continuum. Principles of stress, strain, deformation, shear strength and pore water pressure as applied to mechanical behavior of soil masses.

**4300:614 FOUNDATION ENGINEERING I***3 credits*

Prerequisite: 311 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 bulkheads.

**4300:615 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 cofferdams. Slope stability analysis.

**4300:618 ROCK MECHANICS***3 credits*

Prerequisite: 602 or permission. Mechanical nature of rocks; linear elasticity and application to rock problems; inelastic behavior of rocks, time dependence, and effects of pore pressure; experimental characterization of rock properties; failure theory and crack propagation.

**4300:620 SANITARY ENGINEERING PROBLEMS***2 credits*

Prerequisite: 323. Application of both laboratory methods and theory to solution of sanitary engineering problems involving water pollution, stream regeneration, special industrial wastes, detergents and others.

**4300:621 INDUSTRIAL WASTE TREATMENT***2 credits*

Prerequisite: permission. Analysis of problems arising from industrial water pollution. Analysis of methods of treatment with specific applications and study of cost-effectiveness to meet water quality criteria.

**4300:622 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.

**4300:623 WASTEWATER TREATMENT PLANT DESIGN***3 credits*

Prerequisite: permission. Application of theory and fundamentals to design of wastewater treatment plants. System design methods used for biological and chemical stabilization of wastewater to meet water quality criteria. Economic analyses made to determine best practical designs to be utilized.

**4300:624 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 offered to students seeking engineering fundamentals applicable to water utility systems.

**4300:640 ADVANCED FLUID MECHANICS***3 credits*

Prerequisite: 4600:310 or permission. Basic equations of fluid mechanics, Navier-Stokes equations. Analysis of potential flow, turbulence, hydraulic transients. Solution of typical fluid mechanics problems. Analysis of water hammer in pipe networks by method of characteristics.

**4300:644 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.

**4300:645 APPLIED HYDROLOGY***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.

**4300:646 COASTAL ENGINEERING***3 credits*

Characteristics of linear and nonlinear wave theories. Interaction of structures and waves and design analysis of shore and offshore structures. Movement and transportation of sediments in lake shore areas.

**4300:661 ADVANCED ENGINEERING MATERIALS***3 credits*

Selected topics on 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.

**4300:697 SPECIAL PROBLEMS***1-2 credits*

Prerequisite: permission. Supervised research or directed individual study in student's major field. Topic selected by student, subject to approval by adviser.

**4300:698 SPECIAL PROBLEMS***1-2 credits*

Prerequisites: 697 and permission. Continuation of 697. Individual research should lead to final report of publishable quality.

**4300:699 MASTER'S THESIS***1-6 credits*

Prerequisite: permission. Research and thesis on some suitable topic in civil engineering as approved by department. Defense of thesis is by final examination.

**4300:701 EARTHQUAKE ENGINEERING***3 credits*

Prerequisite: 604. Earthquake fundamentals. Earthquake response of single-story and multistory buildings, as well as structural components. Modal analysis for earthquake response. Inelastic response of multistory structures. Earthquake codes. Stochastic approach.

**4300:702 PLATES AND SHELLS***3 credits*

Prerequisites: 602 and 3450:531. Navier and Levy solutions for rectangular plates. Approximate methods, including finite differences. Forces in middle plane. Large deflections. Differential geometry of a surface. Shells of revolution.

**4300:703 APPLICATIONS IN PLASTICITY AND VISCOELASTICITY***3 credits*

Prerequisite: 602. Formulation of boundary value. Problems in plasticity and viscoelasticity. Correspondence principle. Solution approaches to practical problems, e.g., problems with cylindrical and spherical symmetry, torsional and two-dimensional problems.

**4300:704 FINITE ELEMENT ANALYSIS II***3 credits*

Prerequisites: 609 and 702 or permission. Curved, plate, shell brick elements. Quasi-analytical elements. Quadrature formulas. Substructuring for static and dynamic analyses. Solution algorithms for linear and nonlinear static and dynamic analysis. Computer program formulation. Review of large-scale production programs.

**4300:705 FINITE ELEMENT ANALYSIS III***3 credits*

Prerequisites: 704, and 702 or permission. Static and dynamic contact problems. Tire mechanics. Fracture mechanics. Plasticity problems involving small and large deflections. Shake-down analysis. General constitutive models for composite media, thermoviscoelasticity, fluid turbulence. Fluid-solid interaction analysis.

**4300:717 SOIL DYNAMICS***3 credits*

Prerequisite: 614 or permission. Vibration and wave propagation theory relating to soils, soil-structures and foundations. Dynamic behavior of soils. Design of foundations for dynamic loading impact, pulsating and blast loads.

**4300:745 SEEPAGE***2 credits*

Discussion of parameters determining permeability of various soils. Analytical, numerical and experimental methods to determine two- or three-dimensional movement of groundwater. Unsteady flows.

**4300:794 ADVANCED SEMINAR IN CIVIL ENGINEERING***1-3 credits*

(May be repeated for a total of 9 credits)

Prerequisite: permission of department head. Advanced projects, reading and other studies in various areas of civil engineering. Intended for students seeking Ph.D. in Engineering degree.

**4300:898 PRELIMINARY RESEARCH***1-15 credits*

(May be repeated for a total of 15 credits)

Prerequisite: approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

**4300:899 DOCTORAL DISSERTATION***1-15 credits*

Prerequisite: completion of preliminary examination and approval of Advisory Committee. Original research by Ph.D. candidate.

May be taken more than once.

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**4400: Electrical Engineering****4400:101 ENGINEERING DESIGN***1 credit*

Introduction of freshman engineering student to problem-solving techniques. Required of all entering electrical engineering freshmen.

**4400:231 CIRCUITS I***3 credits*

Prerequisite: 3650:291; corequisite: 3450:223. Fundamentals of circuit analysis including loop and nodal methods, phasor techniques, resonance, polyphase circuits and magnetic coupling in circuits.

**4400:232 CIRCUITS II***3 credits*

Prerequisites: 231, 3450:235. Network theorems, Fourier methods, transfer functions. Laplace and Fourier transforms and their use in analyzing dynamic operation of circuits.

**4400:320 BASIC ELECTRICAL ENGINEERING***4 credits*

Prerequisite: junior standing in engineering; corequisite: 3450:235. Introductory course covering fundamental aspects of electrical circuits, electronics and electrical machinery. Not open to electrical engineering majors.

**4400:333 CIRCUITS III***3 credits*

Prerequisites: 232, 3450:235, 4450:206. Application of Laplace and state variable to frequency and time domain expressions for steady state and transient responses. Network topology and computer-aided circuit design.

**4400:334 CIRCUITS IV***3 credits*

Prerequisite: 333. Network topology; node, mesh, loop cut-set and state variable analysis and solutions; matrix formulations. Transform theory and techniques. Computers in network design and analysis.

**4400:343 ELECTRICAL MEASUREMENTS***4 credits*

Prerequisite: 231. Study of DC and AC meters and bridges. Evaluation of errors involved in measurements.

**4400:344 INSTRUMENTATION***3 credits*

Prerequisites: 343, 362. Analysis and characteristics of transducers, indicating instruments and recorders used in electrical measurements.

**4400:353 ELECTROMAGNETIC FIELDS I***4 credits*

Prerequisite: 3450:223. 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.

**4400:359 TRANSMISSION LINES AND NETWORKS***3 credits*

Prerequisites: 333, 362. Steady state and transient analysis of distributed parameter circuits. Low and high frequency applications. Networks for transmissions.

**4400:361 PHYSICS OF ELECTRONIC DEVICES***3 credits*

Prerequisite: 3640:301; corequisite: 353. Physics of semiconductors. Band theory, energy distribution and electron transport. p-n junctions. BJT and FET devices. Electron emission and ballistics, gaseous discharge, dielectric and magnetic materials. Device modeling.

**4400:362 ELECTRONIC CIRCUITS***4 credits*

Prerequisites: 232, 343, 361. Equivalent circuits for electronic devices. Time and frequency domain analysis. Rectification, voltage and power amplification, feedback, oscillators, linear IC's.

**4400:363 SWITCHING AND LOGIC***4 credits*

Prerequisites: 343, 361. Analysis of computer circuits. Introduction to use of Boolean algebra and mapping techniques in analyzing switching circuits. Sequential circuits.

**4400:371 CONTROL SYSTEMS I***3 credits*

Prerequisites: 333, 361; corequisite: 382. Introduction to servomechanisms and feedback. Modeling and response of feedback control systems. Stability of linear systems. Experiments include analog simulation and basic servomechanism.

**4400:380 ILLUMINATION***2 credits*

Fundamentals of illumination and principles underlying specifications and design for adequate electrical lighting.

**4400:381 ENERGY CONVERSION I***3 credits*

Prerequisites: 231, 353. Sources of energy, principles of energy conversion, thermodynamic limitations. Electric energy from fossil fuel, MHD, nuclear energy. Solar energy, hydro, wind and geothermal energy. Transformers.

**4400:382 ENERGY CONVERSION II***4 credits*

Transformers. Induction and synchronous machines. Single-phase machines.

**4400:383 APPLICATION OF MOTORS***3 credits*

Prerequisite: 382. Apparatus and circuits for control of electric motors. Calculation of accelerating and decelerating time and duty cycles. Selection of motors for various applications.

**4400:387 ADVANCED MACHINERY***3 credits*

Prerequisite: 382. d-q transformation. Reactance of synchronous machines. Parallel operation of transformers. Synchronous-induction motors. Machine saturation and harmonics.

**4400:391 PROBLEMS***1-3 credits*

Prerequisite: permission of department head. Select comprehensive problems, supervised discussions and computation periods. May be taken more than once.

**4400:421/521 ENGINEERING ECONOMY***3 credits*

Prerequisites: 3250:244 and senior standing in engineering. Presents engineering economics as distinguished from classical economic theory.

**4400:445 COMMUNICATION SYSTEMS***3 credits*

Prerequisites: 333, 353, 362. Communications systems and equipment; noise, modulation; antennas and propagation; electronic communication circuits, frequency standards and generation, communication satellites.

**4400:446 ELECTRONIC SYSTEMS***3 credits*

Prerequisite: 445. Study of specific state-of-the-art electronic systems: primary and secondary radar, telemetry systems, video systems, data communications, navigational systems.

**4400:447 RANDOM SIGNALS***3 credits*

Prerequisite: 333. Applications of set theory, discrete and continuous sample spaces; probability, random variables, distribution functions, density functions, stochastic processes, random signals, system function, power spectrum and correlation functions.

**4400:448 COMMUNICATION THEORY***3 credits*

Prerequisite: 447. Spectral analysis and Fourier transforms; random variables and processes; amplitude, frequency and pulse modulation; representations of noise in modulation; threshold in frequency modulation, data transmission; communication system and noise calculations.

**4400:452 INTRODUCTION TO LASERS***3 credits*

Prerequisites: 333, 353. Introduction to basic concepts of maser (laser) action; emission processes and their roles in laser action; types of lasers; presentation of generalized operating criteria.

**4400:454 ELECTROMAGNETIC FIELDS II***3 credits*

Prerequisite: 353 or permission. Advanced field theory including boundary value problems and nonlinear fields. Applications of Maxwell's equations. Antennas.

**4400:455/555 MICROWAVES***4 credits*

Prerequisites: 353, 359. Dynamic fields, Maxwell's equation and wave equations. Field analysis of wave guides, microwave components, techniques and systems.

**4400:464 PULSE ELECTRONICS***4 credits*

Prerequisites: 333, 362. Waveshaping circuits, nonsinusoidal waveform generation and relaxation circuits. Pulse transformers. Application of pulse and switching circuits.

**4400:465/565 COMPUTER CIRCUITS***4 credits*

Prerequisite: 363. Electronic circuitry considerations in logic circuits, methods of sequential and threshold logic analysis and synthesis, development of computer arithmetic elements, memory and storage devices.

**4400:467/567 SOLID-STATE DEVICES***2 credits*

Prerequisite: 362. Static and dynamic behavior of p-n junction and junction transistors. Theory of avalanche and Zener breakdown. FET npn diode and Gunn effect oscillator.

**4400:469 INDUSTRIAL ELECTRONICS***3 credits*

Prerequisites: 362, 382. Application of electronic devices at power levels. Intended for those specializing in power area of electrical engineering rather than electronic areas.

**4400:472/572 CONTROL SYSTEMS II***4 credits*

Prerequisite: 371. State variable analysis and design of control systems. Discrete system and analysis, digital computer control. Experiments include hybrid and AC control system, digital computer control.

**4400:480/580 SYMMETRICAL COMPONENTS***3 credits*

Prerequisite: 382. Per unit method as applied to power system calculations. Fundamental principles of symmetrical components as applied to analysis of electrical circuits, and machines.

**4400:481 ELECTRICAL POWER SYSTEMS I***3 credits*

Prerequisite: 382. Introduction to electricity utility load flow, fault analysis, stability, surge protection and relaying.

**4400:482 ELECTRICAL POWER SYSTEMS II***3 credits*

Prerequisite: 382. Introduction to industrial power systems. Local generation, power factor correction, conductor selection code requirements, coordination of protective devices.

**4400:497 HONORS PROJECT***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: senior standing in Honors Program. Individual creative project or design relevant to electrical engineering, supervised by faculty member of the department.

**4400:498/598 TOPICS IN ELECTRICAL ENGINEERING***1-2 credits*

Prerequisite: permission of department head. Special topics in electrical engineering. May be taken more than once.

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**Graduate Courses**
**4400:631 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.

**4400:641 RANDOM SIGNAL ANALYSIS***3 credits*

Prerequisite: 447. Analysis, interpretation and smoothing of engineering data through application of statistical and probability methods.

**4400:642 STATISTICAL COMMUNICATIONS***3 credits*

Prerequisite: 448 or 641. Detection and estimation of signals in communication systems; linear and nonlinear systems with random inputs; narrow-band systems, mean squared-error filter, modulation and information theory.

**4400:651 ELECTROMAGNETIC FIELDS***3 credits*

Prerequisite: graduate standing in electrical engineering. Introduction to advanced electromagnetic concepts at graduate level.

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**4400:652 ADVANCED ELECTROMAGNETICS**

3 credits

Prerequisite: 651. Application of Maxwell's equations. Propagation equations and antenna analysis.

**4400:661 DESIGN OF DIGITAL SYSTEMS**

3 credits

Prerequisite: 465. Applications of logic circuits in modern digital electronic computer and in digital communication systems. Computer organization and control, input-output devices and interface standards, advanced topics in computers.

**4400:662 TOPICS IN ELECTRONICS**

3 credits

Prerequisite: permission of department head. Discussions of recent advances in electronics.

**4400:671 DISCRETE CONTROL SYSTEMS**

3 credits

Prerequisite: 472/572 or permission. Theory and techniques for analysis and design of discrete control systems. Z-transform technique, stability analysis, frequency response. Optimization. Digital computer control.

**4400:674 CONTROL SYSTEM THEORY**

3 credits

Prerequisite: 472/572. Advanced modern control theory for linear and nonlinear systems. Controllability and observability, state variable feedback, estimation and control nonlinear system analysis and stability problem.

**4400:676 RANDOM PROCESS ANALYSIS**

3 credits

Prerequisite: 674. Analysis and design of control systems with stochastically defined input. Introduction to estimation filters.

**4400:681 POWER SYSTEM ANALYSIS**

3 credits

Prerequisite: 480. Short circuit and load flow analysis of power systems with emphasis on computer solution. Transient machine analysis.

**4400:682 POWER SYSTEM STABILITY**

3 credits

Prerequisite: 681. Steady state and transient stability of power systems with emphasis on computer solution.

**4400:683 ECONOMICS OF POWER SYSTEMS**

3 credits

Prerequisite: 681. Analysis and operation of power system for economic dispatching using a computer.

**4400:684 PROTECTIVE RELAYING**

3 credits

Prerequisite: 480. Principles and application of relays as applied to protection of power systems.

**4400:685 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.

**4400:693 SPECIAL PROBLEMS**

1-3 credits

Prerequisite: permission of department head. For qualified graduate students. Supervised research or investigation in student's major field of training or experience. Credit dependent upon nature and extent of project.

May be taken more than once.

**4400:699 MASTER'S THESIS**

1-6 credits

Prerequisite: permission of department head. Research and thesis on some suitable topic in electrical engineering.

**4400:753 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.

**4400:778 OPTIMAL CONTROL I**

3 credits

Prerequisite: 674. Formulation of optimization problem; application of variational calculus, maximum principle and optimality principle to control problems. Computational techniques in optimization.

**4400:777 OPTIMAL CONTROL II**

3 credits

Prerequisite: 776. Sensitivity problem in optimal control, system identification. Implementation and application of adaptive control.

**4400:779 ADVANCED TOPICS IN CONTROL**

3 credits

Prerequisite: 776. Discussions of recent advances in control systems.

**4400:794 ADVANCED SEMINAR**

1-3 credits

Prerequisite: permission of department head. Advanced level coverage of various specialized topics. Intended for students seeking Ph.D. in Engineering.

May be taken more than once.

**4400:898 PRELIMINARY RESEARCH**

1-15 credits

Prerequisite: completion of Qualifying Examination and approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

May be repeated.

**4400:899 DOCTORAL DISSERTATION**

1-15 credits

Prerequisite: completion of Candidacy Examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.

May be repeated.

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## 4450: Engineering Computer Science

**4450:206 FORTRAN (SCI/ENGR)**

2 credits

Prerequisite: 3450:221 or 2020:334. Introduction to use of digital computers in scientific and engineering applications. For students majoring in engineering or physical sciences. No credit for persons having completed 3460:201.

**4450:207 USER LANGUAGES**

2 credits

Prerequisite: 206 or equivalent. Comparative study of features of high-level computer languages from standpoint of user.

**4450:306 ASSEMBLER PROGRAMMING**

3 credits

Prerequisite: 206 or equivalent. Introduction to computer organization and programming at machine language level. Assembler syntax, subroutine linkage conventions, macro language.

**4450:407 SYSTEMS PROGRAMMING**

3 credits

Prerequisite: 306. Introduction to operating systems. Data structures and algorithms in assemblers, macroprocessors, loaders and compilers. Process and memory management, procedure and data sharing.

**4450:410 COMPUTER METHODS**

3 credits

Prerequisites: 206 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 library routines. Job Control Language. Interactive computing.

**4450:432 SYSTEM SIMULATION***3 credits*

Prerequisite: 410. Principles of modeling and simulation of discrete and continuous time models, using Fortran and S/360 CSMP. Discrete event models and GPSS, SIMSCRIPT.

**4450:497/597 TOPICS IN COMPUTER SCIENCE***1-2 credits*

Prerequisite: permission of department head. Special topics in computer engineering.

May be taken more than once.

**Graduate Courses****4450:810 COMPUTER ALGORITHMS I***3 credits*

Prerequisites: 206 and 3450:235. Organization of scientific and engineering problems for computer solutions. Analysis of error and convergence properties of algorithms.

**4450:811 COMPUTER ALGORITHMS II***3 credits*

Prerequisite: 810 or permission. Data structures and algorithm design for minimum execution time and memory requirements.

**4450:893 SPECIAL PROBLEMS***1-3 credits*

Prerequisite: permission of department head. For qualified graduate students. Supervised research or investigation in student's major field. Credit depends upon nature and extent of project.

May be taken more than once.

**4450:794 ADVANCED SEMINAR***1-3 credits*

Prerequisite: permission of department head. Advanced level coverage of various topics. Intended for students seeking Ph.D. in Engineering.

May be taken more than once.

**4600:305 THERMAL SCIENCE***2 credits*

Prerequisites: 3450:222 and 3650:291. Credit not allowed for both 300 and 305. Introduction to first and second laws of thermodynamics, perfect gas relationships, equations of state, cycle analysis. Introduction to conduction, convection and radiation heat transfer.

**4600:310 FLUID MECHANICS***3 credits*

Corequisite: 300. Properties and behavior of gases and liquids at rest and in motion. Energy equation. Flow in conduits. Forces on body submerged in moving fluid. Dimensional analysis and similitude.

**4600:315 HEAT TRANSFER***3 credits*

Prerequisites: 300, 310. Fundamentals of heat transfer by conduction, convection and radiation.

**4600:321 KINEMATICS OF MACHINES***3 credits*

Prerequisites: 125, 203. Displacements, velocities, accelerations and introduction to forces in plane motion mechanisms. Introduction to design of gears, gear trains and cams.

**4600:336 ANALYSIS OF MECHANICAL COMPONENTS***3 credits*

Prerequisite: 4300:202. Analysis of stress and strain at a point. Mohr's circles, shear centers, elastic instability. Stresses in thick and thin cylinders.

**4600:337 DESIGN OF MECHANICAL COMPONENTS***3 credits*

Prerequisites: 336, 380. Application of stress analysis to design of fasteners, welds, springs, ball bearings and gears. Introduction to journal bearings and lubrication. Component design projects.

**4600:360 ENGINEERING ANALYSIS***3 credits*

Prerequisite: 3450:235. Analytical and numerical methods of solution of mechanical engineering problems.

**4600:360 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.

**4600:393 INTERNAL COMBUSTION ENGINES LABORATORY***1 credit*

Prerequisite: 301. Study of application and performance of reciprocating and rotary engines.

**4600:396 COMPUTER METHODS LABORATORY***1 credit*

Prerequisite: 3450:235. Application of digital computers to solution of typical problems in heat transfer, fluid dynamics, machine design, kinematics, strength of materials, elasticity and vibrations and dynamics.

**4600:400 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.

**4600:401 DESIGN OF ENERGY SYSTEMS***2 credits*

Prerequisites: 400, 460. Analysis and design of systems for energy exchange. Emphasis on performance of energy system components and their integration into complex practical systems. Design project required.

**4600:410/510 HEATING AND AIR CONDITIONING***3 credits*

Prerequisites: 301, 315. Thermodynamics of gas mixtures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling and humidity.

**4600 Mechanical Engineering****4600:125 ENGINEERING GRAPHICS***2 credits*

Freehand sketching techniques. Orthographic projection and pictorial representation of typical machine elements.

**4600:160 ENGINEERING DESIGN: MECHANICAL ENGINEERING***1 credit*

Introduction to engineering profession. Engineering curriculum and programs of study. Basic tools of engineering analysis and design.

**4600:203 DYNAMICS***3 credits*

Prerequisite: 4300:201. Kinematics and kinetics of particles and rigid bodies. Principles of work, energy, momentum and impulse.

**4600:300 THERMODYNAMICS I***4 credits*

Prerequisites: 3450:221 and 3650:291. Basic concepts of thermodynamics. The pure substance, the system, and first and second laws of thermodynamics. Entropy, availability, power cycles.

**4600:301 THERMODYNAMICS II***3 credits*

Prerequisites: 300 and 310. Thermodynamics of state, gas mixtures and gas-vapor mixtures. Combustion. Thermodynamics of gas flow.

**4600:411/511 COMPRESSIBLE FLUID MECHANICS****3 credits**

Prerequisites: 301, 310. Subsonic and supersonic flow in nozzles, diffusers and ducts. One-dimensional reactive gas dynamics. Prandtl-Meyer theory. Applications to design and analysis of compressors, turbines and propulsion devices.

**4600:415/515 ENERGY CONVERSION****3 credits**

Prerequisites: 301, 315. Topics from fields of internal combustion engines, cycle analysis, modern conversion devices.

**4600:416/516 HEAT TRANSFER PROCESSES****3 credits**

Prerequisite: 315. Continuation of 315. Analysis and design of extended surfaces. Natural convective heat transfer, combined modes of heat transfer, heat transfer with a change of phase. Heat transfer in magnetohydrodynamic systems.

**4600:422/522 EXPERIMENTAL STRESS ANALYSIS I****2 credits**

Prerequisites: 336 or 4300:202. Experimental methods of determining stress or strain. Use of brittle lacquer, strain gages and photoelasticity.

**4600:425/525 ENGINEERING ACOUSTICS I****3 credits**

Prerequisite: 431 or permission. Analysis of vibrating systems by complex variable techniques and Fourier's theorem, phase and impedance concept, propagation, transmission and reflection of plane and spherical waves.

**4600:430/530 MACHINE DYNAMICS****3 credits**

Prerequisites: 203, 321. Dynamic analysis of components and machines, dynamic forces and reactions. Balancing, rotor dynamics, space kinematics and kinetics of rigid bodies.

**4600:431/531 MECHANICAL VIBRATIONS I****3 credits**

Prerequisites: 203 and 3450:235. Undamped, damped and forced vibrations of systems having one or two degrees of freedom.

**4600:440 CONTROL SYSTEMS****3 credits**

Prerequisites: 315, 431. Laplace transforms. Mathematical models of physical systems. Transient response and stability. Error analysis and system accuracy. Root locus methods in design. Frequency analysis and design. Compensation techniques.

**4600:441 CONTROL SYSTEM DESIGN****3 credits**

Prerequisite: 440. Continuation of 440. Design applications to mechanical engineering control systems.

**4600:442/542 INDUSTRIAL AUTOMATIC CONTROL****2 credits**

Prerequisite: 440. Theory and operation of basic control mechanisms. Analysis and design of mechanical, hydraulic, pneumatic and fluidic control systems. Practical techniques for optimizing system performance.

**4600:460 CONCEPTS OF DESIGN****3 credits**

Prerequisite: 337; corequisite: 400. Design process. Creativity and inventiveness. Tools of decision making, engineering economics, reliability, optimization. Case studies.

**4600:461 DESIGN OF MECHANICAL SYSTEMS****2 credits**

Prerequisites: 321, 431, 460. Detailed mechanical design project and case studies.

**4600:462/562 PRESSURE VESSEL DESIGN****3 credits**

Prerequisites: 336 or 4300:202. Introduction to modern pressure vessel technology. Topics include basic structural considerations, materials and their environment and design-construction features.

**4600:463 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.

**4600:464 MECHANICAL ENGINEERING LABORATORY****1 credit**

Prerequisite: 463; corequisites: 315 and 431. Laboratory experiments in areas of dynamics, vibrations, thermodynamics, fluids, heat transfer and controls.

**4600:465 MECHANICAL ENGINEERING PROBLEMS****1-2 credits**

Prerequisite: permission. Investigation of a project by individual or small student groups. Detailed formal report required.

**4600:466 SPECIAL TOPICS****1-3 credits**

Prerequisite: permission. Brief description of current content to be announced in schedule of classes.

**4600:467 HONORS PROJECT****1-2 credits**

Prerequisite: senior standing in Honors program. Individual creative project in thermal science, mechanics or design relevant to mechanical engineering, supervised by faculty member of the department.

**4600:468 EXPERIMENTAL INVESTIGATIONS IN MECHANICAL ENGINEERING****1-2 credits**

Individual independent laboratory investigations in areas relevant to mechanical engineering. Students suggest their own projects and make appropriate arrangements with departmental faculty member for supervision.

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**Graduate Courses**
**4600:600 GAS DYNAMICS****3 credits**

Prerequisite: 411/511. Derivation of equations for multidimensional irrotational flow of a compressible fluid. Method of small perturbations. Method of characteristics. Oblique shocks. Transonic flow. One-dimensional unsteady flow.

**4600:608 THERMODYNAMICS****3 credits**

Prerequisite: 301 or permission. Extension and generalization of basic concepts of thermodynamics. Thermodynamic systems and states. Criteria for equilibrium. Third law. Statistical approaches to thermodynamics.

**4600:609 FINITE ELEMENT ANALYSIS I****3 credits**

Prerequisite: 622. Introductory development of finite element method as applied to various topics from continuum mechanics. Areas covered include plane; axisymmetric and 3-D stress analysis; conduction; fluid mechanics; transient problems and geometric and material nonlinearity.

**4600:610 DYNAMICS OF VISCOUS FLOW I****3 credits**

Prerequisites: 301, 310, or permission. Derivation and solution of equations governing laminar viscous flow. Applications include unsteady flows, slow viscous flows, parallel flows, lubrication theory and laminar boundary layers.

**4600:615 CONDUCTION HEAT TRANSFER****3 credits**

Prerequisite: 315 or permission. Study of one-, two- and three-dimensional heat conduction. Development of analytical techniques for analysis and design.



**4600:616 CONVECTION HEAT TRANSFER***3 credits*

Heat transfer from laminar and turbulent external and internal flows. Convective heat transfer at high velocities. Heat transfer to liquid metals as well as high Prandtl number fluids.

**4600:817 RADIATION HEAT TRANSFER***3 credits*

Prerequisite: 315 or permission. Study of governing radiation laws. Black and real systems, geometric factors, gray enclosures, non-gray systems, gaseous radiation, radiation equipment.

**4600:618 BOILING HEAT TRANSFER AND TWO-PHASE FLOW***3 credits*

Prerequisite: permission. Development and application of current techniques to determine heat transfer and pressure drop in components such as boilers, heat exchangers, steam generators, and other components with boiling two-phase fluid. Development of understanding of boiling mechanism, slip ratio, critical heat flux and instabilities experienced in boiling two-phase flow systems.

**4600:620 EXPERIMENTAL STRESS ANALYSIS II***2 credits*

Prerequisite: 422/522. Dynamic strain gage methods, transducer design, Moire fringe techniques and topics in photoelasticity.

**4600:621 INTRODUCTION TO TIRE MECHANICS***3 credits*

Prerequisite: permission. Topics include tire as vehicle component, tire traction and wear, laminated structures, tire stress and strains and advanced tire models.

**4600:622 CONTINUUM MECHANICS***3 credits*

Prerequisite: permission. Analysis of stress and deformation at a point. Derivation of fundamental field equations of fluid and solid mechanics by applying basic laws of dynamics, conservation of mass, energy and thermodynamics. Development of constitutive laws.

**4600:623 APPLIED STRESS ANALYSIS I***3 credits*

Prerequisite: 622. Continuation of 622 with specific application to solid mechanics. Development of energy theorems due to Reissner, Washizu and generalized Hamilton's principle. Solutions of static and dynamic problems.

**4600:625 ANALYSIS OF MECHANICAL COMPONENTS***3 credits*

Prerequisite: permission. Theories of failure. Determination of strength-static loading, fatigue, creep and stress rupture. Torsional stresses, contact stresses and thermoelastic problems.

**4600:629 NONLINEAR ENGINEERING PROBLEMS***3 credits*

Prerequisite: 622 or permission. Study of nonlinear ordinary and partial differential equations governing phenomena of mechanics. Analysis of phase-space trajectories, singularities and stability. Development of approximate analytical methods.

**4600:630 MECHANICAL VIBRATIONS II***3 credits*

Prerequisite: 431/531 or permission. Study of vibrations of multi-degree 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.

**4600:634 ENGINEERING ACOUSTICS II***3 credits*

Prerequisite: 425/525. Beam width and directivity of radiation sources, microphones and speakers. Huygen's principle and diffraction of sound waves, physiology and response criteria of human ear, Fourier analysis of steady state and transient noise.

**4600:642 SYSTEM ANALYSIS AND CONTROL DESIGN***3 credits*

Prerequisite: permission. Uniform methods of modeling and response analysis, controllability 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.

**4600:690 POLYMER PROCESSING***2 credits*

Prerequisite: permission. Study of process engineering in polymer conversion industry, emphasizing analytical treatment of heat transfer, mass flow, mixing, shaping and molding of polymeric materials.

**4600:681 DESIGN OF RUBBER COMPONENTS***2 credits*

Prerequisite: permission. Study of principles of design of elastomeric products, emphasizing analytical treatments of elastic behavior and mechanisms of failure of resilient mountings, springs, seals, bearings and tires.

**4600:697 SPECIAL TOPICS***1-4 credits*

Prerequisite: permission. For qualified candidates for graduate degree. Supervised research in student's major field of training or experience. Credit dependent upon nature and extent of project as determined by adviser and department head.

**4600:699 MASTER'S THESIS***1-4 credits*

Prerequisite: permission of adviser. Supervised research in a specific area of mechanical engineering.

**4600:704 FINITE ELEMENT ANALYSIS II***3 credits (3-0)*

Prerequisites: 609, 4300:702. Curved, plate, shell, brick elements; quasi-analytical elements. Quadrature formulas. Substructuring for static and dynamic analysis. Solution algorithms for linear and nonlinear static and dynamic analysis. Computer program formulation. Review of large-scale production programs.

**4600:705 FINITE ELEMENT ANALYSIS III***3 credits*

Prerequisites: 704, 4300:602. Static and dynamic contact problems. Tire mechanics. Fracture mechanics. Plasticity problems involving small and large deflections. Shake down analysis. General constitutive models for composite media, thermoviscoelasticity, fluid turbulence. Fluid-solid interaction analysis.

**4600:710 DYNAMICS OF VISCOUS FLOW II***3 credits*

Prerequisite: 610. Introduction to turbulence. Turbulence modeling and turbulent boundary layers. Practical methods of solution of boundary layer problems. Compressible boundary layer theory.

**4600:719 ADVANCED HEAT TRANSFER***3 credits*

Prerequisites: 615, 616. Topics include nonhomogeneous or nonlinear boundary value problems of heat conduction, heat transfer with melting, solidification and ablation, heat transfer in porous systems and hydrodynamically and thermally unsteady convection.

**4600:723 APPLIED STRESS ANALYSIS II***3 credits*

Prerequisite: 623. Continuation of 623. Development of approximate solution techniques including finite elements, method of weighted residuals (Rayleigh-Ritz, Galerkin, Trefftz, collocation, least squares, etc.) and finite differences.

**4600:726 NONLINEAR CONTINUUM MECHANICS***3 credits*

Prerequisite: 622. Finite deformation and strain, stress, constitutive equations, strain energy functions. Solution of finite deformation problems in hypoelasticity, coupled thermoviscoelasticity and plasticity, electroelasticity and micropolar theories.

**4600:730 MECHANICAL VIBRATIONS III***3 credits*

Prerequisite: 630. Continuation of 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.

**4600:731 RANDOM VIBRATIONS***3 credits*

Prerequisite: 630 or permission. Stationary random processes and their transmission through linear time-invariant discrete and continuous vibrating systems. Analysis of random data and interaction between mechanisms of failure.

**4600:741 OPTIMIZATION THEORY AND APPLICATIONS***2 credits*

Prerequisite: permission. Theory of optimization in engineering systems, development and method of solution of optimization problems for physical processes and large systems. Use of dynamic programming and operational research methods for system optimization and control.

**4600:763 ADVANCED METHODS IN ENGINEERING ANALYSIS***3 credits*

Prerequisite: permission. Applications of finite difference and finite element methods, variational methods, integral methods and similarity transforms to engineering problems in heat transfers, fluid mechanics and vibrations.

**4600:790 ADVANCED SEMINAR IN MECHANICAL ENGINEERING***1-4 credits*

(May be repeated for a total of 9 credits)

Prerequisite: permission of department head. Advanced projects and studies in various areas of mechanical engineering. Intended for students seeking Ph.D. in Engineering degree.

**4600:898 PRELIMINARY RESEARCH***1-1.5 credits*

Prerequisite: approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

**4600:899 DOCTORAL DISSERTATION***1-1.5 credits*

Prerequisite: approval of Advisory Committee. Original research by Ph.D. candidate.

May be taken more than once.

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**4980: Construction Technology****4980:351 CONSTRUCTION QUALITY CONTROL***2 credits*

Prerequisites: 2980:237 and 238 or permission. Designed for owners, contractors or consultant personnel directly concerned with quality control in construction industry.

**4980:352 FIELD MANAGEMENT***2 credits*

Prerequisites: 2980:222, 245, 133 or permission. Emphasis on planning, scheduling, and controlling of field work within time and cost constraints.

**4980:353 LEGAL ASPECTS OF CONSTRUCTION***2 credits*

Study of business of contracting and sub-contracting and legal problems therein such as breach, partial performance, payment, insolvency, subsurface. Review of AIA standard contracts and construction industry rules of arbitration.

**4980:354 FOUNDATION CONSTRUCTION METHODS***3 credits*

Prerequisite: 2980:234. Soil mechanics and soils exploration as related to construction. Foundation construction methods and practice in the interest of safety and suitable economy.

**4980:481 CONSTRUCTION FORMWORK***3 credits*

Prerequisite: 2980:234 or permission. Introduction to design and construction of field structures. Emphasis on design and construction of formwork and temporary wood structures.

**4980:482 MECHANICAL SERVICE SYSTEMS***3 credits*

Introduction to materials and equipment used in mechanical heating, ventilating, air conditioning, water and waste systems.

**4980:483 ELECTRICAL SERVICE SYSTEMS***3 credits*

Introduction to materials and equipment in electrical and acoustical systems of buildings. Includes illumination, electrical sources, materials and distribution, acoustical problems and materials.

# The College of Education

## 5100: Educational Foundations

### 5100:150 INTRODUCTION TO PROFESSIONAL EDUCATION

3 credits

Nature and purpose of education in United States. Emphasis on social, historical and philosophical foundations of public education and on roles of professional educator.

### 5100:250 HUMAN DEVELOPMENT AND LEARNING

3 credits

Prerequisite: 150. Study of principles underlying intellectual, emotional, social and physical growth and development of human organism; and of learning process with implications for instructional procedures.

### 5100:258 SMALL GROUP INSTRUCTION

1-3 credits

(May be repeated for a total of 3 credits)

Prerequisites: 250 and 3750:100 or their equivalent and permission of instructor. Study of student-centered group leadership skills for facilitating classroom cognitive learning. Students exposed to basic literature related to student-centered style, trained in appropriate observational techniques and provided practice in leading small instructional groups.

### 5100:320 LEARNING AND INDIVIDUALIZED INSTRUCTION

2 credits

Prerequisite: 250. Behavioral approach to learning and the management of students. Emphasizes design of instructional sequences using behavioral analysis of objectives in both cognitive and psychomotor domains.

### 5100:350 EDUCATIONAL MEASUREMENT AND EVALUATION

2 credits

Prerequisite: 250. Methods of measurement and evaluation applied to learning and instruction. Emphasis on development and coordination of instructional objectives and measurement techniques with instructional procedures.

### 5100:410 AUDIOVISUAL EDUCATION

2 credits

Acquaints student with audiovisual equipment and materials and their respective utilization techniques. Includes equipment operation, nonprint materials evaluation and media preparation.

### 5100:412/512 DESIGN AND PRODUCTION OF INSTRUCTIONAL MATERIALS

3 credits

Covers design, adaptation and preparation of media materials. Students produce media materials including overhead projection transparencies, audio recordings, slide sequences and opaque materials. Students are offered project choices.

### 5100:430 SENIOR HONORS PROJECT: FOUNDATIONS

1 credit

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

### 5100:450 PROBLEMS IN EDUCATION

2 credits

Prerequisites: 350 and senior status. Involves students in analytical and critical approach to problems of education as social undertaking in light of history and philosophy of education.

### 5100:490-491-492/590-591-592 WORKSHOP

1-3 credits each

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

### 5100:494/594 EDUCATIONAL INSTITUTES

1-4 credits

Special course designed as in-service upgrading programs, frequently provided with the support of national foundations.

### 5100:497 INDEPENDENT STUDY

1-3 credits

(May be repeated for a total of 6 credits)

Prerequisite: permission of department head and instructor. Specific area of study determined in accordance with student's program and professional goals.

## Graduate Courses

### 5100:600 PHILOSOPHIES OF EDUCATION

3 credits

Examination of basic philosophical problems underlying broad educational questions that confront society. Provides foundation for critical understanding of fundamental questions of modern society and education.

### 5100:602 COMPARATIVE AND INTERNATIONAL EDUCATION

3 credits

Comparative study of selected national school systems with reference to forces that shape their characteristics. Different theoretical approaches used in study of comparative education also investigated.

### 5100:604 TOPICAL SEMINAR IN THE CULTURAL FOUNDATIONS OF EDUCATION

3 credits

(May be repeated for a total of 6 credits)

Issues and subjects related to study of educational institutions, theories and/or ideas. Different topics will be offered from section to section.

### 5100:616 ADULT EDUCATION

2 credits

Survey course for teachers and administrators. Historical background including influences and their relation to developments in the field. Emphasis on background and social value of current programs.

### 5100:620 BEHAVIORAL BASES OF EDUCATION

3 credits

Prerequisite: 250 or equivalent. Introduction to scientific study of learning and development. Students required to study current theories and research in areas of learning, development, motivation and instruction.

### 5100:624 SEMINAR: EDUCATIONAL PSYCHOLOGY

3 credits

(May be repeated for a total of 6 credits)

Prerequisite: 250 or equivalent. In-depth study of research in selected areas of learning, development, evaluation and motivation.

### 5100:636 SEMINAR: EDUCATIONAL TECHNOLOGY

3 credits

Practices and trends in educational communications and technology including centers, learning stations, programmed learning, educational television and computer-assisted instruction.

### 5100:640 TECHNIQUES OF RESEARCH

3 credits

Research methods and techniques commonly used in education and behavioral sciences; preparation of research reports. Includes library, historical, survey and experimental research and data analysis.

### 5100:695 FIELD EXPERIENCE: MASTER'S

1-3 credits

Prerequisite: permission of department head and instructor. Specific area determined in accordance with student's program and professional goals.

### 5100:697 INDEPENDENT STUDY

1-3 credits

(May be repeated for a total of 6 credits)

Prerequisite: permission of department head and instructor. Specific area of study determined in accordance with student's program and professional goals.

**5100:699 RESEARCH IN EDUCATION***1-4 credits*

Prerequisite: permission of department head and instructor. In-depth study of research problem within humanistic and behavior foundation of education.

**5100:701 HISTORY OF EDUCATION IN AMERICAN SOCIETY***3 credits*

Historical development of education in American social order, with special emphasis on social, political and economic setting.

**5100:703 SEMINAR: HISTORY AND PHILOSOPHY OF HIGHER EDUCATION***3 credits*

Prerequisite: 600. History and philosophy related to genesis and development of higher education in the Western world, with special emphasis given to higher education's development in United States.

**5100:705 SEMINAR: SOCIAL-PHILOSOPHICAL FOUNDATIONS OF EDUCATION***3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: 600 or equivalent. Inquiry into selected ideological social, economic and philosophical factors affecting educational development in United States and other countries.

**5100:721 LEARNING PROCESSES***3 credits*

Study of principles underlying classroom learning processes with particular emphasis on teaching as means of modifying pupil behavior: cognitive, motor, social and affective.

**5100:723 TEACHER BEHAVIOR AND INSTRUCTION***3 credits*

Prerequisite: 600. Intensive survey of theoretical and empirical literature involving teacher and conceptions of instruction. Students report on theory, empirical research and applications in areas of their own interests.

**5100:741 STATISTICS IN EDUCATION***3 credits*

Statistical methods and techniques used in field of measurement and by research workers in education.

**5100:743 ADVANCED EDUCATIONAL STATISTICS***3 credits*

Prerequisite: 741. A second course on quantification in behavioral sciences. Includes testing of statistical hypotheses, experimental design, analysis of variance and nonvariance, factor analysis and introduction to nonparametric statistics.

**5100:796 RESEARCH PROJECT IN SPECIAL AREAS***1-3 credits*

Prerequisite: permission of department head and instructor. Critical and in-depth study of specific problem in educational foundations.

**5100:801 RESEARCH SEMINAR***3 credits*

(May be repeated for a total of 6 credits)

Prerequisites: 640 and 741; permission of department head and instructor. Intensive study of research methods applicable to education. Emphasis on developing a dissertation proposal.

**5100:897 INDEPENDENT STUDY***1-4 credits*

(May be repeated for a total of 8 credits)

Prerequisite: permission of department head and instructor. Specific area of inquiry within humanistic and behavioral foundations of education determined in advance by student and faculty adviser.

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**5200: Elementary Education****5200:100 STUDENT PARTICIPATION***1 credit*

Planned field experience emphasizing tutorial settings in reading and other curricular areas.

**5200:141 HANDICRAFTS IN THE ELEMENTARY SCHOOL***2 credits*

Prerequisite: 7100:191. Broad range of experiences through manipulation of various craft medium which enriches curriculum of elementary schools.

**5200:200 STUDENT PARTICIPATION***1 credit*

Prerequisite: 100. Planned field experience emphasizing field settings where students work with small groups in elementary school classrooms.

**5200:266 CHILDREN'S LITERATURE***3 credits*

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.

**5200:300 STUDENT PARTICIPATION***1 credit*

Prerequisite: 200. Planned field experience where students work in both small group and large group settings in elementary school environment.

**5200:310 INTRODUCTION TO EARLY CHILDHOOD EDUCATION***2 credits*

Prerequisite: 7400:265. Core course for early childhood education. Provides background information, defines roles and goals within field of early childhood education.

**5200:311 CURRICULUM FOR PRESCHOOL LEARNING CENTERS***2 credits*

Prerequisite: 310. Curricular and instructional techniques in mathematics, science, language arts, social studies and music examined with emphasis on early learning as foundation for later growth.

**5200:321 ART FOR THE GRADES***2 credits*

Prerequisite: 141. Art requirements in elementary grades; laboratory work to give teachers knowledge of materials and mediums and skills in handling them.

**5200:330 EARLY ELEMENTARY EDUCATION I***3 credits*

Prerequisite: 5100:250. First of two courses designed to introduce student specifically to primary-aged child and his learning style.

**5200:331 EARLY ELEMENTARY EDUCATION II***3 credits*

Prerequisite: 330. Concentrates on curriculum needs of primary-aged child.

**5200:333 SCIENCE FOR THE ELEMENTARY GRADES***3 credits*

Prerequisite: 5100:250. For prospective elementary school science teachers. Development of a point-of-view toward science teaching and study of methods of presenting science material.

**5200:334 TEACHING ART IN THE ELEMENTARY SCHOOL***2 credits*

Prerequisites: art education major, junior standing; elementary education majors, 141 and 321. Visual arts in elementary schools. Art education concepts with studio orientation including history of art education, developmental stages, curriculum and organization, methods, evaluation and research and practical participation.

**5200:335 TEACHING THE LANGUAGE ARTS***5 credits*

Prerequisites: 286 and 5100:250. Course for elementary teachers stressing methods and materials for skills development, and trends in various language arts.

**5200:336 TEACHING OF ELEMENTARY SCHOOL MATHEMATICS***3 credits*

Prerequisite: 5100:250. Trends in arithmetic instruction in elementary schools. Procedures for development of mathematical concepts and skills.

**5200:337 TEACHING OF READING***3 credits*

Prerequisites: 335 and 5100:250. Reading program for elementary school, together with modern methods of teaching reading at various levels.

**5200:338 THE TEACHING OF SOCIAL STUDIES***3 credits*

Prerequisite: 5100:250. Social studies in elementary school and varied means of implementing program.

**5200:339 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.

**5200:360 NURSERY SCHOOL LABORATORY***3 credits*

Prerequisite: 7400:265. Concentrated study and experience in nursery school programming under direction of supervising teachers.

**5200:365 COMPREHENSIVE MUSICIANSHIP FOR THE ELEMENTARY CLASSROOM TEACHER***4 credits*

Designed to afford prospective classroom teachers the opportunity to develop their individual musical skills in creativity, performance and listening as means of enhancing their teaching through use of music.

**5200:395 FIELD EXPERIENCE***1-3 credits*

Prerequisite: permission of adviser and department head. Independent field work in area selected by student's adviser and based on student's needs.

**5200:403 STUDENT TEACHING SEMINAR***1 credit*

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.

**5200:411/511 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 theater and choral speaking.

**5200:430 SENIORS HONORS PROJECT: ELEMENTARY***1 credit*

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

**5200:435/535 ACTIVITIES TO INDIVIDUALIZE SOCIAL STUDIES***2 credits*

Prerequisite: 338. Development of materials and activities (learning games, simulation games, simulations, learning stations, programmed field trips and map activities) to provide teacher with variety of techniques in order to develop an individualized, student-involved social studies program.

**5200:436/536 GEOMETRY AND MEASUREMENT IN ELEMENTARY SCHOOL MATHEMATICS***3 credits*

Prerequisite: 336. Trends in geometry and measurement instruction in elementary school. Procedures for development of important geometric concepts and measurement skills.

**5200:437/537 STRUCTURE OF THE NUMBER SYSTEM IN ELEMENTARY SCHOOL MATHEMATICS***3 credits*

Prerequisite: 336. Applied and advanced topics in mathematics education in elementary school. Thorough investigation of number system presently being taught in elementary school.

**5200:438/538 MATERIALS AND LABORATORY TECHNIQUES IN ELEMENTARY SCHOOL MATHEMATICS***3 credits*

Prerequisite: 336. Applied mathematics in elementary school. Construction and application of mathematical models. Procedures for development of important mathematical concepts through the laboratory approach.

**5200:439/539 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.

**5200:440/540 CONTEMPORARY ELEMENTARY SCHOOL SCIENCE PROGRAMS***2 credits*

Prerequisite: 333. Contemporary elementary science programs critically analyzed and their procedures developed and implemented in university classroom.

**5200:451 ELEMENTARY EDUCATION***3 credits*

Evaluation of recent trends and practices in elementary education. Required for those converting from other certificates.

**5200:490-491-492-493/590-591-592-593 WORKSHOPS***1-3 credits each*

Elective workshop for elementary education majors who would pursue further refinement of their teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.

**5200:494/594 EDUCATIONAL INSTITUTES***1-4 credits*

Special courses designed as in-service upgrading programs. Frequently provided with the support of national foundations.

**5200:495 STUDENT TEACHING***4-8 credits*

Prerequisite: senior standing and 300. Planned teaching experience (in elementary school) selected and supervised by Office of Educational Field Experience.

**5200:497 INDEPENDENT STUDY***1-3 credits*

Prerequisite: permission of adviser and department head. Specific area of curriculum investigation pertinent to elementary education as determined by student's academic needs.

**Graduate Courses****5200:620 LITERATURE FOR YOUNG CHILDREN***2 credits*

Literature for children ages 2-6 examined in depth in terms of value and purpose; methods and techniques for presenting it to children; variety and quality of books available.

**5200:630 ELEMENTARY SCHOOL CURRICULUM AND INSTRUCTION***2 credits*

Application of findings of recent research to curriculum building and procedures in teaching.

**5200:631 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.

**5200:640 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.

**5200:641 DIAGNOSIS AND TREATMENT OF PERFORMANCE DIFFICULTIES IN ELEMENTARY SCHOOL MATHEMATICS***2 credits*

Examination of implications of contemporary mathematics learning theory on diagnostic-remedial process.

**5200:645 EDUCATION IMPLICATIONS OF ELEMENTARY SCIENCE***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.

**5200:650 EDUCATION AND THE YOUNG CHILD***2 credits*

Content centered on educational settings of young children from birth through five years.

**5200:695-696-697 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.

**5200:698 INDEPENDENT STUDY***1-3 credits*

Prerequisite: permission of adviser and department head. Selected areas of independent investigation as determined by adviser and related to student's academic needs.

**5200:899 RESEARCH IN EDUCATION***1-4 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.

**5200:732 SUPERVISION OF INSTRUCTION IN THE ELEMENTARY SCHOOL***2 credits*

Study of supervisory role of elementary principal and other supervisory personnel.

**5200:780 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, science, social studies, early childhood, critical analysis of children's literature.

**5200:781 RESIDENCY SEMINAR***2 credits*

One-hour weekly meeting for elementary doctoral students in residence.

**5200:799 RESEARCH PROJECTS IN ELEMENTARY EDUCATION***1-2 credits*

Prerequisite: permission of adviser and department head. In-depth investigation of specific problem pertinent to elementary education.

**5200:895-896-897 FIELD EXPERIENCE FOR ELEMENTARY DOCTORAL STUDENTS***1-2 credits each*

Prerequisite: permission of adviser and department head. Designed to help students preparing to teach methods course at college level.

**5200:898 INDEPENDENT STUDY***1-3 credits**(May be repeated for a total of 6 credits)*

Prerequisite: permission of adviser and department head. Selected areas of independent investigation as determined by adviser and related to student's academic needs.

**5200:899 DISSERTATION***1-20 credits*

Prerequisite: permission of adviser and department head. Thorough study and in-depth analysis of a research problem in elementary education.

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**5250: Reading****5250:340 DEVELOPMENTAL READING IN THE CONTENT AREAS***3 credits*

Prerequisite: 5200:337 or 5300:425. Nature of reading skills relating to content subjects. Methods and materials needed to promote reading achievement in content subjects by classroom teacher.

**5250:341 LABORATORY PRACTICUM IN READING***3 credits*

Prerequisites: 340 and 5200:339. Laboratory experience with classroom, small groups and individual situations. Students diagnose, implement procedures and follow prescribed reading improvement practices.

**5250:411/511 MATERIALS AND ORGANIZATIONS FOR READING INSTRUCTION***3 credits*

Prerequisite: 5200:339. Professional problems of selection and evaluation of reading materials and classroom organizations explored.

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**Graduate Courses****5250:680 TRENDS IN READING INSTRUCTION***2 credits*

Prerequisite: 5200:335 or 5300:425. Survey course designed to update reading background of students who have not had a recent course in reading.

**5250:681 DIAGNOSIS AND CORRECTION OF READING PROBLEMS***5 credits*

Prerequisite: 680. Relation of growth to reading development and reasons for retardation. Implementation of diagnostic and corrective techniques by developing case studies in supervised setting.

**5250:682 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.

**5250:692 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 group individual study.

**5250:693 SUPERVISION AND CURRICULUM DEVELOPMENT IN READING INSTRUCTION***2 credits*

Study of reading 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.

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**5300: Secondary Education****5300:295 EXPLORATORY EXPERIENCES IN SECONDARY SCHOOLS***1-2 credits**(May be repeated for a total of 2 credits)*

Field work with secondary school pupils, teachers and other professional personnel.

**5300:296 EXPLORATORY EXPERIENCES IN SECONDARY SCHOOLS/MAINSTREAMING***1-2 credits*

Field work for special education majors.

**5300:310 PRINCIPLES OF SECONDARY EDUCATION***3 credits*

Designed to familiarize preservice teachers with nature of secondary education and act of teaching in secondary schools.

**5300:311 INSTRUCTIONAL TECHNIQUES IN SECONDARY EDUCATION***3 credits*

Prerequisite: 310. Techniques of planning, instruction and evaluation in various secondary teaching fields.

**5300:316 METHODS IN TEACHING ART***2 credits*

Prerequisite: completion of required course for art teachers and quality point ratio 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.

**5300:321 JUNIOR HIGH AND MIDDLE SCHOOL EDUCATION***2 credits*

Designed to provide students with knowledge and understanding of junior high and middle school education with ability to interpret it to other educators, parents and pupils.

**5300:330 TEACHING OF ADOLESCENT LITERATURE***3 credits*

Prerequisite: permission of adviser. Students develop skills for selection of literature that is well suited for secondary students. Students develop, use and experience methods for teaching adolescent literature in secondary schools.

**5300:374 PRINCIPLES OF SHORTHAND INSTRUCTION***2 credits*

Prerequisite: 2540:173 and quality point ratio of 2.00 in the field. Methods of presentation in shorthand and transcription. Demonstration and observations required. Theory test in the field must be passed before credit given for course.

**5300:395 FIELD EXPERIENCE***1-3 credits*

Prerequisite: upper college standing. Supervised work with youngsters, individually and in groups in school and/or community settings.

**5300:403 STUDENT TEACHING SEMINAR***1 credit*

Corequisite: 495.

**5300:425/525 READING PROGRAMS IN SECONDARY SCHOOLS***2 credits*

Relationship of reading to human development; materials, class organization and procedures for developing reading improvement programs for high school and college students.

**5300:430 SENIOR HONORS PROJECT: SECONDARY***1 credit*

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

**5300:476/576 VOCATIONAL COOPERATIVE OFFICE EDUCATION***2 credits*

Principles of program construction, organization, implementation, evaluation, improvement and development of program guides in cooperative office education.

**5300:477/577 INTENSIVE VOCATIONAL OFFICE EDUCATION***2 credits*

Principles of program construction, organization, implementation, evaluation and development of program guides.

**5300:490-491-492-493/590-591-592-593 WORKSHOP***1-3 credits each*

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

**5300:494/594 EDUCATIONAL INSTITUTES***1-4 credits*

Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

**5300:495 STUDENT TEACHING***4-8 credits*

Prerequisites: 311 or equivalent and permission of adviser; corequisite: 403. Directed teaching under supervision of directing teacher and University supervisor.

**5300:497 INDEPENDENT STUDY***1-3 credits*

Prerequisite: permission of adviser and supervisor of independent study. Area of study determined by student's needs.

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**Graduate Courses**
**5300:619 SECONDARY SCHOOL CURRICULUM AND INSTRUCTION***2 credits*

Application of findings of recent research to curriculum building and procedures in teaching.

**5300:630 ADVANCED INSTRUCTIONAL TECHNIQUES IN BOOKKEEPING — ACCOUNTING AND BASIC BUSINESS SUBJECTS***3 credits*

Intensive examination of teaching-learning strategies for improvement of instruction. Emphasis on teacher coordination of methods, pre-planned objectives, and evaluation to insure maximum student competency in subject knowledge and skill.

**5300:632 ADVANCED INSTRUCTIONAL TECHNIQUES IN TYPEWRITING AND TYPEWRITING-RELATED SUBJECTS***3 credits*

Intensive examination of teaching-learning strategies for improvement of instruction. Emphasis on teacher coordination of methods, pre-planned objectives and evaluation to insure maximum student competency in subject knowledge and skill.

**5300:695 FIELD EXPERIENCE: MASTER'S***1-6 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of adviser and supervisor of field experience. On-the-job experience related to student's program of studies.

**5300:697 INDEPENDENT STUDY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of adviser and supervisor of independent study. Area of study determined by student's needs.

**5300:699 MASTER'S PROBLEM OR THESIS***1-4 credits*

Prerequisite: permission of adviser. In-depth study of research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in secondary education.

**5300:721 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.

**5300:780 SEMINAR IN SECONDARY EDUCATION***2 credits*

(May be repeated)

Intensive examination of a particular area of secondary education.

**5300:781 RESIDENCY SEMINAR***2 credits*

One-hour weekly meeting for secondary doctoral students in residence. Two semester credits will be earned over a period of two consecutive semesters.

**5300:895 FIELD EXPERIENCE: DOCTORAL***1-6 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of adviser 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.

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**5300:897 INDEPENDENT STUDY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of adviser and director of independent study.

Area of study determined by student's needs.

**5300:898 RESEARCH PROJECT IN SPECIAL AREAS***1-2 credits*

Prerequisite: permission of adviser. Critical and in-depth study of specific problem in secondary education.

**5300:899 DISSERTATION***1-20 credits*

Prerequisite: permission of adviser. Specific research problem that requires student to apply research skills and techniques pertinent to problem being studied.

**5400:440 LIFE-SPAN AND COMMUNITY EDUCATION***2 credits*

Designed for persons engaged in providing educational services in the community. Includes examination of community education concept and roles of various personnel and agencies.

**5400:451/551 HOME ECONOMICS JOB TRAINING***2 credits*

Prerequisite: 351. Concept development in vocational home economics. Emphasis on job training, program development, operational procedures, skill and knowledge identification, training profiles, job description and analysis.

**5400:490-491-492/590-591-592 WORKSHOP***1-3 credits each*

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

**5400:494/594 EDUCATIONAL INSTITUTES***1-4 credits*

Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

**5400:495 TECHNICAL EDUCATION PRACTICUM***1-4 credits*

Prerequisites: 410, 421, 430 or equivalent and permission of adviser; corequisite: 403. Directed teaching under supervision of directing teacher and University supervisor.

**5400:497 INDEPENDENT STUDY***1-3 credits*

Prerequisite: permission of adviser and supervisor of independent study. Area of study determined by student's need.

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## 5400: 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.

**5400:351 CONSUMER HOMEMAKING METHODS***3 credits*

Organization of home economics in secondary schools. Emphasis on methodology, techniques, development of concepts, utilization of audiovisual materials and comprehensive evaluation procedures.

**5400:395 FIELD EXPERIENCE***1-3 credits*

Prerequisite: upper college standing. Supervised work with youngsters, individually and in groups in educational institutions, training and/or community settings.

**5400:403 TECHNICAL EDUCATION PRACTICUM SEMINAR***2 credits*

Corequisite: 495.

**5400:405/505 VOCATIONAL EDUCATION FOR YOUTH AND ADULTS***2 credits*

History and operation of current vocational education for youth and adults. Includes study of social, economic and political influences that stimulate growth and expansion of vocational education.

**5400:410/510 THE TWO-YEAR COLLEGE***3 credits*

Designed to introduce student to nature, purpose and philosophy of the two-year college. Includes examination of types of institutions offering two-year programs.

**5400:421/521 INSTRUCTIONAL TECHNIQUES IN TECHNICAL EDUCATION***4 credits*

Selected topics in instructional techniques appropriate to post-secondary technical education. Emphasis on instructional methods and techniques in classroom and laboratory including tests and measurements.

**5400:430/530 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.

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## Graduate Courses

**5400:810 COMMUNICATION WITH BUSINESS AND INDUSTRY***2 credits*

Techniques of establishing better communications between education and business and industry. Emphasis on the advisory committee, coordination functions and working with local professional associations in the community.

**5400:881 CURRENT ISSUES IN HIGHER EDUCATION***2 credits*

Examination of many current problems and issues in institutions of higher education; adult education, technical institutes, community colleges, proprietary schools, undergraduate, graduate and professional education.

(May be repeated with change in topic.)

**5400:890 INTERNSHIP: TEACHING VOCATIONAL EDUCATION****5400:891 INTERNSHIP: TEACHING TECHNICAL EDUCATION****5400:892 INTERNSHIP: POSTSECONDARY EDUCATION***2 credits each*

Teaching under supervision from the University and the educational institution. Includes a seminar each week.

**5400:895 FIELD EXPERIENCE: MASTER'S***1-6 credits*

Prerequisite: permission of adviser and supervisor of field experience. On-the-job experience related to student's program of studies.

**5400:897 INDEPENDENT STUDY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of adviser and supervisor of field experience. On-the-job experience related to student's program of studies.

**5400:899 MASTER'S PROBLEM OR THESIS***1-4 credits*

Prerequisite: permission of adviser. In-depth study of research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in vocational education.



## 5550: Physical Education

### 5550:101 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.

### 5550:102 FUNDAMENTALS OF BADMINTON/VOLLEYBALL

1 credits

Acquisition of performance skills, knowledge of rules and strategy and appreciation of badminton and volleyball as a means of physical activity in our culture. Two class periods per week.

### 5550:103 FUNDAMENTAL OF SOCCER/FIELD HOCKEY

1 credit

Acquisition of performance skills, knowledge of rules and strategy and appreciation of soccer and field hockey as a means of physical activity. Two class periods per week.

### 5550:104 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.

### 5550:105 RECREATIONAL ACTIVITIES

1 credit

Acquisition of skills and knowledge of rules for participation in, and organization of, common indoor and outdoor recreational activities. For physical education and outdoor education students.

### 5550:106 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.

### 5550:115 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).

### 5550:120 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.

### 5550:130 PHYSICAL EDUCATION ACTIVITIES FOR ELEMENTARY SCHOOL CHILDREN

2 credits

For physical education majors only. Participation in play activities commonly used in elementary physical education programs. One lecture and two laboratory periods per week.

### 5550:140 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.

### 5550:141 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.

### 5550:155 ORGANIZATION AND ADMINISTRATION OF RECREATION

2 credits

General administrative procedures common to recreational programs. Analysis, discussion and visitations of various types of recreational programs.

### 5550:193 METHODS OF TEACHING PHYSICAL EDUCATION

3 credits

Investigation 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.

### 5550:194 SPORTS OFFICIATING

2 credits

Knowledge of 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.

### 5550:201 KINESIOLOGY

2 credits

Prerequisites: 3100:106, 107. Application of principles of anatomy to movement of human body.

### 5550:202 PHYSIOLOGY OF EXERCISE

3 credits

Prerequisites: 3100:106, 107. Study of physiological effects of exercise relative to physical education activities and athletics. Two hours lecture, two hours laboratory.

### 5550:211 FIRST AID

2 credits

Standard American Red Cross gives instruction and practice in immediate and temporary care of injuries and sudden illnesses. In addition to standard course, C.P.R. is covered.

### 5550:235 CONCEPTS OF MOTOR DEVELOPMENT AND LEARNING

2 credits

Analysis of concepts fundamental to learning motor activities.

### 5550:245 INSTRUCTIONAL TECHNIQUES IN ELEMENTARY PHYSICAL EDUCATION

2 credits

Prerequisites: 130, 140, 193. Supervised teaching of elementary physical education activities to peers. Four class periods per week.

### 5550:246 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.

### 5550:300 PHYSIOLOGY OF EXERCISE FOR THE ADULT AND ELDERLY

2 credits

Analysis of physiological effects of exercise on elderly. Exercise programs which may be adapted for use by persons working with the elderly.

### 5550:310 THEORY AND TECHNIQUES OF SOCCER

1 credit

Theory, techniques and organizational procedures for coaching of soccer. Two class periods per week.

### 5550:311 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.

### 5550:312 THEORY AND TECHNIQUES OF BASKETBALL

1 credit

Theory, techniques and organizational procedures for coaching of basketball. Two class periods per week.

### 5550:313 THEORY AND TECHNIQUES OF BASEBALL/SOFTBALL

1 credit

Theory, techniques and organizational procedures for coaching of baseball and softball. Two class periods per week.

### 5550:314 THEORY AND TECHNIQUES OF SWIMMING

2 credits

Theory, techniques and organizational procedures for coaching of swimming. One hour lecture, two hours laboratory.

**5550:315 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.

**5550:320 THEORY AND TECHNIQUES OF VOLLEYBALL**

*1 credit*  
Theory, techniques and organizational procedures for coaching of volleyball. Two class periods per week.

**5550:325 THEORY AND TECHNIQUES OF FOOTBALL**

*1 credit*  
Theory, techniques and organizational procedures for coaching of football. Two class periods per week.

**5550:326 THEORY AND TECHNIQUES OF WRESTLING**

*1 credit*  
Theory, techniques and organizational procedures for coaching of wrestling. Two class periods per week.

**5550:334 GAMES AND RHYTHMS: ELEMENTARY GRADES**

*2 credits*  
Not open to physical education majors. Physical education activities which may be used by classroom teachers. Theory of motor development. One hour lecture, two hours laboratory.

**5550:335 MOVEMENT EXPERIENCES FOR THE ELEMENTARY GRADES**

*2 credits*  
Analysis, theory and practical application of basic movement experiences for elementary school children. One hour lecture, two hours laboratory.

**5550:336 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.

**5550:340 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 postinjury support.

**5550:345 ADAPTED PHYSICAL EDUCATION**

*2 credits*  
Prerequisites: 3100:106, 107. Current theories and practices relating to needs of physically handicapped children; emphasis given to underlying philosophy, purposes and administration.

**5550:350 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, curricular patterns and equipment and supplies.

**5550:351 ORGANIZATION AND ADMINISTRATION OF INTRAMURALS AND ATHLETICS**

*3 credits*  
Organizational patterns unique to conduct of intramurals, sport clubs and interscholastic athletics. Includes considerations of tournament designs, supplies and equipment and administration. Two hours lecture, two hours laboratory.

**5550:395 FIELD EXPERIENCE**

*1-3 credits*  
Prerequisite: permission of adviser. Practical experience in an area related to physical education under supervision of faculty member. Student works with current physical education programs in schools.

**5550:403 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.

**5550:430 SENIOR HONORS PROJECT: PHYSICAL EDUCATION**

*1 credit*  
(May be repeated for a total of 6 credits)  
Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

**5550:436/536 ADAPTED PHYSICAL EDUCATION TASKS FOR THE LEARNING DISABLED CHILD**

*2 credits*  
Teaching methods and materials necessary to structure developmental tasks for learning disabled child; designed for persons preparing to teach elementary school physical education and special education.

**5550:490-491-492-493/590-591-592-593 WORKSHOP**

*1-3 credits each*  
Practical, intensive and concentrated involvement with current curricular practices in areas related to physical education.

**5550:494/594 EDUCATIONAL INSTITUTIONS AND FOUNDATIONS**

*1-4 credits*  
Practical experience with current research or curricular practices involving expert resource persons in physical education, and usually financed by private or public funding.

**5550:495 STUDENT TEACHING**

*4-8 credits*  
Prerequisites: senior status, all major courses completed, 2.50 grade point average in major. Supervised teaching experience in a public school for fifteen weeks.

**5550:497 INDEPENDENT STUDY**

*1-2 credits*  
Prerequisite: permission of adviser. Analysis of specific topic related to a current problem in physical education. May include investigative procedures, research or concentrated practical experience.

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**Graduate Courses**
**5550:601 ADMINISTRATION OF HEALTH, PHYSICAL EDUCATION ATHLETICS AND RECREATION**

*3 credits*  
Techniques of organization, administration and evaluation of health, physical education and recreation programs. Administrative policies of athletic programs at elementary, secondary and collegiate levels.

**5550:603 CURRICULUM PLANNING IN HEALTH AND PHYSICAL EDUCATION**

*2 credits*  
Analysis of objectives, procedures and trends in health and physical education curricula and principles and procedures for developing sound programs.

**5550:605 PHYSIOLOGY OF MUSCULAR ACTIVITY AND EXERCISE**

*2 credits*  
Study of functions of body systems and physiological effects of exercise. Laboratory experiences accompany lectures and discussions.

**5550:606 MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION**

*3 credits*  
Critical analysis of existing testing procedures and discussion and study of measurement and evaluation in terms of program needs.

**5550:608 SUPERVISION OF PHYSICAL EDUCATION**

*2 credits*  
Principles involved in supervision of physical education service programs. Procedures and techniques of supervision of service classes at elementary, junior high and senior high school levels.

**5550:695 FIELD EXPERIENCE: MASTER'S**

*1-6 credits*  
Prerequisite: permission of adviser. Participation in a work experience related to physical education. The experience may not be part of current position. Documentation of project required.

**5550:697 INDEPENDENT STUDY**

1-3 credits

Prerequisite: permission of adviser. In-depth analysis of current practices or problems related to physical education. Documentation of the study required.

**5550:699 RESEARCH IN EDUCATION**

1-3 credits

Prerequisite: permission of adviser. In-depth research investigation. Student must be able to demonstrate necessary competencies to deal with a research problem in physical education.

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## 5560: Outdoor Education

**5560:430 SENIOR HONORS PROJECT: OUTDOOR EDUCATION**

1 credit

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

**5560:450/550 APPLICATION OF OUTDOOR EDUCATION TO THE SCHOOL CURRICULUM**

4 credits

Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.

**5560:452/552 METHODS, MATERIALS AND RESOURCES FOR TEACHING OUTDOOR EDUCATION**

3 credits

Methodologies unique to outdoor education which incorporate a multi-sensory approach to learning. Instructional materials and resources which permit expansion of curriculum beyond the school building.

**5560:454 RESIDENT OUTDOOR EDUCATION**

2 credits

Emphasizes skills, program considerations and organizational techniques unique to an extended, overnight, resident outdoor education program. On location for at least five days and four nights.

**5560:460 OUTDOOR EDUCATION PRACTICUM**

2 credits

Prerequisites: 452 and 454. Closely supervised practical experience in conjunction with regularly scheduled classroom meetings. Laboratory experience consists of active participation with an established outdoor education program.

**5560:497 INDEPENDENT STUDY**

1-3 credits

Prerequisite: permission of adviser and supervisor of independent study. Provides varied opportunities for students to gain first-hand knowledge and experience with existing outdoor education programs.

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## Graduate Course

**5560:695 PRACTICUM IN OUTDOOR EDUCATION**

3 credits

Prerequisites: 550 and 552 and permission of adviser. Supervised practical experience with existing outdoor education programs. In conjunction with practical work student meets regularly with a university adviser.

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## 5570: Health Education

**5570:101 PERSONAL HEALTH**

2 credits

Application of current scientific principles and facts pertaining to healthful, effective living. Personal health problems and needs of students.

**5570:320 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.

**5570:321 ORGANIZATION AND ADMINISTRATION OF SCHOOL HEALTH**

2 credits

Organization of school health program, with special reference to national, state and local control. Staff, program, budget, health and safety, facilities and other phases of administration.

**5570:322 METHODS AND MATERIALS IN TEACHING HEALTH EDUCATION**

3 credits

Planning and organizing subject matter for elementary and secondary school health instruction. Development of teaching techniques, utilization of instructional media, and evaluation procedures in health education.

**5570:430 SENIOR HONORS PROJECT: HEALTH EDUCATION**

1 credit

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

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## 5600: Educational Guidance and Counseling

**5600:410 PERSONNEL SERVICES IN SCHOOLS**

2 credits

Prerequisite: senior standing. Introduction to background, role and function, techniques, community agencies and issues in personnel field. Helpful for students considering pupil personnel fields or social work.

**5600:426/526 CAREER EDUCATION**

2 credits

Prerequisite: junior, senior or graduate standing. Examination of current career education models and programs with emphasis on infusion of career education activities into elementary and secondary curriculum

**5600:490-491-492/590-591-592 WORKSHOP**

1-3 credits each

Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

**5600:493/593 WORKSHOP**

1-4 credits

Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

**5600:494/594 COUNSELING INSTITUTE**

1-4 credits

In-service programs to meet needs of counselors and other helping professionals.

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## Graduate Courses

**5600:600 SEMINAR IN COUNSELING***1 credit*

Prerequisite: Counseling majors must elect 600 prior to electing 651 and/or within the first ten credits of 5600 coursework. Structured group experience designed to help students assess their selection of counseling as a profession.

**5600:602 INTRODUCTION TO COUNSELING***2 credits*

Understanding guidance and counseling principles including organization, operation and evaluation of guidance programs (designed for non-counseling majors).

**5600:631 ELEMENTARY SCHOOL GUIDANCE***3 credits*

Introductory course which examines guidance and counseling practices.

**5600:633 SECONDARY SCHOOL GUIDANCE***3 credits*

Introductory course which examines guidance and counseling practices.

**5600:635 COMMUNITY AND COLLEGE COUNSELING***3 credits*

Overview of community and college counseling services; their evaluation, philosophy, organization and administration.

**5600:643 COUNSELING: THEORY AND PHILOSOPHY***3 credits*

Examination of major counseling systems including client-centered, behavioral and existential theories. Philosophical and theoretical dimensions stressed.

**5600:645 GROUP TESTING IN COUNSELING***3 credits*

Study of evaluation and measurement procedures in counseling including instrument development, selection and use of aptitude tests, inventories and rating scales.

**5600:647 CAREER COUNSELING: THEORY AND PRACTICE***3 credits*

Prerequisite: 631 or 633 or 635 or permission. Study of career development, career decision making, career options and career counseling program development.

**5600:649 COUNSELING AND PERSONNEL SERVICES IN HIGHER EDUCATION***2 credits*

Prerequisite: 635 or permission of instructor. Study of counseling services as related to psychological needs and problems of college students.

**5600:651 TECHNIQUES OF COUNSELING***3 credits*

Prerequisite: 643 or permission. Study and practice of selected counseling techniques and skills with emphasis on structuring, listening, leading and establishing a counseling relationship.

**5600:653 GROUP COUNSELING***3 credits*

Prerequisite: 651. Provides knowledge, understanding and skills necessary for conducting group counseling sessions.

**5600:655 FAMILY COUNSELING***3 credits*

Prerequisite: 653 or permission. Understanding of principles related to family counseling and development of related skills.

**5600:657 CONSULTANT: COUNSELING***3 credits*

Prerequisite: 631, 651 or permission. Examination of consultation models with focus on process and product.

**5600:659 ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES***3 credits*

Prerequisite: 631 or 633 or permission. Development of a comprehensive articulated guidance and counseling program.

**5600:661 SEMINAR: ELEMENTARY SCHOOL COUNSELING***2 credits*

Prerequisites: 645, 647, 653 and 657. Examination of primary models for understanding and modifying children's behavior in classroom including technique development and review of guidance materials and programs.

**5600:663 SEMINAR: SECONDARY SCHOOL COUNSELING***2 credits*

Prerequisites: 633, 643, 645 and 647. Study of specific guidance techniques and materials useful to counselors working with secondary school students, teachers and parents.

**5600:665 SEMINAR: COMMUNITY AND COLLEGE COUNSELING***3 credits*

Prerequisite: 635 or permission. Study of topics of concern to students specializing in community and college counseling. Topics may differ each semester according to students' needs.

**5600:671 COUNSELING CLINIC***1-3 credits*

Prerequisite: permission. Closely supervised application and integration of diagnostic, counseling and consultant skills in clinical setting.

**5600:675 PRACTICUM IN COUNSELING***4 credits*

Prerequisite: 653. Supervised counseling experience with individuals and small groups.

**5600:695 FIELD EXPERIENCE: MASTER'S***1-10 credits*

Prerequisite: permission of adviser and department head. Placement in selected setting for purpose of acquiring experiences and/or demonstrating skills related to student's counseling program.

**5600:697 INDEPENDENT STUDY***1-3 credits*

(May be repeated for a total of 9 credits)

Prerequisite: permission of adviser and department head. Specific area of investigation determined in accordance with student needs.

**5600:699 COUNSELING: THESIS OR PROBLEM***1-3 credits*

Prerequisite: permission of adviser and department head. In-depth study and analysis of counseling problem.

**5600:702 ADVANCED COUNSELING PRACTICUM***3 credits*

(May be repeated for a total of 9 credits)

Prerequisite: doctoral residency or permission. Examination of theories of individual and group counseling along with supervised counseling experience in selected settings.

**5600:703 ADVANCED SEMINAR IN COUNSELING***3 credits*

Prerequisite: doctoral residency or permission. Examination of major issues in the field such as the counselor as a professional and as a person, and issues, problems and trends in counseling.

**5600:704 RESEARCH DESIGN IN COUNSELING I***3 credits*

Prerequisite: doctoral residency or permission. Study of research designs, evaluation procedures and review of current research in counseling.

**5600:705 RESEARCH DESIGN IN COUNSELING II***3 credits*

Prerequisite: 704. Computer analysis of data related to counseling problem. Development of research proposal.

**5600:706-707 INTERNSHIP IN COUNSELING SUPERVISION I, II***3 credits each*

Prerequisite: doctoral residency or permission. Instruction and experience in supervising graduate students in counseling.

**5600:895 FIELD EXPERIENCE: DOCTORAL**

1-6 credits

Prerequisite: doctoral candidate status. Placement in selected setting for purpose of acquiring experiences and/or developing skills related to student's doctoral program.  
May be repeated.

**5600:897 INDEPENDENT STUDY**

1-3 credits

(May be repeated for a total of 9 credits)

Prerequisite: permission of adviser and department head. Specific area of investigation determined in accordance with student needs.

**5600:898 RESEARCH PROJECTS IN SPECIAL AREAS**

1-2 credits

Prerequisite: permission of adviser and department head. Study, analysis and reporting of counseling problem.  
May be repeated.

**5600:899 DISSERTATION**

1-20 credits

Prerequisite: permission of major doctoral adviser and department head. Study, design and analysis of counseling problem.

**5610:441/541 DEVELOPMENTAL CHARACTERISTICS OF MENTALLY RETARDED INDIVIDUALS**

4 credits

Prerequisite: 440/540. Study of etiology, diagnosis, classification and developmental characteristics of educable mentally retarded, trainable mentally retarded and profoundly retarded individuals.

**5610:443/543 DEVELOPMENTAL CHARACTERISTICS OF LEARNING DISABLED INDIVIDUALS**

3 credits

Prerequisite: 440/540. Survey of etiology, diagnosis, classification and developmental characteristics of learning disabled individuals.

**5610:444/544 DEVELOPMENTAL CHARACTERISTICS OF INTELLECTUALLY GIFTED INDIVIDUALS**

3 credits

Prerequisite: 440/540. Survey of etiology, diagnosis, classification and developmental characteristics of intellectually gifted individuals.

**5610:445/545 DEVELOPMENTAL CHARACTERISTICS OF ORTHOPEDICALLY HANDICAPPED INDIVIDUALS**

3 credits

Prerequisite: 441/541. Survey of etiology, diagnosis, classification and developmental characteristics of orthopedically handicapped individuals.

**5610:446/546 DEVELOPMENTAL CHARACTERISTICS OF BEHAVIORALLY DISORDERED INDIVIDUALS**

3 credits

Prerequisite: 443/543. Survey of etiology, diagnosis, classification and developmental characteristics of socially and emotionally maladjusted individuals.

**5610:450/550 EDUCATIONAL ADJUSTMENT FOR PRESCHOOL AND PRIMARY LEVEL EXCEPTIONAL INDIVIDUALS**

3 credits

Prerequisites: Plans A and B: 441/541 and 443/543; Plan C: 443/543 and 445/545; certification minors: 443/543 and characteristic course in certification focus area. Study of diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of preschool and primary level exceptional children.

**5610:451/551 EDUCATIONAL ADJUSTMENT FOR INTERMEDIATE LEVEL EXCEPTIONAL CHILDREN**

3 credits

Prerequisite: 450/550 except for secondary certification minors. Study of diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of intermediate level exceptional children.

**5610:452/552 EDUCATIONAL ADJUSTMENT FOR SECONDARY LEVEL EXCEPTIONAL CHILDREN**

3 credits

Prerequisite: 451/551. Study of diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of secondary level exceptional children.

**5610:453/553 RECREATIONAL PROGRAMS FOR EXCEPTIONAL INDIVIDUALS**

1 credit

Study experience which examines crafts and outdoor recreational programming for exceptional individuals in a field setting.

**5610:454/554 EDUCATIONAL ADJUSTMENT FOR MODERATE, SEVERE AND PROFOUND MENTALLY RETARDED INDIVIDUALS**

3 credits

Prerequisite: 441/541. Study of programs, services, and training techniques designed to accommodate developmental patterns of moderate, severe and profound mentally retarded individuals.

**5610:455/555 EDUCATIONAL ADJUSTMENT FOR INTELLECTUALLY GIFTED INDIVIDUALS**

3 credits

Prerequisite: 444/544. Study of programs, services and educational experiences designed to accommodate developmental patterns of intellectually gifted individuals.

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## 5610: Special Education

**5610:201 STUDENT PARTICIPATION: EDUCABLE MENTALLY RETARDED/LEARNING DISABILITIES**

1 credit

Prerequisite: sophomore standing and permission. Systematic observation and participation in classes for educable mentally retarded and learning disabled children for ½ semester each. This experience is prerequisite to student teaching in each area.

**5610:202 STUDENT PARTICIPATION: EDUCABLE MENTALLY RETARDED/ORTHOPEDICALLY HANDICAPPED**

1 credit

Prerequisite: sophomore standing and permission. Systematic observation and participation in classes for educable mentally retarded and orthopedically handicapped children for ½ semester each. This experience is prerequisite to student teaching in each area.

**5610:203 STUDENT PARTICIPATION: EDUCABLE MENTALLY RETARDED/TRAINABLE MENTALLY RETARDED**

1 credit

Prerequisite: sophomore standing and permission. Systematic observation and participation in classes for educable mentally retarded and trainable mentally retarded children for ½ semester each. This experience is prerequisite to student teaching in each area.

**5610:395 FIELD EXPERIENCE: SPECIAL EDUCATION**

1-3 credits

Prerequisite: upper college standing. Supervised work with youngsters, individually and in groups in school and/or community settings.

**5610:403 STUDENT TEACHING SEMINAR: SPECIAL EDUCATION**

1 credit

Corequisite: 495. Seminar in support of the student teaching experience.

**5610:430 SENIOR HONORS PROJECT: SPECIAL EDUCATION**

1 credit

(May be repeated for a total of 6 credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

**5610:440/540 DEVELOPMENTAL CHARACTERISTICS OF EXCEPTIONAL INDIVIDUALS**

3 credits

Prerequisites: 3750:100 and 5100:250. Survey of etiology, diagnosis, classification and developmental characteristics of atypical individuals.

**5610:456/556 CLASSROOM BEHAVIOR MANAGEMENT FOR EXCEPTIONAL INDIVIDUALS***2 credits*

Prerequisite: 451/551 or equivalent. Review and development of behavior management principles and application models for exceptional individuals.

**5610:457/557 CLINICAL TEACHING PRACTICUM: CHILDREN WITH LEARNING PROBLEMS***3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: 450/550 or 451/551 or 452/552. Supervised clinical teaching experience with individuals or small groups of problem learners. Designed to familiarize and give practice in diagnostic and remedial teaching techniques and pupil personnel resources.

**5610:459/559 SEMINAR: INVITATIONAL STUDIES IN SPECIAL EDUCATION***1-2 credits*

(May be repeated for a total of 4 credits)

Topical study with a varied array of disciplinary input. Staffing will be invited members of allied and contributing professions active in management of exceptional children.

**5610:490-491-492-493/590-591-592-593 WORKSHOP***1-3 credits each*

(May be repeated for a total of 4 credits)

Designed to explore special topics in in-service or preservice education on a needs basis.

**5610:494/594 EDUCATION INSTITUTES: SPECIAL EDUCATION***1-4 credits*

Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

**5610:495 STUDENT TEACHING***4-8 credits*

Corequisite: 403. Student teaching with educable mentally retarded, learning disabled, orthopedically handicapped, or speech handicapped children under supervision of the directing therapist and University supervisor.

**5610:497 INDEPENDENT STUDY: SPECIAL EDUCATION***1-3 credits*

Prerequisite: permission of adviser and supervisor of the independent study. Specific area of investigation determined in accordance with student's needs.

**5610:603 ASSESSMENT AND EDUCATIONAL PROGRAMMING***3 credits*

Prerequisite: certification in an area of special education or permission of instructor. Overviews psychodiagnostic approach in assessment of handicapped individuals and examines methods for designing individual programming based on formal and informal assessment. Program management also examined.

**5610:604 EDUCATION AND MANAGEMENT STRATEGIES FOR PARENTS OF EXCEPTIONAL INDIVIDUALS***3 credits*

Prerequisite: certification in an area of special education and/or permission of instructor. Methods of working with parents to facilitate effective programs for handicapped individuals. Strategies for providing support and educational services for parents examined.

**5610:605 PROGRAM DEVELOPMENT AND SERVICE DELIVERY SYSTEMS***3 credits*

Prerequisite: certification in an area of special education and/or permission of instructor. Provides strategies for community analysis, case findings, funding sources and practices, and development of program models and service delivery systems to serve handicapped individuals.

**5610:695 FIELD EXPERIENCE: MASTER'S***1-4 credits*

(May be repeated for a total of 8 credits)

Designed to provide on-the-job experience in a special education program on an individual basis.

**5610:697 INDEPENDENT STUDY***1-3 credits*

(May be repeated for a total of 9 credits)

Prerequisite: permission of adviser and supervisor of the independent study. Specific area of investigation determined in accordance with student's needs.

**5610:699 SPECIAL EDUCATION: PROBLEM OR THESIS***1-3 credits*

Thorough study and analysis in depth of an educational problem; field projects in special areas; synthesis of existing knowledge in relationship to a specific topic.

**5610:796 RESEARCH PROJECT IN SPECIAL EDUCATION***1-3 credits*

Study, analysis and reporting of special education problem.

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**Graduate Courses****5610:800 SEMINAR: SPECIAL EDUCATION***3 credits*

Prerequisite: 12 credits of graduate study in special education. Critical examination of practices and pertinent research in special education. Legislation and court decisions affecting special education programs in Ohio and nation examined.

**5610:801 SEMINAR: SPECIAL EDUCATION CURRICULUM PLANNING***3 credits*

Prerequisite: certification in an area of special education. Study of curriculum planning practices unique to special education classes and services. Appropriate curriculum objectives for selected areas of instruction as well as effective organizational programs examined.

**5610:802 SUPERVISION OF INSTRUCTION***3 credits*

Prerequisite: certification in an area of special education. Study of administration and supervisory practices unique to special education classes and services.

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**5620: School Psychology****5620:490/590 WORKSHOP***1-2 credits*

Prerequisite: permission of instructor. Opportune topical experience provided periodically as needed and/or resources become available.

**5620:491-492/591-592 WORKSHOP***1-3 credits each*

Prerequisite: permission of instructor. Opportune topical experience provided periodically as needed and/or resources become available.

**5620:494/594 SCHOOL PSYCHOLOGY INSTITUTES***1-4 credits*

Prerequisite: permission of instructor. Specifically designed learning experience for program graduate focusing on critical topics in school psychology.

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## Graduate Courses

### 5620:600 SEMINAR: ROLE AND FUNCTION OF THE SCHOOL PSYCHOLOGIST

3 credits

Prerequisite: permission of instructor. Seminar on role and function of school psychologist. The course, tailored to meet individual needs of trainees, is a consideration of professional standards of school psychology practice.

### 5620:801 COGNITIVE FUNCTION MODELS FOR PRESCRIPTIVE EDUCATIONAL PLANNING

3 credits

Prerequisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.

### 5620:810 EDUCATIONAL DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS

4 credits

Prerequisite: permission of instructor. Clinical study and application of current assessment approaches applicable in assessment of children's learning problems.

### 5620:811 PRACTICUM IN SCHOOL PSYCHOLOGY

4 credits

Prerequisite: permission of instructor. Laboratory experience in psycho-educational study of individual children who have learning problems in school.

### 5620:630-631 INTERNSHIP IN SCHOOL PSYCHOLOGY: FALL/SPRING

3 credits each

Prerequisite: permission of instructor. Full-time paid work assignment under supervision of a qualified school psychologist for an academic year structured according to provisions of State Department of Education. Additional readings required.

### 5620:640 FIELD SEMINAR I: ISSUES AND ASSESSMENTS (FALL)

### 5620:641 FIELD SEMINAR II: CLASSROOM ENVIRONMENT (SPRING)

2 credits each

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.

### 5620:695 FIELD EXPERIENCE: MASTER'S

1-3 credits

Prerequisite: permission of instructor. Practical school psychology-related experience in school setting.

### 5620:696 FIELD EXPERIENCE: MASTER'S

1-3 credits

Prerequisite: permission of instructor. Practical school psychology-related experience in appropriate setting other than a school.

### 5620:697 INDEPENDENT STUDY

1-4 credits

Prerequisite: permission of adviser and supervisor of the independent study. Documentation of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.

### 5620:698 RESEARCH PROJECT IN SPECIAL AREAS

1-3 credits

Prerequisite: permission of adviser. Study, analysis and reporting of school psychology problem.

### 5620:699 SCHOOL PSYCHOLOGY: PROBLEM OR THESIS

1-3 credits

Prerequisite: permission of instructor. Thorough study, analysis and reporting in depth of an educational problem; field projects in special areas; synthesis of existing knowledge in relationship to specific topic.

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## 5630: Inner-City Education

### 5630:481/581 MULTICULTURAL EDUCATION IN UNITED STATES

3 credits

Inquiry into multicultural dimensions of American education. Comparisons of urban, suburban and rural educational settings with reference to socioeconomic differences.

### 5630:482/582 CHARACTERISTICS OF CULTURALLY DIFFERENT YOUTH

3 credits

Study of characteristics of culturally different youth with focus on youth in low-income areas. Emphasis on cultural, social, economic and educational considerations and their implications.

### 5630:483/583 PREPARATION FOR TEACHING CULTURALLY DIFFERENT YOUTH

3 credits

Designed to help prepare trainees to teach culturally different youth from low-income backgrounds. Through use of multimedia source materials trainees gain knowledge of background and culture of culturally different learners, determine role of teacher, explore techniques of discipline and classroom management, survey motivational and instructional techniques and examine, prepare and adapt variety of instructional materials for individual, small group and large group instruction.

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## Graduate Course

### 5630:686 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 visitations to agencies serving low-income families required.

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## 5700: School Administration

### 5700:490-491-492-493/590-591-592-593 WORKSHOP

1-3 credits each

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

### 5700:494/594 EDUCATIONAL INSTITUTES

1-4 credits

Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

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## Graduate Courses

### 5700:601 PRINCIPLES OF EDUCATIONAL ADMINISTRATION

3 credits

Theories and practices in administering schools and school systems, with emphasis on administrative process, common problems, career opportunities, getting the first job.

### 5700:604 SCHOOL AND COMMUNITY RELATIONS

2 credits

Basics in maintaining cooperative relationships between educational institutions and their supporting publics. Examination and analysis of institutional environments and impact of mass news media on public support.

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**5700:605 DECISION-MAKING THEORY AND PRACTICE IN EDUCATIONAL ADMINISTRATION***3 credits*

Theories underlying process of decision making in philosophy, sociology, economics and politics of education. Alternative decisions and their respective consequences. Fundamentals of PPBS and other decision-making aids.

**5700:606 EVALUATION OF EDUCATIONAL INSTITUTIONS***3 credits*

Theories and practices involved in processes of delineating, obtaining and providing information for decision making introduced and explicated.

**5700:607 LEGAL BASIS OF EDUCATION***2 credits*

Legal principles underlying education in U.S. as reflected in statutory provisions, court decisions and administrative orders presented. Ohio school statutes covered in depth.

**5700:608 PRINCIPLES OF SCHOOL FINANCE***2 credits*

Study of financial operations of school systems including tax and other income, expenditures and budgeting.

**5700:610 PRINCIPLES OF EDUCATIONAL SUPERVISION***3 credits*

Study of principles, organizations and techniques of supervision with view to improvement of instruction.

**5700:611 SUPERVISION OF STUDENT TEACHING***2 credits*

Primarily for supervising teachers in guidance of student teachers. Topics include readiness for student teaching, directing teacher and college supervisor relationships, use of the conference, demonstration and observation.

**5700:620 SECONDARY SCHOOL ADMINISTRATION***3 credits*

Prerequisite: 601. Designed to help students gain knowledge and develop skills needed to successfully deal with problems, procedures of organization and administration of secondary school.

**5700:631 ELEMENTARY SCHOOL ADMINISTRATION***2 credits*

Prerequisite: 601. Problems, procedures and principles of organization, administration and supervision in elementary schools.

**5700:695 FIELD EXPERIENCE FOR SUPERVISORS***2 credits*

Prerequisite: completion of all coursework except research problem. Designed to help students test and develop understandings and skills in supervision. Students participate in selected task areas which reflect supervisory responsibilities.

**5700:696 FIELD EXPERIENCE FOR THE SECONDARY SCHOOL ADMINISTRATOR***3 credits*

Prerequisite: completion or present enrollment in all coursework for the master's degree for the Secondary School Principal. Designed to provide students with on-the-job experience in secondary school administration.

**5700:697 FIELD EXPERIENCE FOR THE ELEMENTARY ADMINISTRATOR***1-2 credits*

(May be repeated for a total of 2 credits)

On-the-job experience in a public school system working with administrators and/or supervisors.

**5700:698 INDEPENDENT STUDY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of adviser and supervisor of the independent study. Area of study determined by student's needs.

**5700:699 MASTER'S PROBLEMS OR THESIS***1-4 credits*

Prerequisite: permission of adviser. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in educational administration.

**5700:701 SCHOOL BUILDING AND CONSTRUCTION***2 credits*

Theories and practices involved in planning school facilities discussed. Includes field explorations of exemplary school buildings.

**5700:702 SCHOOL BUSINESS ADMINISTRATION***2 credits*

Study of school business administration as part of total administrative pattern, and as creative planning process designed to facilitate instruction.

**5700:703 ADMINISTRATION OF STAFF PERSONNEL***2 credits*

Guidelines, techniques and procedures for helping administrator become democratic leader. Duties and responsibilities of staff as participants in administrative activity.

**5700:704 ADMINISTRATIVE ORGANIZATIONS IN EDUCATION***2 credits*

Study of organizations, strengths and weaknesses of bureaucratic model in administering them. Practical means by which weaknesses of bureaucracies are offset or lessened in educational institutions.

**5700:710 PRINCIPLES OF CURRICULUM DEVELOPMENT***3 credits*

Overview of instructional programs of a school in terms of basic purposes, functions and structures necessary to study and interpret these instructional programs.

**5700:715 EDUCATIONAL ORGANIZATIONAL INFORMATION PROCESSING***2 credits*

Designed primarily for graduate education students majoring in administration. Includes concepts of modern systems and their educational applications.

**5700:730 SEMINAR IN SCHOOL ADMINISTRATION***3 credits*

Prerequisite: 601. Focus on recent research in administration and educational administration theory.

**5700:731 SEMINAR: PROBLEMS OF THE SCHOOL ADMINISTRATOR***2 credits*

Current administrative problems in educational institutions as perceived by students and practicing school executives. Emphasis on problem management, amelioration or solution. Field visits, or resource persons invited to classroom.

**5700:732 ORGANIZATIONAL COMMUNICATIONS AND THE SCHOOL ADMINISTRATOR***3 credits*

Fundamentals in interpersonal communications. Application of these principles to roles of educational administrators. Skill development in written and spoken communications, with attention to nonverbal communications; simulation and role-playing.

**5700:733 THE EDUCATIONAL ADMINISTRATOR AND 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.

**5700:740 THEORIES OF EDUCATIONAL SUPERVISION***3 credits*

Prerequisites: 610, 5200:732 or 5300:721. Explanation and examination of various theories of supervision; sample models which implement existing theories.



**5700:745 PRACTICUM IN EDUCATIONAL ADMINISTRATION:  
URBAN SETTING***2 credits*

Prerequisite: completion of three-fourths of doctoral program courses. Analysis of uniquenesses of urban setting, e.g., multicultural and pluralistic urban populations. Stress on administrator's human relation skills.

**5700:748 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.

**5700:747 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.

**5700:795-796 INTERNSHIP IN EDUCATIONAL ADMINISTRATION***2 credits each*

(May be repeated for a total of 6 credits)

Work under a practicing administrator involving experience in optimum number of administrative tasks. Includes seminars and written work.

**5700:797 FIELD EXPERIENCE FOR THE ELEMENTARY  
ADMINISTRATOR***2 credits*

Entails supervised, on-the-job, administration experience in administrative task areas of staff personnel, pupil personnel, curriculum, community relations, finance and physical facilities.

**5700:895 FIELD EXPERIENCE FOR THE SUPERINTENDENT***2 credits*

Prerequisite: permission of instructor. Cooperative, field-based experience in central office of a school district in which student performs assignments in administrative task areas.

**5700:898 FIELD EXPERIENCE IN SCHOOL PLANT PLANNING***2 credits*

Prerequisite: permission of instructor. Selected field experiences in science of planning school plants. Emphasis on analysis of school enrollments, evaluation of school plants and financial aspects of plant planning.

**5700:897 INDEPENDENT STUDY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of adviser. 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.

**5700:898 RESEARCH PROJECT IN SPECIAL AREAS***1-2 credits*

Prerequisite: permission of adviser. Critical and in-depth study of specific problem in educational administration.

**5700:899 DISSERTATION***1-20 credits*

Prerequisite: permission of adviser. Specific research problem that requires student to apply research skills and techniques to the problem being studied.

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## 5800: Special Educational Programs

**5800:490/590 WORKSHOP IN ECONOMIC EDUCATION OR IN  
SOCIAL STUDIES***1-3 credits*

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

**5800:491/591 WORKSHOP IN ARITHMETIC OR IN PHYSICAL  
SCIENCE***1-3 credits*

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

**5800:492/592 WORKSHOP IN READING***1-3 credits*

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

**5800:493/593 WORKSHOP ON EXCEPTIONAL CHILDREN***1-3 credits*

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

**5800:494/594 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.

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## 5850: Educational Technology

**5850:100 INTRODUCTION: PUPIL PERSONNEL WORK***2 credits*

Purposes, needs, scope and character of pupil personnel services explored.

**5850:201 INFORMATIONAL SERVICES IN GUIDANCE AND  
SPECIAL EDUCATION***2 credits*

Emphasis on organization and status of informational services as related to activities of educational technologist.

**5850:204 HUMAN RELATIONS IN EDUCATION***3 credits*

Study of individual and group relationships in educational setting including development of basic interpersonal skills.

**5850:207 MECHANICS OF STUDENT APPRAISAL***3 credits*

Introduction to group appraisal with major emphasis on assisting certified personnel in group test administration, scoring, organizing and recording test results.

**5850:213 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.

**5850:280 SPECIAL EDUCATION TECHNOLOGY***2 credits*

Survey of selected procedures and materials employed in classrooms especially designed and operated for exceptional children.

**5850:295 EDUCATION TECHNICIAN FIELD EXPERIENCE***5 credits*

Supervised field experience in school setting designed for educational technician enrollees only. May be repeated once.

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# The College of Business Administration

## 6200: Accounting

### 6200:201 ACCOUNTING I

4 credits

Introduction to accounting, the language of business. Emphasis on basic principles, concepts and terminology of accounting for assets, liabilities and proprietorship.

### 6200:202 ACCOUNTING II

4 credits

Prerequisite: 201. Study of accounting informational needs of management. Emphasis on planning and control, including financial statement analysis, funds flow, budgets, cost-volume-profit analysis and decision-making costs.

### 6200:301 COST ACCOUNTING

3 credits

Prerequisites: 3250:202, and grades of not less than C- in 6200:201 and 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.

### 6200:317 INTERMEDIATE ACCOUNTING I

4 credits

Prerequisites: grades of not less than C- in 201 and 202. Accounting theory and problems of statement preparation; in-depth study of cash, temporary investments, receivables, inventories, tangible fixed assets, intangibles and current liabilities.

### 6200:318 INTERMEDIATE ACCOUNTING II

4 credits

Prerequisite: 317. In-depth study of long-term liabilities and investments, capital stock, retained earnings, accounting changes, funds statement, pensions, leases, statement analysis and price level accounting.

### 6200:355 ELECTRONIC DATA PROCESSING

3 credits

Prerequisite: 202. Introduction to automatic data processing systems in an accounting and management environment. Fundamentals of computer programming presented to student for execution of basic programs.

### 6200:360 BUDGETING

3 credits

Prerequisite: 301. Study of principles and policies of budgeting. Emphasis on managerial control of expenses, capital expenditures and related activities.

### 6200:401 ACCOUNTING SURVEY

3 credits

Prerequisite: permission of instructor. Introductory course for students with no previous accounting background. Essential accounting concepts, techniques and terminology for business organizations.

### 6200:402 ADVANCED COST ACCOUNTING

3 credits

Prerequisite: 301. In-depth study of use of standard cost procedures, job-order costing procedures and advanced problems in area of cost accounting.

### 6200:410 TAXATION FOR THE NONACCOUNTANT

3 credits

Designed to provide nonaccountant basic knowledge of federal tax law as applied to individuals and businesses. Not open to accounting majors.

### 6200:420/520 ADVANCED ACCOUNTING

3 credits

Prerequisite: 318. Examination of accounting theory emphasizing accounting for business combinations, partnerships, foreign operations, nonprofit entities, and consolidated statements.

### 6200:425 CURRENT DEVELOPMENTS IN ACCOUNTING

3 credits

Prerequisite: 318. Official pronouncements of Accounting Principles Board, Financial Accounting Standards Board and Securities and Exchange Commission, and other current developments in accounting theory. Essential for CPA preparation.

### 6200:430/530 TAXATION I

3 credits

Prerequisite: 318. Application of current federal tax law to individuals and proprietorships. Types of income, deductions, and structure of tax return covered.

### 6200:431/531 TAXATION II

3 credits

Prerequisite: 430/530. Application of current federal tax law to partnerships, corporations, trusts, estates and gifts. Social security taxes and Ohio income, sales and personal property taxes discussed.

### 6200:440/540 AUDITING

3 credits

Prerequisites: 301 and 318. Examines auditing standards and procedures used by independent auditor in determining whether a firm has fairly represented its financial position.

### 6200:454 ACCOUNTING SYSTEMS

3 credits

Prerequisites: 301, 355, and permission of instructor. Focus on development of accounting methods and procedures, installation and improvement of accounting systems, and evaluation of automated data processing systems.

### 6200:460 CONTROLLERSHIP PROBLEMS

3 credits

Prerequisites: 301, 318. Examination of quantitative accounting methods of planning, control and decision making. Standard costing, variable costing and contribution approach to decision making emphasized.

### 6200:470/570 GOVERNMENTAL AND INSTITUTIONAL ACCOUNTING

3 credits

Prerequisite: 318. Theory and procedures involved in application of fund accounting, budgetary control, appropriations and various accounting systems to governmental units, educational, medical and other nonprofit institutions.

### 6200:480/580 ACCOUNTING PROBLEMS

3 credits

Prerequisite: 318. Independent research on advanced accounting problem in student's specific area of interest.

### 6200:485 CPA PROBLEMS: COMMERCIAL LAW

2 credits

Prerequisite: permission of instructor. Deals with those general principles of commercial law which appear on CPA examination.

### 6200:486 CPA PROBLEMS: ACCOUNTING PRACTICE

3 credits

Prerequisite: permission of instructor. Study of methods for solving various types of problems which appear on accounting practice section of CPA examination.

### 6200:487 CPA PROBLEMS: TAXATION

1 credit

Prerequisite: permission of instructor. Application of current developments in federal income tax law to CPA examination.

### 6200:488/588 CPA PROBLEMS: AUDITING

2 credits

Prerequisite: 440/540 or permission of instructor. Preparation for auditing section of CPA examination, focusing on auditing principles, standards and ethics and situations encountered by independent auditor.

**6200:469/589 CPA PROBLEMS: THEORY***2 credits*

Prerequisite: permission of instructor. Preparation for theory section of CPA examination, focusing on current developments and use of basic accounting theory to solve advanced accounting problems.

**6200:491/591 WORKSHOP IN ACCOUNTING***1-3 credits*

Prerequisite: permission of instructor. Group study of accounting under faculty guidance. May not be used to meet undergraduate or graduate accounting major requirements, but may be used for elective credit only with permission of instructor or department. May be repeated.

**6200:495 INTERNSHIP IN ACCOUNTING***3 credits*

Prerequisite: permission of instructor. On-the-job training for student in field of public, industrial or nonprofit accounting. Individual assignments made by supervising faculty member.

**6200:497 HONORS PROJECT***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: senior standing in Honors Program. Individual Seniors Honors Thesis or creative project relevant to accounting approved and supervised by member of the department faculty.

**6200:499 INDEPENDENT STUDY IN ACCOUNTING***3 credits*

Prerequisite: permission.

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**Graduate Courses**
**6200:801 FINANCIAL ACCOUNTING***3 credits*

Introductory course for students with no accounting background. Examines accounting principles as applied to financial problems of firm.

**6200:810 ACCOUNTING MANAGEMENT AND CONTROL***3 credits*

Prerequisite: 801 or equivalent. Investigation of role of accounting as management tool in areas of production, marketing, internal control and capital budgeting with focus on management planning.

**6200:830 TAX RESEARCH AND PLANNING***3 credits*

Prerequisite: 431 or equivalent. Designed to develop research competence in solving complex tax problems involving federal income, estate trust and gift tax laws.

**6200:831 CORPORATE TAXATION I***3 credits*

Prerequisite: 431. Detailed examination of tax problems of corporations and their shareholders. Formation, distribution, redemption, liquidation and penalty taxes covered.

**6200:832 TAXATION OF TRANSACTIONS IN PROPERTY***3 credits*

Prerequisite: 431. Explores federal tax implications of gains and losses derived from sales, exchanges and other dispositions of property.

**6200:833 ESTATE AND GIFT TAXATION***2 credits*

Prerequisite: 431. Analyzes provisions of federal estate and gift tax laws and tax consequences of testamentary and lifetime transfers.

**6200:837 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 stressed.

**6200:840 ADVANCED AUDITING***3 credits*

Prerequisite: 440/540. Conceptual foundations and current research on professional and internal auditing. Includes government regulation and litigation, statistics, computer systems as well as current and prospective developments in auditing.

**6200:841 TAXATION OF PARTNERSHIPS AND SUBCHAPTER S CORPORATIONS***3 credits*

Prerequisite: 431. Examines intensively provisions of subchapters K and S of Internal Revenue Code and uses of partnerships and subchapter S corporations for tax planning.

**6200:842 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.

**6200:843 TAX ACCOUNTING***2 credits*

Prerequisite: 431. Attention focused on timing of income and expenses for individuals and businesses and its relation to tax planning.

**6200:844 INCOME TAXATION OF TRUSTS AND ESTATES***2 credits*

Prerequisite: 633. Analysis of income taxation of trusts and estates and their creators, fiduciaries and beneficiaries.

**6200:845 ADVANCED INDIVIDUAL TAXATION***3 credits*

Prerequisite: 430. In-depth study of some of the more involved areas of individual income taxation.

**6200:846 CONSOLIDATED TAX RETURNS***2 credits*

Prerequisite: 431. Intensive study of tax provisions concerning use of consolidated tax returns.

**6200:847 DEFERRED COMPENSATION***2 credits*

Prerequisite: 431. Nature, purpose and operation of various forms of deferred compensation examined with much emphasis on pension and profit-sharing plans.

**6200:848 TAX PRACTICE AND PROCEDURE***2 credits*

Prerequisite: 431. In-depth study of administration and procedures of Internal Revenue Service and responsibilities of tax practitioner.

**6200:849 STATE AND LOCAL TAXATION***2 credits*

Prerequisite: 631. Examines common types of taxes imposed by state and local governments and includes taxation of multistate businesses.

**6200:850 ESTATE PLANNING***2 credits*

Prerequisite: 633. Considers entire process of planning the estate with due regard for disposition of property, tax minimization, liquidity requirements and administrative costs.

**6200:851 UNITED STATES TAXATION AND TRANSNATIONAL OPERATIONS***2 credits*

Prerequisite: 431. Examines United States taxation of foreign income of domestic corporations, citizens and residents, as well as United States income of nonresident aliens and foreign corporations.

**6200:852 TAX-EXEMPT ORGANIZATIONS***2 credits*

Prerequisite: 431. Analysis of tax aspect of tax-exempt organizations, including nature of and limitations of its exemption.

**6200:853 BUSINESS PLANNING***2 credits*

Prerequisite: 631. Uses cases depicting complex problems to permit students to integrate their knowledge of taxation.

**6200:854 INDIVIDUAL STUDIES***1-3 credits*

Prerequisite: permission of instructor. Intensive study of particular topic or limited number of topics not otherwise offered in curriculum.

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**6200:655 INFORMATION SYSTEMS***3 credits*

Prerequisites: 355 and 610. Advanced study of accounting information system theory, elements, principles, design and implementation. Practical data processing and networks to control flow of information discussed.

**6200:670 COST CONCEPTS AND CONTROL***3 credits*

Prerequisite: 610. Focus on analysis and control of costs and their uses in decision making. Determination of cost data and efficiency of decision emphasized.

**6200:680 INTERNATIONAL ACCOUNTING***3 credits*

Prerequisite: 610. Examination of accounting theory and practice from international perspective with emphasis on multinational investment, business and auditing activities and reporting problems.

**6200:697 INDEPENDENT STUDY IN ACCOUNTING***1-3 credits*

(May be repeated for a total of 3 credits)

Focus on special topics of study and research in accounting on an independent basis.

**6200:699 SEMINAR IN ACCOUNTING***3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Program of independent research in account area of student's choice, requiring submission of a finished report within a year.

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**6400: Finance****6400:314 CREDITS AND COLLECTIONS***2 credits*

Nature and fundamentals of credit investigation and analysis, credit extension, collection operations, collection aids and problems.

**6400:316 RISK MANAGEMENT AND INSURANCE***2 credits*

Concept of risk and risk management and principles of insurance are developed in business. Life and health insurance related to employee benefit programs.

**6400:320 THE LEGAL ENVIRONMENT OF BUSINESS***4 credits*

Designed to give student an understanding of legal reasoning and analysis. Discussions include court and procedures, business organizations, commercial transactions and legal aspects of government regulation of business.

**6400:321 BUSINESS LAW I***3 credits*

Discussions designed to develop legal reasoning within substantive areas of contractual obligation, agency relationships, partnerships, corporations, accountant's legal responsibility, federal securities regulation and antitrust law.

**6400:322 BUSINESS LAW II***3 credits*

Applications of Uniform Commercial Code in sales, commercial paper and secured transactions. Additional discussions include property, wills, estates, trusts, bailments, insurance, suretyship, bankruptcy and labor law.

**6400:336 FINANCIAL INTERMEDIARIES***3 credits*

Studies the flows of funds. Analyzes major financial intermediaries. Money and capital markets reviewed with emphasis on interest rates and their impact upon administration of specific financial intermediaries.

**6400:343 INVESTMENTS***3 credits*

Prerequisite: 371. Range of security investment media explored, alternative investment programs considered and role of securities markets through which goals can be achieved studied.

**6400:371 BUSINESS FINANCE***3 credits*

Prerequisites: 6200:201 and 202 (or 401) and 3250:201 and 202. Study of problems of business firm from financial manager's viewpoint. Topics include planning, sources and uses of funds, capital budgeting and optimum financial structure.

**6400:400 INVESTING IN REAL ESTATE***3 credits*

Prerequisite: 371. Study in environment and variables of associated decision-making process, its background, the specialists on decision making, with emphasis on purchase and financing decisions.

**6400:410 PERSONAL FINANCIAL MANAGEMENT***3 credits*

Reviews and analyzes the many personal financing decisions made by individuals. Areas of study include money management, credit acquisition, insurance program development, investment analysis and pension evaluation.

**6400:425 BUSINESS AND SOCIETY***3 credits*

Prerequisite: senior standing. Conceptual course considers financial, economic, legal and sociopolitical implications of business in society. Issues related to economic and legal framework for business decisions discussed.

**6400:436 COMMERCIAL BANK MANAGEMENT***3 credits*

Prerequisite: 338. Study of administrative policy determination and decision making within the commercial bank. Analyses of policymaking in areas of liquidity, loan and security investment and sources of funds.

**6400:447 SECURITY ANALYSIS***3 credits*

Prerequisite: 343. Application of quantitative and qualitative techniques of analysis to limited income and equity securities. Timing changes in portfolio composition.

**6400:479 PROBLEMS IN FINANCE***3 credits*

Prerequisites: 371 and senior standing. Case method utilized, emphasizing application of analytical techniques from texts and journal readings to solution of complex problems in financial management.

**6400:491/591 WORKSHOP IN FINANCE***1-3 credits*

Group studies of special topics in Department of Finance. 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.

**6400:497 HONORS PROJECT***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: senior standing in Honors Program. Individual Senior Honors Thesis or creative project relevant to finance approved and supervised by member of the department faculty.

**6400:499 INDEPENDENT STUDY: FINANCE***1-3 credits*

Prerequisite: permission of department head. Provides means for individualized in-depth study of finance problem or problems from which student can derive significant benefit.

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**Graduate Courses****6400:802 MANAGERIAL FINANCE***3 credits*

Prerequisites: 6200:201 and 202 (or 601) and 3250:201 and 202 (or 600). Emphasis on financial decision making related to goal of firm; specifically, the investment decision, the financing decision and the dividend decision.

**6400:633 MANAGEMENT OF FINANCIAL INSTITUTIONS**

3 credits

Prerequisite: 674. Study of administration of financial institutions in U.S. economy. Focal point of study is policy determination and administrative decision making in individual financial institutions.

**6400:645 INVESTMENT ANALYSIS**

3 credits

Prerequisite: 674. Workings and nature of equity markets; development of ability to analyze operational capability of industrial firms and make rational portfolio selections leading to long-term capital preservation and appreciation.

**6400:650 ADMINISTERING COSTS AND PRICES**

3 credits

Prerequisite: 3250:600 or equivalent. Provides an understanding of managerial economics. Short- and long-run decisions of firm analyzed. Analysis includes impact of costs and prices on business profitability.

**6400:655 GOVERNMENT AND BUSINESS**

3 credits

Public policy with regard to business, institutions and issues in U.S. considered from economic, legal and political frameworks.

**6400:665 COMPARATIVE INDUSTRIAL RATIONALE**

3 credits

Analytic approach to proper allocation of resources. Consideration given to industrial structure and evaluation made of relationship between structure and total economy. Various economic and political systems considered.

**6400:674 FINANCIAL MANAGEMENT AND POLICY**

3 credits

Prerequisite: 602 or equivalent. Working capital management, controlling inventory investments, administering costs and funds, managing investment in plant and equipment, administering business income and forecasting for financial management.

**6400:676 MANAGEMENT OF FINANCIAL STRUCTURE**

3 credits

Prerequisite: 674. Emphasizes determination of volume and composition of sources of funds. Primary attention directed to cost of capital for specific sources of financing.

**6400:676 CAPITAL BUDGETING**

3 credits

Prerequisite: 674. Attempt to integrate various theories of capital budgeting into comprehensive conceptual scheme. Theoretical concepts and practical applications blended for better understanding of capital problems.

**6400:681 INTERNATIONAL BUSINESS FINANCE**

3 credits

Prerequisite: 602 or equivalent. Financial policies and practices of companies involved in multinational operations. Considers management of working capital and permanent assets, return on investment and capital budgeting for the global firm.

**6400:697 INDEPENDENT STUDY IN FINANCE**

1-3 credits

(May be repeated for a total of 3 credits)

Focus on special topics of study and research in finance on an independent basis.

**6400:699 SEMINAR IN FINANCE**

3 credits

(May be repeated for a total of 6 credits)

Prerequisites: 674 and a total of 18 Phase II-III graduate credits. Individual research projects.

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## 6500: Management

**6500:301 MANAGEMENT: PRINCIPLES AND CONCEPTS**

3 credits

Prerequisite: two courses in behavioral science. Introductory study of behavioral and quantitative theory, principles and practice in management of human resources; extended illustrations drawn from management of operations systems. Prerequisite to all other management courses except 321, 322, 323 and 407.

**6500:302 INTRODUCTION TO ORGANIZATIONAL BEHAVIOR**

3 credits

Prerequisite: two courses in psychology or sociology. Investigation of applications of behavioral and social sciences as they relate to individual and group behavior in organizations.

**6500:321 QUANTITATIVE BUSINESS ANALYSIS I**

3 credits

Prerequisite: math modules. Statistical analysis of business data including coverage of probability theory, probability distributions, sampling, estimation, hypothesis testing and analysis of variance.

**6500:322 QUANTITATIVE BUSINESS ANALYSIS II**

3 credits

Prerequisite: 321. Statistical analysis of business data including regression and correlation, time series, index numbers, distribution free statistics, Bayesian decision making. Includes applications using cases in functional areas of business.

**6500:323 COMPUTER APPLICATIONS FOR BUSINESS**

3 credits

Prerequisite: Fortran IV programming or its equivalent recommended. Emphasis on use of batch and realtime processing in solving computer-oriented business problems. Includes flowcharting, hardware, and Plotall, Fortran, APL and GPSS programming languages.

**6500:331 PRODUCTION AND SYSTEMS MANAGEMENT**

3 credits

Prerequisites: 301 and 321. Basic course for management majors. Terminal course in production for other students. Emphasis on design and analysis of operating systems, utilizing scientific decision-making methodology. Case exercises and project.

**6500:332 PRODUCTION AND OPERATIONS MANAGEMENT**

3 credits

Prerequisites: 323, 321, 331, 301. Continuation of 331. Introduces use of models for production scheduling, materials management, quality control, distribution and project management. Includes linear programming, PERT and simulation. Cases, exercises, problems and computer analysis.

**6500:341 PERSONNEL MANAGEMENT**

3 credits

Prerequisite: two courses in psychology or sociology. Principles, policies and practices in administering functions of recruiting, selecting, training, compensating and appraising human resources of organizations.

**6500:342 PERSONNEL 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.

**6500:407 INDEPENDENT STUDY IN SMALL BUSINESS MANAGEMENT**

3 credits

Prerequisite: senior standing. Focuses on problems of organizing and operating a small business. This is done through case studies and field experiences.

**6500:408/501 MANAGEMENT PROBLEMS**

3 credits

Prerequisite: senior standing. Student applies modern management principles, practices and theory to an actual problem in industry.

**6500:409 BUSINESS POLICY**

4 credits

Prerequisite: senior standing and all other business core program courses. Designed to enable student to understand informal organization; philosophy of modern management; evaluation of objectives of management; policy requirements of business and use of various management tools in operating the business firm.

**6500:433 BUSINESS OPERATIONAL PLANNING**

3 credits

Prerequisites: 322, 332. Application of quantitative techniques for planning overall operations of firm. Emphasis given to external-internal factors, which influence short- and long-run economic success of firm.

**6500:434 PRODUCTION PLANNING AND CONTROL***3 credits*

Prerequisites: 323, 322, 332. Forecasting, materials management, production planning, scheduling and control. Integrates previous courses and provides overall framework including use of computers and quantitative methods. Cases and a project in an operating organization.

**6500:435 QUALITY CONTROL***3 credits*

Prerequisites: 321, 322. Emphasis on statistical techniques essential to controlling product quality for both measurement and attribute data. Includes control chart methods and acceptance sampling plans.

**6500:443 ADVANCED PERSONNEL MANAGEMENT***3 credits*

Prerequisite: 341. Advanced study of current issues and problems in field of personnel. Emphasis given to current literature and research. Activities may include projects, library research, case studies.

**6500:491 WORKSHOP IN MANAGEMENT***1-2 credits*

Group studies of special topics in management. May not be used to meet undergraduate major requirements in management. May be used for elective credits only. May be repeated with permission of instructor or department.

**6500:497 HONORS PROJECT***1-3 credits*

(May be repeated for a total of 6 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.

**6500:499 INDEPENDENT STUDY: MANAGEMENT***1-3 credits*

Prerequisite: senior standing and permission of department head. Provides a means for individualized study in management from which student can derive significant value.

**6500:655 BUSINESS STRATEGY AND POLICY FORMULATION***3 credits*

Prerequisite: to be scheduled during last semester of individual's MBA program. Focus on integration of theoretical and practical knowledge acquired in core discipline courses. Student required to analyze and evaluate organizational strategy and policy from administrative viewpoint.

**6500:656 MANAGEMENT OF INTERNATIONAL OPERATIONS***3 credits*

Prerequisite: 652 or equivalent. Deals with institutional environment of international business; parameters of international business system which hold the system together and which individual businessman cannot materially alter.

**6500:657 THE LEADERSHIP ROLE IN ORGANIZATIONS***3 credits*

Prerequisite: 652. Analysis and development of leadership theory and thought. Identification of leaders in both formal and informal organizations. Training and development methods for leaders evaluated. Individual and small group field study assignments.

**6500:662 QUANTITATIVE METHODS — OPERATIONS MANAGEMENT***3 credits*

Prerequisite: 601 or equivalent. Survey of basic techniques of operations research. Stresses application to functional areas of business with particular emphasis given to production and planning aspects.

**6500:663 APPLIED INDUSTRIAL STATISTICS I***3 credits*

Prerequisite: 601 or equivalent. Designs for survey sampling and estimation. Simple linear regression analysis, including inferences, aptness of the model and joint confidence intervals.

**6500:664 APPLIED INDUSTRIAL STATISTICS II***3 credits*

Prerequisite: 663. Applications of multiple regression including determining "best" set of independent variables, correlation models, analysis of variance models including multifactor models. Experimental designs including randomized block and Latin square designs.

**6500:671 ADVANCED OPERATIONS RESEARCH***3 credits*

Prerequisite: 601 or equivalent. Designed to present in more depth and breadth certain topics surveyed in 662, with emphasis on application of these techniques to student's own business situations.

**6500:672 MANUFACTURING AND OPERATIONS ANALYSIS***3 credits*

Prerequisite: 601 or equivalent. Provides an applications forum where skills gained in other manufacturing — quantitative areas of curriculum can be empirically utilized and applied.

**6500:669 SEMINAR IN HEALTH CARE SYSTEMS MANAGEMENT***3 credits*

Prerequisite: 600 or equivalent or permission of instructor. In-depth study of nonprofit health care organizations and health care delivery system. Examination of organizational structure and management differences between nonprofit health care organizations and traditional business organizations. Study of providers (patient care-third party payers), and role of governmental programs. Major research paper required.

**6500:690 SELECTED TOPICS IN MANAGEMENT***3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: 652. Selected topics in historical and/or contemporary management issues, and/or operational and functional areas of management.

**6500:697 INDEPENDENT STUDY IN MANAGEMENT***1-2 credits*

(May be repeated for a total of 2 credits)

Focus on special topics of study and research in management on an independent basis.

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**Graduate Courses****6500:800 MANAGEMENT CONCEPTS***3 credits*

Quantitative, behavioral, systems approach to introduce management process, emphasizing production function. Designed for students who have not previously had courses in business.

**6500:801 QUANTITATIVE DECISION MAKING***3 credits*

Prerequisite: finite math. Applies quantitative techniques to business decision making. Topics covered include probability estimation and hypothesis testing, simple and multiple regression and correlation analysis, analysis of variance and nonparametric statistics.

**6500:852 ORGANIZATIONAL BEHAVIOR***3 credits*

Prerequisite: 600 or equivalent. Study of factors which influence human behavior in business organizations. Emphasis on theories of individual and group behavior, motivation, leadership and communication in organizations.

**6500:853 ORGANIZATIONAL THEORY***3 credits*

Prerequisite: 652. Leadership styles explored in organized institutional setting; influence of these styles on individual and group behavior; organizational goal attainment. Analysis of leader's role in administrative process.

**6500:854 INDUSTRIAL RELATIONS***3 credits*

Prerequisite: 600. Study of rights and duties of management in dealing with labor and economic consequences of union and management policies and practices.

**6500:699 GRADUATE SEMINAR IN MANAGEMENT***3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: total of 18 Phase II-III graduate credits. For master's degree candidates in management. Independent study and reading. Leads to finished paper which should be completed within one year from time of enrollment of course.

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## 6600: Marketing

**6600:300 MARKETING PRINCIPLES***3 credits*

Prerequisites: 3250:201-202 or permission. Broad course integrating commodity, institutional, functional and managerial concepts of marketing process to provide student with total framework of economic activity.

**6600:320 PHYSICAL DISTRIBUTION***3 credits*

Prerequisite: 300. Basic course in source, movement and storage of goods, including emphasis on economics of transportation and requirements of an effective system.

**6600:330 INTERNATIONAL MARKETING***3 credits*

Prerequisite: 300. Students concentrate on principles of international trade, balances, and import and export distribution machinery. Pinpoints characteristics and potentials of various foreign markets.

**6600:340 MERCHANDISING***3 credits*

Prerequisite: 300. Presents principles of management resulting in service to consumers at profit to retailer. Store location, staffing, planning and control, buying, pricing and promotion explored.

**6600:350 ADVERTISING***3 credits*

Prerequisite: 300. Basic principles of marketing communication system developed, with emphasis on media selection and feedback requirements. Roles of research and trade requirements stressed.

**6600:360 INDUSTRIAL MARKETING***3 credits*

Prerequisite: 300. Following principles of modern marketing management, this focuses on development of local, regional and national markets. Particular emphasis on problems of industrial goods manufacturers.

**6600:370 PURCHASING***3 credits*

Prerequisite: 3250:202. Covers process and activities associated with cost effective buying and internal management of all materials and equipment needed by manufacturer to produce product or provide a service.

**6600:430 PROMOTIONAL STRATEGIES***3 credits*

Prerequisite: 340 or 350. Examination at length and in depth of a variety of the advertising-public relations-personal selling mix to marketing problems.

**6600:460/560 MARKETING RESEARCH***3 credits*

Prerequisites: 300, 6500:321. Through lectures, cases and team projects, students are taught to detect and evaluate actionable forces in the marketplace. Emphasis on investigation appropriate to economics of situation.

**6600:470/570 SALES ADMINISTRATION***3 credits*

Prerequisite: 350 or 360. Advanced consideration of firm's marketing mix as applied and adjusted to marketing objectives and policies and their implementation and control.

**6600:480/580 MARKETING CASES AND PROBLEMS***3 credits*

Prerequisite: 470 or equivalent. Detailed case analysis of corporate marketing problems, most of which involve all of the marketing inputs and allied internal and external forces and resources.

**6600:490 WORKSHOP IN MARKETING***1-3 credits*

Group studies in special topics in marketing. May not be used to meet undergraduate or graduate major requirements in marketing. May be used for elective credit only with permission of instructor or department.

**6600:497 HONORS PROJECT***1-3 credits*

(May be repeated for a total of 6 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.

**6600:499 INDEPENDENT STUDY: MARKETING***1-3 credits*

Prerequisite: permission of instructor. Provides a means for individualized in-depth study of marketing problem or problems from which student can derive significant benefit.

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## Graduate Courses

**6600:600 MANAGERIAL MARKETING***3 credits*

Assessment of basic marketing principles involved in business and industry. Required of all nonbusiness undergraduates; may not be selected for Phase III credit.

**6600:629 THE INTERNATIONAL BUSINESS ENTERPRISE***3 credits*

Prerequisite: 3250:600 or equivalent. Provides comprehensive overview of international business emphasizing interactions between multinational environmental setting and firm's decision-making process. Students assigned specific research topics.

**6600:630 INTERNATIONAL MARKETING POLICIES***3 credits*

Prerequisite: 600. Within a planning framework, explores some problems in formulating and implementing multinational marketing strategies emphasizing the resolution of conflict. Students assigned specific research papers.

**6600:660 MARKETING MANAGEMENT AND POLICY***3 credits*

Prerequisite: 600 or equivalent. Basic survey stresses company functions in relation to demand and consumer factors, and cost of operational elements that determine profitable operation. Corporate viewpoint emphasized.

**6600:670 MARKETING PLANNING***3 credits*

Prerequisite: 660. In the context of a dynamic domestic marketing environment, students develop extensive marketing plans, both short- and long-run, for a wide variety of businesses, services and institutions.

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**6600:680 MARKETING THEORY**

*3 credits*

Prerequisite: 660. Designed to apply those theoretical works from areas of economics, psychology, sociology and cultural anthropology which have relevance to a general theory of marketing.

**6600:690 SEMINAR IN INTERNATIONAL BUSINESS**

*3 credits*

Prerequisites: 629 and a total of 18 Phase II-III graduate credits. Permits MBA candidate to independently analyze a significant international business problem culminating in a major paper.

**6600:697 INDEPENDENT STUDY IN MARKETING**

*1-3 credits*

(May be repeated for a total of 3 credits)

Focus on special topics of study and research in marketing on an independent basis.

**6600:699 SEMINAR IN MARKETING**

*3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: a total of 18 Phase II-III graduate credits. Capstone course permits MBA candidate to undertake a carefully delineated program of independent study and reading which leads to a finished major paper.



# The College of Fine and Applied Arts

## 7100: Art

### 7100:100 SURVEY OF HISTORY OF ART I

4 credits

Architecture, sculpture, painting and minor arts from Primitive sources through Gothic time period in Europe.

### 7100:101 SURVEY OF HISTORY OF ART II

4 credits

Prerequisite: 100. Architecture, sculpture, painting and minor arts from Renaissance through 1960s, primarily in Western art. Development of photography and its application as art form integrated into artistic styles of 20th century.

### 7100:105 UNDERSTANDING ART

3 credits

Study of uses different societies have found for art and how social and technological levels of the society have affected the kind of art they make.

### 7100:121 THREE-DIMENSIONAL DESIGN

3 credits

Introduction to meaning of "design" and act of designing in real space. Study of naturally occurring form, structure and process.

### 7100:131 DRAWING I

3 credits

Freehand drawing experience with an orientation to elements and principles of visual organization. Limited media.

### 7100:144 TWO-DIMENSIONAL DESIGN

3 credits

Experimentation with systems for purposeful organization of visual elements on a two-dimensional surface. Study of visual theory including color theory. Lecture and studio experience.

### 7100:191 DESIGN

2 credits

Basic principles of creative design and color theory. Discussion and studio. No credit toward major or teaching field in art.

### 7100:213 LITHOGRAPHY

3 credits

Prerequisites: 101, 131, 144 and 231. Use of lithographic stone and metal plate as printmaking media. Stone and plate preparation, lithographic drawing materials and techniques, paper registration and printing press covered. Emphasis on aesthetic theory, technique and related history.

### 7100:214 SERIGRAPHY

3 credits

Prerequisites: 101, 131, 144 and 231. Silk screen printmaking. Theory and use of stencil process, positive and negative block-out techniques, photo stencil, registration and printing procedures. Emphasis on aesthetic theory, technique and related history.

### 7100:215 RELIEF PRINTING

3 credits

Prerequisites: 101, 131, 144 and 231. Relief printmaking using found objects, synthetic materials, as well as traditional woodcut and linoleum engraving. Emphasis on aesthetic theory, technique and related history.

### 7100:216 INTAGLIO PRINTING

3 credits

Prerequisites: 101, 131, 144 and 231. Intaglio printmaking using dry-point engraving, aquatint and soft-ground techniques. Emphasis on aesthetic theory, technique and related history.

### 7100:222 INTRODUCTION TO SCULPTURE

3 credits

Prerequisites: 100 and 121. Introduction to sculpture and its significance as a human endeavor. Exploration of factors influencing a sculptural statement through lecture and studio work.

### 7100:231 DRAWING II

3 credits

Prerequisites: 100 and 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.

### 7100:232 INSTRUMENT DRAWING

3 credits

Creative uses of mechanical drawing processes for visually descriptive purposes. Proficiency in use of mechanical drawing instruments stressed. Both practical and theoretical drawing styles undertaken.

### 7100:233 LIFE DRAWING

2 credits

Prerequisite: 131. Study of perceptual problems in drawing from the life model. Study of skeletal, muscular and mechanical nature of human figure and application of this knowledge to the resolution of aesthetic problems.

### 7100:245 POLYMER ACRYLIC PAINTING

3 credits

Prerequisites: 100, 131 and 144. Study of technical and aesthetic problems involved in polymer acrylic painting. Student pursues, through lecture and experimentation, transparent and opaque uses of this water-based paint.

### 7100:246 WATERCOLOR PAINTING

3 credits

Prerequisites: 100, 131 and 144. Studio course in theory and technique of watercolor painting. Study of traditional transparent watercolor methods, and experimentation with less conventional approaches to aqueous media.

### 7100:247 OIL PAINTING

3 credits

Prerequisites: 100, 131 and 144. Study of technical and aesthetic problems involved in oil painting. A painterly orientation toward plasticity of form as mediated by color.

### 7100:254 CERAMICS I

3 credits

Prerequisites: 100, 121 and 131. Studio/lecture course exploring potentials of hand-building techniques in both sculptural and functional forms. Clay processing, glaze application and practical kiln firing.

### 7100:266 METALSMITHING I

3 credits

Prerequisites: 101, 121, 131 and 144. Studio experience in which student is introduced to properties of metals, processes of silversmithing and design and production of jewelry.

### 7100:268 ENAMELING ON METAL

3 credits

Prerequisite: 266. Studio course in which student investigates inherent aesthetic qualities of color and texture resulting when molten, colored glass is applied to metal surfaces.

### 7100:275 PHOTOGRAPHY I

3 credits

Prerequisites: 100, 131 and (either 144 or 284 or 2240:245). Lecture, studio and laboratory course in which student studies and experiences fundamental characteristics of photosensitive materials, chemistry of photography, optical systems and photographic equipment. Photography studied as an art medium.

### 7100:283 DRAWING TECHNIQUES

3 credits

Prerequisites: 131 and 232. Includes advanced drawing and presentation techniques commonly used in graphic design. Various presentation and design problems will be encountered stressing use of selected drawing methods and processes.

**7100:284 INTRODUCTION TO GRAPHIC DESIGN***3 credits*

Prerequisites: 131 and 232. Studio experience in use of tools and materials of commercial graphic artist. Elementary design problems in commercial graphic design.

**7100:286 COMMERCIAL DESIGN THEORY***3 credits*

Prerequisite: 284. Basic course in visual problem solving emphasizing visual movements in, and graphic elements of, single as well as multiple images. Equal emphasis given to existing and created images.

**7100:288 LETTER FORM AND TYPOGRAPHY***3 credits*

Prerequisite: 286. Letter symbols studied in terms of communication and aesthetic awareness. History of letter forms, hand lettering, alphabet design, contemporary type faces and reproduction processes.

**7100:293 WEAVING I***3 credits*

Prerequisites: 100, 131 and 144. Warping, threading and manipulation of table and floor looms. Some off-the-loom techniques, yarn dyeing, and experimentation with types, weights and colors of yarn.

**7100:300 ART SINCE 1945***3 credits*

Prerequisite: 101 or permission of instructor. Consideration of significant developments in visual art forms since World War II in architecture, sculpture, printing, photography, metal, textile, ceramics, printmaking and graphic design.

**7100:302 ART IN EUROPE DURING THE 17TH AND 18TH CENTURIES***3 credits*

Prerequisites: 101 or permission of instructor. Analysis of major European examples of architecture, landscape design, painting, prints and sculpture from beginning of 17th century until approximately 1850.

**7100:303 RENAISSANCE ART IN ITALY***3 credits*

Prerequisite: 101 or permission of instructor. Study of architecture, painting and sculpture of Italy during 13th through 16th centuries.

**7100:304 ART IN EUROPE DURING THE 19TH CENTURY***3 credits*

Prerequisite: 101 or permission of instructor. Study and analysis of major developments in visual arts in Europe from 1800 to 1900.

**7100:305 ART FROM 1900 TO 1945***3 credits*

Prerequisite: 101 or permission of instructor. Study of significant developments in visual arts from approximately 1900 to 1945.

**7100:317 PRINTMAKING II***3 credits*

Prerequisites: 233, 275 and (either 213 or 214 or 215 or 216 in the appropriate process). Continuation of studio work in printmaking with concentration in one process designated by letter as follows: A. Lithography, B. Serigraphy, C. Relief, D. Intaglio. May be repeated for a total of 12 credits when a different process is indicated.

**7100:322 SCULPTURE: MOLDING AND CASTING***3 credits*

Prerequisites: 101, 131, 144 and 222. Examination of relationship of materials and tools to aesthetic decisions. To include studio work with modeling/molding and metal casting. May include other techniques.

**7100:323 SCULPTURE: FABRICATION***3 credits*

Prerequisites: 101, 131, 144 and 222. Examination of relationship of materials and tools to aesthetic decisions. To include studio work with wood and metal fabrication. May include other techniques.

**7100:331 DRAWING III***3 credits*

Prerequisites: 101, 144, 231 and 233. Continues concerns of visual organization and technical proficiency with materials begun in 131 and 231, but places more emphasis on use of imagination and development of ideas in drawing.

**7100:333 ADVANCED LIFE DRAWING***2 credits*

(May be repeated for a total of 6 credits)

Prerequisites: 231 and 233. 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.

**7100:348 PAINTING II***3 credits*

Prerequisites: 101 and (either 245 or 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. May be repeated for a total of 9 credits, but limited to a maximum of 3 credits in a given medium.

**7100:354 CERAMICS II***3 credits*

Prerequisites: 101, 144 and 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.

**7100:368 METALSMITHING II***3 credits*

(May be repeated for a total of 6 credits)

Prerequisites: 232 and 266. Continuation of experiences presented in 266 with further development of skills and expansion of technical knowledge.

**7100:368 ADVANCED ENAMELING***3 credits*

(May be repeated for a total of 9 credits)

Prerequisite: 268. Continuation of 268. Development of personal aesthetic values. Advanced techniques with metal foils, champeve, cloisonne, limoge and grisaille processes.

**7100:375 PHOTOGRAPHY II***3 credits*

Prerequisites: 101, 231 and 275. Projects utilizing photographic media and tools designed to expand student's awareness of visual qualities and order, both in the subject and photographic image. Student must own or have use of camera with controllable shutter, lens diaphragm, focus and exposure meter.

**7100:378 PHOTOGRAPHICS***3 credits*

Prerequisites: 121 and 375. Photographic media and equipment used experimentally to produce line conversions, high contrast images, tone separations, shadow reversals and other photo-abstractions.

**7100:387 ADVERTISING LAYOUT DESIGN***3 credits*

Prerequisites: 275 and 288. Creative exploration of problems in visual merchandising. Projects offer exercises in developing design skills from concept through final comprehensive presentation.

**7100:388 ADVERTISING PRODUCTION AND DESIGN***3 credits*

Prerequisites: 387 and (either 2240:222 or 7100:376). Continuation of 387. More complex projects with emphasis given to mechanical preparation of finished art for various printing processes.

**7100:389 CORPORATE IDENTITY AND GRAPHIC SYSTEMS***3 credits*

Prerequisite: 388. Advanced level projects in corporate identity and graphic systems analysis and design. Problem solving for these specific areas of graphic design within mechanical limitations of art reproduction.

**7100:393 WEAVING II***3 credits*

(May be repeated for a total of 9 credits)

Prerequisites: 101, 121, 231 and 293. Continuation of 293. Advanced off-the-loom and loom techniques. Spinning. Emphasis on creative and experimental approaches.

**7100:400/500 ART IN THE UNITED STATES BEFORE WORLD WAR II****3 credits**

Prerequisite: 101 or permission of instructor. Consideration of development of art in the United States from earliest evidences to approximately World War II.

**7100:401 SPECIAL TOPICS IN HISTORY OF ART****1-3 credits**

Prerequisites: 100 and 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. May be repeated for credit when a different subject or level of investigation is indicated.

**7100:405/505 HISTORY OF ART SYMPOSIUM****1-3 credits**

Prerequisite: 15 credits in art history or permission of instructor. Lecture, individual research and evaluation, group discussion related to a specific time period or to an artistic problem. May be repeated for credit when a different subject is indicated.

**7100:418 ADVANCED PRINTMAKING****3 credits**

(May be repeated for a total of 12 credits)

Prerequisites: 121, (either 245 or 246 or 247), 317 in the appropriate process, and 375. Lectures, demonstrations and experiments with more sophisticated printmaking techniques and applications. Concentration in one process designated by letter as follows: A. Lithography, B. Serigraphy, C. Relief, D. Intaglio.

**7100:421 THREE-DIMENSIONAL DESIGN APPLICATIONS****3 credits**

Prerequisites: 121, 232, advanced standing in art, or permission of instructor. Application of creative designing principles to problems of utilitarian function in human-designed and -produced items. May include product design/prototype development, furniture design and construction, display design, etc.

**7100:422 ADVANCED SCULPTURE****3 credits**

(May be repeated for a total of 9 credits)

Development of individual points of view and sculptural statements.

**7100:431 DRAWING IV****3 credits**

(May be repeated for a total of 9 credits)

Prerequisites: 121, 232 and 331. In-depth study of drawing for advanced art students. Emphasis on interpretive and inventive drawing using widest possible range of media and techniques:

**7100:449 ADVANCED PAINTING****3 credits**

(May be repeated for a total of 9 credits)

Prerequisites: 121, 231, 233 and 348 in the appropriate medium. Advanced level painting course. Opportunity to explore polymer acrylic, oil or watercolor painting techniques, and experiment with aesthetics of color, form and style. Concentration in one medium designated by letter as follows: A. Polymer Acrylic, B. Watercolor, C. Oil.

**7100:454 ADVANCED CERAMICS****3 credits**

(May be repeated for a total of 15 credits)

Prerequisites: 231 and 354. Emphasis on refinement of technique toward personal aesthetic statement in preparation for professional or private studio production. Student may choose a general survey of subject matter or a more concentrated area of study.

**7100:455 FIBER, CLAY AND METAL SEMINAR****2 credits**

Prerequisite: permission of instructor. Open format seminar designed to explore ideas in clay, fiber and metal art through reading, discussion and production.

**7100:488 ADVANCED METALSMITHING****3 credits**

(May be repeated for a total of 12 credits)

Prerequisites: 283 and 366. Investigation in depth of aesthetic and technical problems of metalsmithing. Student works on individual projects under guidance from instructor.

**7100:475 ADVANCED PHOTOGRAPHY****3 credits**

(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 graphic images. Student works under guidance of instructor on advanced individual projects.

**7100:480 ADVANCED GRAPHIC DESIGN****3 credits**

(May be repeated for a total of 9 credits)

Prerequisite: 368 or permission of instructor. Student works on advanced level individual projects under supervision of instructor.

**7100:484 ILLUSTRATION****3 credits**

Prerequisite: 283 or permission of instructor. Application of painting and drawing skills and aesthetic sensitivity to specific commercial illustration and editorial art assignments.

**7100:485 ADVANCED ILLUSTRATION****3 credits**

(May be repeated for a total of 9 credits)

Prerequisite: 484 or permission of instructor. Advanced projects designed to tune student's personal aesthetic to communicative imagery. A more individual approach to design. Drawing and painting emphasized as is experimentation with multimedia.

**7100:488 PACKAGING DESIGN****3 credits**

Prerequisite: 367 or permission of instructor. Synthesis of two- and three-dimensional visual thinking. Research in materials applicable to packaging of various products. Assignment of projects stressing development of conventional and experimental package design.

**7100:488 PUBLICATION DESIGN****3 credits**

Prerequisite: 389. Advanced research and design of promotional brochures, annual reports and other multipaged communicational print. Emphasis on total design from concept to camera-ready art. Student's individual approach to communicative graphics stressed. Portfolio development.

**7100:489 SPECIAL TOPICS IN STUDIO ART****3 credits**

Prerequisite: advanced standing or permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum. May be repeated for credit when a different subject or level of investigation is indicated.

**7100:490/590 WORKSHOP IN ART****1-4 credits**

Prerequisite: advanced standing in art or permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum. May be repeated for credit when a different subject or level of investigation is indicated (490 to maximum of 6 credits, or 590 to maximum of 12 credits).

**7100:497 STUDIO PROBLEMS****3 credits**

Prerequisite for art majors, advanced standing in area chosen, and permission of instructor. Prerequisite for non-art majors, permission of instructor. Investigation in depth of aesthetic and technical problems within a studio-selected area of specialization. Student must present in writing a proposed study plan and time schedule for instructor approval. May be repeated.

**7100:498/598 SPECIAL PROBLEMS IN HISTORY OF ART***1-3 credits*

Prerequisite: 20 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 be counted toward major. May be repeated for credit when a different subject or level of investigation is indicated.

**7100:499 HONORS IN ART***3 credits*

(May be repeated for a total of 9 credits)

To be used for research in the honors program established by student and his adviser(s).

**7400:201 RELATIONAL PATTERNS IN MARRIAGE AND FAMILY***3 credits*

Study of familial interaction in various life-styles with emphasis on self-concept, changing roles, developmental tasks, family life cycles and socioeconomic and cultural influence upon individual and family.

**7400:204 SURVEY OF APPLIED HOME ECONOMICS IN THE COMMUNITY***1 credit*

Directed study and observation of ongoing community and business programs in home economics and family ecology related areas including housing, home management, family financial management, food and nutrition, clothing, child development, parent effectiveness, and handicapping conditions through family life cycle. Weekly two-hour local tour in addition to class sessions.

**7400:218 FAMILY HEALTH AND HOME NURSING***2 credits*

Overview of strategies for generation of positive physical, mental and emotional health across individual and family life cycles. Emphasis on preventative strategies as well as home care procedures.

**7400:245 BASIC NUTRITION AND FOODS***5 credits*

Basic study of composition of common foods, their places in the diet. Principles involved in selection, purchase and preparation of food. Emphasis on retention of food nutrients in preparation and preservation of foods.

**7400:255 FATHERHOOD: THE PARENT ROLE***2 credits*

Overview of development of stereotyped behavior as it affects the father role and his interactive relationship with other family members. Directives for family life education, research, theory and social policy.

**7400:285 CHILD DEVELOPMENT***3 credits*

Physical, social, mental and emotional development of child from prenatal through five. Observation of children in child care and preschool centers.

**7400:275 PLAY AND CREATIVE EXPRESSION ACTIVITIES***4 credits*

Importance of play in child's social, emotional, intellectual and physical growth. Encouragement of creativity in adults and children through planned experiences that provide for individual expression.

**7400:290 ADMINISTRATION OF CHILD CARE CENTERS***3 credits*

Study of principles, concepts and procedures involved in working with children in preschool programs. Curriculum innovation and implementation, parent involvement, observation and recording of children's progress.

**7400:301 CONSUMER EDUCATION***3 credits*

Study of consumer needs, concerns and problems as related to individual consumer, to consumers in the market economy and to the complex society in which families function.

**7400:305 ADVANCED CONSTRUCTION AND TAILORING***3 credits*

Prerequisites: 121, 123. Advanced theory and principles in construction of couture garment. Construction of coat or suit jacket utilizing custom tailoring techniques. 2 hours lecture, 4 hours laboratory.

**7400:311 CONTEMPORARY NEEDLE ARTS***3 credits*

Prerequisite: 123 or permission of instructor. Emphasizes use of appropriate textiles, yarns and needles in creation of various items for purposes of enhancing leisure time or as earning skills. Lecture/Laboratory.

**7400:314 INTRODUCTION TO FOOD SYSTEMS MANAGEMENT***4 credits*

CUP students only. Introductory course in food systems management with coordinated experiences to identify initial concepts.

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## 7400: Home Economics and Family Ecology

**7400:121 TEXTILES***3 credits*

Basic study of natural and man-made fibers. Emphasis on physical properties, selection and care. Attention given to design and manufacture of textiles. Lecture.

**7400:123 CLOTHING CONSTRUCTION***3 credits*

Basic theory and methods of garment construction including experience with pattern alterations, diverse fabrics and special construction techniques. 2 hours lecture, 2 hours laboratory.

**7400:132 EARLY CHILDHOOD NUTRITION***2 credits*

Emphasis on nutrition as component of Early Childhood programs. Nutrition principles discussed in relation to self and young children. Prenatal and infant nutrition studied. Food as learning experience, menu planning, purchasing, sanitation, food labeling, storage and parent involvement included. For Family and Child Development Option, and educational technology students.

**7400:133 NUTRITION FUNDAMENTALS***3 credits*

Study of fundamental concepts of nutrition. Nutrients, their sources, metabolism, physiology and interrelationships emphasized. Requirements at different stages of growth and development considered.

**7400:141 FOOD FOR THE FAMILY***3 credits*

Application of nutrition to meal planning; problems in selecting, budgeting and preparing food; table etiquette, meal service. Three 2-hour laboratories.

**7400:147 HOME ECONOMICS SURVEY***1 credit*

Survey of history and development of home economics with emphasis on professional and career opportunities.

**7400:158 HOUSE FURNISHINGS***2 credits*

Introduction to home furnishings involving topics such as furniture styles, utilization of space, color, lighting, wallcoverings, window treatments, floor coverings, furniture arrangement/selection and accessorizing. Lecture/Laboratory.

**7400:159 FAMILY HOUSING***3 credits*

Study of housing alternatives related to stages in the family life cycle. Also overview of physical aspects of house: construction financing, insulation, heating/cooling systems, wiring and kitchen design. Lecture/Laboratory.

**7400:316 NORMAL NUTRITION***5 credits*

Prerequisites: 245, 3100:265, 3150:130. Composition, metabolism and physiological functions of food nutrients; requirements and interrelating factors affecting nutritional intake throughout life cycle; interpretation of research findings.

**7400:317 HISTORIC COSTUME***3 credits*

Chronological study of costume from ancient to modern times as source of inspiration for contemporary dress and the theater with consideration of cultural forces that affected the development. Lecture.

**7400:326 INTRODUCTION TO NUTRITION IN MEDICAL SCIENCE***5 credits*

Prerequisite: 316; CUP students only. Implementation of therapeutic health care concepts. Study of nutritional implications of pathological conditions and construction of diets for specific disorders: cardiovascular, gastrointestinal and endocrine.

**7400:331 APPLIED HOME FURNISHINGS***3 credits*

Prerequisites: 123, 158. Laboratory course designed for students to apply knowledge of home furnishings principles specifically in areas of drapery making, reupholstering/slipcovering and accessory construction.

**7400:340 MEAL SERVICE***2 credits*

Prerequisites: 245, 316, (or 133, 141). Management of resources in relation to marketing, meal preparation and service; appropriate forms of service for various types of meals. Preparation of foods from various parts of the world.

**7400:382 HOME MANAGEMENT THEORY***3 credits*

Introduction to management theories, processes and principles as applied to utilization of human and material resources in promotion of individual and family well-being.

**7400:381 PROMOTIONAL TECHNIQUES: DIETETICS***4 credits*

Prerequisite: 316. Techniques for effective oral and written communication of nutrition information to individuals and groups to meet behavioral objectives; evaluation of literature on nutrition; experiences in community facilities providing nutritional services.

**7400:395 COMMUNITY INVOLVEMENT IN HOME ECONOMICS***1-3 credits*

Development of managerial expertise through experience with families. Selected participation sites in business and industry, hospitals, community agencies and with individual families with special managerial problems.

**7400:401/501 FAMILY LIFE PATTERNS IN THE ECONOMICALLY DEPRIVED HOME***2 credits*

Study of family life orientation and life-style patterns among economically deprived with emphasis on impact of socioeconomic and psychological deprivation on family members throughout family life span.

**7400:412 INSTITUTIONAL MANAGEMENT***3 credits*

Principles of organization and management in administration of food service systems; problems in administration of food service systems; problems in control of labor, time and cost. Limited field experience in food production.

**7400:414 FOOD SYSTEM MANAGEMENT***10 credits*

Prerequisite: 314; CUP students only. Coordination of clinical experiences with advanced concepts in management of dietetic service systems relating to achievement of nutritional care goals; preparation for entry-level staff positions.

**7400:415 HOUSEHOLD EQUIPMENT***2 credits*

Selection, use and care of modern household equipment. Survey of commercial equipment used in home economics related professions.

**7400:418 QUANTITY FOOD PREPARATION***4 credits*

Prerequisites: 245, 340 (or 2280:121, 135, 236). Scientific principles and methods of preparation for different types of service of food in quantity. Use and care of equipment.

**7400:419 CLOTHING COMMUNICATION***3 credits*

Study of cultural, social, psychological and economic aspects of clothing. Emphasis on expression and use of clothing in relation to self, society and culture. Lecture/Discussion.

**7400:420 EXPERIMENTAL FOODS***3 credits*

Prerequisites: 245, 3100:130, 3150:130. Scientific approach to study of foods under controlled conditions. Group and individual research.

**7400:421 SPECIAL PROBLEMS IN HOME ECONOMICS***1-3 credits*

Additional study or apprentice experience in specialized field or preparation; group and individual experimentation.

**7400:422 ADVANCED HOME MANAGEMENT***3 credits*

Theoretical and practical experiences utilized in study of management processes and principles as applied to families. Management of human and material resources and decision-making processes emphasized.

**7400:426 THERAPEUTIC NUTRITION***4 credits*

Prerequisites: 316, 3100:130, 3150:202, or permission. Application of principles of normal nutrition to diet in disease. Effects of pathological conditions on planning of modified diets to meet nutritional needs. Practice in writing therapeutic diets and interviewing hospitalized patients; limited experience in specialized clinics.

**7400:428 NUTRITION IN MEDICAL SCIENCE***10 credits*

Prerequisite: 326; CUP students only. Overview of major areas of diet therapy not covered previously. Coordinates clinical experience and delivery of therapeutic nutritional services in participating agencies.

**7400:430 COMPUTER-ASSISTED FOOD SERVICE MANAGEMENT***3 credits*

Use of computer programs in application of management concepts for food service systems.

**7400:439 FASHION***3 credits*

Prerequisite: junior standing or permission of instructor. Overview of fashion industry including growth, promotion and impact of cultural influences. Review of international and American fashion scene. Lecture/Discussion.

**7400:449 DESIGN AND DRAPING***3 credits*

Prerequisite: 305. Theory and experience in clothing design utilizing flat pattern and draping techniques. 2 hours lecture, 4 hours laboratory.

**7400:450 DEMONSTRATION TECHNIQUES***2 credits*

Majors only. Provides practical experience in organization and presentation of demonstrations. Emphasis on competencies in coordination of materials, motion and speech in presentation.

**7400:460/580 ORGANIZATION AND SUPERVISION OF CHILD CARE CENTERS***2 credits*

Prerequisite: permission of instructor. Theory and principles involved in establishing and operating centers for infants and young children.

**7400:480-481 COMMUNITY NUTRITION I, II***4 credits each*

Prerequisites: 316 and 381; CUP students only. Major food and nutrition-related problems in community. Emphasis on policies, legislation, program evaluation and rationales for nutrition services. Field experiences.

**7400:485/585 SEMINAR IN HOME ECONOMICS***1-3 credits*

Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas of home economics and family ecology.

**7400:490/590 WORKSHOP IN HOME ECONOMICS AND FAMILY ECOLOGY***1-3 credits*

Prerequisite: at least junior standing. Investigation on current issue or topic in selected areas of home economics and family ecology.

**7400:897 INDIVIDUAL INVESTIGATION IN FAMILY DEVELOPMENT***1-3 credits*

Prerequisite: permission of graduate adviser only. Individual pursuit and analysis in specific area of student's interest and design under direction of faculty adviser.

**7400:898 INDIVIDUAL INVESTIGATION OF CHILD DEVELOPMENT***1-3 credits*

Prerequisite: permission of graduate adviser only. Individual pursuit and analysis in specific area of student's interest and design under direction of faculty adviser.

**7400:899 THESIS***5 credits*

Prerequisite: permission of adviser. Preparation of thesis pertaining to a selected research project in area of family or child development.

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**Graduate Courses**
**7400:801 FAMILY IN TRANSITION***2 credits*

Overview of family in historical perspective. Effects of social change upon family and emerging relational patterns. Review of theory, research and educational strategies.

**7400:802 FAMILY IN LIFE SPAN PERSPECTIVE***2 credits*

Study of individual and family development across life span. Emphasis on management of available resources, adjustment patterns and interpersonal competence. Implications for education, theory, research and social policy.

**7400:803 FAMILY: MIDDLE AND LATER YEARS***2 credits*

Study of family patterns and problems during middle and later years of life with emphasis on psychological and biological changes and economic and social adequacy. Research and trends in gerontology.

**7400:805 PARENT-CHILD RELATIONS***2 credits*

Prerequisite: 265, or equivalent, or permission. Study of reciprocal interactions formed between parent and child from birth to adulthood. Consideration of cross-cultural studies, historical and societal influences and varying family characteristics and structures.

**7400:816 INFANT AND CHILD NUTRITION***2 credits*

Prerequisites: 265 and 133 or 316. Emphasizes current research trends in physiology of infant and young child in relation to nutritional requirements and feeding practices.

**7400:851 FAMILY LAW***2 credits*

Study of laws which control and protect individuals within family unit. Emphasis on current trends and legal rulings. Course taught by an attorney.

**7400:860 PROGRAMMING FOR CHILD CARE CENTERS***2 credits*

Principles and procedures involved in program development for child care centers. Examination of current programs available for preschool children. Implications, literary analysis, application and evaluation stressed.

**7400:865 DEVELOPMENT IN INFANCY***2 credits*

Prerequisite: 265 or permission. Analysis of research and theoretical frameworks regarding infant development from conception through age four. Implications for guidance and education.

**7400:895 INTERNSHIP IN FAMILY AND CHILD DEVELOPMENT***5 credits*

Prerequisite: permission of adviser. Community-based experience designed to supplement classroom studies. Students work with agency personnel and clientele in programs designed to meet needs of children and/or families.

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**7500: Music**
**7500:101 INTRODUCTION TO MUSIC THEORY***2 credits*

Credit not applicable toward degree for music majors. Designed to correct deficiencies in background. Includes notation, scales, meter, key signatures, intervals, chords. Computer Assisted Instruction in basic music concepts.

**7500:104 CLASS PIANO I***2 credits*

Prerequisite: 101 or permission of instructor. Designed for students with no previous keyboard experience to learn rudimentary keyboard skills such as playing scales, chords, arpeggios and melodic patterns as well as simple music.

**7500:105 CLASS PIANO II***2 credits*

Prerequisite: 104 or permission of instructor. Continuation of work begun in 104.

**7500:107 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.

**7500:108 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.

**7500:151-152 THEORY I, II***3 credits each*

Sequential. 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.

**7500:154-155 MUSIC LITERATURE I, II***2 credits each*

Sequential. Familiarization with large body of musical material from all branches of music writing; vocal, instrumental, symphonic and choral music literature. Special attention given to style, form and structural procedures of principal composers.

**7500:157 STUDENT RECITAL***0 credits*

Required of all music majors until minimum requirement is met. Forum for students and faculty members providing lectures, recitals and opportunity for practice of various skills necessary for successful music performance.

**7500:181-182 SIGHT-SINGING AND EAR-TRAINING I, II***2 credits each*

Prerequisite: 101 or permission of instructor. Vocal mastery of major and minor scales, intervals, broken chords, problems of rhythm, meter, tempo, dynamics, modulation. Computer Assisted Instruction in ear training.

**7500:201 FUNDAMENTALS OF MUSIC***2 credits*

Introduction to fundamentals of music, including basic notation, elementary music reading, sight-singing, creativity, and some functional piano (for nonmusic majors). Computer Assisted Instruction in basic music concepts.

**7500:251-252 THEORY III, IV***3 credits each*

Sequential. Prerequisite: 152. Renaissance vocal counterpoint; baroque instrumental counterpoint; form and analysis of music of all eras.

**7500:254-255 STRING INSTRUMENT TECHNIQUES I, II***2 credits each*

Sequential. Fundamentals of technique, tone production, methods and materials pertaining to violin, viola, cello and string bass; heterogeneous string ensemble activities.

**7500:261-262 KEYBOARD HARMONY I, II***2 credits each*

Sequential. Prerequisites: 105 or equivalency and 152. Essentials of basic theory and harmony practically applied at keyboard; accompaniment, improvisation, transposition, modulation and sight-reading.

**7500:263 SERVICE PLAYING FOR ORGANISTS***2 credits*

Prerequisites: 152 and 261. Practical course in basic keyboard skills needed by organist to play for religious services in various denominations. Hymn playing, anthem accompaniment and simple improvisation.

**7500:265-266 DICTION FOR SINGERS I, II***2 credits each*

Sequential. Prerequisite: permission. Study of diction of the four most used languages (Italian, German, French and English) in vocal performance and International Phonetic Alphabet. Designed for students who expect to function as vocal performers and/or choral and studio voice teachers.

**7500:301 MUSIC APPRECIATION: MUSIC BEFORE 1800***2 credits***7500:302 MUSIC APPRECIATION: 19TH AND 20TH CENTURIES***2 credits*

301 and 302 designed as electives for nonmusic majors to provide introductory survey of art of music.

**7500:305 MARCHING BAND ORGANIZATION AND TECHNIQUE***1 credit*

Prerequisite: 104 or permission of instructor. All aspects of band on the field discussed. Students learn to write complete half-time show, administer marching band program, etc.

**7500:306 MARCHING BAND ARRANGING***2 credits*

Prerequisite: 152 or permission of instructor. Students arrange music for marching band including style, sound projection, etc. Includes discussion of scoring for concert band as related to marching band.

**7500:307 TECHNIQUES OF STAGE BAND PERFORMANCE AND DIRECTION***2 credits*

Prerequisite: permission of instructor. Provides for basic experiences relating to conducting, rehearsal techniques, improvisation, performance, repertoire, and other matters pertaining to organization and direction of stage bands.

**7500:308 THE HISTORY AND LITERATURE OF JAZZ***3 credits*

Prerequisite: permission of instructor. Study of origins of jazz music, its development and influence on today's culture. Investigates evolution of musical instruments as they pertain to jazz music, the artists who perform on them, and their music through live and recorded listening experiences.

**7500:309 JAZZ KEYBOARD TECHNIQUES***2 credits*

Prerequisite: 262. Study of and familiarization with basic jazz keyboard techniques as they relate to contemporary jazz harmony and theory.

**7500:340 GENERAL MUSIC***3 credits*

(May be repeated for a total of 6 credits)

Prerequisites: 155, 162, 252, 262. Introductory and developmental sequence of studies related to skills, techniques and materials appropriate to nonpublic performance music classes in grades K-12. Clinical and field-based experiences.

**7500:342 WIND-PERCUSSION INSTRUMENT TECHNIQUES***3 credits*

(May be repeated for a total of 6 credits)

Prerequisites: 155, 162, 252, 262. Basic techniques in teaching woodwind, brass and percussion instruments. Development of knowledge and skills on band instruments applied to ensemble, large group and individualized instruction. Clinical and field-based experiences.

**7500:351-352 MUSIC HISTORY I, II***3 credits each*

Sequential. Prerequisites: 152 and 155. Development of music from ancient to modern times; scores, recordings and live performances as illustrative material.

**7500:358 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.

**7500:358 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 music classrooms.

**7500:360 CHORAL TECHNIQUES***2 credits*

Prerequisites: 152 and 361. Techniques employed in choral conducting; problems of attacks, releases, dynamic and tempo changes, voice classification, and choral intonation; analysis of choral literature; administration of choral organizations.

**7500:361 CONDUCTING***2 credits*

Prerequisite: 152. Study and practice of conducting techniques; beat patterns, fermatas, tempo and dynamic change, attacks and releases, score reading.

**7500:362 CHORAL ARRANGING***2 credits*

Prerequisites: 252, 352, or permission of instructor. Designed to provide student with an understanding of principles of choral arranging and composition in all idioms and styles.

**7500:365 SONG LITERATURE***2 credits*

Prerequisite: 252 or permission of instructor. Exposes students systematically to vocal literature, aiding in their ability to distinguish between various periods and styles of music through recordings and class participation.

**7500:371 ANALYTICAL TECHNIQUES I***2 credits*

Prerequisite: 252. Techniques for analysis of musical scores from all eras of western music history, with major emphasis on works of baroque, classical and romantic periods.

**7500:372 ANALYTICAL TECHNIQUES II***2 credits*

Prerequisite: 371. Continuation of 371. Required of majors in theory-composition.

**7500:407 JAZZ ARRANGING AND SCORING***2 credits*

Prerequisite: 454 or permission of instructor. Study of jazz instrumentation from small groups to large ensembles.

**7500:408 JAZZ IMPROVISATION I***2 credits*

Prerequisites: 262 and permission of instructor. Study and application of principles of jazz improvisation as they relate the chord-scale structures, motif development and style.

**7500:409 JAZZ IMPROVISATION II***2 credits*

Prerequisite: 408. Advanced study in principles of jazz improvisation.

**7500:451/551 INTRODUCTION TO MUSICOLOGY***2 credits*

Prerequisite: 352. Comparative musicology; acoustics; psychology and physiology of music; aesthetics; theory of music theory; historical musicology.

**7500:452 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.

**7500:453/553 BIBLIOGRAPHY AND RESEARCH***2 credits*

Prerequisite: 352. Examination of all types of published musical materials and publications related to music; methods of research; field trips to specialized collections; writing of research papers in areas of interest.

**7500:454 ORCHESTRATION***2 credits*

Prerequisite: 252. Theory of instrumentation ranging from small ensembles to full band and orchestras.

**7500:455/555 ADVANCED CONDUCTING***2 credits*

Prerequisites: 361 and 454. Baton technique and problems relating to practice, reading and preparation of scores; organization of orchestra and band, problems in programming and practice conducting larger instrumental ensembles.

**7500:461/561 REPERTOIRE AND PEDAGOGY: PIANO AND HARPSICHORD***3 credits*

Prerequisite: permission of instructor. Designed for future keyboard teacher; study of standard teaching repertoire and practical teaching methods: some supervised teaching of children and/or adults.

**7500:462/562 REPERTOIRE AND PEDAGOGY: ORGAN***3 credits*

Prerequisite: permission of instructor. Survey of organ literature of all eras and styles, and of methods of teaching organ, applying principles to literature.

**7500:463/563 REPERTOIRE AND PEDAGOGY: STRING INSTRUMENTS***4 credits*

Prerequisite: permission of instructor. Study in depth of the four bowed string instruments, their teaching, and close relationship. Despite obvious difference in physical application of cello and bass from violin and viola, methods of bowing, sound production and coloring are closely related. Application of the instruments to solo, chamber and orchestral playing.

**7500:464/564 REPERTOIRE AND PEDAGOGY: WIND AND PERCUSSION INSTRUMENTS***3 credits*

Prerequisite: permission of instructor. Survey of wind and percussion instrument literature with representative works from total repertory for each instrument. Principles and methods of teaching and performance.

**7500:471 COUNTERPOINT***2 credits*

Prerequisite: permission of instructor. Designed to give student of theory-composition necessary knowledge and skills for understanding contrapuntal practices and procedures; emphasis on 20th-century techniques.

**7500:472 ADVANCED ORCHESTRATION***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.

**7500:490/590 WORKSHOP IN MUSIC***1-3 credits*

Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate students must fulfill additional requirements.

**7500:497 INDEPENDENT STUDY IN MUSIC***1-2 credits*

(May be repeated for a total of 4 credits)

Prerequisites: senior standing and permission of department head. Music majors only. Independent study under supervision of specially selected faculty members in subject area bearing on student's own goals.

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**Graduate Courses**
**7500:601 CHORAL LITERATURE***2 credits*

Prerequisite: permission of instructor. Study in depth of style, structure, technical demands, manner of setting text, and special performance problems found in masterworks by great choral composers of nine centuries.

**7500:604 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.

**7500:606 SEMINAR IN MUSIC OF THE WESTERN HEMISPHERE***2 credits*

Prerequisite: permission of instructor. Designed to develop understanding of peoples and cultures of Western Hemisphere through study of music of each major area. Research and writing in areas of special interest.

**7500:611 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.

**7500:612 PRACTICES AND TRENDS IN MUSIC EDUCATION***3 credits*

Prerequisite: permission of instructor. In-depth exploration of innovative practices and trends in music education. Findings of research and practice related to prevailing situations in public/private school programs.

**7500:614 MEASUREMENT AND EVALUATION IN MUSIC***2 credits*

Prerequisite: permission of instructor. Study and application of principles of music aptitude, music achievement, and content evaluation. Elementary statistics for music test interpretation and construction explored.

**7500:615 MUSICAL STYLES AND ANALYSIS I***2 credits*

Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in western music from period of Gregorian chant through music of Palestrina, Gesualdo and others of late Renaissance.



**7500:616 MUSICAL STYLES AND ANALYSIS II***2 credits*

Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in western music from Monteverdi through early Beethoven.

**7500:617 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.

**7500:618 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.

**7500:619 THEORY AND PEDAGOGY***2 credits*

Prerequisite: permission of instructor. Methodology of theory teaching in 20th century. Focus on differing philosophies of approach to theory instruction as noted from texts on subject. Recent innovations and techniques of teaching, such as programmed material, computer-assisted instruction, etc., studied.

**7500:621 MUSIC HISTORY SURVEY: MIDDLE AGES AND RENAISSANCE***2 credits*

Prerequisite: permission of instructor. Historical and stylistic analysis of all aspects of music of Middle Ages and Renaissance. Research and writing in areas of special interest.

**7500:622 MUSIC HISTORY SURVEY: BAROQUE***2 credits*

Prerequisite: permission of instructor. Historical and stylistic analysis of baroque music; study in depth of specific examples, from recordings, scores and live performances; continuation and synthesis of approaches normal to study of music history; selected readings related to each student's particular fields of interest; project papers.

**7500:623 MUSIC HISTORY SURVEY: CLASSIC AND ROMANTIC***2 credits*

Prerequisite: permission of instructor. Historical and stylistic analysis of classic and romantic music; study in depth of specific examples, through recordings, scores and live performances; continuation and synthesis of approaches normal to study of music history; selected readings related to each student's particular fields of interest; project papers.

**7500:624 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; continuation and synthesis of approaches normal to study of music history; selected readings and project papers.

**7500:647 MASTER'S CHAMBER RECITAL***1 credit*

Prerequisite: permission of instructor. Composition student will present a recital of chamber music compositions (at least one-half hour in length) written while in residence at The University of Akron. Student will actively organize and coordinate the recital and will also participate either as performer or conductor.

**7500:665 VOCAL PEDAGOGY***3 credits*

Prerequisite: permission. In-depth study of subjects dealing with teaching of voice: physiology of vocal instrument, principles governing vocal production and application of vocal pedagogy.

**7500:697 ADVANCED PROBLEMS IN MUSIC***1-3 credits*

(May be repeated for a total of 8 credits)

Prerequisite: permission of graduate adviser. Studies or research projects related to problems in music.

**7500:699 MASTER'S THESIS/RECITAL***2 credits*

Prerequisites: completion of at least two semesters of graduate work and permission of student's graduate adviser. Thesis or recital credit is taken as appropriate to each student's major option.

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## 7510: Musical Organizations

No fee is charged for enrollment of qualified students in music organizations. Enrollment may be repeated.

**7510:101 CONCERT CHOIR***1 credit*

Mixed chorus. Membership by audition. Open to any qualified University student. Previous choral experience and knowledge of music reading essential. Campus, regional and tour performances. Also annual concerts with Akron Symphony Orchestra and Chorus.

**7510:102 UNIVERSITY EVENING CHORUS***1 credit*

Membership by audition. Prospective members are advised to contact Department of Music two weeks prior to beginning of term. Music reading skills and previous choral experience required. Performs with Akron Symphony Orchestra.

**7510:103 UNIVERSITY SYMPHONY ORCHESTRA***1 credit*

Membership by audition. Organization devoted to study of orchestral literature. Full-length concerts as well as special University appearances.

**7510:104 UNIVERSITY BAND***1 credit*

Includes Marching Band (fall semester only), Symphony Band, Concert Band, Varsity Band. Membership open to all University students by audition with Director of Bands.

**7510:105 CHORAL ENSEMBLE***1 credit*

Membership by audition. Study and performance of literature for chamber vocal ensemble from all periods of music history. Frequent public concerts. Designed for personnel with good music reading ability and previous choral experience.

**7510:106 BRASS ENSEMBLE***1 credit*

Membership by audition. Must be member of a University Band or Orchestra. Study and performance of literature for brass ensemble from all periods of music history. Frequent public concerts. For advanced brass players.

**7510:107 STRING ENSEMBLE***1 credit*

Membership by audition. In-depth study of performance of chamber music literature with special emphasis on string quartet and piano trio.

**7510:108 OPERA WORKSHOP***1 credit*

Membership by audition. Musical and dramatic group study of excerpts from operatic repertoire. Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.

**7510:109 PERCUSSION ENSEMBLE***1 credit*

Membership by audition. Must be member of a University Band or Orchestra. Study and performance of literature for various percussion groups; develops skill in ensemble performance.

**7510:110 WOODWIND ENSEMBLE***1 credit*

Membership by audition. Must be member of a major organization. Study and performance of woodwind literature from all periods for various combinations of woodwinds. Develops performance skills and knowledge of woodwind literature.

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**7510:111 CHAMBER ORCHESTRA***1 credit*

Membership by audition. Organization designed to study for performance the substantial repertoire for small orchestra. Open to students of advanced ability.

**7510:112 MEN'S GLEE CLUB***1 credit*

Prerequisite: permission of instructor. Designed to perform variety of music written for male voices in ensemble.

**7510:113 WOMEN'S GLEE CLUB***1 credit*

Prerequisite: permission of instructor. Designed to perform variety of music written for female voices in ensemble.

**7510:114 KEYBOARD ENSEMBLE***1 credit*

Involves three hours a week of accompanying. Keyboard majors required to enroll for at least three years. Music education majors may substitute another musical organization for one year.

**7510:115 JAZZ ENSEMBLE***1 credit*

Membership by audition. Provides experience in jazz ensemble performance. Students are assumed to have knowledge of rudiments of music and some experience in jazz performance.

**7520:030 STRING BASS****7520:031 TRUMPET/CORNET****7520:032 FRENCH HORN****7520:033 TROMBONE****7520:034 BARITONE****7520:035 TUBA****7520:036 FLUTE/PICCOLO****7520:037 OBOE/ENGLISH HORN****7520:038 CLARINET/BASS CLARINET****7520:039 BASSOON/CONTRABASSOON****7520:040 SAXOPHONE****7520:041 HARPSICHORD****7520:042 COMPOSITION****7520:121-441/521-541 APPLIED MUSIC FOR MUSIC MAJORS***2-4 credits each*

The following courses are intended for students majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) Students may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than 8 credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

**7520:121-221-321-421/521 PERCUSSION****7520:122-222-322-422/522 CLASSICAL GUITAR****7520:123-223-323-423/523 HARP****7520:124-224-324-424/524 VOICE****7520:125-225-325-425/525 PIANO****7520:126-226-326-426/526 ORGAN****7520:127-227-327-427/527 VIOLIN****7520:128-228-328-428/528 VIOLA****7520:129-229-329-429/529 CELLO****7520:130-230-330-430/530 STRING BASS****7520:131-231-331-431/531 TRUMPET OR CORNET****7520:132-232-332-432/532 FRENCH HORN****7520:133-233-333-433/533 TROMBONE****7520:134-234-334-434/534 BARITONE****7520:135-235-335-435/535 TUBA****7520:136-236-336-436/536 FLUTE OR PICCOLO****7520:137-237-337-437/537 OBOE OR ENGLISH HORN****7520:138-238-338-438/538 CLARINET OR BASS CLARINET****7520:139-239-339-439/539 BASSOON OR CONTRABASSOON****7520:140-240-340-440/540 SAXOPHONE****7520:141-241-341-441/541 HARPSICHORD****7520:142-242-342-442/542 PRIVATE LESSONS IN MUSIC COMPOSITION***2-4 credits each**(May be repeated)*

Prerequisite: 7500:252 and permission of instructor; 7500:452 recommended. Private instruction in composition. Primarily for students whose major is theory-composition.

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## 7520: Applied Music

Students must contact the Department of Music and consult with the applied music instructor before registering for applied music.

Music majors must perform annually before an applied music jury on each instrument studied privately for credit. The nonmusic 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.

**7520:021-042 APPLIED MUSIC FOR NONMAJORS***2-4 credits each*

For students below minimum level of performance skills expected for credit at 7520:100 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 nonmusic programs. Not to be counted for credit in any music major programs of study.

**7520:021 PERCUSSION****7520:022 CLASSICAL GUITAR****7520:023 HARP****7520:024 VOICE****7520:025 PIANO****7520:026 ORGAN****7520:027 VIOLIN****7520:028 VIOLA****7520:029 CELLO**

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## Graduate Course

**7520:642 APPLIED COMPOSITION***2-4 credits**(May be repeated)*

Prerequisite: undergraduate degree with a major in music. Private instruction in composition offered primarily for students majoring in composition. Other students may be approved by composition faculty.

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## 7600: Mass Media-Communication

**7600:141 INTERCOLLEGIATE DEBATE***1 credit*

Study and practice of techniques of contest speech and debate, including techniques of research and presentation. Requires participation in University's forensics program.

**7600:190 PUBLIC SPEAKING***2 credits*

Study and practice in public address, especially audience analysis and adaptation in platform-speaking situation. Includes opportunity for performance, individual analysis and criticism.

**7600:201 NEWS WRITING***3 credits*

Prerequisite: 1100:112. Writing of news stories; applying theory through discussions, illustrative material; actual writing for publication.

**7600:202 INTRODUCTION TO JOURNALISM***3 credits*

Consideration of whole field of contemporary American journalism. Attempt to present and explain functions of agencies through which news and views reach the general public.

**7600:203 RADIO AND TELEVISION NEWS WRITING***2 credits*

Prerequisite: 1100:112. Principles and practice in preparation of radio/television news and documentaries. Fundamentals of electronic news gathering and writing, practice in news delivery and voice control.

**7600:204 EDITING***2 credits*

Prerequisite: 201. Copyreading, headline writing, proofreading, make-up, type and typography, printing machines and processes, newspaper methods and systems.

**7600:206 FEATURE WRITING***3 credits*

Prerequisite: 1100:112. Short newspaper and magazine articles, preparation of articles for publication, human interest situations, exteinalve writing with class discussion.

**7600:245 ARGUMENTATION***3 credits*

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.

**7600:252 ETHICAL PERSUASION***3 credits*

Emphasis on understanding persuasion theory and practice. Includes information analysis of motivational appeals and introduction to propaganda analysis.

**7600:261 INTRODUCTION TO RADIO AND TELEVISION***2 credits*

Special projects in message design and development with practical radio and television production experience.

**7600:262 COMMUNICATION MEDIA: RADIO***2 credits*

Prerequisite: 281. Study of history, nature and function of educational and commercial broadcasting with practical production experience.

**7600:283 COMMUNICATION MEDIA: TELEVISION***3 credits*

Prerequisite: 281 or permission. Function, structure and influence of television as communication medium with practical production experience in studio.

**7600:286 COMMUNICATION MEDIA: FILM***3 credits*

Techniques, limitations and potentials of film production. Students learn script writing, directing, lighting and makeup; practical production experience in studios and on location.

**7600:301 COMMUNICATION MEDIA: PRINT***3 credits*

Prerequisite: 201 or permission. Advanced course in writing and editing news, features and analysis for print media. Behavioral approach to communication of information and ideas.

**7600:303 PUBLICITY WRITING***2 credits*

Prerequisite: 201 or permission. Acquaints student with functions of public relations in our society and explains basic theories and principles involved in publicity writing and placement.

**7600:309 PUBLICATIONS PRODUCTION***3 credits*

Prerequisite: 201. Fundamental course for persons engaged in production of publications. Consideration of variety of processes for reproducing printed work including photoengraving, lithography, letterpress, roto gravure, mimeographing.

**7600:310 INTERCULTURAL COMMUNICATION***2 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.

**7600:344 PUBLIC DISCUSSION***3 credits*

Principles of effective group discussion and practices inherent to panel presentations, participation in group of simulations, and interviews found in variety of situations.

**7600:351 SURVEY OF SPEECH COMMUNICATION***3 credits*

Elements of communication and communication systems, including special stress on language, paralanguage, media, interpersonal and public communication.

**7600:380 MASS MEDIA-COMMUNICATION INTERNSHIP***1-8 credits**(May be repeated for a total of 8 credits)*

Prerequisite: permission. Provides student with supervised experience and on-the-job training in mass media communications related organizations on and off campus.

**7600:363 THE TELEVISION PRODUCER***3 credits*

Prerequisite: permission. In-depth study of role of producer in complexities of developing a television program from inception to completion.

**7600:384 SPEECH-COMMUNICATION RESEARCH***2 credits*

Role of mass media as related to modern communication theory. Special projects in research.

**7600:385 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.

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**7600:366 AMERICAN FILM HISTORY: 1945 TO THE PRESENT***3 credits*

Continuation of student's survey of film history and film concepts begun in 385.

**7600:392 SPEECH IN AMERICA***3 credits*

Survey and critical analysis of major speakers, speeches and speech movements in American history. Examines how style and content of American speaking influenced events and reflected their times.

**7600:393 INTERPERSONAL COMMUNICATION***3 credits*

Theory and practice in interpersonal communication. Emphasis on communicator apprehension, interpersonal attitudes, nonverbal communication and listening. Introduction to current research in intrapersonal communication — biofeedback and noninstrument assisted self-communication.

**7600:410 ORGANIZATIONAL COMMUNICATION***2 credits*

Study of large organizational communication principles and practices. Group projects related to several communication problems inherent to organizations (1) inside communication flow, (2) communication outward, (3) incoming information to organization.

**7600:439 MASS MEDIA-COMMUNICATION PRACTICUM***1-12 credits*

(May be repeated for a total of 12 credits)

Prerequisite: permission from a Departmental Committee on Special Projects.

**7600:445/545 THEORIES OF ARGUMENT AND FORENSICS***3 credits*

Prerequisite: 245. Intended for advanced student of argument. Survey of major theories of argument, including those of Aristotle, Toulmin and Perelman. Application of theory argument to forensic model presented where appropriate.

**7600:454/554 THEORY OF GROUP PROCESSES***3 credits*

Group communication theory and conference leadership as applied to individual projects and seminar reports.

**7600:470/570 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.

**7600:471/571 THEORIES OF RHETORIC***3 credits*

Study of key figures in history of rhetorical theory, stressing interrelationships among theories of rhetoric, intellectual climates and social climates.

**7600:483 SURVEY OF BROADCAST STATION DEPARTMENTS***3 credits*

Prerequisite: 282, 283, or permission. Designed to give senior student an understanding of the several departments in a radio/television station.

**7600:484 REGULATIONS IN MASS MEDIA***3 credits*

Concentration on government regulations and self-regulatory bodies in broadcasting, film and print media.

**7600:486/586 CINEMATOGRAPHY***3 credits*

Designed to give filming experience to selected students. Emphasis on communication through film, color and sound; not a technical course in camera maintenance.

**7600:490/590 MEDIA WORKSHOP***1-3 credits*

(May be repeated for a total of 3 credits)

Prerequisites: advanced standing and permission. Group study or group projects investigating a particular phase of media not covered by other courses in curriculum.

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**Graduate Courses****7600:800 INTRODUCTION TO GRADUATE STUDY IN MASS MEDIA-COMMUNICATION***3 credits*

Introduces new graduate students to historical, critical, quantitative and production research methods as practiced in areas of mass media communication, journalism and communication-rhetoric. Students read articles, theses, books and other materials that illustrate and explain these methods, then prepare and present research proposals for each method.

**7600:801 INTRODUCTION TO QUANTITATIVE RESEARCH IN SPEECH COMMUNICATION***3 credits*

Introduces students to basic concepts of scientific method applied to social sciences and their specific application to problems of interest in field of communication and mass media.

**7600:806 COMMUNICATION PROBLEMS IN THE BASIC SPEECH COURSE***1 credit*

Designed to train graduate students in methods and materials of introductory speech course. Required of all teaching graduate assistants.

**7600:810 SEMINAR IN COMMUNICATION PROBLEMS***3 credits*

(May be repeated for a total of 6 credits)

Variable content seminar examines such areas of concern in communication theory and practice as organizational communication, psychology of audience and cross-cultural communication.

**7600:871 SEMINAR: RHETORICAL FORMS***3 credits*

Study of various periods, forms and functions of discourse in sustaining social order and mediating social change.

**7600:875 SEMINAR ON RHETORICAL CRITICISM***3 credits*

(May be repeated for a total of 6 credits)

Organized around special problems and methods involved in analysis of different genres, forms and topics of discourse.

**7600:876 SURVEY OF RHETORICAL THEORIES***4 credits*

Concentrated study and research of ancient, modern or contemporary writers or on some specific topic in rhetorical theory.

**7600:880 SPECIAL PROBLEMS IN COMMUNICATION AND MASS MEDIA***2 credits*

(May be repeated for a total of 4 credits)

Problem analysis, investigation and evaluation of a major interest area related to communication theory, mass media or interpersonal communication.

**7600:881 THEORY OF INTERPERSONAL COMMUNICATION***3 credits*

Prerequisite: permission. Detailed analysis of complex systems in persuasion and propaganda, particularly as related to information control.

**7600:883 MASS MEDIA RESEARCH SEMINAR***2 credits*

Study of experimental design in mass media, its development and use. Students study research literature on experiments in mass media.

**7600:884 SURVEY OF COMMUNICATION THEORY***3 credits*

Study of dimensions of field of communication: information analysis, social interaction and semantic analysis.

**7600:885 SCHOOL ADMINISTRATOR: COMMUNICATION DESIGN IN THE MASS MEDIA***2 credits*

Designed to teach school administrator communication development for media in order to take full advantage of potentialities of radio, TV and films for message impact.

**7600:866 STUDIES IN COMMUNICATION MEDIA: RADIO****7600:887 STUDIES IN COMMUNICATION MEDIA: TELEVISION****7600:888 STUDIES IN COMMUNICATION MEDIA: FILM***3 credits each*

Emphasis on production, message design and impact analysis. These courses designed to give students an opportunity to experiment with new production and message concepts.

**7600:897 GRADUATE RESEARCH IN MASS MEDIA-COMMUNICATION***1-6 credits*

(May be repeated for a total of 6 credits)

Prerequisites: 7600:600 and approval of project prospectus one term prior to undertaking the project. Performance of research on problems found in mass media/communication.

**7600:899 RESEARCH AND THESIS***1-6 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of department head.

## 7700: Speech Pathology and Audiology

**7700:110 INTRODUCTION TO SPEECH DISORDERS***3 credits*

Overview of various types of speech disorders; their incidence, etiology and characteristics. Basic concepts and principles underlying speech pathology.

**7700:111 INTRODUCTION TO PHONETICS***2 credits*

Introduction to International Phonetic Alphabet, and overview of articulatory phonetics.

**7700:130 BASES AND STRUCTURE OF LANGUAGES***3 credits*

Introduction to linguistic bases of speech and language: phonological, morphological, syntactical and semantic. Social and psychological variables in communicative process as applied to therapeutic environment presented.

**7700:140 INTRODUCTION TO AUDIOLOGY***3 credits*

Normal anatomy and physiology of hearing system and acoustics of hearing. Survey of field of audiology. Nature of hearing problems.

**7700:210 APPLIED PHONETICS***3 credits*

Prerequisite: 111. Training in allophonic transcription. Analysis of sound substitutions, distortions and dialectal variations. Study of Distinctive Feature Systems.

**7700:211 INTRODUCTION TO SPEECH SCIENCE***2 credits*

Study of anatomical, physiological and physical principles involved in production, transmission and reception of speech signal.

**7700:230 SPEECH AND LANGUAGE DEVELOPMENT***3 credits*

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.

**7700:240 AURAL REHABILITATION***4 credits*

Prerequisite: 140. Introduction to philosophy and methods of aural rehabilitation for children and adults. Includes methods of speech reading, auditory training, speech conservation, hearing aid use and combined visual and auditory approaches.

**7700:241 PRINCIPLES OF AUDIOMETRY***3 credits*

Prerequisite: 140. Introduction to psychoacoustic principles which underlie basic audiometric tests; principles of speech audiometry, masking and impedance audiometry.

**7700:250 OBSERVATION AND CLINICAL METHODS***1 credit*

Prerequisite: 110. Observation of speech and hearing disorders in variety of clinical settings; introduction to general methods of clinical procedures.

**7700:271 LANGUAGE OF SIGNS I***3 credits*

Fundamental expressive 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.

**7700:321 SPEECH PATHOLOGY I***4 credits*

Prerequisites: 110 and 210. Study of disorders of articulation, voice and stuttering including etiology, symptomatology, evaluation and therapeutic procedures.

**7700:322 SPEECH PATHOLOGY II***4 credits*

Prerequisites: 110 and 3100:264. Study of organically based speech disorders: cleft palate, cerebral palsy, aphasia and dysarthria including etiology, symptomatology, evaluation and therapeutic procedures.

**7700:330 LANGUAGE DISORDERS***4 credits*

Prerequisite: 230. Etiology, identification, evaluation, intervention and remediation of symbolic, cognitive and interpersonal language disorders of children viewed. Disorders viewed as correlates or sequelae of central nervous system dysfunction or emotional disturbance.

**7700:340 AUDIOLOGIC EVALUATION***2 credits*

Prerequisite: 241. "Test battery" approach to audiometry explored; techniques of case finding and handling of difficult-to-test cases; competency with all tests in the battery required.

**7700:350 CLINICAL PRACTICUM: ARTICULATION***1 credit*

Prerequisite: 321. Supervised clinical practicum in articulation. Emphasis on therapy procedures, diagnostic techniques and preparation of reports.

**7700:351 CLINICAL PRACTICUM: LANGUAGE***1 credit*

Prerequisite: 330. Supervised clinical practicum in language. Emphasis on therapy procedures, diagnostic techniques and preparation of reports.

**7700:352 CLINICAL PRACTICUM: AURAL REHABILITATION***1 credit*

Prerequisite: 240. Supervised clinical practicum in hearing rehabilitation. Emphasis on therapy procedures, diagnostic techniques and preparation of reports.

**7700:370 LANGUAGE OF SIGNS II***1 credit*

Prerequisite: 271 or permission of instructor. Advanced work in signs and fingerspelling with emphasis on additional sign vocabulary acquisition and development of expressive and receptive skills. Stress on continued skill building in conversing with deaf adults.

**7700:430/530, ASPECTS OF NORMAL LANGUAGE DEVELOPMENT***3 credits*

May not be taken by majors in speech pathology and audiology. Introduction to acquisition and development of comprehension and production of language — phonologically, semantically and syntactically. Relates language acquisition to perceptual development of child and looks at function of language in individual, family and school.

**7700:450 INTRODUCTION TO SPEECH AND HEARING DIAGNOSTICS***3 credits*

Prerequisite: senior status. General introductory course devoted to discussion of role of speech and hearing clinician in differential diagnosis. Special emphasis on case history taking, and administration of standardized and informal procedures in diagnosis of communicative disorders.

**7700:451 CLINICAL PRACTICUM: HEARING DIAGNOSIS***1 credit*

Prerequisite: 340. Supervised clinical practicum in hearing diagnostics. Emphasis on diagnostic procedures and preparation of reports.

**7700:460/560 SPEECH AND HEARING DISORDERS IN THE PUBLIC SCHOOLS***2 credits*

May not be taken by majors in speech pathology and audiology. Nature, causes and treatment of speech, hearing and language disorders in public schools. Special reference to role of classroom teacher in identifying and referring students with suspected problems and in working with school clinician.

**7700:461 ORGANIZATION AND ADMINISTRATION: PUBLIC SCHOOL SPEECH AND HEARING PROGRAMS***2 credits*

Prerequisite: senior standing; open to majors in speech pathology and audiology only. Designed for speech and hearing clinicians who plan to work in public school system. Covers following areas with particular reference to public school setting: case selection; scheduling, individual and group therapy; in-service training for classroom teachers; parent counseling; and certification and program standards as set up by Department of Education in State of Ohio.

**7700:460 SEMINAR IN COMMUNICATIVE DISORDERS***2 credits*

Prerequisite: senior standing. Provides a vehicle for detailed study and discussion of various communicative disorders.

**7700:481 SPECIAL PROJECTS***1-3 credits*

(Maybe repeated for a total of 4 credits)

Prerequisite: permission of instructor. Individual or group projects related to any of the problems of communicative disorders.

**7700:483/583 COMMUNICATION DISORDERS: GERIATRIC POPULATION***3 credits*

Examination of communication disorders that exist in geriatric population. Focus on etiology, symptomatology and concomitant rehabilitative procedures. Designed for students interested in the aging population; not open to majors in speech pathology and audiology.

**7700:490/590 WORKSHOP: COMMUNICATIVE DISORDERS***1-3 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission. Group investigation of particular phase of speech pathology and/or audiology not offered by other courses in curriculum.

**7700:495 INTERNSHIP: SPEECH PATHOLOGY AND AUDIOLOGY***3-6 credits*

Prerequisite: permission of Director of Speech and Hearing center. Affords opportunity for in-depth clinical experience in variety of clinical settings outside The University of Akron Speech and Hearing Center. Student afforded on-the-job experience with specialized case populations.

**7700:810 INSTRUMENTATION IN SPEECH PATHOLOGY AND AUDIOLOGY***2 credits*

Principles and use of clinical and research instrumentation in speech and hearing.

**7700:811 RESEARCH METHODS IN COMMUNICATIVE DISORDERS I***3 credits*

Introduction to experimental design in field of communicative disorders.

**7700:812 RESEARCH METHODS IN COMMUNICATIVE DISORDERS II***2 credits*

Prerequisite: 811. Advanced experimental methods; development of a research study.

**7700:820 ARTICULATION***2 credits*

Historical background, current theories and research related to etiology, diagnosis and treatment of articulatory disorders.

**7700:821 COMMUNICATIVE DISORDERS IN CLEFT PALATE***2 credits*

Historical background, current theories and research related to etiology, diagnosis and treatment of cleft palate.

**7700:822 COMMUNICATIVE DISORDERS IN MENTAL RETARDATION***2 credits*

Historical background, current theories and research related to etiology, diagnosis and treatment of mental retardation.

**7700:823 COMMUNICATIVE DISORDERS IN CEREBRAL PALSY***2 credits*

Historical background, current theories and research related to etiology, diagnosis and treatment of cerebral palsy.

**7700:824 APHASIA***2 credits*

Historical background, current theories and research related to etiology, diagnosis and treatment of adult aphasia.

**7700:825 COMMUNICATIVE DISORDERS OF CHILDREN***2 credits*

Oral and aural language deviations; their etiologies, pathologies and remediation.

**7700:826 VOICE PATHOLOGY***2 credits*

Background and current research related to etiology, diagnosis and therapy for various disorders of voice.

**7700:827 STUTTERING: THEORIES AND THERAPIES***3 credits*

Reading and discussion of selected theories and therapies related to stuttering.

**7700:828 TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS***2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: permission of Director of Speech and Hearing Center.

**7700:829 TOPICS: SPEECH PATHOLOGY AND AUDIOLOGY***2 credits*

Prerequisite: permission of instructor. Selected current topics in clinical and/or experimental areas of speech pathology, audiology or language. Emphasis on review of current and historical literature.

**7700:830 SEMINAR IN LANGUAGE PROCESSING: DEVELOPMENT AND PATHOLOGY***3 credits*

Prerequisite: permission of instructor. Current research and issues in areas of speech perception, processing of syntax and semantics, speech and language acquisition, and strategies affecting evaluation and intervention.

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**Graduate Courses****7700:801 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 speech and hearing services.

**7700:638 SEMINAR IN LANGUAGE AND SPEECH OF THE HEARING IMPAIRED.***2 credits*

Study of development of language and speech in hearing-impaired children, emphasizing psycholinguistic approach, and means of intervention. Communicative processes of hearing-impaired adults. Effect of conditions of minimum auditory stimulation and acoustic feedback on speech and language. Methods of speech conservation.

**7700:639 ADVANCED CLINICAL TESTING***4 credits*

Theoretical basis for pure tone, speech tests, masking and acoustic impedance measurements. Review of classical and current literature relative to above tests.

**7700:640 SPECIAL TESTS/MEDICAL AUDIOLOGY***4 credits*

Prerequisite: 639 or permission of instructor. Underlying psychoacoustic principles of administration and interpretation of site-of-lesion tests. Relationship between otology and audiology; application of clinical audiology in medical environment.

**7700:641 AMPLIFICATION***3 credits*

Prerequisite: 639 or permission of instructor. Components of amplification systems; methods of evaluating hearing aid performance.

**7700:642 PEDIATRIC AUDIOLOGY***2 credits*

Prerequisite: 639 or permission of instructor. Etiology of hearing loss in children; techniques for testing preschool and school-age children and other difficult-to-test clients.

**7700:643 INDUSTRIAL AUDIOLOGY***2 credits*

Prerequisite: 639 or permission of instructor. Theoretical principles of noise measurement; etiology of noise-induced hearing loss and acoustic trauma; industrial hearing conservation programs; Occupational Safety and Health Act (OSHA) regulations.

**7700:644 AURAL REHABILITATION***4 credits*

Prerequisite: permission of instructor. Review of current methodologies employed in aural rehabilitation of children and adults, as well as current and potential areas of research.

**7700:647 EXPERIMENTAL AUDIOLOGY***2 credits*

Prerequisite: 6 graduate audiology credits or permission of instructor. Principles of psychoacoustics. Review of instrumentation and research techniques. Study of significant literature in the field.

**7700:650 ADVANCED CLINICAL PRACTICUM: DIFFERENTIAL DIAGNOSIS***1 credit*

Supervised clinical practicum in diagnostic procedures.

**7700:651 ADVANCED CLINICAL PRACTICUM: VOICE***1 credit*

Supervised clinical practicum in rehabilitation of voice disorders.

**7700:652 ADVANCED CLINICAL PRACTICUM: FLUENCY***1 credit*

Supervised clinical practicum in rehabilitation of disorders of fluency.

**7700:653 ADVANCED CLINICAL PRACTICUM: APHASIA***1 credit*

Supervised clinical practicum in rehabilitation of aphasia.

**7700:654 ADVANCED CLINICAL PRACTICUM: AUDIOLOGY***1 credit*

Supervised clinical practicum in hearing diagnostics and aural rehabilitation.

**7700:695 EXTERNSHIP: SPEECH PATHOLOGY AND AUDIOLOGY***2-4 credits*

(May be repeated for a total of 4 credits)

Clinical practicum in a selected area center.

**7700:697 SPECIAL PROBLEMS: SPEECH PATHOLOGY AND/OR AUDIOLOGY***1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Guided research or reading in selected topics in speech pathology, audiology or language disorders.

**7700:699 RESEARCH AND THESIS***2 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of department head.

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## 7750: Social Work

**7750:270 POVERTY IN THE UNITED STATES***3 credits*

Survey of social and personal dimensions of life in the inner city and other areas of poverty in United States. For persons wishing to develop an in-depth understanding and/or intending to work in such areas.

**7750:276 INTRODUCTION TO SOCIAL WELFARE***4 credits*

Survey of field of social welfare and place of social work profession within human services institutions of U.S. Introduction of basic concepts relating social welfare institutions and social work to our society.

**7750:401/501 SOCIAL WORK PRACTICE I***3 credits*

Prerequisite: 276 or permission. Basic concepts and methods of social work practice, particularly relating to understanding and working with individuals and families.

**7750:402/502 SOCIAL WORK PRACTICE II***3 credits*

Prerequisite: 276 or permission. Concepts and methods of social work practice particularly relating to understanding and working with groups in various settings in our society.

**7750:403/503 COMMUNITY ORGANIZATION***3 credits*

Prerequisite for 403: 276 or permission; for 503: permission. Development of understanding and practice methods for utilization of community organization and social planning as social work process in assessing problems and developing program to meet needs.

**7750:421 FIELD EXPERIENCE SEMINAR***1 credit*

Prerequisite: 401 and permission; corequisite: 495. Careful examination and integration of academic understanding and professional methodological studies into professional practice.

**7750:430/530 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT FOR SOCIAL WORKERS***3 credits*

Prerequisites for 430: 276; 3750:130 recommended; for 530: permission. Bio-psycho-social knowledge applied to social work. Emphasis on social workers' understanding of and use of individual interaction and growth within family as a system, groups (of society), roles, organizations, community and culture.

**7750:450/550 SOCIAL NEEDS AND SERVICES FOR LATER ADULTHOOD AND AGING***3 credits*

Prerequisite: 276 or permission. Application of knowledge and principles of professional social work practice to understanding, development and provision of social services to meet needs of aging and later maturity individuals, families and communities and institutions serving them and their relatives.

**7750:451/551 SOCIAL WORK IN CHILD WELFARE***3 credits*

Prerequisite: 276 or permission. In-depth exploration of structure and functioning of social services designed to help children, and of practice of social work in child welfare settings. Consideration of supportive, supplementary and substitutive services.

**7750:452/552 SOCIAL WORK IN MENTAL HEALTH***3 credits*

Prerequisite: 276 or permission. Issues, organization, development and methodologies of current professional social work practice in mental health settings.

**7750:465/565 ADMINISTRATION AND SUPERVISION IN SOCIAL WORK***3 credits*

Prerequisites: two of the following or their equivalents: 401/501; 402/502; 403/503; or 430/530. Preparation for use of supervision, staff development and program planning in a social work agency. Examines the social work/welfare agency in its community as it affects its organizational goal-setting and program-implementation problems.

**7750:480/580 SPECIAL TOPICS IN SOCIAL WORK AND SOCIAL WELFARE***1-3 credits*

Prerequisite: 401 and permission of instructor. Analysis of current social work and social welfare theory and policy, settings, innovative interventions and trends in delivery systems in relation to selected areas of concern. Topics and credits variable.

**7750:490/590 SOCIAL WORK WORKSHOP***1-4 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of instructor. Group investigation of a particular phase of social work or social welfare not offered by other courses in curriculum.

**7750:495 FIELD EXPERIENCE IN SOCIAL AGENCY***2-8 credits*

(2 credits minimum and 8 credits maximum-total in consecutive semesters only.)

Prerequisite: 401 and permission; corequisite: 421. Individual placement in selected community and social service agencies for supervised experience with individuals, groups and communities in family service, health care, corrections, community development, mental health, child welfare, public welfare and similar social welfare settings. Student must register intent and receive permission to take the course with the course instructor during early part of semester preceding enrollment. For senior majors in social work.

**7750:497/597 INDIVIDUAL INVESTIGATIONS IN SOCIAL WORK SOCIAL WELFARE***1-3 credits*

Prerequisite: permission and prearrangement with instructor. Individual readings, research or projects in area of interest in social welfare theory or institutional operations or in social work practice under guidance of social work faculty member. Preparation of report paper appropriate to nature of topic. For social work majors.

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**Graduate Course****7750:873 CONTEMPORARY SOCIAL WORK APPLICATIONS***3 credits*

Contemporary social work concepts and methods compared and applied in various social welfare, community service, educational and health settings. Particularly useful for professionals from related fields and for advanced practitioners.

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**7800: Theatre Arts and Dance****7800:116 BALLET ANALYSIS I***3 credits*

Required of all ballet majors in their freshman year. Lecture and laboratory course designed to prepare dancer to understand his/her body and its function in the technique class, as student and future teacher or performer.

**7800:117 BALLET ANALYSIS II***3 credits*

Prerequisite: 116 or permission. Continuation of 116.

**7800:119 INTRODUCTION TO CONTEMPORARY DANCE I***2 credits*

Course for novice dancers and teachers wishing to use a dance vocabulary for expressiveness and enhancement of rhythmic and creative movement. Presents dance as an organic technique which trains coordination through development of locomotor skills.

**7800:120 INTRODUCTION TO CONTEMPORARY DANCE II***2 credits*

Prerequisites: 119 and permission of instructor. Continuation and expansion of materials presented in 119. Focus on expansion of dance movement vocabulary, with emphasis on shape and form of movement.

**7800:122 BALLET TECHNIQUE I***5 credits*

(May be repeated for a total of 10 credits)

Prerequisite: permission. Theory and practice of ballet, stressing fundamentals of vocabulary, structure and placement.

**7800:124 INTRODUCTION TO BALLET***2 credits*

(May be repeated for a total of 4 credits)

Designed for students with little or no previous experience or training. Basic exercises of classical ballet with emphasis on body placement, rhythmic and muscular awareness.

**7800:126 CHOREOGRAPHY: IMPROVISATION***2 credits*

Experiential approach leading to rediscovery of unstructured movement. Emphasis toward inner space and textures as materials for later structurings.

**7800:127 CHOREOGRAPHY: ESTABLISHED FORMS***2 credits*

Prerequisite: 126 or permission. Study and practical application of choreographic principles recorded by earlier masters (Horst, Humphrey, Cunningham, etc.) as they apply to concert dance today.

**7800:175 ORAL INTERPRETATION I***3 credits*

Oral interpretation of printed page with special emphasis on individual performance of poetry and prose fiction.

**7800:222 BALLET TECHNIQUE II***5 credits*

(May be repeated for a total of 20 credits)

Prerequisite: 122 or permission. Continuation of 122, expanding upon vocabulary and established patterns of balletic movement.

**7800:224 FUNDAMENTAL BALLET TECHNIQUE***3 credits*

(May be repeated for a total of 6 credits)

Continuation of 124 designed as a bridge between 124 and 122. Emphasis on perfecting basic vocabulary of the Barre and developing strength.

**7800:225 DANCE AS AN ART FORM***2 credits*

Survey of dance for novice observer: aesthetics, philosophies, methods of training. Lecture and discussion of readings, viewing of film, videotape and live performances.



**7800:228 CHOREOGRAPHY: SOUND AND MOVEMENT I***2 credits*

Prerequisite: 127. Introduction to music structures and their applicability to dance structure. Emphasis on rhythm (simple music notation and score comprehension) and linear aspects of dance/music as well as texture, contrast and parallelism.

**7800:227 CHOREOGRAPHY: SOUND AND MOVEMENT II***2 credits*

Prerequisite: 127. Continuation of 226.

**7800:229 CONTEMPORARY DANCE TECHNIQUE I***2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: 122 or permission. Introduction to contemporary movement styles. For ballet majors or dancers with equal training.

**7800:250 VOICE TRAINING FOR SPEECH AND THEATRE ARTS***1 credit*

Prerequisite: permission. Focus on safe and most effective uses of vocal instrument in its specific application to stage, platform, radio, television and films. Laboratory hours required.

**7800:261 INTRODUCTION TO THEATRE***3 credits*

Aesthetics of theatre — stage theatre, opera theatre, musical theatre, dance theatre — and to some extent media theatre — with attendance at campus productions required. Extra credit for production work.

**7800:262 STAGE MAKEUP***2 credits*

Study of basic principles of stage makeup, from character analysis to execution of a makeup plan. Laboratory hours required.

**7800:263 SCENE PAINTING***1 credit*

Introduction to basic equipment and techniques of scene painting. No particular artistic skills required. Laboratory hours required.

**7800:265 BASIC STAGECRAFT***3 credits*

Content includes basic aspects of stagecraft in terms of production: stage and its equipment; construction and handling of scenery; theatrical hardware. Laboratory hours required.

**7800:271 DIRECTING I***2 credits*

Prerequisite: 261. Emphasizes fundamentals of play directing, including responsibilities of director, stage nomenclature, play selection, character analysis and rehearsals. One-act form stressed.

**7800:275 ORAL INTERPRETATION II***3 credits*

Prerequisite: 175. Oral interpretation from printed page, with special emphasis on group performance of literature.

**7800:320 DANCE NOTATION***2 credits*

Beginning study of Labanotation method of recording movement both as reading skill and means of increasing one's perception of movement *per se*. Designed to prepare student to level of passing beginning examination of the Notation Bureau.

**7800:322 BALLET TECHNIQUE III***5 credits*

(May be repeated for a total of 30 credits)

Prerequisite: 222 and permission. Continuation of 222 with emphasis on development of style and line.

**7800:329 CONTEMPORARY DANCE TECHNIQUE II***2 credits*

(May be repeated for a total of 4 credits)

Prerequisite: 229 or equivalent and 222. Advanced course in contemporary technique.

**7800:330 THEATRE ARTS/DANCE PARTICIPATION***1 credit*

(May be repeated for a total of 4 credits)

Prerequisite: permission of instructor. Participation in theatre-dance activities, including practical laboratory experience. Optional for dance majors; required for theatre majors. Two of the four credits required for theatre majors must be in technical theatre projects.

**7800:335 INTRODUCTION TO STAGE COSTUME HISTORY AND DESIGN***3 credits*

Study of historical civilian and theatre dress. Costumes designed for each historical period in class. Period patterns drafted and constructed during designated lab hours.

**7800:338 HISTORY AND CONSTRUCTION OF PERIOD FURNISHING FOR THE STAGE***3 credits*

Survey 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 welding, upholstery, joinery, finishing methods.

**7800:362 ADVANCED STAGECRAFT***3 credits*

Prerequisite: 265. Includes backstage organization and management in terms of production staff; three-dimensional scenery construction and rigging problems. Laboratory hours required.

**7800:364 INTRODUCTION TO STAGE DESIGN***3 credits*

Introduction to basic design principles and drawing techniques for design of stage scenery. Ability to draw not a prerequisite, but an understanding of basic stagecraft is necessary.

**7800:365 ADVANCED STAGE DESIGN***3 credits*

Focuses on advanced design problems involving designing multiset productions, unusual staging methods and specific historical periods. Understanding of basic design principles necessary. Laboratory hours required.

**7800:367 HISTORY OF THEATRE: GREEK-ELIZABETHAN***4 credits*

Prerequisite: 261 or permission. Development of theatre in ancient Greece and Rome, Medieval period and Renaissance, with emphasis on culture of each period, dramatists, plays, stage conventions and theatre architecture.

**7800:368 HISTORY OF THEATRE: RESTORATION TO PRESENT***4 credits*

Prerequisite: 261 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.

**7800:370 THE AMERICAN THEATRE: PLAYS, PLAYERS AND PLAYWRIGHTS***3 credits*

Study of American theatre, from its beginning in 17th century to present, with emphasis on achievements in 20th century.

**7800:371 DIRECTING II***2 credits*

Prerequisite: permission. Advanced course in principles and techniques of staging plays from past periods, as well as modern plays requiring stylized treatment.

**7800:372 ACTING I***2 credits*

Prerequisites: 250 and 261. Introduction to fundamentals of improvisation, mime and basic stage movement.

**7800:373 ACTING II***2 credits*

Prerequisite: 372. Extension of acting techniques in 372 to include stage terminology, analysis of character and structure in one-act forms, with emphasis on development of short scenes in class.

**7800:374 ACTING III***2 credits*

Prerequisite: 373 and permission. Introduction to advanced acting techniques required in classic plays and modern dramas. This performance course places special emphasis on stylized acting techniques, as well as on dialects.

**7800:376 THEATRE ORGANIZATION AND MANAGEMENT***2 credits*

Prerequisite: 261. Study of successful organization and management of nonprofessional theatre operation.

**7800:403 SPECIAL TOPICS IN THEATRE ARTS AND DANCE***2 credits*

Prerequisite: junior standing. Traditional and nontraditional topics in theatre arts/dance, supplementing courses listed in General Bulletin. May be repeated as different subject areas are covered, but no more than 10 credits may be applied toward B.A. degree.

**7800:422 BALLET TECHNIQUE IV***5 credits*

(May be repeated for a total of 40 credits)

Prerequisite: 322 and permission. Professional level of ballet technique.

**7800:423 HISTORY OF THE DANCE***2 credits*

Survey of the most important developments in dance from prehistory to Renaissance.

**7800:424 20TH CENTURY DANCE***2 credits*

Prerequisite: ballet major and permission of instructor. Investigation of the many different styles and techniques of today's dance and their influence on present-day choreography, Diaghileff to now.

**7800:425 DEVELOPMENT OF BALLET***2 credits*

Ballet origins from Italy to France with various influences from court of Louis XIV through Diaghileff era of today. Each student will do a project in a special area and present it for class discussion. Emphasis on technical and choreographic evolution with regard for developments in other art forms as well as socioeconomic change.

**7800:426 TECHNIQUES OF TEACHING BALLET I***2 credits*

Prerequisite: ballet major and permission of instructor. Lecture course combined with practical work in classroom in basic principles of teaching classical ballet, with emphasis on elementary training.

**7800:427 TECHNIQUES OF TEACHING BALLET II***2 credits*

Prerequisite: 426. Continuation of 426, with more emphasis on teaching and practical work.

**7800:428 DANCE REPERTOIRE***2 credits*

(May be repeated for a total of 12 credits)

Prerequisites: 122 and permission of instructor. Designed to acquaint dance students with classic and contemporary dance repertoire, both original works and reconstructions.

**7800:435 ADVANCED PROBLEMS IN STAGE COSTUME DESIGN***2 credits*

Prerequisite: 335. Advanced study of problems confronting costume designer. Concept of style explored through several design assignments, ranging from large cast musicals to opera to dance to Shakespearean drama. Laboratory hours required.

**7800:462/562 PLAYWRITING***2 credits*

Prerequisite: permission. Principles of dramatic construction learned through analysis of playwright's art, as well as through writing of dramatic compositions by individual student.

**7800:484 STAGE LIGHTING***3 credits*

Outlines history, theories 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.

**7800:485 ADVANCED PROBLEMS IN LIGHTING***2 credits*

Prerequisites: 464 and permission of instructor. Advanced study of problems confronting lighting designer and technician. Emphasis on application of color theory, aesthetic background, and designing for thrust, proscenium and experimental stages.

**7800:487/587 CONTEMPORARY THEATRE STYLES***3 credits*

Study of contemporary theatre from emergence of modern drama in 19th century through a reading list of representative plays, with special emphasis on departures from realism.

**7800:488/588 CHILDREN'S THEATRE***3 credits*

Study of theatre for child audience: play selection, set design and construction, acting, directing. A full-length play for children, produced by the class, culminates course.

**7800:490/590 WORKSHOP IN THEATRE ARTS/DANCE***1-3 credits*

(May be repeated for a total of 8 credits)

Prerequisite: advanced standing or permission. Group study or group projects investigating particular phase of theater arts or dance not covered by other courses in curriculum.

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## Graduate Courses

**7800:800 INTRODUCTION TO GRADUATE STUDIES IN SPEECH AND THEATRE ARTS***1 credit*

Study of basic research methods used in speech and theatre arts. Students present oral seminar reports and written research papers to indicate competence in the several research methods.

**7800:803 SPECIAL TOPICS IN THEATRE ARTS/DANCE***2 credits*

Traditional and experimental topics in theatre and dance, supplementing courses listed in General Bulletin, and generally constructed around areas of special interest to student. May be repeated as different subject areas are covered, but no more than 8 credits may be applied toward M.A. degree).

**7800:836 SPECIAL PROBLEMS IN ORAL INTERPRETATION***2 credits*

Prerequisite: permission. Theory and performance course centering upon interpretation of variety of literary forms both individually and in a group.

**7800:841 PROBLEMS IN DIRECTING***3 credits*

Advanced directing course, with special emphasis on staging of complex plays from all periods of drama.

**7800:842 PROBLEMS IN CONTEMPORARY ACTING***3 credits*

Study of problems confronting advanced actor in such areas as style, environmental theatre, mixed media, nonverbal productions and participatory theatre.

**7800:858 HISTORY OF TECHNICAL PRODUCTION***3 credits*

History of technical production utilizing pictorial materials and models to study evolution of physical stage; scene changing devices; stage machines. Term paper or project required.

**7800:659 HISTORY AND THEORY OF STAGE LIGHTING**

*3 credits*

Historical survey of evolution of stage lighting culminating in understanding of modern lighting design skills and their practical application. Term paper or major project required.

**7800:660 ADVANCED TECHNICAL THEATRE**

*2 credits*

Detailed problems in mounting plays on secondary school, university and professional stages.

**7800:661 SEMINAR IN STAGE COSTUME DESIGN**

*3 credits*

Prerequisite: undergraduate costume design course or permission of instructor. Study and discussion of special interests in costume design: costumes for musical or opera theatre, research of specific period costume patterns, textile modification, portfolio projects, research of noted designers.

**7800:662 SEMINAR IN SCENE DESIGN**

*3 credits*

Prerequisite: 364 or undergraduate scene design course or permission of instructor. Specialized study and discussion of problems in scene design: portfolio projects, research of noted designers, studies of theatre spaces, new scenographic materials, use of various rendering media.

**7800:663 SEMINAR: AMERICAN THEATRE**

*2 credits*

**7800:665 THEATRE AUDIENCES: ANALYSIS AND RESEARCH**

*2 credits*

Examination of both quantitative and qualitative methods of researching today's audience for live theatre, including use of computer-assisted methodology. Research projects, team-taught.

**7800:666 INTRODUCTION TO ARTS MANAGEMENT**

*2 credits*

Examination of efficient and practical arts management, with emphasis on theatre operations. Individual projects and lectures by experts in field highlight course.

**7800:667-668-669 STUDIES IN DRAMATIC PRACTICE**

Detailed and selective studies in theatre, with emphasis on dramaturgy, social influences on theatre, auditoria and staging areas, technical elements and acting techniques.

**7800:667 PRE-ELIZABETHAN THEATRE**

*2 credits*

**7800:668 THEATRE: ELIZABETHAN THROUGH 18TH CENTURY**

*2 credits*

**7800:669 THEATRE: 19TH AND 20TH CENTURIES**

*2 credits*

**7800:690 GRADUATE RESEARCH/READINGS**

*1-3 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission. Individual research of independent readings under supervision of member of departmental graduate faculty.

**7800:899 RESEARCH AND THESIS**

*1-6 credits*

(May be repeated for a total of 6 credits)

Prerequisite: permission of department head.

# The College of Nursing

## 8200: Nursing

### 8200:100 INTRODUCTION TO NURSING

1 credit

Designed to introduce student to nursing. Emphasis on historical perspective as basis for modern trends in profession of nursing.

### 8200:200 NURSING THEORIES AND CONCEPTS

5 credits

Prerequisite: 100. Demonstrates 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.

### 8200:276 NURSING PRACTICUM

3 credits

Prerequisites: 273, 274 and permission. Opportunities for student to make application of theory from 273, 274 in the clinical laboratory. Includes seminar where student compares and contrasts basic concepts and applies them to nursing process. Laboratory.

### 8200:278 COLLOQUIUM FOR R.N. STUDENTS

3 credits

Prerequisite: Course to be taken before challenging nursing courses. Provides opportunity for discussion and application of concepts; professional identity, accountability and responsibility, wellness-illness continuum, therapeutic communication and teaching-learning process. Utilizes nursing process as problem-solving methodology for providing health care. Research process integrated through independent study.

### 8200:300 NURSING PROCESS APPLIED TO MAN'S ADAPTATION IN HEALTH

12 credits

Prerequisites: 100, 200. Focus on healthy man's adaptation throughout life cycle. Emphasis on his interactions within an ecosystem approach. Nursing process used to view this approach as holistic man's adaptation.

### 8200:310 CULTURAL DIMENSIONS OF NURSING CARE

2 credits

Prerequisites: 3750:130 or permission. Application of cultural concepts in delivery of nursing care to individuals, families and communities. Exploration of attitudes, values and beliefs in relation to health and illness. Focus on transcultural health practice in multicultural society.

### 8200:315 NURSING PATHOPHYSIOLOGY

2 credits

Prerequisite: 274 or permission. Broad overview which develops an understanding of disease as disturbance of normal physiologic processes. Course addresses the five needs of man.

### 8200:320 NURSING PROCESS APPLIED TO MAN'S MALADAPTATION

12 credits

Prerequisites: 100, 200, 300. Focus on man's maladaptation throughout life cycle. Emphasis on his interactions within an ecosystem approach. Nursing process used to view this approach as holistic man's adaptation.

### 8200:324 ADULT NURSING THEORY

4 credits

Prerequisites: 273, 274, 276 or permission; prerequisite or corequisite, 315. Theory and concepts of nursing process as applied to adult clients. Emphasis on prevention, acuteness, chronicity and rehabilitation of individuals in health and diminished health situations.

### 8200:325 ADULT NURSING PRACTICE

3 credits

Prerequisites: 273, 274, 276; Prerequisite or corequisite, 315. Clinical application of theories and concepts of nursing process in care

of adult individuals. Experience provided in acute settings and visits to prevention, rehabilitation or chronic care facilities. Laboratory.

### 8200:335 MATERNAL-NEWBORN NURSING THEORY

4 credits

Prerequisites: 276, 3100:381, 3750:130; prerequisite or corequisite, 315; corequisite, 336. Focus on scientific and theoretical bases for nursing process in primary health care to maintain and/or restore health of families during childbearing period.

### 8200:336 MATERNAL-NEWBORN NURSING PRACTICE

3 credits

Corequisite, 335. Application of theory taught in 335 utilizing nursing process in variety of settings for care of families during childbearing cycle.

### 8200:345 NURSING OF CHILDREN THEORY

4 credits

Prerequisites: 276, 3100:381, 3750:130; prerequisite or corequisite, 315. Ten-week course focusing on nursing process as means of assisting children and families to attain, maintain and regain health. Problem-solving/decision-making approach utilized in studying health problems of each age group, infancy through adolescence.

### 8200:346 NURSING OF CHILDREN PRACTICE

3 credits

Prerequisites: 276, 3100:381, 3750:130. Ten-week course with focus on application of theory presented in 345. Family-centered approach utilized in providing learning experiences in variety of community agencies. Laboratory.

### 8200:400 NURSING PROCESS IN COMPLEX SITUATIONS

10 credits

Prerequisites: 100, 200, 300, 320. Assists students in applying knowledge and skills for an integrated approach to nursing process in various settings and to develop roles of leadership and change-agent utilizing teaching/learning process.

### 8200:420 ADVANCED NURSING PRACTICE

10 credits

Prerequisites: 100, 200, 300, 320. Provides student with independent practice opportunity. Emphasis on providing student with practice in an area of his/her choice. Guidance and direction provided to students as necessary by preceptor.

### 8200:441 COMMUNITY NURSING: PSYCHIATRIC ASPECTS

6 credits

Prerequisites: 324, 325; 335, 336; 345, 346, and senior standing. Social and community aspects of psychiatry explored with special attention given to behavioral theories, personality difficulties and clinical application in care of disturbed patients. Laboratory.

### 8200:451 COMMUNITY NURSING: HEALTH AND WELFARE TEAMS

6 credits

Prerequisites: 324, 325; 335, 336; 345, 346 and senior standing. Nursing process adapted to needs of clients and communities at primary, secondary and tertiary levels. Concepts of public health science applied to analysis of family and community health problems. Laboratory.

### 8200:461 ISSUES IN NURSING

2 credits

Prerequisites: one of the following courses: 441, 451, or 471 and senior standing. Orientation to current economic, social and educational trends with their influence on contemporary nursing. Nursing organizations and nursing opportunities, legal and professional relationships with their responsibilities included.

### 8200:471 SEMINAR IN NURSING

6 credits

Prerequisite, senior standing. Facilitates synthesis and application of previous learning for in-depth identification and investigation of major nursing problems. Laboratory includes beginning position functions considering organizational and operational aspects of nursing practice.

**8200:489/589 SPECIAL TOPICS***1-4 credits*

Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit. May be repeated as new topics are presented.

**8200:493/593 WORKSHOPS***1-3 credits*

Group studies of special topics in nursing. May not be used to meet college undergraduate or graduate major requirements. May be used for elective credit only. May be repeated as new topics are presented.

**8200:497 INDEPENDENT STUDY***1-3 credits*

Prerequisites: senior standing and permission of instructor. Provides opportunity to develop greater depth in an area of nursing through methodology specific to discipline of nursing.

**8200:498/598 SPECIAL READINGS***1-4 credits*

Prerequisites: permission of student's adviser or dean. Special readings in an area of concentration may be taken to satisfy elective credit. Special readings may not be used to satisfy requirements of the major.

**Graduate Courses****8200:600 THEORETICAL BASIS FOR NURSING PRACTICE I.***3 credits*

Prerequisite: departmental approval. Study of concepts and theories common to all specialty areas of nursing. Provides firm basis for advanced clinical nursing practice.

**8200:601 THEORETICAL BASIS FOR NURSING PRACTICE II***2 credits*

Prerequisite: 600. Provides a focus for students to explore cognitive and affective concepts and theories and interrelatedness of needs of individuals, groups, families and communities for health care.

**8200:612 NURSING INQUIRY***4 credits*

Prerequisite: statistics. Focus on theories, techniques and methods of research. Adaptation of research methods to clinical setting and application of findings to innovation in practice.

**8200:615 HEALTH APPRAISAL***6 credits*

Prerequisite: formal admission into M.S. in Nursing program. Combination of seminar and clinical practicum used to study health appraisal. Focus on holistic aspects of health appraisal through life span.

**8200:620 NURSING I***6 credits*

Prerequisites: 600 and 615. Focus on concepts, theories, research and practice relative to family as health-sustaining unit within the community.

**8200:621 NURSING II***6 credits*

Prerequisites: 600-601, 612 and 620. Examines developmental phases in life of individuals within family constellation with accompanying maturational and situational issues/crises which precipitate health-related issues/crises.

**8200:670-671 SPECIAL TOPICS***2 credits each*

Prerequisite: completion of all required first-year courses. Selected topics and areas of interest to faculty and students will be available as electives.

**8200:683 FUNCTIONAL AREA OF NURSING-PRACTICE SEMINAR***3 credits*

Prerequisites: 600-601, 612 and 620. Examines concepts and issues regarding developing roles and functions of Family Health Nurse.

**8200:684 FUNCTIONAL AREA OF NURSING-PRACTICE PRACTICUM***3 credits*

Prerequisites: 621 and 683. Clinical practicum for implementing the Family Health Nurse.

**8200:685 FUNCTIONAL AREA OF NURSING — EDUCATION SEMINAR***3 credits*

Prerequisites: 600-601, 612 and 620. Concepts in curriculum development with focus on philosophical commitments, theoretical frameworks and educational goals.

**8200:686 FUNCTIONAL AREA OF NURSING — EDUCATION PRACTICUM***3 credits*

Prerequisites: 621 and 685. Guided study and practice in roles and functions of a teacher with focus on student learning opportunities and appraisal of student achievement.

**8200:687 FUNCTIONAL AREA OF NURSING — ADMINISTRATION SEMINAR***3 credits*

Prerequisites: 600-601, 612 and 620. Appraisal made of power, communication, decision making and change processes in all health care organizations. Theories and principles of administration discussed as they apply to nursing services.

**8200:688 FUNCTIONAL AREA OF NURSING — ADMINISTRATION PRACTICUM***3 credits*

Prerequisites: 621 and 687. Guided study and practice in roles and functions of nursing administrator in selected clinical setting.

**8200:689 COLLOQUIUM***1 credit*

Prerequisite: completion of Functional Area Seminar. Means whereby all students in Functional Area Practicum can synthesize role in relation to family health nursing.

**8200:696 NONTHESIS PROJECT OPTION***3 credits*

Prerequisite: completion of first year of program. Students must carry out an applied clinical project which meets the approval of a project committee. A project is a report of application of research findings in a clinical setting, a critical analysis of literature directed toward a significant nursing problem or approved individual projects.

**8200:699 THESIS***3 credits*

Prerequisite: completion of first year of program. Students must register for a total of 3 semester hours. Thesis is a report of a faculty supervised, clinical or nonclinical research investigation suitable for publication, which meets approval of thesis committee.

# The School of Law

## 9200: Law

### 9200:801 CIVIL PROCEDURE I

3 credits

Survey of civil procedure in state and federal courts. Jurisdiction. Pleading, motions, joinder of parties and causes of action. Judgments. Trial and appellate practice.

### 9200:802 CIVIL PROCEDURE II

3 credits

Prerequisite: 801. Continuation of 601.

### 9200:803 CONSTITUTIONAL LAW I

3 credits

Governmental authority and its distribution under Constitution. Introduction to individual rights and liberties.

### 9200:804 CONSTITUTIONAL LAW II

2 credits

Prerequisite: 803. Continuation of 603.

### 9200:805 CONTRACTS I

3 credits

Nature and purpose of contract law. Formation. Consideration. Contractual alternatives. Reality of consent. Capacity. Statute of Frauds.

### 9200:806 CONTRACTS II

3 credits

Prerequisite: 805. Construction. Breach and associated remedies. Resolution of disputes. Discharge. Third party interests.

### 9200:807 CRIMINAL LAW

3 credits

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.

### 9200:808 EVIDENCE I

3 credits

Nature of judicial proof; law of evidence by which trial and resolution of issues of fact by judicial tribunals are regulated.

### 9200:809 EVIDENCE II

1 credit

Prerequisite: 808. Continuation of 808.

### 9200:811 LEGAL PROCESS

2 credits

Law making by private parties, courts, legislatures and administrative agencies. Statutory interpretation. Coordination of law-making techniques.

### 9200:812 LEGAL PROFESSION

1 credit

Legal profession as an institution. Profession responsibilities of lawyers. Duties and privileges of membership. Professional qualifications.

### 9200:813 LEGAL RESEARCH AND ADVOCACY

1 credit

Development and integration of skills in legal research, argumentation, writing and advocacy.

### 9200:814 PROPERTY I

3 credits

Possession, means by which title may be obtained; fixtures; emblements; estates in land; concurrent ownership; the deed; the mortgage; the land contract.

### 9200:815 PROPERTY II

3 credits

Prerequisite: 814. History of land law; Statute of Frauds; recording; title; registration; covenants for title; adverse possession; landlord-

tenant relationship; legislation restricting land use; easements; licenses; private restrictions; water rights.

### 9200:816 TORTS I

3 credits

Survey of basic tort law and its function; impact of insurance and notions of allocating cost of unintentionally caused harm on tort doctrines keyed to negligence.

### 9200:817 TORTS II

3 credits

Prerequisite: 816. Continuation of 816.

### 9200:821 ACCOUNTING FOR LAWYERS

2 credits

Accounting principles in selected areas, including taxation, corporate enterprise and regulation of economic activity. Income determination, measurement and evaluation of business capital. Interpretation of accounting statements.

### 9200:822 ADMINISTRATION OF CRIMINAL JUSTICE

3 credits

Administration of criminal justice relating processes of criminal law to objectives of criminal correction. Effects of federal constitutional provisions on criminal procedure.

### 9200:823 ADMINISTRATIVE PROCESS

3 credits

Prerequisite: 604. Traditional politico-legal theories of separation of powers and the administrative process; procedure for rule-making and adjudication; conclusiveness of administrative determination.

### 9200:824 AIR LAW

3 credits

Law of modern air transportation in international and domestic flight and emerging area of outer space.

### 9200:825 ANTITRUST LAW

3 credits

Fundamentals of antitrust; questions of evidence in price fixing and boycotts under the Sherman Act, resale restrictions and tie-ins, scope of antitrust law and certain exemptions.

### 9200:826 BASIC BUSINESS ASSOCIATIONS

3 credits

Vicarious liability. Employment relationships and scope. Authority and apparent authority. Misrepresentation by an agent. Undisclosed principal. Ratification. Elements of partnership and other unincorporated business associations.

### 9200:827 COMMERCIAL TRANSACTIONS: NEGOTIABLE INSTRUMENTS

3 credits

Commercial paper and bank deposits and collections under Articles 3 and 4 of Uniform Commercial Code and under prior uniform acts relevant to modern law of commercial paper.

### 9200:828 COMMERCIAL TRANSACTIONS: SALES

2 credits

Law of sales of personal property under Article 2 of Uniform Commercial Code and under prior uniform acts relevant to the modern law of sales.

### 9200:829 COMMERCIAL TRANSACTIONS: SECURED TRANSACTIONS

3 credits

Security interests in personal property emphasizing Uniform Commercial Code, portions of Bankruptcy Act affecting rights of secured parties; problems of priority between security interests and federal tax liens.

### 9200:830 ADMIRALTY

3 credits

History and jurisdiction of and practice in admiralty; carriage of goods by water and combined transport, collision, salvage and insurance; claims for personal injury and death claims; maritime lien.

### 9200:831 CONFLICT OF LAWS I

3 credits

Problems of application of private law in jural relations containing one or more foreign law elements. Jurisdiction and enforcement of foreign judgments.

**9200:633 CORPORATIONS I**

*2 credits*

Conduct of the business enterprise. Control, management, financing and governmental regulation of corporations, whether publicly owned or closely held. Management benefits and hazards, asset distribution to shareholders, dissolution and reorganization.

**9200:634 CORPORATIONS II**

*2 credits*

Prerequisite: 633. Continuation of 633.

**9200:635 CREDITORS' RIGHTS**

*3 credits*

Recommended: 627. Provisional remedies and enforcement of judgments. Fraudulent conveyances. General assignments for benefit of creditors. Creditors' agreements. Bankruptcy.

**9200:636 DEVELOPMENT OF LAW AND LEGAL INSTITUTIONS**

*2 credits*

Historical introduction to Anglo-American legal system.

**9200:637 EQUAL OPPORTUNITY LAW**

*3 credits*

Prerequisite: 604. Legal developments, primarily federal, affecting discrimination in employment, housing and public accommodations.

**9200:638 FAMILY LAW**

*3 credits*

Major 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.

**9200:639 FEDERAL ESTATE AND GIFT TAXATION**

*3 credits*

Federal estate and gift taxation; relation between federal income tax and federal taxes on gratuitous transfers; place of federal taxes in estate planning.

**9200:641 FEDERAL INCOME TAXATION I**

*3 credits*

Survey of federal income tax law with primary emphasis on individual income. May be taken independently of 642.

**9200:642 FEDERAL INCOME TAXATION II**

*2 credits*

Prerequisite: 641. Survey of federal income tax law with primary emphasis on taxation of business units.

**9200:643 FEDERAL JURISDICTION AND PROCEDURE**

*3 credits*

Prerequisite: 602. Congress, the federal courts and the Constitution; appellate and collateral review; federal question, diversity and admiralty cases; sovereign immunity, abstention and enjoining state actions; choice of law; federal common law.

**9200:644 FINANCING STATE AND LOCAL GOVERNMENT**

*2 credits*

Planning, programming and budgeting; state and federal programs; local taxes; use of public authorities and special districts; property tax limits; debt limits; state supervision of local finance.

**9200:645 GOVERNMENT CONTRACTS**

*3 credits*

Prerequisite: 606. Contracting with governmental units, primarily federal, including sovereign power to contract and limitations thereon; contract formation and performance clauses and litigation, considering applicable statutes, regulations and executive orders.

**9200:646 INJURIES TO RELATIONS**

*2 credits*

Prerequisites: 606 and 617. Theories of liability for invasion of non-personal and nonproperty interests arising in three-party situations. Tort remedies available for physical, appropriational and defamatory harms to trade, family, community and political relations.

**9200:647 JUVENILE LAW**

*2 credits*

Study of laws relating to juveniles (neglect, dependency and delinquency).

**9200:648 INSURANCE LAW**

*3 credits*

Legal principles of insurance of person and property, including insurable interest, measure of recovery, subrogation, rights of assignees and beneficiaries, warranty, concealment, representation and fraud. Adjustment of claims. Regulation.

**9200:649 INTERNATIONAL LAW**

*3 credits*

Nature and breadth of international law; its sources and subjects, and relation to municipal law, to individuals and to international organizations.

**9200:650 LABOR LAW**

*3 credits*

Collective bargaining process. Representation procedures. Duty to bargain. Unfair labor practices of labor and management, strikes, picketing, boycotts, lockouts. Jurisdictional disputes.

**9200:651 LABOR ARBITRATION AND COLLECTIVE BARGAINING**

*2 credits*

Prerequisite: 650. Law and practice of labor arbitration and collective bargaining, including study of grievance arbitration process pursuant to collective bargaining agreements.

**9200:652 LAND USE PLANNING**

*3 credits*

Prerequisite: 615. Assumptions, doctrines and implications of planning law; zoning; legal and administrative problems involved in allocating and developing land located in metropolitan area.

**9200:653 LAW AND SOCIAL CHANGE**

*2 credits*

Examination and study of influence of law on society and society on law to illuminate contemporary developments in law and social institutions.

**9200:654 LAW OF CONSUMER CREDIT**

*2 credits*

Recommended: 627 and 628. Consumer sale and credit transactions and their regulation, including specific statutory and administrative approaches dealing with problems of individual consumers and classes of consumers.

**9200:656 LAW REVIEW INTERNSHIP**

*1 credit*

Prerequisite: completion of first year and invitation predicated upon scholarship or demonstrated writing skills. Citations; preparation of casenote of recent cases; recent case analyses and criticism; correction of casenotes or comments of others (spacing). Graded Credit/Noncredit. Credit for 656, 657, 658, 666, 696 and 698 not to exceed ten.

**9200:657 LAW REVIEW STAFF**

*1 credit*

Prerequisite: 656. Preparation of comment or article of publishable quality. May be repeated twice. Graded Credit/Noncredit. Credit for 656, 657, 658, 666, 696 and 698 not to exceed ten.

**9200:658 LAW REVIEW EDITORIAL BOARD**

*1 credit*

Prerequisites: 657 and election to Editorial Board. One credit per term for service on *Akron Law Review* Editorial Board; total credits for 656, 657 and 658 not to exceed four. Graded Credit/Noncredit. Credit for 656, 657, 658, 666, 696 and 698 not to exceed ten.

**9200:659 LAWYER AS NEGOTIATOR**

*2 credits*

Prerequisite: 602. Lawyer's role as negotiator in planning negotiations and determination of strategies to effect object, weighing legal, economic, behavioristic, ethical and social factors that condition outcomes.

**9200:660 LABOR RELATIONS LAW IN THE PUBLIC SECTOR**

*3 credits*

Collective bargaining in public (governmental) sector; forming and joining unions; establishing bargaining relationship; duty to bargain;

union security arrangements; collective action, impasse resolution and enforcement of collective agreements.

**9200:661 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 statutory law, federal administrative agencies, civil actions, constitutional considerations; federal tax incentives.

**9200:662 LEGAL REGULATION OF COMPETITION**

2 credits

Regulated and unregulated sectors of industry aside from antitrust law; law of pricing practices; regulation of entry and rates; Robinson-Patman Act.

**9200:663 LEGISLATION**

2 credits

Legislative process in context of legislative organization, policy formulation, drafting, statutory construction, constitutional limitations on subject matter and form and judicial interpretation; illustrative drafting problems.

**9200:664 LOCAL GOVERNMENT LAW**

3 credits

Nature of municipal corporations. Creation, annexation and dissolution. Home rule. Police powers. Financing. Federal-state-local relationships. Staffing. Contractual and delictual liability.

**9200:665 MODERN REAL ESTATE TRANSACTIONS**

3 credits

Prerequisite: 615. Real estate transactions such as condominiums, cooperatives, sales and leasebacks, high credit leases, leasehold mortgage, construction lending and syndication, with major emphasis on financing and related tax considerations.

**9200:666 MOOT COURT**

1 credit

Credit for participation by brief writing or written argumentation in National Moot Court, Jessup International or other approved moot court competitions. Not open to first-year students. May be repeated once. Graded Credit/Noncredit. Credit for 656, 657, 658, 666, 696 and 698 not to exceed ten.

**9200:667 PATENT, TRADEMARK AND COPYRIGHT LAW**

2 credits

Federal protection of patents, trademarks and copyrights, registration procedures, appeals from administrative actions, rights of patentees, trademark owners and copyright holders, grants, licenses and assignments, infringement, plagiarism and unfair competition.

**9200:668 REMEDIES I**

3 credits

Equitable remedies, unjust enrichment and restitution; remedies for injuries to tangible property, and economic, dignitary and personal interests including wrongful death. May be taken independently of 669.

**9200:669 REMEDIES II**

2 credits

Prerequisite: 668. Disaffirmance and remedies for deception, duress, undue influence, hardship, unconscionability, mistake, breach of contract and nominally unenforceable transactions. 668 may be taken independently of 669.

**9200:670 SEMINAR IN CRIMINAL PROCESS**

2 credits

Prerequisite: 622. Study of criminal process including decision to prosecute, grand jury, preliminary hearing, joinder and severance, discovery, plea bargaining, jury trials and double jeopardy.

**9200:671 SECURITIES REGULATION**

3 credits

Prerequisite: 634. 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.

**9200:672 SEMINAR IN BUSINESS PLANNING**

3 credits

Prerequisites: 634 and 642 or permission of instructor. Advanced course using the problem approach in planning business transactions in light of applicable corporate, tax and securities law.

**9200:673 SEMINAR IN COMPARATIVE LEGAL SYSTEMS**

2 credits

Study of contemporary foreign legal systems by discussion of basic problems in specific areas on comparative basis.

**9200:674 SEMINAR IN CORRECTIONS AND PRISONERS' REMEDIES**

3 credits

Study of theoretical and practical aspects of sentencing, punishment, treatment, release and alternatives thereto; developments in field of prisoners' rights and remedies.

**9200:675 SEMINAR IN ESTATE PLANNING**

3 credits

Prerequisites: 641 and 686 or permission of instructor. Relevant tax and nontax problems in planning of estates and examination of dispositive devices in accomplishing objectives of estate planning.

**9200:676 SEMINAR IN INTERNATIONAL TRANSACTIONS AND RELATIONS**

3 credits

Legal problems in doing business abroad. Entry, holding, property, economic activity and choice of incorporated form; restrictive practices, currency and exchange. European Common Market. Relations being developed and developing countries.

**9200:677 SEMINAR IN JUDICIAL ADMINISTRATION**

2 credits

Problems and practices in selection, tenure and removal of judges, selection and responsibilities of court administrators, the effect of devices and procedures used to expedite movement of cases through litigation process; analysis of suggested reforms.

**9200:678 SEMINAR IN JURISPRUDENCE**

2 credits

Examination and evaluation of principal theories of legal philosophy. Theories are frequently considered in connection with concrete problems and are evaluated in light of various goal values.

**9200:679 SEMINAR IN LABOR LAW**

2 credits

Prerequisite: 650. Selected issues in labor law and labor relations such as internal union affairs, union democracy, bargaining in public sector, discrimination in employment and topical affairs.

**9200:680 SEMINAR IN PENSION AND PROFIT SHARING**

2 credits

Recommended: 634 and 642. Employee benefit plans; qualified pension and profit-sharing plans under Internal Revenue Code. Non-qualified contracts involving individual employees.

**9200:681 SEMINAR IN LEGAL PROBLEMS OF THE DISADVANTAGED**

2 credits

Selected legal problems of persons disadvantaged by such factors as age, illness, mental incompetency and poverty.

**9200:682 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.

**9200:683 SEMINAR IN PRODUCT LIABILITY**

2 credits

Prerequisite: 617. Recommended: 628. Liability for defective products and developing legal theories and remedies. Examination of government regulation of dangerous and defective products.

**9200:684 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 nonlegal materials, and expository legal writing.



**9200:685 WILLS, TRUSTS AND ESTATES I**

*3 credits*

Intestate succession; execution, revocation and revalidation of wills; creation and termination of trusts; gifts to charity; will substitutes; future interests; powers of appointment; class gifts.

**9200:686 WILLS, TRUSTS AND ESTATES II**

*3 credits*

Prerequisite: 685. Continuation of 685.

**9200:691 SELECTED PROBLEMS, INTERNATIONAL LAW**

*2 credits*

Prerequisite: 649. Topical international problems and use of international law research materials in dealing with concrete international legal problems; analysis and preparation of short legal opinions.

**9200:692 PROBLEMS IN TRIAL ADVOCACY**

*3 credits*

Assigned problems requiring application of rules and procedures and professional considerations in typical trial contexts.

**9200:696 LEGAL AID**

*2 credits*

Prerequisites: 28 credits, and permission of clinical director. May be repeated once. Application of legal knowledge to practical problems in supervised public law office contexts. Graded Credit/Noncredit. Credit for 656, 657, 658, 666, 696 and 698 not to exceed ten.

**9200:698 INDIVIDUAL STUDIES AND RESEARCH**

*2 credits*

(May be repeated for a total of 4 credits)

With permission of dean, special problems, projects or research may be taken for credit under supervision of member of faculty. Credit for 656, 657, 658, 666, 696 and 698 not to exceed ten.

## Board of Trustees

August 1979

- MR. RAY C. BLISS**; 2535 Addyston Road, Akron, Ohio 44313 (Term expires 1984).
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## Administrative Officers

August 1979

### Administration

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- WILLIAM A. ROGERS**, *Executive Dean of Continuing Education and Public Services*, Ed.D.
- CAESAR A. CARRINO**, *Dean of Evening College and Summer Sessions*, Ph.D.
- MARION A. RUEBEL**, *Dean of General College*, Ph.D.
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- ALLEN M. BOYER**, *Assistant to the Executive Director of University Relations and Communications*, B.A.
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- FOSTER S. BUCHEL**, *Assistant to the President*, M.B.A.
- ROBERT G. CORBETT**, *Coordinator of Research*, Ph.D.
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- THOMAS E. GETZINGER**, *University Auditor and Assistant to the Vice President for Business and Finance*, M.B.A.
- RUSSEL GIERSCHE**, *Director of Physical Plant*, B.M.E.
- ROBERT D. HAHN**, *Director of Student Financial Aids*, M.Ed.
- FAITH I. HELMICK**, *Assistant Director of Academic Personnel*, M.S.T.E.
- ALBERTA R. HENSLEY**, *Assistant to the Executive Director of University Relations and Communications*, B.S.
- JAY R. HERSHEY**, *Director of Residence Halls*, M.Ed.
- DUDLEY C. JOHNSON, JR.**, *Director of Counseling and Advising*, M.S.Ed.
- DAVID JOHNSTON**, *Assistant to the President — Development*, M.S.
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- HENRY NETTLING**, *Controller*, B.S.B.A.
- MARY O'NEIL**, *Director of University News Service*, B.A.
- JAMES O. OSWALD**, *Director of University Publications*, B.S.Ed., B.A.
- JAMES W. OWEN**, *Director of Admissions*, M.A.
- CHARLES F. POSTON**, *Director of Academic Services and Personnel*, Ph.D.
- GEORGE E. RAYMER**, *Director of Radio and Television Information*, M.A.Ed.
- DONALD E. SABATINO**, *Director of the Gardner Student Center*, M.A.Ed.
- H. PAUL SCHRANK, JR.**, *University Librarian*, M.S.
- FRANK B. THOMAS**, *Director of the Computer Center*, M.A.
- KATHRYN VEGSO**, *Assistant Dean of Continuing Education and Public Services*, M.S.Ed.
- JOSEPH M. WALTON**, *Associate Dean of Graduate Studies and Research*, Ph.D.
- JOHN S. WATT**, *Associate Provost*, Ph.D.
- PAUL S. WINGARD**, *Associate Dean of the Buchtel College of Arts and Sciences*, Ph.D.
- W. RICHARD WRIGHT**, *Assistant to the President — Off-Campus*, B.A.

# Emeritus Faculty

August 1979

- NORMAN P. AUBURN**, *President Emeritus of the University, Professor Emeritus of Political Science and Consultant* (1951) (Ret. as President 1971; Consultant 1971-) B.A., University of Cincinnati, 1927; L.L.D. Parsons College, 1945; LL.D., University of Cincinnati, 1952; D.Sc., University of Tulsa, 1957; LL.D., University of Liberia (West Africa), 1959; Litt. D., Washburn University of Topeka, 1961; L.H.D., College of Wooster, 1963; LL.D., The University of Akron, 1971.
- PAUL ACQUARONE**, *Professor Emeritus of Botany and Geology* (1931) (Ret. 1965) B.S., Pennsylvania State College; Ph.D., Johns Hopkins University, 1929.
- DAVID E. ANDERSON**, *Associate Professor Emeritus of Engineering Materials* (1923) (Ret. 1962) B.A., Augustana College; M.S., University of Chicago, 1923.
- HELEN MAE ARNETT**, *Associate Professor Emeritus of Bibliography* (1953) (Ret. 1972) B.A., The University of Akron; B.S.L.S., Case Western Reserve University; M.A., San Jose State College (California); Ph.D., Case Western Reserve University, 1965.
- JOHN BACHMANN**, *Professor Emeritus of Chemistry* (1960) (Ret. 1976) B.Ch.E., Ph.D., University of Minnesota, 1939.
- GERTRUDE BADGER**, *Associate Professor Emeritus of Education* (1965) (Ret. 1977) B.S.Ed., B.A., The Ohio State University; M.Ed., Kent State University, 1960.
- EVELYN BAER**, *Associate Professor Emeritus of Speech* (1966) (Ret. 1974) B.A., University of Chicago; M.A., The University of Akron, 1948.
- FRANK V. BALDO**, *Professor Emeritus of Marketing* (1969) (Ret. 1979) B.B.A., Fenn College; M.B.A., Case Western Reserve University; Ph.D., Pennsylvania State University, 1968.
- IRENE C. BEAR**, *Professor Emeritus of Home Economics* (1944) (Ret. 1968) B.S., Illinois Wesleyan University, M.A., Texas State College for Women, 1937.
- HELEN BECKER**, *Associate Professor Emeritus of Primary Education* (1949) (Ret. 1968) B.S., M.A., Ed.D., Columbia University Teachers College, 1949.
- CLARE BEDILLION**, *Associate Professor Emeritus* (1968) (Ret. 1975) B.A., Woman's College of Georgia; M.A., New York University, 1944; Ph.D., University of Michigan, 1974.
- ROBERT C. BERRY**, *Director of Placement Emeritus* (1946) (Ret. 1976) B.S.B.A., The University of Akron, 1942.
- MICHAEL BEZBATCHENKO**, *Professor Emeritus of Mechanical Engineering* (June 1949) (Ret. 1979) B.M.E., The University of Akron; M.S., Case Western Reserve University, 1954; P.E., Ohio.
- VINCENT J. BIONDO**, *Assistant Professor Emeritus of Education* (1968) (Ret. 1976) B.A., M.A., M.A.Ed., The University of Akron, 1957.
- RENA NANCY CABLE**, *Associate Professor Emeritus of Art* (1927) (Ret. 1953) B.F., M.Ed., The University of Akron, 1931.
- FRANCES A. CLARK**, *Associate Professor Emeritus of Accounting* (1946) (Ret. 1974) B.S., The University of Akron; M.Ed., University of Pittsburgh, 1946.
- KENNETH COCHRANE**, *Professor Emeritus of Physical Education* (1948) (Ret. 1973) B.E., The University of Akron; M.Ed., University of Pittsburgh, 1941.
- GERALD CORSARO**, *Professor Emeritus of Chemistry* (1948) (Ret. 1976) B.S., Fenn College; M.S., Ph.D., Case Western Reserve University, 1944.
- DONALD M. DAVIS**, *Associate Professor Emeritus of Transportation* (1966) (Ret. 1977) B.S.B.A., University of Dayton; M.S., University of North Carolina, 1952.
- EMILY DAVIS**, *Professor Emeritus of Art* (1945) (Ret. 1973) B.A., The Ohio State University; M.A., Columbia University, Teachers College; Ph.D., The Ohio State University, 1936.
- HJALMER W. DISTAD**, *Professor Emeritus of Education* (1934) (Ret. 1963) B.S.Ed., M.A., Ph.D., University of Minnesota, 1926.
- JAMES F. DUNLAP**, *Professor Emeritus of Theatre Arts* (1955) (Ret. December 1978) B.S.Ed., Wilmington College; M.A., Ph.D., The Ohio State University, 1954.
- ALICE M. FLAKSMAN**, *Associate Professor Emeritus of Music* (1965) (Ret. 1978) B.A., Hunter College; M.A., Columbia University, Teachers College; Ph.D., The University of Akron, 1972.
- ELDORA FLINT**, *Associate Professor Emeritus of Secretarial Science* (1929) (Ret. 1957) B.E., The University of Akron; M.S.Ed., Syracuse University, 1935.
- VAUGHN W. FLOUTZ**, *Professor Emeritus of Chemistry*, (1941) (Ret. 1970) B.A., Olivet College; M.A., Ph.D., University of Colorado, 1932.
- OMER R. FOUTS**, *Associate Professor Emeritus of Physics* (1926) (Ret. 1965) B.A., Wittenberg University; M.A., The Ohio State University, 1925.
- OSSIAN GRUBER**, *Assistant Professor Emeritus of Business Administration* (1946) (Ret. 1962) B.A., University of Minnesota; M.B.A., Northwestern University, 1928.
- EMILE GRUNBERG**, *Professor Emeritus of Economics* (1946) (1956) (Ret. 1970) A.M., M.A., Ph.D., University of Frankfurt, 1930.
- DOROTHY HAMLIN**, *Professor Emeritus of Bibliography* (February 1937) (Ret. 1972) B.A., The University of Akron; B.S.L.S., Case Western Reserve University, 1942.
- LOUIS F. HAMPPEL**, *Associate Professor Emeritus of Finance* (1933) (1968) (Ret. 1974) B.S., The University of Akron; M.B.A., Northwestern University, 1931.
- PETER J. HAMPTON**, *Associate Professor Emeritus* (August 1954) (Ret. 1975) B.A., M.A., University of Manitoba (Canada); Ph.D., Case Western Reserve University, 1950.
- LESLIE P. HARDY**, *Financial Vice President Emeritus* (1934) (Ret. 1964) B.S.Ed., Kent State University; M.S.Ed., The University of Akron, 1935; L.H.D., The University of Akron.
- MARY GRACE HARRINGTON**, *Associate Professor Emeritus of Bibliography* (1960) (Ret. 1976) B.S., The University of Akron; B.A.L.S., University of Michigan, 1939.
- ELIZABETH J. HITTLE**, *Professor Emeritus of Speech* (1950) (Ret. December, 1978) B.S.Ed., The University of Akron; M.A., Kent State University; Ed.D., Case Western Reserve University, 1963.
- IRENE HORNING**, *Assistant Professor Emeritus of Biology* (1946) (Ret. 1970) St. John's Hospital School of Nursing, R.N., 1928; B.S.N., Western Reserve University, 1934.
- MARTHA HOSFELT**, *Instructor Emeritus in English* (1961) (Ret. 1977) B.A., The University of Akron, 1959.
- DONATO INTERNOSCIA**, *Professor Emeritus of Modern Languages* (1938) (Ret. 1963) B.A., Broadview College; M.A., Ph.D., Northwestern University, 1938.
- ALFRED H. JOHNSON**, *Associate Professor Emeritus of Education* (1956) (Ret. 1969) B.S., College of Wooster; M.S., Ph.D., University of Wisconsin, 1956.
- DON A. KEISTER**, *Distinguished Professor Emeritus of English* (1931) (Ret. 1971) B.A., M.A., The University of Akron; Ph.D., Western Reserve University, 1947.
- R.D. LANDON**, *Professor Emeritus of Civil Engineering* (February 1946) (Ret. 1963) C.E., M.S., University of Cincinnati, 1927; P.E., Ohio
- DOROTHY LAUBACHER**, *Professor Emeritus of Home Economics* (1950) (Ret. 1977) B.S., M.A., The Ohio State University; M.L.S., Kent State University, 1967.
- WILL LIPSCOMBE**, *Associate Professor Emeritus of Mathematics* (1921) (Ret. 1962) B.S., Florida State College; M.S., The Ohio State University, 1926.
- EDWIN L. LIVELY**, *Professor Emeritus of Sociology* (1963) (Ret. 1978) B.A.Ed., Fairmont State College (W.Va.); M.A., Ph.D., The Ohio State University, 1959.
- MARGARET EVELYN MAUCH**, *Professor Emeritus of Mathematics* (1945) (Ret. 1963) B.S., Huron College; M.S., Ph.D., University of Chicago, 1938.

- JAMES MCLAIN**, *Professor Emeritus of Economics* (1946) (Ret. 1978) B.A., The University of Akron; M.A., Western Reserve University; Ph.D., The Ohio State University, 1959.
- MAURICE MORTON**, *Regents' Professor Emeritus of Polymer Chemistry* (October 1948) (Ret. August 1978) B.S., Ph.D., McGill University (Canada), 1945.
- ESTELLE B. NAES**, *Professor Emeritus of Nursing and Dean Emeritus of the College of Nursing* (1966) (Ret. 1975) B.S.N., M.S.N.E., Ph.D., Saint Louis University, 1922, R.N.
- SAMUEL C. NEWMAN**, *Professor Emeritus of Sociology* (1951) (Ret. 1973) B.A., University of Pittsburgh; M.A., Oberlin College; Ph.D., The Ohio State University, 1939.
- OLIVER OCASEK**, *Professor Emeritus of Education* (January 1961) (Ret. December 1978) B.S.Ed., M.A., Kent State University, 1950.
- ROBERT A. OETJEN**, *Dean Emeritus of Buchtel College of Arts and Sciences and Professor Emeritus of Physics* (July 1970) (Ret. 1977) B.A., Asbury College; M.S., Ph.D., University of Michigan, 1942.
- SARAH ORLINOFF**, *Associate Professor Emeritus of Education* (1963) (Ret. 1978) B.A., M.A.Ed., The University of Akron; Ph.D., Case Western Reserve University, 1963.
- MABEL RIEDINGER**, *Distinguished Professor Emeritus of Education* (February 1947) (Ret. 1971) B.A., Mount Union College; M.A., University of Chicago; Ed.D., Columbia University, Teachers College, 1946 L.H.D., Mount Union College, 1965.
- EDGAR C. ROBERTS**, *Assistant Professor of English* (1926) (Ret. 1966) B.S.Ed., M.A., The Ohio State University, 1924.
- LOUIS D. RODABAUGH**, *Associate Professor Emeritus of Mathematics* (1964) (Ret. 1978) B.A., Miami University; M.A., Ph.D., The Ohio State University, 1938.
- CECIL A. ROGERS**, *University Auditor Emeritus* (1932) (Ret. 1969) B.S.B.A., The University of Akron, 1932.
- CHARLES ROGLER**, *Professor Emeritus of Sociology* (1949) (Ret. 1962) B.A., M.A., University of Michigan; Ph.D., University of Kansas, 1935.
- MARGARET F. ROGLER**, *Assistant Professor Emeritus of Marketing* (1948) (Ret. 1972) B.S., University of Nebraska; M.S., University of Denver, 1944.
- LOUIS ROSS**, *Professor Emeritus of Mathematics* (February 1946) (Ret. 1977) B.S., B.A., M.A.Ed., The University of Akron; Ph.D., Case Western Reserve University, 1955.
- RAY H. SANDEFUR**, *Professor Emeritus of Speech and Dean Emeritus of the College of Fine and Applied Arts* (1950) (Ret. August 1978) B.A., B.S.Ed., Emporia State Teachers College; M.A., University of Colorado; Ph.D., State University of Iowa, 1950.
- ROY V. SHERMAN**, *Professor Emeritus of Political Science* (1929) (Ret. 1967) B.A., M.A., Ph.D., State University of Iowa, 1927.
- KENNETH F. SIBILA**, *Professor Emeritus of Electrical Engineering* (February 1940) (Ret. 1977) B.S.E.E., M.S.E.E., Case Institute of Technology, 1937, P.E., Ohio.
- MARY VERNON SLUSHER**, *Associate Professor Emeritus of Accounting* (1947) (1954) (Ret. 1971) B.S., M.A., Virginia Polytechnic Institute, 1931; C.P.A., Virginia.
- HENRY P. SMITH**, *Associate Professor Emeritus of Music* (1947) (Ret. 1978) B.M., Illinois Wesleyan University; M.A., Carnegie Institute of Technology; Ed.D., Columbia University, Teachers College, 1949.
- SAMUEL SPINAK**, *Assistant Professor Emeritus of Music* (1968) (Ret. 1978) Licentiate, King's College in Sussex (England), 1929; Fellowship, Trinity College in London.
- JANE M. STEINER**, *Associate Professor Emeritus in the Community and Technical College* (1968) (Ret. July 1978) B.A., The University of Akron; M.A., Western Reserve University, 1945.
- HELEN S. THACKABERRY**, *Assistant Professor Emeritus of English* (1940) (Ret. 1976) B.A., M.A., State University of Iowa, 1937.
- ROBERT E. THACKABERRY**, *Professor Emeritus of English* (1938) (Ret. 1976) B.A., M.A., Ph.D., State University of Iowa, 1937.
- ERNEST R. THACKERAY**, *Distinguished Professor Emeritus of Physics* (1949) (Ret. 1972) B.A., M.A., University of Saskatchewan (Canada); Ph.D., University of Wisconsin, 1948.
- EVELYN M. TOVEY**, *Professor Emeritus of Nursing* (1950) (Ret. 1975) B.S.N., M.S.N., Case Western Reserve University, 1950; R.N., City Hospital of Akron.
- AUDRA TUCKER**, *Associate Professor Emeritus of Secretarial Science* (1926) (Ret. 1970) B.A., The University of Akron; M.A., New York University, 1936.
- PAUL E. TWINING**, *Professor Emeritus of Psychology* (November 1941) (Ret. 1969) B.S., Ottawa University; M.A., University of Kansas; Ph.D., University of Chicago, 1938.
- PAUL UHLINGER**, *Professor Emeritus of Philosophy* (1968) (Ret. 1979) B.A., Youngstown University; B.D., Oberlin College; Ph.D., Boston University, 1953.
- DONALD S. VARIAN**, *Associate Professor Emeritus of Speech* (1934) (Ret. 1972) B.A., M.A., University of Wisconsin, 1934.
- MILTON WALES**, *Assistant Professor Emeritus of Mechanical Technology* (1966) (Ret. 1977) B.S., Louisiana State University; M.Ed., Pennsylvania State University, 1966.
- FRANCIS WERNER**, *Instructor Emeritus of Psychology*, (June 1951) (Ret. August 1978) B.A., M.A., The University of Akron, 1952.
- FLORENCE N. WHITNEY**, *Associate Professor Emeritus of English* (1936) (Ret. 1953) B.A., Dakota Wesleyan University; M.A., Columbia University, 1913.
- MARY H. WILSON**, *Assistant Professor Emeritus of Home Economics* (April 1943) (Ret. 1972) B.S., Iowa State College, 1932.

# \* Full-Time Faculty and Administration

August 1979

## Full-Time

**D.J. GUZZETTA**, *President of the University and Professor of Higher Education* (1954 - March, 1968), (August, 1971) B.A., Ed.M., Ed.D., University of Buffalo, 1953; LL.D., The University of Akron, 1968; D.S.Sc., Marian College, 1971; LL.D., Kent State University, 1971; L.H.D., Walsh College (Canton, O.), 1972.

**NORMAN P. AUBURN**, *Consultant, President Emeritus of the University and Professor Emeritus of Political Science* (1951) B.A., University of Cincinnati, 1927; LL.D., Parsons College, 1945; LL.D., University of Cincinnati, 1952; D.Sc., University of Tulsa, 1957; LL.D., University of Liberia (West Africa), 1959; Litt.D., Washburn University of Topeka, 1961; L.H.D., College of Wooster, 1963; LL.D., The University of Akron, 1971.

**PAUL ABERCROMBIE**, *Associate Director of Purchasing* (1971) B.S., B.S.Ed., M.Ed., Miami University (Ohio), 1960.

**IRVING ACHORN**, *Professor of Art* (1965) B.S., M.A., Kent State University, (1956).

**ALEXANDER L. ADAMS**, *Instructor in Physical Education* (1970) B.S.Ed., M.S.Ed., The University of Akron, 1970.

**HOBART W. ADAMS**, *Professor of Accounting* (1969) B.S., Kent State University; M.B.A., D.B.A., Indiana University, 1967.

**MAURICE L. ADAMS**, *Associate Professor of Mechanical Engineering* (1977) B.S.M.E., Lehigh University; M.Eng.Sc., Pennsylvania State University; Ph.D., University of Pittsburgh, 1977.

**RONNIE G. ADAMS**, *Associate Professor of Surveying and Construction Technology* (1969) B.C.E. Cleveland State University; M.S.C.E., Lehigh University, 1963.

**JOHN THOMAS ADOLPH**, *Associate Professor of Physical Education* (1969) B.A., The University of Akron; M.Ed., Ohio University; Ph.D., The Ohio State University, 1969.

**CAROLYN A. ALBANESE**, *Assistant Professor of Home Economics* (1978) B.S., Southern Illinois University; M.S., The Ohio State University, 1969.

**DORIS ALDRICH**, *Associate Professor of Home Economics* (1973) B.S., M.Ed., Kent State University, 1972.

**RALPH A. ALEXANDER**, *Assistant Professor of Psychology* (1973) B.A., Arizona State University; M.A., Ph.D., University of Rochester, 1974.

**RONALD E. ALEXANDER**, *Associate Professor of Law* (1973) B.A., J.D., Ohio State University; LL.M., University of Pennsylvania (1978).

**TANA F. ALEXANDER**, *Assistant Professor of Music* (1978) B.M., The Ohio State University; M.M., University of Louisville, 1974.

**GUY S. ALITTO**, *Assistant Professor of History* (1976) B.A., King's College; M.A., University of Chicago; Ph.D., Harvard University, 1975.

**HOLLIS ALLAN**, *Professor of Law* (1972) B.A., The University of Akron; J.D., University of Michigan Law School, 1949.

**VIRGINIA ALLANSON**, *Assistant Professor of Bibliography and Research Librarian* (October 1968) B.S., Purdue University; M.L.S., Kent State University, 1966.

**ABDUL AMIR AL-RUBAIY**, *Associate Professor of Education* (1972) B.S., M.A., E.D.S., Eastern Michigan University, 1967.

**MICHAEL P. ALTIERE**, *Assistant Professor of Aerospace Studies* (August, 1978) B.S., Allegheny College, M.S., Central Missouri State University, 1976; Captain, USAF.

\*The dates in parentheses indicate the beginning of service at The University of Akron; unless otherwise stated, service began in the month of September.

**BARBARA S. ANANDAM**, *Assistant Professor of Nursing* (March 1973) B.S., M.S., Boston University, 1964.

**JAMES C. ANDERSON**, *Assistant Professor of Philosophy* (1979) B.A., State University of New York at Geneseo; M.A., Ph.D., Syracuse University, 1975.

**ALEXIS M. ANIKEEFF**, *Professor of Psychology* (1967) A.B., A.M., University of Michigan; Ph.D., Purdue University, 1949.

**JOHN ARENDT**, *Instructor in Surveying and Construction Technology* (February 1967) B.S.M.E., Cleveland State University, 1944.

**WALTER E. ARMS**, *Associate Professor of Education* (1968) B.S., Northwest Missouri State College; M.Ed., University of South Dakota; Ed.D., Indiana University, 1968.

**BARBARA N. ARMSTRONG**, *Professor of Home Economics* (1972) B.S., M.S., West Virginia University; Ph.D., The Ohio State University, 1970.

**BRUCE R. ARMSTRONG**, *Assistant Professor of Art* (1971) B.F.A., California Institute of the Arts, M.F.A., Washington State University, 1968.

**WILLIAM J. ARN**, *Associate Professor of Education* (1967) B.S., Ohio Northern University; M.S., Bowling Green State University; Ph.D., Kent State University, 1967.

**ROBIN DIANE ARNOLD**, *Assistant Professor of Physical Education (Wayne General and Technical College)* (1972) B.S., University of Maryland; M.A., The Ohio State University, 1966.

**JOANN M. ARRIETTA**, *Advisor of Students* (July 1976) B.A.Ed., M.A.Ed., The University of Akron, 1975.

**JOHN H. ASHLEY**, *Producer/Director for Television Productions* (1973) B.S., Southern Illinois University; M.S., Indiana University, 1973.

**GLENN A. ATWOOD**, *Professor of Chemical Engineering* (1965) B.S.Ch.E., M.S.Ch.E., Iowa State University; Ph.D., University of Washington, 1963 P.E., Ohio.

**MARY ELLEN ATWOOD**, *Assistant Professor of Education and of Home Economics, Director of University Nursery School* (1969) B.S., Iowa State University; M.S., The University of Akron, 1968.

**CHRISTOPHER J. AUGSBURGER**, *Accountant* (February 1979) B.S., The University of Akron, 1979.

**SUSAN AUSTIN**, *Lecturer in Nursing* (1978) B.S.N., Kent State University, 1971.

**RICHARD L. AYNES**, *Assistant Professor of Law* (1976) B.S., Miami University; J.D., Cleveland State University, 1974.

**BRIDGET F. BAGNOLA**, *Assistant Director of Student Financial Aids* (March, 1979) B.A., The University of Akron; M.A., Bowling Green State University, 1974.

**ROGER BAIN**, *Associate Professor of Geology* (1970) B.S., M.S., University of Wisconsin; Ph.D., Brigham Young University, 1968.

**J. WAYNE BAKER**, *Associate Professor of History* (1968) B.A., Western Baptist Bible College; B.D., Talbot Theological Seminary; B.A., Pepperdine College; M.A., Ph.D., University of Iowa, 1970.

**HOWARD R. BALDWIN**, *Registrar* (July 1967) B.P.S.M., Mount Union College; M.Ed., Kent State University, 1960.

**GEORGE W. BALL**, *Executive Director of University Relations and Communications* (1957) B.A., Mount Union College, 1943.

**ARPAD FREDERIC BANDA**, *Professor of Finance* (1968) B.S., City College of New York; M.B.A., Ph.D., New York University, 1964.

**JAMES P. BANKS**, *Development Officer* (May 1974) B.S., Ohio University, 1950.

**H. KENNETH BARKER**, *Dean of the College of Education and Professor of Education* (1966) A.B., M.A., University of Louisville; Ph.D., University of Michigan, 1959.

**ANNA P. BARNUM**, *Assistant Professor in the Community and Technical College* (1970) A.B., Middlebury College; M.A., University of Vermont; J.D., The University of Akron, 1977.

**DAVID G. BARR**, *Associate Professor of Education* (1967) B.S., M.A., Kent State University, 1966.

**CHARLES M. BARRESI**, *Professor of Sociology* (1966) B.A., M.A., Ph.D., State University of New York at Buffalo, 1965.

**GERALD V. BARRETT**, *Professor of Psychology* (1973) B.A., Wittenberg University; M.S., Ph.D., Case Western University, 1962.

- PHILLIP E. BARTLETT**, *Facilities Planner* (July 1971) B.A., Kent State University, 1963.
- WALTER BARZDITIS, JR.**, *Manager of Parking Systems* (April 1970) B.A., Ripon College, 1950.
- MARIAN BAUER**, *Associate Professor of Nursing* (1969) B.A., Maryville College; M.N., Western Reserve University, 1941, R.N.
- EDWARD L. BAXTER**, *Assistant Professor of Business Law* (1974) A.B., Bowdoin College; J.D., Harvard Law School; LL.M., M.A., Boston University, 1966.
- THOMAS G. BECK**, *General Manager - WAUP-FM* (June 1978) B.S., Slippery Rock State College; M.A., Ohio University, 1975.
- DONALD E. BECKER**, *Associate Professor of Management* (1959) B.A., M.A., Oberlin College, 1948.
- JOHN D. BEE**, *Associate Professor of Mass Media-Communication* (1969) B.A., Ohio University; M.A., Ph.D., University of Wisconsin, 1972.
- GREGORY K. BELL**, *Assistant Professor of Theatre Arts* (1978) B.A., Morehead State University, M.F.A., University of Minnesota, 1976.
- JUTTA T. BENDREMER**, *Instructor in English* (1967) B.A., Hunter College; M.A., Brooklyn College, 1951.
- EUGENE MOSS BENEDICT**, *Assistant Professor in the Community and Technical College* (January 1969) S.T.B., Boston University School of Theology; B.A.Ed., M.A., The University of Akron, 1964.
- MICHAEL S. BENNETT**, *Assistant Professor in the Community and Technical College* (1976) B.S., M.S., Ph.D., The Ohio State University, 1976.
- DAVID S. BERNSTEIN**, *Associate Professor of Music* (1972) B.M., M.M., Florida State University; D.M., Indiana University, 1974.
- DONALD BERQUIST**, *Associate Professor of Accounting* (1968) B.S.B.A., Youngstown University; M.Acc., The Ohio State University, 1964; C.P.A., Ohio.
- CARL A. BERSANI**, *Associate Professor of Sociology* (1965) B.A., Eastern Michigan University; M.A., University of Michigan; Ph.D., Iowa State University, 1965.
- WILLIAM J. BERTIN**, *Instructor in Finance* (1979) B.A., University of Dayton; M.A., Ohio University, 1972.
- WILLIAM H. BEYER**, *Professor of Mathematics* (1961) B.S., The University of Akron; M.S., Ph.D., Virginia Polytechnic Institute, 1961.
- CLARK E. BIGGINS**, *Director of Purchasing* (April 1967) B.S.C., Ohio University, 1957.
- CAROL L. BILICZKY**, *Editor - Publications* (August 1978) B.A., Kent State University, 1974.
- CLIFFORD BILLIONS**, *Assistant Professor of Music* (1978) B.M., Oklahoma Baptist University, M.M., Converse College.
- DON BIRDSELL**, *Assistant Dean of the College of Education and Professor of Education* (1977) B.A., Luther College; M.A., University of Minnesota; Ph.D., University of Iowa, 1965.
- PAUL MARTIN BISS**, *Associate Professor of Music* (1972) B.M., Indiana University; M.S., Julliard School of Music, 1968.
- ROBERT R. BLACK**, *Associate Professor of Economics* (1958) B.A., Carleton College; M.B.A., University of Chicago; Ph.D., University of California at Berkeley, 1963.
- PATSY B. BLACKWELL**, *Assistant Professor of Speech* (1973) B.S.Ed., Mississippi College; M.A., Louisiana State University, 1971.
- RALPH O. BLACKWOOD**, *Professor of Education* (1967) B.A., Muskingum College; M.A., Ph.D., The Ohio State University, 1962.
- C. ROBERT BLANKENSHIP**, *Instructor in Education and Head of Audio-Visual Services* (1952) (July 1956) B.S.B.A., The University of Akron; M.S.Ed., Indiana University, 1963.
- BORIS BLICK**, *Associate Professor of History* (1964) B.A., Brooklyn College; M.A., Ph.D., University of Wisconsin, 1958.
- JEAN L. BLOSSER**, *Instructor in Speech* (January 1979) B.S., Ohio University; M.A., Kent State University, 1974.
- JOHN ANDREW BLOUGH**, *Professor of Education* (1979) B.A., College of Wooster; Ph.D., Ohio State, 1971.
- GERALD J. BLUMENFELD**, *Professor of Education* (1970) A.B., Harris Teachers College; M.A., Ed.D., Washington University (St. Louis), 1966.
- PERRI JANE BOMAR**, *Associate Professor of Nursing* (1972) B.S., The University of Akron; M.S., Case Western Reserve University, 1972; R.N.
- RICHARD K. BONNELL**, *Assistant to the Dean of the Evening College and Summer Sessions* (August 1969) B.A., M.A., The University of Akron, 1972.
- TERRELL J. BOOK**, *Assistant Professor of Mass Media-Communication* (1978) B.A., University of Wisconsin, M.A., The Ohio State University, 1975.
- CHARLES E. BOOMS**, *Instructor in Physical Education* (July 1979) B.S.Ed., The University of Akron, 1978.
- MARTHA A. BOOTH**, *Assistant Director of Admissions* (June 1971) B.S.Ed., M.S.Ed., The University of Akron, 1979.
- ROBERT BOSSAR**, *Manager of Staff Employee Relations* (October 1974) B.A., Kent State University, 1970.
- DONALD L. BOWLES**, *Assistant to the Vice President for Planning* (February 1959) B.S.I.M., B.A.Ed., The University of Akron, 1959.
- ALLEN M. BOYER**, *Assistant to the Executive Director of University Relations and Communications* (November 1966) B.A., The University of Akron, 1942.
- LARRY G. BRADLEY**, *Professor of Education* (1969) B.A., Muskingum College; M.A., West Virginia University; Ph.D., Ohio University, 1969.
- FRANK BRADSHAW**, *Associate Professor of Music* (1968) B.A., M.A., Bob Jones University, 1950.
- IRVIN W. BRANDEL**, *Counselor, Testing and Counseling Bureau* (July 1969) B.S., Bowling Green State University; M.A., Michigan State University; Ph.D., The University of Akron, 1975.
- MARCO BRDAR**, *Associate Professor of Chemical Technology* (1967) B.S., M.A., Case Western Reserve University, 1954.
- MERLIN G. BRINER**, *Professor of Law* (1970) B.S.B.A., University of Wichita; J.D., The University of Akron, 1966.
- DAVID R. BRINK**, *Instructor in Bibliography and Research Librarian* (December 1976) B.A., Wabash College, B.D., University of Chicago; M.A., University of Minnesota, 1970.
- THOMAS M. BRITTAIN**, *Professor of Mechanical Engineering and Professor of Mechanical Technology* (February 1965) B.M.E., The University of Akron; M.S., Ph.D., University of Illinois, 1966.
- JERI F. BROWN**, *Adviser of Students* (February 1978) B.A., Westmar College, M.Ed., Kent State University, 1977.
- THOMAS O. BROWN**, *Adjunct Associate Professor of Education and Director of Testing and Counseling* (July 1964) B.S., M.Ed., Mississippi State University; Ph.D., Kent State University, 1968.
- DAVID J. BRUNNER**, *Assistant Registrar* (November 1978) B.S., Bowling Green State University; M.S.Ed., The University of Akron, 1973.
- ANGELA ROSE BRUNO**, *Associate Professor of Education* (1969) B.S., Seton Hill College; M.Ed., Indiana University of Pennsylvania; Ed.D., Pennsylvania State University, 1969.
- STANLEY R. BRUNS**, *Assistant Professor in the Community and Technical College* (1970) B.S., Fort Hays Kansas State College; M.A., Central Michigan University, 1970.
- JAMES BUCHANAN**, *Associate Professor of Philosophy* (1971) B.A., M.A., Ohio University; Ph.D., Pennsylvania State University, 1970.
- FOSTER S. BUCHTEL**, *Assistant to the President* (July 1974) B.A., The University of Akron; M.B.A., Western Michigan University, 1970.
- DAVID BUCHTHAL**, *Associate Professor of Mathematics* (1971) B.S., Loyola University; M.S., Ph.D., Purdue University, 1971.
- DAN LEE BUIE**, *Liaison Coordinator* (July 1968) B.S., M.S., The University of Akron, 1969.
- ARTHUR BURFORD**, *Professor of Geology* (1968) B.A., Cornell University; M.S., University of Tulsa; Ph.D., University of Michigan, 1960.

- VICTOR BURKE**, *Assistant Professor of Electrical Engineering* (1975) B.S., M.S., Ph.D., Case Western Reserve University, 1975.
- JERRY J. BURR**, *Assistant Professor of Dance* (1975) Cleveland College; studied with Robert Joffrey of New York, Audrey De Vos of London, Michele de Lutry and William Millie of Munich.
- DONALD R. BURROWBRIDGE**, *Associate Professor of Coordination and Director of the Cooperative Program, College of Engineering* (July 1965) B.S., University of Wisconsin; M.S., Virginia Polytechnic Institute, 1965.
- JUNE K. BURTON**, *Associate Professor of History* (1971) B.A., M.A., Stetson University; Ph.D., University of Georgia, 1971.
- DOUGLAS R. BUTTURFF**, *Associate Professor of English* (1977) B.A., University of Pennsylvania; M.A., Georgetown University; Ph.D., University of Illinois, 1968.
- ALBERT C. BUXTON**, *Assistant Professor of Electronic Technology* (January 1975) B.S.E.E., M.S.E.E., Tulane University, 1952.
- DENNIS M. BYRNE**, *Assistant Professor of Economics* (1975) B.S., Villanova University; M.A., Ph.D., University of Notre Dame, 1975.
- ALLEN MANUAL CABRAL**, *Associate Professor of Accounting* (1972) B.S.B.A., American International College; M.S., Kent State University; J.D., The University of Akron, 1975.
- LEONARD M. CALABRESE**, *Instructor in the Community and Technical College* (1977) B.A., John Carroll University; M.A., Northwestern University, 1974.
- RICHARD A. CALKINS**, *Adviser of Students and Instructor in the Community and Technical College* (1964) A.B., Westminster College (Pa.), 1961.
- DOUGLAS E. CAMERON**, *Associate Professor of Mathematics* (1969) B.A., Miami University; M.S., The University of Akron; Ph.D., Virginia Polytechnic Institute, 1970.
- GERALD R. CAMP**, *Associate Professor of Data Processing* (March 1969) B.A., Case Western Reserve University; M.S., The University of Akron, 1971.
- T. ALLEN CAMPBELL**, *Assistant Professor of Physical Education* (August 1968) B.S., M.S., The University of Akron, 1970.
- MARY CAPOTOSTO**, *Assistant Professor of Speech and Clinical Supervisor in Speech Pathology* (1968) B.A., The University of Akron; M.A., DePaul University, 1967.
- NATHAN F. CARDARELLI**, *Professor of General Technology and Director of Environmental Management Lab* (1968) B.S., B.A., M.S., M.A., The University of Akron, 1961.
- MARILYN JEAN CARRELL**, *Director of Placement* (October 1972) B.S., M.S.Ed., The University of Akron, 1972.
- CAESAR A. CARRINO**, *Dean of the Evening College and Summer Sessions and Professor of Education* (1967) B.S., Baldwin-Wallace College; M.S., The University of Akron; Ph.D., Case Western Reserve University, 1965.
- J. DEAN CARRO**, *Assistant Coordinator-Appellate Review Office and Staff Attorney* (November 1978) B.A., State University of New York at New Paltz; J.D., The University of Akron, 1978.
- GREGORY A. CARROLL**, *Editor - Publications* (August, 1978) B.S.Ed., Kent State University; M.Ed., The University of Akron, 1974.
- ROBERT C. CARSON**, *Associate Professor of Mathematics* (July 1963) B.S., M.S., Purdue University; Ph.D., University of Wisconsin, 1953.
- VINCENT H. CASSIDY**, *Professor of History* (1969) B.A., M.A., Ph.D., University of North Carolina, 1957.
- DANA F. CASTLE**, *Assistant Professor of Law* (March 1974) B.S., Cornell University; J.D., The University of Akron, 1973.
- STEPHEN S. CASTLE**, *Professor of Marketing* (1967) B.A., Hillsdale College; M.B.A., University of Michigan; Ph.D., Michigan State University, 1964.
- JOSEPH F. CECCIO**, *Assistant Professor of English* (1978) B.A., Loyola College, M.A., Ph.D., University of Illinois, 1975.
- WARREN N. CHALMERS**, *Assistant Professor of Aerospace Studies* (July 1978) B.S., University of Northern Colorado; M.Ed., Wichita State University, 1976; Captain, USAF.
- TOMASITA M. CHANDLER**, *Associate Professor of Home Economics* (1971) B.A., New Mexico Highlands University; M.S., Ph.D., Texas Women's University, 1970.
- TSE-YUNG CHANG**, *Professor of Civil Engineering* (1970) B.S.C.E., National Taiwan University; M.S., Ph.D., University of California at Berkeley, 1966.
- CHIOU-SHIUN CHEN**, *Professor of Electrical Engineering* (1968) B.S., National Taiwan University; M.S., Ph.D., University of Rochester, 1967; P.E., Ohio.
- CHUN-FU CHEN**, *Professor of Electrical Engineering* (February 1968) B.S., National Taiwan University; M.S., University of Tennessee; Ph.D., Vanderbilt University, 1968; P.E., Ohio.
- MARY ELIZABETH CHESROWN**, *Assistant Director of the Institute for Civic Education* (June 1965) B.A., The University of Akron, 1949.
- MARIAN J. CHILDS**, *Administrative Project Leader, Computer Center* (January 1978) B.S., The University of Akron, 1964.
- GERALDINE F. CHITTY**, *Assistant Registrar* (October 1967) B.A.Ed., The University of Akron, 1968.
- FRANK L. CHLAD**, *Administrative Officer, Department of Chemistry* (January 1967) B.B.A., Michigan State University, 1956.
- YONG H. CHO**, *Professor of Urban Studies and Professor of Political Science* (1967) B.A., Seoul National University (Korea); M.P.A., Ph.D., Syracuse University, 1965.
- HUGH GENE CHRISTMAN**, *Associate Professor of Education* (1970) B.S., Miami University; M.Ed., Ed.D., Pennsylvania State University, 1970.
- ROBERT D. CHRISTMAN**, *Administrative Project Leader, Computer Center* (1969) B.S.E.E., The University of Akron, 1972.
- HARRY CHU**, *Associate Professor of Physics* (1969) B.S., Chikung University; M.A., Ph.D., State University of New York at Stony Brook, 1969.
- MAMERTO L. CHU, JR.**, *Associate Professor of Mechanical Engineering* (1968) B.S.M.E., Iloilo City University (Philippines); M.S.M.E., Ph.D., University of Houston, 1967.
- BENJAMIN T. CHUNG**, *Associate Professor of Mechanical Engineering* (December 1969) B.S.M.E., Taiwan Provincial Cheng-Kung University; M.S.M.E., Kansas State University; M.S. Math., University of Wisconsin; Ph.D., Kansas State University, 1968.
- LINDGREN L. CHYI**, *Assistant Professor of Geology* (1978) B.Sc., National Taiwan University; M.Sc., Ph.D., McMaster University, 1972.
- STEPHEN J. CHYLINSKI**, *Assistant Professor in the Community and Technical College* (March 1971) B.A., Cleveland State University; M.A., University of Pittsburgh, 1970.
- BARBARA CLARK**, *Instructor in Bibliography and Senior Cataloger* (October 1957) B.A., The University of Akron, 1950.
- BLANCHE E. CLEGG**, *Associate Professor of Education* (1973) B.S.Ed., Wayne State University; M.Ed., University of Massachusetts; Ph.D., University of Washington, 1971.
- BARBARA E. CLEMENTS**, *Associate Professor of History* (1971) B.A., University of Richmond; M.A., Ph.D., Duke University, 1971.
- HELEN K. CLEMINSHAW**, *Assistant Professor of Home Economics* (1977) B.S., Rutgers; M.A., Ph.D., Kent State University, 1977.
- BERNARD J. CLIFFORD**, *Assistant Professor of Social Work* (1969) B.A., Western Reserve University; M.S.S.W., University of Wisconsin, 1952.
- RUTH CLINEFELTER**, *Associate Professor of Bibliography and Research Librarian* (June 1952) B.A., M.A., The University of Akron; M.A.L.S., Kent State University, 1956.
- LLOYD CLOSE**, *Instructor in Transportation* (1979) B.S., Kent State University, 1951.
- JOHN R. COCHRAN**, *Associate Professor of Education* (1969) B.S., M.A., Ph.D., The Ohio State University, 1968.
- JOHN R. COLE**, *Assistant Professor of Secretarial Science* (1976) B.S., M.A., University of Pittsburgh; Ph.D., Kent State University, 1976.
- JOANN COLLIER**, *Assistant Professor of Nursing* (1974) B.S., Loretto Heights College; M.S., University of Colorado, 1974.
- CHRISTOPHER COLLINS**, *Producer/Director, Instructional TV* (August 1975) B.S., Miami University; M.S., University of Kentucky, 1974.
- ROBERT E. COLLINS**, *Associate Professor of Secretarial Science* (1964) B.A., Glensville State Teachers College (W.Va.); M.A., West Virginia University, 1952.

- KELVIE C. COMER**, *Assistant to the Dean, College of Fine and Applied Arts* (1978) B.S., Pennsylvania State University, Ed.M., Ed.D., Temple University, 1978.
- M. HENRY CONE**, *Associate Professor of Education* (1971) B.A.E., B.S.A., M.Ed., University of Florida; D.Ed., Harvard Graduate School of Education, 1962.
- MARTHA R. CONRAD**, *Lecturer in Nursing* (1977) B.S.N., The Ohio State University, 1975.
- VERNON COOK**, *Associate Professor of Political Science* (1965) B.A., The Ohio State University, 1951.
- MADLINE A. COOKE**, *Associate Professor of Education* (1969) B.S., The Ohio State University; M.A., Mexico City College; Ph.D., The Ohio State University, 1969.
- DALE E. COONS**, *Associate Professor of Education and Director of Special Education* (1973) B.S.Ed., Butler University; M.S.Ed., Ph.D., Indiana University, 1970.
- ROBERT G. CORBETT**, *Coordinator of Research and Professor of Geology* (1969) B.S., M.S., Ph.D., University of Michigan, 1964.
- DANIEL B. CORMANY**, *Adviser of Students* (March 1979) B.A., The University of Akron; M.A., Bowling Green State University, 1979.
- FRANK J. COSTA**, *Director of Center for Urban Studies and Associate Professor of Urban Studies* (1972) B.A., Kent State University; M.S., Case Western Reserve University; Ph.D., University of Wisconsin, 1974.
- DAVID F. COX**, *Associate Professor of Urban Studies and of Philosophy* (1970) A.B., Morningside College; S.T.B., Ph.D., Boston University, 1953.
- THOMAS J. COYNE**, *Professor of Business Economics* (1969) B.B.A., Marshall University; M.B.A., Kent State University; Ph.D., Case Western Reserve University, 1967.
- WALDEN BLAIN CRABTREE**, *Professor of Education* (1968) B.A., St. Meinrad College (Indiana); M.S.Ed., Ph.D., Indiana University, 1968.
- MARY ANN CRAWFORD**, *Instructor in Nursing* (1976) B.S.N., St. John College, 1965.
- ROGER B. CREEL**, *Professor of Physics* (1970) B.A., Kalamazoo College; Ph.D., Iowa State University, 1969.
- JAMES L. CRESS**, *Assistant Professor of Accounting* (1973) B.S.B.A., M.B.A., Bowling Green State University, 1964.
- KENNETH G. CUNNINGHAM**, *Instructor in Physical Education* (April 1976) B.S.Ed., University of Cincinnati; M.Ed., Kent State University, 1966.
- RONALD J. CURTIS**, *Instructor in Physical Education* (March 1979) B.S.Ed., M.S.Ed., Ohio University, 1971.
- DAVID D. DAHNKE**, *Instructor in English Language Institute* (June 1978) B.A., University of Wisconsin; M.A., University of Texas, 1975.
- FAYE DAMBROT**, *Assistant Professor of Psychology and Administrative Assistant* (1967) B.S., Carnegie Institute of Technology; M.A., The University of Akron, 1966.
- VICTORIA J. D'AMBROCIA**, *Instructor in Nursing* (1978) B.S.N., Kent State University; M.S.N., University of Kentucky, 1976.
- MICHAEL F. d'AMICO**, *Associate Professor of Marketing* (1972) B.S., Georgetown University; M.B.A., Rutgers University; D.B.A., Texas Technical University, 1975.
- SUSAN J. DANIELS**, *Assistant Professor of Education* (1977) B.A., Marian College; M.A., Ph.D., Ball State University, 1977.
- ALEX DARBES**, *Associate Professor of Psychology* (1968) B.A., Ph.D., Case Western Reserve University, 1951.
- STEPHEN DARLING**, *Associate Professor of Chemistry* (1970) B.S., University of Wisconsin; M.A., Ph.D., Columbia University, 1959.
- RALPH FRANK DARR, JR.**, *Professor of Education* (1968) B.S., Southeast Missouri College; M.A., Washington University; Ph.D., Southern Illinois University, 1967.
- PATRICK A. DARRAH**, *Assistant Director of Placement* (August 1976) B.S., M.S., The University of Akron, 1976.
- PAUL A. DAUM**, *Associate Professor of Theatre Arts* (1965) B.F.A., Wesleyan College; M.A., The University of Akron, 1964; Ph.D., The Ohio State University, 1973.
- ALEXANDER N. DAVIS**, *Instructor in Theatre Arts* (1976) B.A., The University of Dayton; M.A., The University of Akron, 1975.
- GEORGE D. DAVIS**, *Professor of Speech* (1974) B.S.Ed., Kent State University; M.A., Ph.D., Ohio State University, 1968.
- KATHLEEN M. DAVIS**, *Instructor in Ballet* (1977) B.A., The University of Akron, 1975.
- N. F. DAVIS**, *Professor of Management* (1970) B.S., Lincoln University; M.B.A., Washington University; Ph.D., Indiana University, 1960.
- RUSSELL K. DAVIS, III**, *Assistant Professor of Business Management Technology* (1971) B.S.B.A., M.A., Wayne State University; Ed.D., The University of Akron, 1978.
- LINDA L. DAWALT**, *Adviser of Students* (July 1978) A.B.Ed., Marian College; M.Ed., Kent State University, 1978.
- MARY H. K. DEE**, *Assistant Professor in the Community and Technical College* (1970) B.S., University of the East (Manila); M.A., Central Missouri State University, 1969.
- MARY DEHAVEN**, *Assistant Professor of English* (1969) B.A., University of Wisconsin; M.A., The University of Akron; Ph.D., Case Western Reserve University, 1972.
- ROBERT DEITCHMAN**, *Assistant Professor of Psychology* (1970) B.B.A., City College of New York; M.A., Ph.D., University of Tennessee, 1968.
- RODNEY E. DEITZ**, *Accountant* (April 1979) B.S., The University of Akron, 1978.
- BERNARD A. DEITZER**, *Professor of Management and Director of Seminars* (January 1967) A.B., Allegheny College; M.L.L., University of Pittsburgh; Ph.D., The Ohio State University, 1967.
- JAMES L. DENNISON**, *Assistant Professor of Physical Education* (July 1965) B.A., College of Wooster; M.A.Ed., The University of Akron, 1968.
- HAMILTON DESAUSSURE**, *Professor of Law* (1970) B.A., Yale University; LL.B., Harvard University; LL.M., McGill Institute of International Air Law, 1953.
- IRWIN DEUTSCHER**, *Professor of Sociology* (1975) A.B., M.S., M.A., Ph.D., University of Missouri, 1959.
- LILLIAN J. DEYOUNG**, *Dean of the College of Nursing and Professor of Nursing* (1975) B.S., M.S., Ph.D., University of Utah, 1975.
- ROBERT L. DIAL**, *Associate Professor of English* (1965) B.S., Central Missouri State College; M.A., Ph.D., University of Missouri, 1963.
- RICHARD M. DIENESCH**, *Assistant Professor of Business Management Technology* (Wayne General and Technical College) (1975) B.B.A., M.B.A., University of Michigan, 1970.
- CONSTANTIN DIMITRIU**, *Instructor in Classics* (May 1970) Baccalaureate, University of Cluj, Romania; M.A., National University of Bucuresti; M.S.L.S., Case Western Reserve University, 1969.
- THOMAS M. DITZEL**, *Assistant Professor of Mass Media-Communication and Head of Television Services* (December 1977) B.S., Marquette University; M.A., Miami University; Ph.D., The Ohio State University, 1971.
- CECIL L. DOBBINS**, *Director of Special Programs* (February 1965) B.B.A., Cleveland State University, 1952.
- DOROTHY M. DOBRINDT**, *Associate Professor of Nursing* (1969) R.N., St. Elizabeth Hospital School of Nursing; B.S., St. Louis University; M.Ed., Columbia University, 1965.
- SHIRLEY R. DOHERTY**, *Assistant Professor of Nursing* (1975) B.S.N., Syracuse University; M.S.N., Wayne State University, 1968.
- DAVID T. DOLAN**, *Assistant Dean of the Community and Technical College and Associate Professor of Sales and Merchandising* (1965) A.B., M. Ret. Adv., University of Pittsburgh; Ph.D., The University of Akron, 1973.
- HELMAR H.A. DOLLWET**, *Associate Professor of Biology* (January 1970) B.S., University of Michigan and Technische Hochschule, Munich; M.S., Ph.D., University of California at Riverside, 1969.
- JOSEPH J. DONATELLI, JR.**, *Instructor in Modern Languages* (1967) B.A., M.A., The University of Akron, 1968.
- JAMES E. DOVERSPIKE**, *Professor of Education* (1960) B.S., Indiana University of Pennsylvania; M.Ed., Ed.D., Pennsylvania State University, 1961.
- ROBERT L. DOWDY**, *Instructor in Physical Education* (August 1974) B.A., M.S., Indiana University, 1973.



- CLARENCE B. DRENNON**, *Associate Professor of Civil Engineering* (1975) B.S., Colorado School of Mines, M.E., Texas A & M, Ph.D., Iowa State University, 1972.
- MILAN F. DUBRAVIC**, *Professor of Chemical Technology* (January 1968) Ingenieur of Chemistry, University of Zagreb; Ph.D., University of Massachusetts, 1968.
- MARGARET M. DUFALA**, *Senior Academic Programmer/Analyst* (January 1975) B.S., M.S., The University of Akron, 1969.
- R. WAYNE DUFF**, *Vice President for Business and Finance, Assistant Secretary of the Board of Trustees* (May 1963) B.A., Oberlin College; LL.B., Cleveland-Marshall Law School, 1951.
- MARY F. DUGAN**, *Instructor in Nursing* (1975) B.S., M.S., Hunter College, 1962.
- THEODORE DUKE**, *Distinguished Professor of Latin and Greek* (1946) B.A., The University of Akron; M.A., Case Western Reserve University; Ph.D., Johns Hopkins University, 1946.
- PAUL H. DUNHAM**, *Assistant Professor of Industrial Technology* (1972) B.A., Case Western Reserve University; M.B.A., Kent State University, 1960.
- JAMES W. DUNLAP**, *Dean of the College of Business Administration and Professor of Finance* (1963) B.B.A., Memphis State University; M.B.A., Ph.D., University of Arkansas, 1963.
- JOSEPH J. DUNN**, *Director of Special Events — Athletics* (March 1976) B.S., Kent State University, 1974.
- KENNETH A. DUNNING**, *Associate Professor of Management* (1973) B.S.E.E., North Carolina State; M.B.A., Ph.D., University of Pittsburgh, 1972.
- ROGER W. DURBIN**, *Instructor in Bibliography and Serials Cataloger* (1977) B.A., M.A., Youngstown State University; M.L.S., Kent State University, 1979.
- DAVID R. DURST**, *Associate Professor of Finance* (1968) B.S.B.A., Kent State University; M.B.A., D.B.A., Georgia State University, 1972.
- ASHOK DUTT**, *Professor of Geography and of Urban Studies* (1968) B.A., M.A., Ph.D., Patna University (India), 1961.
- CHARLES MYRON DYE**, *Associate Professor of Education* (1972) A.B., Harris Teachers College; M.A., Ph.D., Washington University, 1971.
- JAN EBERLE**, *Instructor in Music* (1979) B.M., The Curtis Institute of Music, 1976.
- JOSEPH A. EDMINISTER**, *Associate Professor of Electrical Engineering and Assistant to the Dean of the College of Engineering* (May 1957) B.E.E., M.S.E.; J.D., The University of Akron, 1974, P.E., Ohio.
- SANDRA B. EDWARDS**, *Program Associate in the Department of Special Programs* (1976) B.A., M.A., The University of Akron, 1968.
- JAMES J. EGAN**, *Associate Professor of English* (1971) B.A., St. Joseph's College; M.A., Ph.D., University of Notre Dame, 1971.
- JANICE L. ELEY**, *Instructor in Food Service Management* (1976) B.A., Manchester College; M.A., Indiana University, 1974.
- ROBERT K. ELEY**, *Assistant Professor of Education* (1975) B.S.Ed., M.Ed., Ball State University; Ed.D., Indiana University, 1975.
- DANIEL L. ELY**, *Assistant Professor of Biology* (1976) B.A., M.S., Ph.D., University of Southern California, 1971.
- JAMES R. EMORE**, *Assistant Professor of Accounting* (1973) B.A.Ed., M.S.Acct., The University of Akron, 1973.
- ELIZABETH B. ERICKSON**, *Assistant Professor of Economics* (1969) B.S., M.S., University of Western Australia; Ph.D., University of Illinois, 1972.
- EARL L. ERTMAN**, *Associate Professor of Art* (1967) B.S., University of Southern Mississippi; M.A., Case Western Reserve University, 1967.
- BERNARD L. ESPORITE**, *Associate Professor of Education* (1970) B.S.Ed., M.Ed., Ph.D., Miami University, 1971.
- CHARLOTTE ESSNER**, *Associate Professor of Speech* (1965) B.A., Hunter College; M.A., The University of Akron, 1964.
- THOMAS K. FAGERHOLM**, *Assistant Professor of Aerospace Studies* (July 1979) B.S., M.S., Colorado State University, 1975; Captain, USAF.
- FRED W. FANNING**, *Associate Professor of Education* (1972) B.S., M.A., Ph.D., The Ohio State University, 1972.
- STEPHEN FARIA, JR.**, *Instructor in Modern Languages* (1967) B.A., Harvard University; M.A., Cornell University, 1965.
- MICHAEL F. FARONA**, *Professor of Chemistry* (1964) B.S., Case Western Reserve University; M.S., Ph.D., The Ohio State University, 1964.
- JAMES N. FARRELL**, *Professor of Aerospace Studies* (August 1978) B.G.S., University of Nebraska; M.B.A., University of West Florida, 1975; Lt. Col., USAF.
- LEONA W. FARRIS**, *Director of the Community Involvement Component of Home Economics* (1969) B.S., The Ohio State University; M.A., Kent State University, 1969.
- ALI M.I. FATEMI**, *Professor of Economics* (1965) B.S., Farleigh Dickinson University; M.S., Ph.D., New School for Social Research (New York), 1967.
- RICHARD M. FAWCETT**, *Associate Professor in the Community and Technical College* (1969) B.A., M.Ed., Kent State University, 1959.
- JAMES V. FEE**, *Professor of Mass Media-Communication* (1967) B.S.Ed., M.S.Ed., Southern Illinois University; Ph.D., The Ohio State University, 1964.
- RUDY FENWICK**, *Assistant Professor of Sociology* (1978) B.A., University of Oklahoma; M.A., McGill University, 1974.
- ROBERT E. FERGUSON**, *Professor of Education* (1965) B.S.Ed., M.A., Kent State University; Ed.D., Case Western Reserve University, 1965.
- D.G. FERTIS**, *Professor of Civil Engineering* (1966) B.S., B.S.C.E., M.S.C.E., Michigan State University; Ph.D., Eng., National Technical University (Athens, Greece), 1964.
- LEWIS J. FETTERS**, *Professor of Chemistry and of Polymer Science* (1967) B.A., College of Wooster; Ph.D., The University of Akron, 1962.
- JOHN P. FINAN**, *Professor of Law* (1967) B.A., Fordham University; J.D., Columbia University, 1961.
- EDWARD M. FIRER**, *Research Associate in the Institute of Polymer Science* (June 1975) B.A., University of Bridgeport; M.S., University of Maryland; Ph.D., The University of Akron, 1973.
- JUDITH L. FITZGERALD**, *Instructor in Bibliography and Cataloger* (July 1969) B.A., West Virginia Wesleyan University; M.S.L.S., Case Western Reserve University, 1976.
- CHARLES W. FLAGG**, *Instructor in Real Estate* (1975) B.A., Ohio University, 1969.
- THOMAS M. FLAHERTY, JR.**, *Instructor in Physical Education* (February 1974) B.S.Ed., M.S.Ed., The University of Akron, 1974.
- EUGENE FLAUMENHAFT**, *Associate Professor of Biology* (1963) B.A., Adelphi University; M.S., Ph.D., University of Chicago, 1958.
- WILLIAM S. FLEMING**, *Professor in the Community and Technical College* (1966) B.S., Rutgers University; M.A., University of Pennsylvania; Ph.D., Kent State University, 1970.
- LAWRENCE G. FOCHT**, *Associate Professor of Chemical Engineering* (1968) B.S. Ch.E., University of Iowa; M.S.Ch.E., Ph.D., Louisiana State University, 1969. P.E., Ohio.
- DAVID C. FORMAN**, *Coordinator of Testing Services* (1974) B.A., Hiram College; M.A., The University of Akron, 1977.
- T. HENRY FORSYTH**, *Associate Professor of Chemical Engineering and Research Associate in the Institute of Polymer Science* (1970) B.S.C.E., University of Kentucky; M.S., Ph.D., Virginia Polytechnic Institute, 1968. P.E., Ohio.
- HAROLD M. FOSTER**, *Assistant Professor of Education* (1976) B.A., Indiana University of Pennsylvania; M.A., University of Pittsburgh; Ph.D., University of Michigan, 1976.
- J. DALE FOSTER**, *Director of Staff Personnel* (March 1978) B.S., Miami University, 1955.
- JUDY L. FOSTER**, *Instructor in Home Economics* (February 1972) B.S., Ohio State University; M.S., The University of Akron, 1976.
- WILLIAM A. C. FRANCIS**, *Assistant Professor of English* (1966) B.A., M.A., Duquesne University; Ph.D., Case Western Reserve, 1975.
- GAIL FRANKENBERGER**, *Assistant Professor of Nursing* (1979) B.S.N., The Ohio State University; M.S.N., University of Kentucky, 1978.

- RICHARD FRANKLIN**, *Assistant Professor of Political Science* (1970) B.A., Bryan College; M.A., Michigan State University; Ph.D., University of Kentucky, 1976.
- PAUL C. FRANKS**, *Professor of Geology* (1971) B.A., Cornell University; M.S., Ph.D., University of Kansas, 1966.
- PAULINE FRANKS**, *Associate Professor of Bibliography and Associate University Librarian* (April 1950) B.S.Ed., Kent State University; B.S.L.S., Case Western Reserve University, 1940.
- J.E. FREDERICK**, *Associate Professor of Chemistry and of Polymer Science* (1966) B.S.Ch., Glenville State College; Ph.D., University of Wisconsin, 1964.
- LAVERNE M. FRIBERG**, *Assistant Professor of Geology* (March 1976) B.S., University of Wisconsin; M.A., Ph.D., Indiana University, 1976.
- JOEL FRIEDMAN**, *Professor of Theatre Arts* (1979) B.A., University of California at Berkeley; M.A., Smith College, 1948.
- JOHN L. FROLA**, *Associate Professor of Biology* (1971) B.S., Waynesburg College; M.S., Ph.D., West Virginia University, 1970.
- BILL J. FRYE**, *Associate Professor of Education* (1971) B.S., M.S., Indiana State University; Ph.D., The Ohio State University, 1971.
- STEPHEN S. FUGITA**, *Assistant Professor of Psychology* (1971) B.S., The Ohio State University; M.A., Ph.D., University of California at Riverside, 1969.
- DONNA J. GABOURY**, *Assistant Professor of Home Economics* (1977) B.A., College of Saint Catherine; M.A., Smith College; Ph.D., University of Massachusetts, 1973.
- ROBERT E. GAEBEL**, *Assistant Professor of Classics* (1970) B.A., M.A., State University of New York at Buffalo; Ph.D., University of Cincinnati, 1968.
- THOMAS J. GALLAGHER**, *Associate Director of Physical Plant* (July 1977) B.A., Saint John's University, 1962.
- JULIE ANN GAMMON**, *Assistant Professor of Bibliography and Head Library Serials Department* (August 1973) B.A., University of Florida; M.S.L.S., University of Pittsburgh, 1967.
- ROBERT N. GANDEE**, *Associate Professor of Physical Education* (1973) B.S., M.S., The University of Akron; Ph.D., Ohio State University, 1972.
- GASPER A. GAROFALO**, *Assistant Professor of Economics* (1979) B.A., St. Vincent College; M.A., Ph.D., University of Pittsburgh, 1974.
- T. NEAL GARLAND**, *Associate Professor of Sociology* (1969) B.A., M.A., University of North Dakota; Ph.D., Case Western Reserve University, 1971.
- PAUL D. GARN**, *Professor of Chemistry* (1963) B.S., M.S., Ph.D., The Ohio State University, 1952.
- JANICE M. GARVER**, *Assistant Director of Student Financial Aids* (October 1976) B.A., Adelphi University, 1976.
- DALE J. GAYDOS**, *Producer/Director, TV Productions* (January 1976) B.A., M.A., The University of Akron, 1976.
- ALAN N. GENT**, *Dean of Graduate Studies and Research and Professor of Polymer Physics* (April 1961) B.S., (General) B.S., (Special Physics), Ph.D., University of London, 1955.
- ARTHUR V. GEORGE**, *Assistant Professor of Transportation* (1979) B.B.A., City College of New York; M.B.A., Iona College, 1972.
- PHILIP M. GERHART**, *Associate Professor of Mechanical Engineering* (1971) B.S.M.E., Rose Polytechnic Institute; M.S.M.E., Ph.D., University of Illinois, 1971. P.E., Ohio.
- DON R. GERLACH**, *Professor of History* (1962) B.S.Ed., M.A., Ph.D., University of Nebraska, 1961.
- THOMAS E. GETZINGER**, *University Auditor and Assistant to the Vice President for Business and Finance* (1969) B.S.B.A., The University of Akron; M.B.A., Kent State University, 1966; C.P.A.
- C. EDWARD GIBNEY**, *Associate Professor of Nursing* (1970) St. Agnes School of Nursing; B.S., University of Baltimore; M.S., University of Maryland, 1969; R.N.
- RUSSEL N. GIERSCH**, *Director of the Physical Plant* (1966) B.M.E., Cleveland State University, 1954.
- RICHARD J. GIGLIOTTI**, *Associate Professor of Sociology* (1972) B.A., St. John Fisher College; M.A., Ph.D., Michigan State University, 1972.
- KRISTINE GILL**, *Instructor in Nursing* (1976) B.S.N., St. John College, Cleveland; M.Ed., Cleveland State University, 1978; R.N.
- PETER J. GINGO**, *Associate Professor of Mathematics* (1969) B.S., The University of Akron; M.A., Ph.D., University of California at Los Angeles, 1966.
- ELTON A. GLASER II**, *Assistant Professor of English* (1972) B.A., M.A., Louisiana State University; M.F.A., University of California, 1972.
- MARIANNE L. GLAZER**, *Assistant Professor of Nursing* (1971) B.S., The University of Akron; M.Ed., University of Pittsburgh, 1975; R.N.
- WILLIAM M. GLAZIER**, *Associate Professor of Surveying and Construction Technology* (1958) (1967) B.S.C.E., Michigan Technical University; M.S.C.E., University of Michigan; Ph.D., West Virginia University, 1978; P.E., Ohio, Michigan and District of Columbia.
- THEODORE L. B. GLOECKLER**, *Associate Professor of Education* (1972) B.A., Lycoming College; M.A., University of Northern Colorado; Ph.D., University of Michigan, 1973.
- PATRICIA P. GODFREY**, *Associate Professor of Nursing* (January 1969) B.S., M.A.Ed., Case Western University, 1964; R.N.
- LATHARDUS GOGGINS**, *Assistant Professor of Geography* (1969) B.A., Central State University; M.A., The Ohio State University; Ph.D., St. John's University, 1973.
- LAWRENCE G. GOLDEN**, *Assistant Professor of Sales and Merchandising* (1968) B.S., Case Western Reserve University; M.B.A., University of Pennsylvania, 1968.
- GALE GOLEMBESKI**, *Assistant Professor of Art* (January 1975) B.F.A., Cleveland Institute of Art, 1970.
- MARY T. GOLETZ**, *Instructor in Nursing* (1976) B.S.N., The University of Akron, 1976; R.N.
- TOM A. GOOSBY**, *Assistant Director of the Gardner Student Center* (July 1970) B.A., Baldwin-Wallace College; M.A.Ed., The University of Akron, 1978.
- C. PETER GOPLERUD**, *Assistant Professor of Law* (1977) B.A., J.D., University of Kansas, 1974.
- DENNIS GORDON**, *Professor of Accounting* (1946) A.B., M.B.A., University of Chicago, 1936; C.P.A., Ohio.
- GEORGE R. GRAHAM**, *Head of Electronic Systems Engineering* (June 1977) B.S., The University of Akron, 1973.
- JANICE E. GRAHAM**, *Counselor* (August 1977) B.A., M.S., Eastern Michigan University; Ph.D., Kent State University, 1977.
- H. ROGER GRANT**, *Associate Professor of History* (1970) B.A., Simpson College; M.A., Ph.D., University of Missouri, 1970.
- RICHARD L. GRANT**, *Professor of Law* (1967) B.S., University of Pennsylvania; J.D., Stanford University; L.L.M., Georgetown University, 1967.
- HOWARD L. GREENE**, *Professor of Chemical Engineering* (1965) B.Ch.E., M.Ch.E., Ph.D., Cornell University, 1966.
- C. FRANK GRIFFIN**, *Professor of Physics* (1967) B.S., M.S., Texas Technological College; Ph.D., The Ohio State University, 1964.
- CLAIBOURNE E. GRIFFIN**, *Dean of the Buchtel College of Arts and Sciences and Professor of Chemistry* (July 1974) B.A., Princeton University; M.S., Ph.D., University of Virginia, 1955.
- NORMAN M. GRIGGS, JR.**, *Associate Professor of Education* (1969) B.A., M.A., DePauw University, Ph.D., The Ohio State University, 1968.
- EDNA P. GRIST**, *Associate Professor of Nursing* (January 1968) B.S.N.Ed., M.S.Ed., The University of Akron, 1967; R.N.
- RICHARD J. GROSS**, *Associate Professor of Mechanical Engineering* (1967) B.S.M.E., University of Pittsburgh; M.S.M.E., Ph.D., Carnegie Institute of Technology, 1967; P.E., Ohio.
- JAMES E. GROVER**, *Assistant Professor of Electrical Engineering* (1979) B.S., Ohio Northern University; M.S., Ohio University, 1978.
- FRANK J. GRUCCIO, JR.**, *Assistant Professor in the Community and Technical College* (1966) B.A., M.A., The University of Akron, 1967.
- ROBERT GRUMBACH**, *Associate Professor of Electrical Engineering and Assistant to the Director of Cooperative Program in the College of Engineering* (1961) B.S.E.E., Case Western Reserve University; M.S.E.E., West Virginia University, 1951.

- BARBARA GSELLMAN**, *Instructor in Mechanical Technology* (1967) B.M.E., The University of Akron, 1950.
- VIRGINIA L. GUNN**, *Assistant Professor of Home Economics* (January 1974) B.S., Kansas State University; M.S., Syracuse University, 1972.
- MARGARET B. GUSS**, *Assistant Professor of Bibliography and Research Librarian* (December 1976) B.A., Oberlin College; M.L.S., University of Oregon, 1969.
- JOHN F. GWINN**, *Assistant Professor of Biology* (1970) B.A., Manchester College; M.S., Purdue University; Ph.D., Kent State University, 1972.
- MICHEL S. HADDAD**, *Instructor in Mechanical Technology* (February 1971)
- SCOTT D. HAGEN**, *Associate Professor of Biology (Wayne General and Technical College)* (1966) B.S., Kansas State University; M.S., Kansas State Teachers College, 1964.
- GORDON A. HAGERMAN**, *Assistant to the Dean of the Evening College and Summer Sessions* (July 1941) B.A., The University of Akron, 1941.
- ROBERT D. HAHN**, *Director of Student Financial Aids* (July 1969) B.S., M.Ed., Kent State University, 1969.
- PHILLIP R. HALES**, *Instructor in Commercial Art* (June 1977) B.F.A., North Carolina State University; M.A., Kent State University, 1978.
- DONALD E. HALL**, *Associate Professor of Speech and Director of the Speech and Hearing Center* (1974) B.S.Ed., Indiana University of Pennsylvania; M.Ed., Westminster College; Ph.D., Ohio University, 1971.
- SHARON A. HALL**, *Associate Director of Residence Halls* (January 1979) B.S., M.A., Bowling Green State University, 1977.
- RICHARD L. HANSFORD**, *Vice President and Dean of Student Services-Civilian Coordinator of the Reserve Officers Training Corps* (August 1949) B.A.Ed., M.A.Ed., The University of Akron, 1954.
- CHARLOTTE M. HANTEN**, *Associate Professor of Art* (1969) B.A., Earlham College; M.Ed., Pennsylvania State University, 1954.
- EDWARD W. HANTEN**, *Professor of Geography, Professor of Urban Studies and Associate Director of Center for Urban Studies* (1963) B.A., Earlham College; M.A., Ph.D., University of Pittsburgh, 1962.
- PHYLLIS HARDENSTEIN**, *Associate Professor of Theatre Arts* (February 1947) (1956) B.A., The University of Akron; M.A., University of Wisconsin, 1951.
- VERN R. HARNAPP**, *Associate Professor of Geography* (1972) B.S.Ed., Concordia Teachers College; M.S.Ed., University of Pennsylvania; Ph.D., University of Kansas, 1972.
- JACK D. HARPOOL**, *Associate Professor of Data Processing* (March 1970) B.S., M.B.A., The University of Akron, 1968.
- ALAN HART**, *Associate Professor of Philosophy* (1970) B.A., M.A., Syracuse University; Ph.D., University of Pennsylvania, 1965.
- DONALD E. HARVEY**, *Assistant Professor of Art* (1973) B.A., Mankato State College; M.F.A., Temple University, 1971.
- H. JAMES HARWOOD**, *Professor of Chemistry and of Polymer Science* (October 1959) B.S., The University of Akron; Ph.D., Yale University, 1956.
- JEAN A. HASPELAGH**, *Assistant Professor of Nursing* (1973) B.S.N., M.S.Ed., The University of Akron, 1974.
- WADE B. HATCH**, *Physical Facilities Analyst* (October 1966) B.S.C.E., University of California at Los Angeles, 1949.
- MARLENE HATHAWAY**, *Assistant to the Dean of the Buchtel College of Arts and Sciences and Instructor in English* (1965) B.A., Kalamazoo College; M.A., The University of Akron, 1965.
- RICHARD H. HAUDE**, *Associate Professor of Psychology* (1967) A.B., Kenyon College; M.S., Ph.D., University of Pittsburgh, 1964.
- BARBARA J. HAZARD**, *Assistant to the Vice President and Dean of Student Services and Project Coordinator, Students Kellogg University/Community Program* (1972) B.A., Ohio Wesleyan University; M.A., Bowling Green University, 1972.
- JOHN G. HEDRICK**, *Dean of Wayne General and Technical College* (July 1967) B.S.Ed., Kent State University; M.A., University of Notre Dame, 1958.
- JACQUELINE HEGBAR**, *Instructor in Classics* (1967) B.A., M.A., The University of Akron, 1967.
- WALTER H. HEINTZ**, *Associate Professor of Physics* (1967) B.S., University of Massachusetts; M.S., Ph.D., The Ohio State University, 1962.
- BARBARA HEINZERLING**, *Assistant Professor of Home Economics* (1973) B.S., M.S., Ohio State University; J.D., The University of Akron, 1979.
- MARION R. HEISE**, *Assistant Professor in the Community and Technical College* (1972) B.A., M.A., The University of Akron, 1972.
- FAITH HELMICK**, *Assistant Director of Academic Personnel* (February 1969) B.A., Kent State University; M.S.T.E., The University of Akron, 1977.
- WILLIAM S. HENDON**, *Professor of Urban Studies and of Economics* (1968) B.A., M.A., Ph.D., University of Oklahoma, 1964.
- PETER N. HENRIKSEN, II**, *Associate Professor of Physics* (1970) B.S., Berry College; M.S., Ph.D., University of Georgia, 1968.
- RICHARD HENRY**, *Associate Professor of Mechanical Technology* (1961) B.M.E., The Ohio State University; M.S.E., The University of Akron, 1965.
- ALBERTA R. HENSLEY**, *Assistant to the Executive Director of University Relations and Communications* (January 1974) B.S.B.A., Indiana Central College, 1969.
- ALAN A. HERBERT**, *Academic Programmer/Analyst* (October 1978) B.S., The University of Akron, 1976.
- THOMAS P. HERBERT**, *Associate Professor of Electronic Technology* (1968) B.S.E.E., University of Dayton; M.Ed., Pennsylvania State University, 1968.
- WALTER M. HERIP**, *Instructor in Art and in Commercial Art* (1974) B.F.A., Cleveland Institute of Art, 1971.
- JAY R. HERSHEY**, *Director of Residence Halls* (July 1967) B.A., Hiram College; M.Ed., University of Illinois, 1965.
- HARRIET K. HERSKOWITZ**, *Assistant Professor of Home Economics and of Educational Technology* (1973) B.S.Ed., Adelphi University; M.A., University of Connecticut, 1972.
- JACK E. HIBBS**, *Assistant Professor of Bibliography and Research Librarian* (October 1974) B.A., M.A.L.S., University of Toledo, 1969.
- ROBERT W. HIGHAM**, *Assistant Professor of Criminal Justice* (1977) B.A., Kent State University; J.D., The University of Akron, 1969.
- KATHERINE A. HINCKLEY**, *Assistant Professor of Political Science* (1972) B.J., University of Missouri; M.A., Ph.D., Stanford University, 1971.
- JOSEPH C. HINTZ**, *Assistant Professor of Mathematics* (1977) B.S., Siena College; M.S., Ph.D., Syracuse University, 1975.
- JOHN J. HIRSCHBUHL**, *Associate Professor of Education and Director of Computer Based Education Center* (1971) B.S., M.S., Temple University; Ph.D., Pennsylvania State University, 1971.
- LOREN HOCH**, *Professor of Education* (1969) B.S., Indiana Central College; M.A., Ball State University; Ed.D., Indiana University, 1968.
- KENNETH C. HOEDT**, *Professor of Education* (1962) B.S., State University of New York, (Buffalo); M.S., Ph.D., University of Wisconsin, 1960.
- LESLEE M. HOFFMAN**, *Adviser of Students* (May 1979) B.S.Ed., The University of Akron, 1976.
- WILLIAM W. HOKMAN**, *Associate Professor of Mathematics* (1967) B.S.Ed., M.A., M.S., West Virginia University, 1958.
- R. BRUCE HOLLAND**, *Associate Professor of English* (1967) B.A., University of Rochester; M.A., Ph.D., University of Michigan, 1972.
- ROBERT M. HOLLAND, JR.**, *Associate Professor of English* (1978) B.A., Dartmouth College; M.A., Harvard University; Ph.D., Indiana University, 1973.
- LORENA HOLSHOY**, *Assistant Professor of Art* (1969) B.F.A., M.A., The Ohio State University, 1965.
- KATHRYN HOMEIER**, *Professor of Nursing* (February 1967) B.S.N.E., Saint Louis University; M.S.Ed., The University of Akron, 1963; R.N.
- RICHARD B. HOSKIN**, *Associate Professor in the Community and Technical College* (1967) B.A., Hiram College; M.E., Kent State University, 1955.

- JANICE D. HOUSER**, *Instructor in Modern Languages* (1965) A.B., Butler University; M.A., Indiana University, 1964.
- JOHN J. HOUSER**, *Associate Professor of Chemistry* (1965) B.S., Villanova University; Ph.D., Pennsylvania State University, 1964.
- ELMORE HOUSTON**, *Assistant Professor of Mass Media-Communication (Wayne General and Technical College)* (1972) B.S., Purdue University; M.A., The University of Akron, 1968.
- ANTHONY E. HROMCO**, *Adviser of Students* (1973) B.A., Kent State University; M.A.Ed., The University of Akron, 1973.
- JACK D. HUGGINS**, *Assistant Professor of Business Management Technology* (1971) B.A., Saint Francis College; M.B.A., University of Colorado, 1970.
- JULIA HULL**, *Assistant Professor of English* (1946) B.A., The University of Akron; M.A., Case Western Reserve University, 1950.
- J. MICHAEL HUNGERMAN**, *Counselor and Educational Programs Coordinator in the Testing and Counseling Bureau* (1970) B.A., College of Steubenville; M.Ed., Ph.D., Kent State University, 1970.
- CARL L. HUSTON**, *Instructor in English (Wayne General and Technical College)* (1972) B.S., Bowling Green State University, 1951.
- FARLEY K. HUTCHINS**, *Professor of Music* (1957) M.B., Lawrence Conservatory of Music; S.M.M., S.M.D., School of Sacred Music, Union Theological Seminary, 1951.
- DOREEN D. IAFELICE**, *Instructor in Nursing* (January 1978) B.S.N., M.S.N., Ohio State University, 1976.
- JAMES E. INMAN**, *Associate Professor of Business Law and Director of Graduate Business Programs* (1966) B.A., Baldwin-Wallace College; M.B.A., The Ohio State University; J.D., The University of Akron, 1971.
- SYS S. INMAN**, *Instructor in Modern Languages* (1968) B.A., Baldwin-Wallace College; M.A., The University of Akron, 1968.
- CHARLES S. INSALAGO**, *Adviser of Students* (August 1974) B.S.Ed., M.S.Ed., The University of Akron, 1971.
- JAMES L. IVEY**, *Adviser to International Students* (January 1978) B.A., M.Ed., University of North Carolina; M.A., Middlebury College, 1967.
- RICHARD JACKOBOICE**, *Associate Professor of Music and Director of University Bands* (July 1967) B.M., M.M., University of Michigan, 1965.
- DALE L. JACKSON**, *Professor of Biology* (1961) B.S., Ph.D., University of Durham (England), 1959.
- DONALD M. JACKSON**, *Associate Professor of Marketing* (1969) B.A., M.B.A., Cornell University; D.B.A., Kent State University, 1976.
- JIM L. JACKSON**, *Associate Professor of Geology and Director of Center for Environmental Studies* (1967) B.S., Kent State University; M.S., Case Western Reserve University; Ph.D., The Ohio State University, 1970.
- FRANK C. JACOBS**, *Assistant Professor of Music* (1977) B.A., B.M., DePauw University; M.A., Occidental College; D.M.A., University of Illinois, 1974.
- DAVID L. JAMISON**, *Associate Professor of Mass Media-Communication* (1972) B.A. Muskingum College; M.A., J.D., University of Michigan, 1969.
- DONALD M. JENKINS**, *Professor of Law* (1965) B.A., J.D., The University of Akron; LL.M., Case Western Reserve University, 1970.
- DUDLEY C. JOHNSON, JR.**, *Director of Counseling and Advising* (July 1961) B.S., University of Vermont; M.S.Ed., University of Southern California, 1961.
- LAURA J. JOHNSON**, *Instructor in the Community and Technical College* (January 1974) B.A., M.A., The University of Akron, 1975.
- WENDELL A. JOHNSON**, *Assistant Professor in the Community and Technical College* (1969) A.A., North Park Junior College; B.S., University of Minnesota; M.Ed., Kent State University, 1968.
- DAVID B. JOHNSTON**, *Assistant to the President - Development* (June 1974) B.A., Hanover College; B.S., Butler University; M.S., Indiana University, 1963.
- MARY JEAN JOHNSTON**, *Professor of Secretarial Science* (1965) B.S., Carnegie Institute of Technology; M.Ed., Ph.D., University of Pittsburgh, 1974.
- SCOTT A. JOHNSTON**, *Assistant Professor of Music* (1978) B.M., University of Wisconsin; M.M., Ohio State University, 1974.
- MIRIAM ANN JOLIAT**, *Assistant Professor of Bibliography and Systems Librarian* (April 1970) B.S.E., St. John College; M.S., Case Western Reserve University, 1969.
- BONNIE B. JONES**, *Assistant Director of Admissions* (October 1978) B.S.Ed., Miami University; M.Ed., Kent State University, 1977.
- DAVID L. JONES**, *Associate Professor of English* (February 1961) B.A., M.A., Ph.D., Harvard University, 1958.
- JOAN F. JONES**, *Certification Coordinator* (1975) B.Ed., M.Ed., Kent State University; Ph.D., The University of Akron, 1979.
- JOHN E. JONES**, *Assistant Director of Admissions* (January 1975) B.S., Ohio State University, 1971.
- ROBERT H. JONES**, *Professor of History* (1971) B.A., M.A., Ph.D., University of Illinois, 1957.
- ROBERT KADERLE**, *Accountant* (December 1975) B.S.B.A., The University of Akron, 1975.
- SEBASTIAN KANAKKANATT**, *Associate Professor of General Technology* (July 1965) B.S., Madras University (India); M.S., Ph.D., The University of Akron, 1969.
- GARY W. KANE**, *Associate Professor of Education* (1972) A.A., Santa Ana College; B.S., State University College at New Paltz; M.Ed., Ed.D., University of Rochester, 1970.
- ARTHUR D. KARLIN**, *Associate Professor of Accounting* (1971) B.S., New York University; M.S., Ph.D., University of Illinois; J.D., The University of Akron, 1976.
- CHAMAN N. KASHKARI**, *Associate Professor of Electrical Engineering* (1969) B.A., Jammu Kashmir University; B.E., Rajasthan University; M.S.E., University of Detroit; Ph.D., University of Michigan, 1969.
- JOLITA E. KAVALIUNAS**, *Assistant Professor of Modern Languages* (1970) B.A., M.A., Ph.D., Case Western Reserve University, 1972.
- AZMI KAYA**, *Associate Professor of Mechanical Engineering* (1970) Diploma, Technical College for Men (Turkey); M.S.M.E., University of Wisconsin; M.S.E.E., Ph.D., University of Minnesota, 1970.
- GREGORY C. KECK**, *Instructor in Social Services Technology (Wayne General and Technical College)* (January 1978) B.A., The University of Akron; M.S.S.A., Case Western Reserve University, 1973.
- ORVILLE R. KEISTER, JR.**, *Professor of Accounting* (1966) B.S.B.A., M.B.A., The Ohio State University; Ph.D., University of Illinois, 1964.
- ROGER F. KELLER, JR.**, *Professor of Biology, Professor in the Community and Technical College, Chairman of the Division of Natural Sciences and Chairman of the Division of Allied Health Technology* (1954) B.S., University of New Hampshire; Ph.D., Michigan State University (1953).
- FRANK N. KELLEY**, *Professor of Polymer Science and Director of the Institute of Polymer Science* (1978) B.S., M.S., Ph.D., The University of Akron, 1961.
- JAMES M. KELLY**, *Assistant Professor of Military Service* (1977) B.A., Cameron University, 1974. Major, Artillery.
- MARTIN L. KEMP**, *Business Manager of Wayne General and Technical College* (July 1972) B.S.Ed., Ashland College; M.S.Ed., Kent State University, 1970.
- FRANK J. KENDRICK**, *Associate Professor of Urban Studies and of Political Science* (1971) B.A., Grinnell College; M.A., Ph.D., University of Chicago, 1962.
- JOSEPH P. KENNEDY**, *Professor of Polymer Science and of Chemistry* (April 1970) B.S., University of Budapest; M.B.A., Rutgers University; Ph.D., University of Vienna, 1954.
- ELLA J. KICK**, *Assistant Professor of Nursing* (1978) B.S.N., M.S.N., Ohio State University, 1968.
- NANCY C. KILBANE**, *Assistant Professor of Nursing* (1977) B.S.N., Saint John College, Cleveland; M.S.N., University of Colorado, 1975.
- THORA S. KILLE**, *Assistant Professor of Secretarial Science* (1975) B.A., M.Ed., Bowling Green State University, 1961.
- DENNIS L. KIMMELL**, *Associate Professor of Accounting* (1976) B.S., University of Wisconsin; M.S., Southern Illinois University; D.B.A., Kent State University, 1974.
- LARRY H. KINDBOM**, *Instructor in Physical Education* (February 1979) B.A., Kalamazoo College; M.A., Western Michigan University, 1976.

- JAMES C. KING**, *Professor of Education* (1969) B.A., Mount Union College; M.Ed., Kent State University; Ed.D., Indiana University, 1969.
- LILLIAN KING**, *Assistant Professor of Education* (1966) B.S.Ed., The University of Akron; M.Ed., Kent State University, 1965.
- RANDALL H. KING**, *Assistant Professor of Economics* (1978) B.S.B.A., M.A., Ph.D., Ohio State University, 1978.
- KEITH A. KLAFEHN**, *Associate Professor of Management* (1970) B.S., M.S., Clarkson College of Technology; D.B.A., Kent State University, 1973.
- DENNIS A. KLEIDON**, *Associate Professor of Art and of Commercial Art* (1969) B.F.A., Illinois Wesleyan University; M.S., Illinois State University, 1967.
- ROSE A. KLEIDON**, *Assistant Professor in the Community and Technical College* (1970) B.A., Illinois Wesleyan University; M.A., University of Illinois, 1968.
- GEORGE W. KNEPPER**, *Professor of History* (1948-49), (August 1954) B.A., The University of Akron; M.A., Ph.D., University of Michigan, 1954.
- GERARD L. KNIETER**, *Dean of the College of Fine and Applied Arts and Professor of Music* (August 1978) B.S., M.A., New York University; B.D.D., Columbia University, 1961.
- NANCY A. KNIGHT**, *Assistant Professor of Bibliography and Assistant Librarian for Research Services* (1967) B.A., University of Idaho; M.S.L.S., Louisiana State University, 1966.
- KATHRYN E. KOCH**, *Assistant Professor of Home Economics* (1970) B.S.Ed., M.A., Kent State University, 1970.
- KENNETH H. KOENIG**, *Director of Intramurals* (1978) B.S., Kent State University; B.S., Ohio State University; M.S., The University of Akron, 1968.
- WILLIAM G. KOFRON**, *Professor of Chemistry* (1965) B.S., University of Notre Dame; Ph.D., University of Rochester, 1961.
- CHARLES L. KOHL, JR.**, *Assistant Professor of Military Science* (1977) B.A., Valparaiso University; M.B.A., Adelphi University, 1974. Major, Transportation.
- KAREN M. KOHN**, *Adviser of Students* (July 1976) B.A., Rutgers; M.A., The Ohio State University, 1976.
- MARTIN F. KOHN**, *Associate in the Department of Special Programs* (1973) B.S.Ed., The Ohio State University; M.S.Ed., The University of Akron, 1979.
- ROSE MARIE KONET**, *Instructional Programmer-Liaison, Computer Based Education Center* (July 1978) B.S., The University of Akron, 1975.
- MARGERY B. KOOSSED**, *Assistant Professor of Law* (1974) B.S.Ed., Miami University; J.D., Case Western Reserve University, 1974.
- DENNIS P. KOPPER**, *Instructor in Management* (1977) B.S., The University of Akron, 1974.
- VINCENT P. KOPY**, *Assistant Professor of Accounting* (1975) B.B.A., M.B.A., Case Western Reserve University, 1959.
- CARL R. KORDIG**, *Associate Professor of Philosophy* (1978) B.S., Illinois Institute of Technology; M.A., M.Phil., Ph.D., Yale University, 1969.
- ALBERT KORSOK**, *Associate Professor of Geography* (1968) B.S., Case Western Reserve University; M.A., Northwestern University; Ph.D., University of Illinois, 1960.
- GERALD F. KOSER**, *Associate Professor of Chemistry* (1969) B.S., The Ohio State University; M.S., Ph.D., University of Illinois, 1968.
- JERZY S. KOSMALA**, *Assistant Professor of Music* (1978) B.M., M.M., Krakow School of Music, M.M., University of Rochester, D. Mus., Indiana University, 1972.
- JANKO P. KOVACEVICH**, *Associate Professor of Education* (1969) B.S., Baylor University; M.A., The University of Akron; Ph.D., Case Western Reserve University, 1970.
- PATRICIA B. KRICOS**, *Assistant Professor of Speech* (1976) B.A., University of Texas; M.A., Ph.D., The Ohio University, 1973.
- ALAN G. KRIGLINE**, *Associate Professor of Management* (1973) B.I.E., University of Florida; M.B.A., Ph.D., Georgia State University, 1977.
- ALAN F. KRIVIS**, *Associate Professor of Chemistry* (1966) A.B., M.A., Columbia University; M.S.Ch., Ph.D., University of Michigan, 1958.
- LAWRENCE C. KRUEGER**, *Associate Director of Residence Halls* (July 1971) B.S., Wisconsin State University; M.S.Ed., Indiana University, 1971.
- WARREN F. KUEHL**, *Professor of History and Director of the Center for Peace Studies* (1964) B.A., Rollins College; M.A., Ph.D., Northwestern University, 1954.
- ERNEST A. KUEHLS**, *Associate Professor of Mathematics* (1965) B.S.Ed., M.Ed., Miami University; Ph.D., The University of Akron, 1971.
- MILTON L. KULT**, *Associate Professor of Electrical Engineering* (June 1954) B.S.E.E., M.S., University of Illinois, 1952; P.E., Illinois, Ohio.
- A. W. GERHARD KUNZE**, *Associate Professor of Geology* (1974) B.S., Ph.D., Pennsylvania State University, 1973.
- HENRY A. KUSKA**, *Associate Professor of Chemistry* (1965) A.A., Morton College; B.A., Cornell College (Iowa); Ph.D., Michigan State University, 1965.
- DAVID E. KYVIG**, *Associate Professor of History and Director of American History Research Center* (1971) B.A., Kalamazoo College; Ph.D., Northwestern University, 1971.
- JOHN A. LAQUARDIA**, *Director of Alumni Relations* (1970) B.A., M.A.Ed., The University of Akron, 1974.
- SUSAN C. LANDIS**, *Lecturer in Nursing* (June 1978) B.A., B.S.N., The University of Akron, 1978.
- GAYNOR E. LANIK**, *Instructor in Nursing* (1975) B.S., University of Washington, 1952.
- GORDON LARSON**, *Associate Professor of Physical Education and Director of Athletics* (February 1961) B.S.Ed., M.E., Kent State University, 1954.
- EDWARD B. LASHER**, *Associate Professor of Education* (1972) B.S., State University College at Oneonta; M.S., Ed.S., Indiana University; Ed.D., University of North Dakota, 1971.
- ELAINE Z. LASKY**, *Professor of Speech* (1972) B.S., M.A., Ph.D., Case Western Reserve University, 1971.
- JOSEPH C. LATONA**, *Professor of Business Administration and Director of Bureau of Organizational Development and Research* (1961) (1971) B.A., The University of Akron; M.B.A., D.B.A., Kent State University, 1970.
- NOEL L. LEATHERS**, *Vice President and Provost and Professor of History* (July 1972) B.S., M.A., Oklahoma State University; Ph.D., University of Oklahoma, 1963.
- NADA LEDINKO**, *Professor of Biology* (1971) B.S., The Ohio State University; M.S., Pennsylvania State University; Ph.D., Yale University, 1952.
- RICHARD GREGG LEFEVRE**, *Associate Professor of Urban Studies* (1973) B.A., Swarthmore College; M.A., Duke University; Ph.D., University of Pennsylvania, 1962.
- WALTER D. LEHRMAN**, *Assistant Professor of English* (1956) B.S., M.A., Columbia University; Ph.D., Case Western Reserve University, 1972.
- JAMES V. LENA VITT**, *Assistant Professor of Art* (1969) B.F.A., M.F.A., Ohio University, 1969.
- JOHN P. LENCZYK**, *Associate Professor of Chemical Engineering* (1970) B.S., M.S., Ph.D., State University of New York at Buffalo, 1970.
- JOSEPH R. LENTINI**, *Associate Professor of Criminal Justice* (1969) B.A., State College at Bridgewater (Massachusetts); M.S., The University of Akron, 1971.
- ARNO K. LEPKE**, *Professor of Modern Language and Master, University Honors Program* (1961) University of Greifswald (Germany); Ph.D., University of Marburg (Germany), 1947.
- GERALD H. LEVIN**, *Professor of English* (1960) M.A., University of Chicago; Ph.D., University of Michigan, 1956.
- RUTH B. LEWIS**, *Professor of Mass Media-Communication* (1966) B.S., Wittenberg University; M.A., Ph.D., The Ohio State University, 1961.
- MARTHA CATHERINE LEYDEN**, *Associate Professor of Education* (1971) B.S., St. John College; M.Ed., Kent State University; Ed.D., Columbia University, 1971.
- ALBERT H. LEYERLE**, *Associate Professor of Law* (1974) B.S., The Ohio State University; J.D., Case Western Reserve University, 1960.

- ALVIN H. LIEBERMAN**, *Associate Professor of Accounting* (1969) B.S., J.D., M.B.A., The University of Akron, 1969.
- CARL LIEBERMAN**, *Associate Professor of Political Science* (1967) B.A., Temple University; M.A., Ph.D., University of Pittsburgh, 1969.
- MARTHA LIERHAUS**, *Assistant Professor of Mathematics* (January 1967) B.A., B.S.Ed., M.A., Kent State University, 1963.
- HUGO LIJERON**, *Professor of Modern Languages and Director of the Latin American Studies Program* (1963) B.A., LaSalle University (Bolivia); LL.D., Universidad San Francisco Xavier de Chuquisaca (Bolivia); M.A., Middlebury College; Ph.D., University of Madrid (Spain), 1965.
- LUNG-HO LIN**, *Assistant Professor of Economics* (January 1978) B.A., M.A., National Chengchi University (Taiwan); M.A., Ph.D., University of Notre Dame, 1974.
- JOY S. LINDBECK**, *Associate Professor of Education* (1967) B.S., Carnegie Institute of Technology; M.Litt., M.Ed., D.Ed., University of Pittsburgh, 1964.
- SHELDON B. LISS**, *Professor of History* (1967) A.B., American University; M.A., Duquesne University; Ph.D., American University, 1964.
- MICHAEL P. LITKA**, *Professor of Business Law* (1971) A.B., Grinnell College; M.A., J.D., University of Iowa, 1958.
- HELEN P. LIVINGSTON**, *Associate Professor of Bibliography and Assistant Librarian for Public Service* (February 1970) B.A., Bishop's University; M.S., Simmons College, 1954.
- KRIEMHILDE I. R. LIVINGSTON**, *Instructor in Modern Language* (1968) Diploma, University of Munich (Germany); Diploma, Bavarian Interpreter School (Germany), 1947.
- ROBERT G. LORD**, *Assistant Professor of Psychology* (1974) B.A., University of Michigan; M.S., Ph.D., Carnegie-Mellon University, 1975.
- MARIAN LOTT**, *Associate Professor of Music* (1967) B.M., M.M., Roosevelt University, 1951.
- DAVID J. LOUSCHER**, *Associate Professor of Political Science* (1970) A.B., Morningside College; M.A., American Univer; M.A., Ph.D., University of Wisconsin, 1972.
- DAVID P. LOYD**, *Associate Professor of Marketing* (1977) B.A., Ashland College; M.B.A., Ph.D., The Ohio State University, 1962.
- LLOYD B. LUEPTOW**, *Professor of Sociology* (1967) B.S., M.S., Ph.D., University of Wisconsin, 1964.
- DEBORAH D. LUMLEY**, *Assistant Professor of Nursing* (1976) B.S.N., M.S.N., The Ohio State University, 1975; R.N.
- RICHARD C. LUTZ**, *Associate Professor of Management* (January 1973) B.S., M.S., Southern Illinois University; D.B.A., Texas Technical University, 1972.
- WILLIAM D. LYON**, *Assistant Professor of Chemistry* (1967) B.S. Chem., University of Illinois; Ph.D., University of Wisconsin, 1967.
- LAURENCE J. C. MA**, *Associate Professor of Geography and Director of International Programs* (1971) B.A., National Taiwan University; M.A.L.S., George Peabody College; M.A., Kent State University; Ph.D., University of Michigan, 1971.
- MARY JO MacCRACKEN**, *Assistant Professor of Physical Education* (1968) B.A., College of Wooster; M.A., The University of Akron, 1969.
- ALICE MacDONALD**, *Instructor in English* (1966) B.A., M.A., The University of Akron, 1969.
- JOHN A. MacDONALD**, *Professor of Music* (1959) B.M.Ed., Oberlin College; M.A., Ph.D., University of Michigan, 1964.
- KENNETH E. MacDONALD**, *Director of Sports Information* (January 1970) B.S., The University of Akron, 1963.
- BARBARA J. MacGREGOR**, *Associate Professor of Music* (January 1970) B.M., The University of Akron; M.M., Cleveland Institute of Music, 1967.
- IAN R. MacGREGOR**, *Vice President for Planning and Professor of Chemistry and Secretary of the Board of Trustees* (1961) B.A., M.S., Ph.D., University of Cincinnati, 1945.
- LAZARUS W. MACIOR**, *Professor of Biology* (1967) B.A., M.A., Columbia University; Ph.D., University of Wisconsin, 1959.
- THEODORE MACKIOW**, *Professor of Modern Languages and Director of the Soviet Area Studies Program* (1962) Ph.D., University of Frankfurt (Germany), 1950.
- JUDITH E. MAFFETT**, *Assistant Professor of Physical Education* (1968) B.S.Ed., M.Ed., Kent State University, 1962.
- EUGENE MAIO**, *Professor of Modern Languages* (1970) B.A., Ph.L., M.A., S.T.L., St. Louis University; Ph.D., University of California at Los Angeles, 1967.
- COLEMAN J. MAJOR**, *Dean of the College of Engineering, Professor of Chemical Engineering, Director of the Institute for Technological Assistance and Director of the Institute for Bio-Medical-Engineering Research* (1964) B.S., University of Illinois; Ph.D., Cornell University, 1941; P.E., Ohio, California.
- GEORGE J. MAKAR**, *Associate Professor in the Community and Technical College* (1973) B.S., Pennsylvania State University; M.Ed., Duquesne University; Ed.D., University of Pittsburgh, 1973.
- DVINDER M. MALHOTRA**, *Assistant Professor of Economics* (1979) B.A., M.A., University of Delhi, 1979.
- YOGENDRA K. MALIK**, *Professor of Political Science* (1969) B.A., M.A., Punjab University; M.A., Ph.D., University of Florida, 1966.
- TED A. MALLO**, *Director of University Legal Service and Adjunct Assistant Professor of Education* (July 1969) B.S., M.S., J.D., The University of Akron, 1972.
- ANDREW MALUKE**, *Associate Professor of Physical Education* (February 1946) B.S.Ed., The University of Akron; M.A., Kent State University, 1949.
- EUGENE R. MANCINI**, *Associate Professor of Music* (1967) B.M., M.M., Cleveland Institute of Music, 1953.
- GEORGE P. MANOS**, *Associate Professor of Civil Engineering* (1957) B.Ch.E., The Ohio State University; M.S.E., West Virginia University; Ph.D., University of Cincinnati, 1971; P.E., Ohio.
- PHILIP S. MANTHEY**, *Research Associate* (November 1965) B.A., Kent State University; M.B.A., The University of Akron, 1960.
- JOHN L. MAPLES**, *Adviser of Students* (July 1972) B.A., M.A., The University of Akron, 1974.
- JOANNE M. MARCHIONE**, *Associate Professor of Nursing* (1973) B.S.N., Case Western Reserve University; M.A., University of Washington; M.A.Ed., University of Santa Clara, 1965.
- JESSE F. MARQUETTE**, *Associate Professor of Political Science* (1971) B.A., M.A., Ph.D., University of Florida, 1971.
- RODNEY S. MARSHALL**, *Manager of Academic Systems and Programming* (1972) B.S.B.A., Bowling Green State University; M.S.T.E., The University of Akron, 1976.
- SPENCER MARSTON, JR.**, *Assistant Director of Gardner Student Center* (November 1972) B.S.L.E., M.S., The University of Akron, 1976.
- ANDRE D. MARTIN**, *Assistant Law Librarian* (March 1969) B.A., The University of Akron, M.L.S., Kent State University, 1978.
- LAWRENCE T. MARTIN**, *Assistant Professor of English* (1977) A.B., Saint Francis Seminary; M.A., Ph.D., University of Wisconsin, 1977.
- ROBERTA R. MARTIN**, *Adviser of Students* (July 1968) B.S., M.A., The Ohio State University, 1968.
- JOHN P. MARWITT**, *Associate Professor of Anthropology* (1971) B.S., Florida State University; Ph.D., University of Utah, 1971.
- KENNETH E. MAST**, *Assistant Professor of Marketing and Director of Undergraduate Studies, College of Business Administration* (1970) B.A., M.B.A., The Ohio State University, 1960.
- WILLIAM MAVRIDES**, *Assistant Professor of Education and Director, Learning Resources Center* (July 1960) B.A., The University of Akron; M.A., Peabody College for Teachers, 1958.
- ARMOLENE J. MAXEY**, *Assistant Professor of Sociology (Wayne General and Technical College)* (1972) B.S., University of Nebraska; M.A., Kent State University, 1967.
- MARY E. MAXWELL**, *Instructional Assistant in the Department of Mathematics* (January 1975) B.S., Ashland College; M.S., The University of Akron, 1974.
- E. DARLENE McCARDEL**, *Associate Professor of Accounting* (1979) B.S., M.S., The University of Akron, 1978.
- McKEE J. McCLENDON**, *Associate Professor of Sociology* (1972) B.A., M.A., Ph.D., University of Kansas, 1972.

- KENNETH L. J. McCORMICK**, *Associate Professor of Criminal Justice* (1973) B.S., Michigan State University; M.A., Central Michigan University, 1972.
- EDWARD E. McDONALD**, *Assistant Professor of Mechanical Technology* (1972) B.S.M.E., M.S.T.E., The University of Akron, 1976. P.E., Ohio.
- ROBERT L. McELWEE**, *Director of Academic Affairs and Development and Assistant Professor of Political Science (Wayne General and Technical College)* (1972) B.A., M.A., Kent State University, 1969.
- WILLIAM MCGUCKEN**, *Associate Professor of History* (1968) B.S., M.A., Queens University, Belfast (N. Ireland); Ph.D., The University of Pennsylvania, 1968.
- ALLAN J. McINTYRE**, *Associate Professor of Modern Languages* (1967) (1969) B.A., Williams College; M.A., Columbia University; Ph.D., University of Pennsylvania, 1967.
- DONALD McINTYRE**, *Professor of Chemistry and of Polymer Science* (1966) A.B., Lafayette College; Ph.D., Cornell University, 1954.
- KATHLEEN A. McINTYRE**, *Coordinator of the Tutorial Program and Counselor in Developmental Programs* (1977) B.A., Ursuline College; M.A., The University of Akron, 1977.
- REGIS Q. McKNIGHT**, *Assistant Professor of Education* (1972) B.S., M.Ed., Ed.D., Penn State University, 1971.
- MARTIN McKOSKI**, *Director of Developmental Programs* (1974) B.A., Saint Joseph's College; M.A., The University of Akron; Ph.D., Florida State University, 1972.
- SUSAN S. McLAUGHLIN**, *Instructor in Nursing* (1976) B.S.N., Ohio State University; M.S.N., Case Western Reserve University, 1975.
- WILLIAM McMAHON**, *Associate Professor of Philosophy* (1969) B.A., University of Notre Dame; M.A., Brown University; Ph.D., University of Notre Dame, 1970.
- MARION W. McPHERSON**, *Associate Professor of Psychology and Associate Director of the Archives of History of American Psychology* (1967) B.A., M.A., University of Maine; Ph.D., Indiana University, 1949.
- CLAUDE Y. MEADE**, *Professor of Modern Languages* (1964) B.A., M.A., University of Minnesota; Ph.D., University of California, 1957.
- LAVERNE J. MECONI**, *Professor of Education* (1967) B.S., West Chester State College (Pennsylvania); M.A., University of Pennsylvania; Ph.D., The Ohio State University, 1966.
- GARY E. MEEK**, *Associate Professor of Management* (1971) B.S., Cleveland State University; Ph.D., Case Western Reserve University, 1970.
- DAVID T. MEETING**, *Instructor in Accounting* (1976) B.S.B.A., Franklin University; M.B.A., University of Dayton, 1973.
- EBERHARD A. MEINECKE**, *Professor of Mechanical Engineering and of Polymer Science* (October 1963) D. Eng., Braunschweig Institute of Technology (Germany), 1960.
- BONITA H. MELCHER**, *Assistant Professor of Management* (1978) B.S.B.A., The University of Akron; M.B.A., D.B.A., Kent State University, 1975.
- WARNER D. MENDENHALL**, *Associate Professor of Political Science (Wayne General and Technical College)* (1972) B.S., Davidson College; M.A., Duke University, 1960.
- JACK F. MERCER**, *Associate Professor in the Community and Technical College* (1965) A.B., Ohio University; M.A., Case Western Reserve University, 1958.
- R. PAUL MERRIX**, *Associate Professor of English* (1966) A.B., M.A., Butler University; Ph.D., University of Cincinnati, 1966.
- RUTH MESSENGER**, *Assistant Professor of English* (1968) B.A., Wellesley College; M.A., The University of Akron; M.A., Ph.D., Case Western Reserve University, 1976.
- DONALD J. METZGER**, *Associate Professor of Sociology* (1968) B.A., Youngstown University; Ph.D., University of Pennsylvania, 1968.
- CHRISTOPHER P. MEYER**, *Assistant Professor of Art* (1972) B.A., Washington and Lee University; M.F.A., Ohio State University, 1972.
- DENNIS MEYER**, *Assistant Professor of Art* (1969) B.A., St. Norbert College; M.F.A., Ohio University, 1969.
- FRITZ M. MEYER**, *Instructor in Physical Education* (1973) B.S.Ed., University of Cincinnati; M.A.Ed., Xavier University, 1970.
- JOSEPH MIGDEN**, *Assistant Director of Student Financial Aids* (July 1975) B.B.A., M.Ed., Kent State University, 1973.
- THOMAS T. MILES**, *Assistant Professor of Mass Media-Communication and Director of Instructional Media* (October 1972) B.S., M.S., Ed.A., Indiana State University; Ph.D., University of Iowa, 1973.
- JOHN V. MILLER, JR.**, *Assistant Professor of Bibliography, Director of Archival Services and Associate Curator for the Hower House* (July 1972) B.A., Franklin and Marshall College; M.A., University of Delaware, 1965.
- KATHLEEN A. MILLER**, *Instructor in Secretarial Science* (1976) B.S.Ed., The University of Akron, 1974.
- TIM W. MILLER**, *Assistant Director of Alumni Relations* (1975) B.A., M.Ed., The University of Akron, 1976.
- WILLIAM I. MILLER**, *Assistant Professor of Modern Languages* (1970) B.A., Wittenberg University; Ph.D., University of Florida, 1970.
- JANET L. MINC**, *Instructor in English (Wayne General and Technical College)* (1974) B.A., Hofstra University, 1970.
- JOYCE E. MIRMAN**, *Instructor in Data Processing* (July 1976) B.S., The University of Akron, 1976.
- ALOYSIUS E. MISKO**, *Professor of Business Management Technology and Director of the Office for Career Planning in the Community and Technical College* (1962) B.S., Central Michigan University; M.S., Ed.D., University of Michigan, 1962.
- ELIZABETH K. MISKO**, *Instructor in Nursing* (1976) B.S.N.Ed., Catholic University of America; M.S.Ed., The University of Akron, 1974.
- SHIRLEY S. MITCHELL**, *Counselor* (1974) B.S.Ed., M.S.Ed., Youngstown State University; Ph.D., The University of Akron, 1976.
- JOHN B. MONROE**, *Associate Professor in the Community and Technical College* (1966) B.A., College of Wooster; M.A., Rutgers University, 1963.
- BEATRICE MONTGOMERY**, *Assistant Professor of Bibliography and Head of Library Cataloging* (December 1972) B.A., Randolph Macon Woman's College; B.A.L.S., Emory University; M.S.L.S., University of North Carolina, 1957.
- CHARLES K. MOORE, JR.**, *Associate Professor of Accounting* (January 1973) A.A., Angelo State University; B.B.A., M.B.A., D.B.A., Texas Technical University, 1973. C.P.A., 1967.
- LINDA L. MOORE**, *Assistant Professor of Mass Media-Communication and Director of Forensics* (1978) B.S., M.A., Ph.D., Bradley University, 1973.
- MARVIN M. MOORE**, *Professor of Law* (July 1960) B.A., Wayne State University; J.D., LL.M., J.S.D., Duke University, 1968.
- CHERYL H. MORGAN**, *Instructor in Nursing* (1977) B.S.N., M.S.N., University of Cincinnati, 1977.
- LINDA E. MORLEY**, *University Artist* (October 1977) B.F.A., The University of Akron, 1975.
- PLINN F. MORSE, II**, *Assistant Law Librarian, Acquisitions* (May 1979) A.B., J.D., University of Michigan, 1973.
- KAREN S. MOSELEY**, *Assistant Director of Placement* (February 1979) B.S.Ed., Slippery Rock State College; M.S.Ed., Kent State University, 1978.
- RICHARD MOSTARDI**, *Associate Professor in Biology* (1967) B.S.Ed., M.Ed., Kent State University; Ph.D., The Ohio State University, 1968.
- JUDITH MOWERY**, *Associate Professor of Bibliography and Research Librarian* (May 1967) B.A., Ohio University; M.S.L.S., Case Western Reserve University; M.A., The University of Akron, 1972.
- FREDERICK W. MOYER**, *Professor of Finance* (March 1970) B.S., M.A., Ph.D., The Ohio State University, 1949.
- ROBERT J. MRAVETZ**, *Associate Professor of Physical Education* (1970) B.S.Ed., Miami University; M.Ed., Ohio University; Ph.D., The Ohio State University, 1970.
- SAMUEL A. MUELLER**, *Associate Professor of Sociology* (1973) B.A., Valparaiso University; M.A., Roosevelt University; Ph.D., Northwestern University, 1971.
- BEVERLY MUGRAGE**, *Assistant Professor of Mathematics (Wayne General and Technical College)* (1972) B.S., Kent State University; M.S., The University of Akron, 1970.
- JOHN MULHAUSER**, *Associate Professor of Geography* (1966) B.A., M.A., Kent State University; J.D., The University of Akron, 1976.

- FRED L. MULLEN**, *Associate Professor of Electronic Technology* (1967) B.S.E.E., Case Western Reserve University; M.S.E., The University of Akron, 1966. P.E., Ohio.
- JOSEPH C. MULLIN**, *Assistant Professor of Criminal Justice* (1970) B.S., Delta State College; M.S.Ed., The University of Akron, 1974.
- JOHN MUMPER**, *Instructor in Community Services Technology* (1977) B.A., The University of Akron; M.S.S.W., University of Louisville, 1975.
- MARTIN D. MURPHY**, *Assistant Professor of Psychology* (1975) A.B., Dartmouth College; M.S., Ph.D., University of Illinois, 1975.
- RUTH C. MURRAY**, *Rubber Division Literature Chemist* (July 1970) B.S., Chatham College, 1944.
- JEROME MUSHKAT**, *Professor of History* (1962) B.A., M.A., D.S.S., Syracuse University, 1964.
- ROBERT H. MYERS**, *Professor of Education* (1966) B.S.Ed., M.A., Ph.D., The Ohio State University, 1964.
- STEVEN C. MYERS**, *Assistant Professor of Economics* (1979) B.S., M.A., West Virginia University; M.A., Ohio State University, 1976.
- THOMAS NASH**, *Associate Professor of Geography* (1967) B.A., M.A., Ph.D., Kent State University, 1973.
- RICHARD NEAL**, *Affirmative Action Officer and Deputy Equal Employment Opportunity Officer* (March 1970) B.S., The University of Akron, 1961.
- MINEL J. NEGREANU**, *Assistant Professor of Mechanical Engineering* (December 1978)
- DANIEL NELSON**, *Professor of History* (1970) B.A., Ohio Wesleyan University; M.A., The Ohio State University; Ph.D., University of Wisconsin, 1967.
- WILLIAM E. NEMEC**, *Assistant Professor of Education* (1974) B.S.S.S., John Carroll University; M.Ed., Ohio University; Ph.D., The Ohio State University, 1974.
- HENRY NETTLING**, *Controller* (February 1964) B.S.B.A., The University of Akron, 1959.
- WILLIAM A. NEUMANN**, *Professor of Art* (1970) B.F.A., Cleveland Institute of Art; M.F.A., Syracuse University, 1970.
- VIRGINIA B. NEWBERN**, *Associate Professor of Nursing and Director of Continuing Education Program - Nursing* (1976) B.S.N., Old Dominion University, M.P.H., University of North Carolina, Chapel Hill; Ph.D., North Texas State University, 1978.
- DAVID L. NEWELL**, *Instructor in Physical Education* (August 1975) B.S., M.A., The University of Akron, 1974.
- DANIEL M. NEWLAND**, *Student Development Coordinator* (August 1971) B.A., Coe College (Iowa); M.S., Indiana University, 1971.
- ISADORE NEWMAN**, *Associate Professor of Education* (1971) B.A., University of Miami; M.A., New School for Social Research (New York); Ph.D., Southern Illinois University, 1971.
- KYLE S. NICEWARNER**, *Assistant Law Librarian, Technical Services* (August 1977) B.A., Capital University; M.L.S., Kent State University, 1977.
- DAVID L. NICHOLS**, *Assistant Professor of Accounting* (1971) B.B.A., M.B.A., University of Houston; Ph.D., University of Arkansas, 1978; C.P.A., 1954.
- ALLEN G. NOBLE**, *Professor of Geography* (1964) B.A., Syracuse University; M.A., University of Maryland; Ph.D., University of Illinois, 1957.
- JUDITH A. NOBLE**, *Associate Professor of Education* (1970) B.S., M.A., Central Michigan University; Ph.D., Michigan State University, 1971.
- RICHARD F. NOKES**, *Associate Professor of Biology* (January 1962) B.S., D.V.M., Michigan State University, 1958.
- WALLACE NOLIN**, *Professor of Music* (1969) B.S., Muskingum College; M.M.Ed., Kent State University; Ph.D., The Ohio State University, 1969.
- JAMES W. NOLTE**, *Assistant Professor of Real Estate* (1972) B.A., M.A., The University of Akron, 1972.
- DOROTHY M. NUNN**, *Associate Professor of Biology* (1967) B.S., Med. Tech., Ph.D., University of Cincinnati, 1962.
- DAVID J. O'BRIEN**, *Associate Professor of Sociology* (1972) B.A., Boston College; M.A., University of Notre Dame; Ph.D., Indiana University, 1972.
- DAVID H. O'KEEFE**, *Assistant Professor of Chemistry* (1978) B.A., Western Washington State College; M.S., Miami University; Ph.D., Arizona State University, 1974.
- JOHN H. OLIVE**, *Professor of Biology* (1970) B.S., The Ohio State University; M.A., Ph.D., Kent State University, 1964.
- GRACE B. OLMSTEAD**, *Adviser of Students* (October 1977) B.A., Wilberforce University; M.Ed., Kent State University, 1972.
- JON OLSON**, *Assistant Professor of Sociology* (1979) B.S., Southern Oregon College; M.A., University of Southern California, 1976.
- LAWRENCE ONDECKER**, *Professor of Military Science* (July 1979) B.S., The University of Akron; M.B.A., The University of Dayton; Lt. Col., Artillery.
- MARY O'NEIL**, *Director of University News Service* (February 1971) B.A., University of Nebraska, 1942.
- MICHAEL T. ORAVECZ**, *Assistant Professor in the Community and Technical College* (1968) B.A.Ed., M.A.Ed., The University of Akron; Ed.D., Western Michigan University, 1975.
- F. SCOTT ORCUTT, JR.**, *Associate Professor of Biology* (1971) B.S., M.S., Ph.D., Cornell University, 1969.
- JAMES O. OSWALD**, *Director of University Publications* (October 1971) B.S.Ed., Central State University; B.A., Cedarville College, 1967.
- DONALD W. OTT**, *Assistant Professor of Biology* (1974) B.S., Southeastern Louisiana University; Ph.D., University of North Carolina, 1973.
- JOHN W. OWEN**, *Director of Admissions* (June 1965) B.A., John Hopkins University; M.A., The University of Akron, 1973.
- DENISE A. OYSTER**, *Assistant Director of Admissions* (February 1978) B.A., The University of Akron, 1975.
- MARC C. OZANICH**, *Associate Professor of Dance* (1973) A.A., Bakersfield College; B.A., University of California at Santa Barbara; M.A., University of California at Los Angeles, 1968.
- JOSEPH PADOVAN**, *Professor of Mechanical Engineering* (1970) B.S.M.E., M.S.M.E., Ph.D., Polytechnic Institute of New York, 1969.
- ARTHUR L. PALACAS**, *Assistant Professor of English* (1976) B.A., Harvard University; Ph.D., Indiana University, 1970.
- JUDITH A. PALAGALLO**, *Assistant Professor of Mathematics* (1978) B.S., Westminster College; M.S., Purdue University; Ph.D., Colorado State University, 1975.
- MARY M. PANDYA**, *Older Adult Coordinator* (August 1978) B.A., City University of New York; M.A., The University of Akron, 1963.
- MARY C. PAOLUCCI**, *Coordinator of Writing Laboratory* (1975) B.A., M.A., The University of Akron, 1978.
- ROLAND PAOLUCCI**, *Instructor in Music* (1975) B.S., State University of New York, 1978.
- JEFFREY A. PARNES**, *Assistant Professor of Law* (1976) B.A., Colby College; J.D., University of Chicago, 1974.
- MANOUCHER PARVIN**, *Professor of Economics* (1978) B.S.E.E., University of Toledo, 1959.
- JAYPRAKASH G. PATANKAR**, *Assistant Professor of Management* (1978) B.S., Bombay University (India); M.S., Ph.D., Clemson University, 1978.
- RONALD PAUGH**, *Instructor in Marketing* (1979) B.A., M.B.A., The University of Akron, 1977.
- JUDITH A. PAULEY**, *Instructor in Music* (1979) B.M., Ithaca College; M.M., The Julliard School of Music, 1978.
- D'ORSAY PEARSON**, *Associate Professor of English* (1966) B.A., University of North Carolina; M.A., University of Florida; Ph.D., Kent State University, 1969.
- NORMA J. PEARSON**, *Instructor in Bibliography and Acting Research Librarian* (May 1979) B.A., M.L.S., M.A., Kent State University, 1978.
- WOLFGANG PELZ**, *Assistant Professor of Mathematics* (1977) B.S., Rose-Hulman Institute of Technology; M.S., Ph.D., Virginia Polytechnic Institute and State University, 1977.
- BRIAN F. PENDLETON**, *Assistant Professor of Sociology* (1978) B.A., University of Minnesota; M.A., University of North Dakota; Ph.D., Iowa State University, 1977.



- MARLENE PEOPLES**, Lecturer in Nursing (July 1978) B.S.E., St. John College; B.S.N., The University of Akron, 1976.
- STEVEN E. PERKINS**, Assistant Professor of Education (1979) B.A., M.A., Western Michigan University; Ph.D., Brigham Young University, 1978.
- JON ROBERT PESKE**, Assistant Professor in the Community and Technical College (1969) B.A., M.A., The University of Akron, 1969.
- GARY W. PETERSON**, Assistant Professor of Home Economics (March 1978) B.S., M.S., University of Nebraska; Ph.D., Brigham Young University, 1978.
- ISOBEL L. PFEIFFER**, Professor of Education (1966) A.B., Manchester College (Indiana); M.S., Indiana University; Ph.D., Kent State University, 1966.
- MARVIN E. PHILLIPS**, Coordinator of Public Services and Director of the Institute for Civic Education (July 1972) A.A., Flint Community College; B.A., Albion College; M.A., Michigan State University, 1952.
- JOHN S. PHILLIPSON**, Professor of English (1961) B.A., University of Rochester; M.A., Ph.D., University of Wisconsin, 1952.
- FRANK T. PHIPPS**, Professor of English (1953) B.A., M.A., Miami University; Ph.D., The Ohio State University, 1953.
- IRJA PIIRMA**, Associate Professor of Polymer Science (December 1952) Diploma in Chemistry, Technische Hochschule of Darmstadt (Germany); M.S., Ph.D., The University of Akron, 1960.
- ROBIN D. PINKNEY**, Administrative Project Leader, Computer Center (August 1974) B.A., Grove City College; M.B.A., The University of Akron, 1975.
- HARRY T. PINNICK**, Associate Professor of Physics (1964) B.A., Southwestern College (Kansas); Ph.D., State University of New York at Buffalo, 1955.
- RENEE S. PITONE**, Instructor in Home Economics (1978) B.A., The University of Akron; M.S., Youngstown State University, 1977.
- JOHN C. PITTS**, Associate Director, Student Financial Aids (July 1971) B.A., The University of Akron, 1968.
- JOHN C. PIZOR**, Assistant Professor in the Community and Technical College (1966) B.S., Grove City College; M.Ed., University of Pittsburgh, 1946.
- ELLEN SUE POLITELLA**, Assistant Professor of History (Wayne General and Technical College) (1972) B.A., Kent State University; M.A., Oberlin College, 1960.
- ARTHUR R. POLLOCK, JR.**, Associate Professor in the Community and Technical College (1967) B.S.Ed., Indiana University of Pennsylvania; M.A., Case Western Reserve University, 1968.
- MARGARET POLOMA**, Associate Professor of Sociology (1970) A.B., Notre Dame College of Ohio; M.A., Ph.D., Case Western Reserve University, 1970.
- VELMA E. POMRENKE**, Research Associate (January 1978) B.A., University of Western Ontario; M.A., New York University; Ph.D., The University of Akron, 1979.
- GEORGE S. POPE**, Assistant Professor of Music (1978) B.M.E., University of Tulsa; M.M., Northwestern University, 1975.
- ROBERT F. POPE, JR.**, Assistant Professor of English (1977) B.A., University of California, Berkeley; M.A., California State University, San Diego; M.F.A., University of Iowa, 1976.
- JOHN A. POPPLESTONE**, Professor of Psychology and Director of the Archives of the History of American Psychology (1961) B.A., University of Michigan; M.A., Wayne State University; Ph.D., Washington University, 1958.
- CHARLES F. POSTON**, Professor of Finance and Director of Academic Services and Personnel (1959) B.A., Eastern Illinois State College; M.A., University of Illinois; Ph.D., University of North Carolina, 1959.
- EFTHIMIOS POURNARAKIS**, Professor of Economics (1967) B.A., Athens Graduate School of Economics and Business Science (Greece); M.A., Ph.D., University of Kansas, 1967.
- BRENDA POWERS**, Child Care Coordinator (March 1979) B.S.Ed., The University of Akron, 1970.
- CARLSON PREER**, Instructor in Physical Education (July 1979) B.S.Ed., M.S.Ed., The University of Akron, 1974.
- THOMAS E. PRICE**, Assistant Professor of Mathematics (1976) B.S., M.S., Ph.D., University of Georgia, 1976.
- MINNIE C. PRITCHARD**, Instructor in Surveying and Construction Technology (1971) B.S.C.E., The University of Akron, 1955.
- GEORGE E. PROUGH**, Assistant Professor of Marketing (1968) B.A., The University of Akron; M.A., Michigan State University; D.B.A., Kent State University, 1977.
- HAROLD L. PUTT**, Assistant Professor of Mathematics (1978) B.S., Clarion State College; M.A., Ph.D., Bowling Green State University, 1977.
- GERALD F. PYLE**, Professor of Urban Studies (1970) B.A., Kent State University; M.A., Ph.D., University of Chicago, 1970.
- NEAL C. RABER**, Assistant Professor of Mathematics (1972) B.S.Ed., Kent State University; M.S., Ph.D., Ohio State University, 1972.
- MALCOM R. RAILEY**, Associate Professor of Electrical Engineering (1970) B.S.E.E., M.S.E.E., Ph.D.E.E., University of Texas, 1970. P.E., Texas.
- ALBERT RAKAS**, Interim Dean of the School of Law and Goodrich Professor of Law in International Transactions (July 1971) B.A., University of Michigan; B.S.L., St. Paul's College; J.D., John Marshall Law School, 1960.
- JONATHON S. RAKICH**, Professor of Management (1972) B.A., Oakland University; M.B.A., The University of Michigan; Ph.D., Saint Louis University, 1970.
- PENNY RAKOFF**, Instructor in Art (1978) B.F.A., University of Michigan; M.F.A., Rochester Institute of Technology, 1976.
- JOHN H. RAMEY**, Associate Professor of Social Work (1969) B.A., M.A.S.A., The Ohio State University, 1950. A.C.S.W., C.S.W., (Illinois).
- D. NICHOLAS RANSON**, Assistant Professor of English (1973) B.A., M.A., Cambridge University (England); Ph.D., Case Western Reserve University, 1974.
- GEORGE E. RAYMER**, Director of Radio and Television Information (August 1961) B.A., Kent State University; B.A.Ed., M.A.Ed., The University of Akron, 1968.
- JANEANE A. REAGAN**, Assistant Professor of Psychology (Wayne General and Technical College) (1972) B.A., M.A., Kent State University, 1970.
- DONNA JEAN RECTOR**, Accountant (March 1976) B.S.B.A., Kent State University, 1962.
- HOWARD S. REINMUTH, JR.**, Associate Professor of History (1966) B.A., M.A., Ph.D., University of Minnesota, 1958.
- JANET R. REUTER**, Assistant Professor of Education (1975) B.A., M.A., Ohio University; Ph.D., University of Toledo, 1975.
- DICK I. RICH**, Professor of Education and Director of Graduate Studies in Education (1965) B.A., Otterbein College; M.Ed., Kent State University; Ed.D., Columbia University Teachers College, 1961.
- ALVIN M. RICHARDS, JR.**, Professor of Civil Engineering (June 1949) B.C.E., The University of Akron; M.S., Harvard University; Ph.D., University of Cincinnati, 1968. P.E., Ohio.
- JAMES F. RICHARDSON**, Professor of History and of Urban Studies (1967) B.A., Iona College; Ph.D., New York University, 1961.
- PAUL RICHERT**, Law Librarian and Assistant Professor of Law (July 1977) A.B., M.S., University of Illinois; J.D., Tulane University of Louisiana, 1977.
- SHARON L. RICKERT**, Assistant Professor of Social Work (1978) B.S., Miami University; M.S.N., University of Michigan, 1970.
- KATHLEEN A. RICKS**, Instructor in Art (1976) B.A., University of South Florida; M.F.A., University of Nebraska, 1976.
- DAVID C. RIEDE**, Professor of History (1955) B.A., M.A., Ph.D., University of Iowa, 1957.
- RICHARD S. ROBERTS**, Professor of Accounting (1964) B.B.A., University of Cincinnati; M.B.A., Ph.D., The Ohio State University, 1966. C.P.A., Ohio.
- ROBERT W. ROBERTS**, Robert Iredell Professor of Chemical Engineering and Research Associate in the Institute of Polymer Science (1966) B.S.Ch.E., Washington University; M.S., Ph.D., University of Iowa, 1962.
- RUTH SEMELS ROBERTS**, Associate Professor of Education (1971) B.A., Hunter College; M.Ed., Ph.D., Kent State University, 1975.

- DAVID J. ROBINSON**, *Associate Professor of Electronic Technology* (January 1970) B.S.E.E., The University of Akron; M.S.E., Case Western Reserve University; J.D., The University of Akron, 1975.
- LINDA J. RODDA**, *Associate Professor of Secretarial Science* (1967) B.S., M.A., The University of Akron, 1969.
- LOUIS E. ROEMER**, *Professor of Electrical Engineering* (1968) B.S., M.S.E.E., Ph.D., University of Delaware, 1967. P.E., Ohio.
- WILLIAM A. ROGERS**, *Executive Dean of Continuing Education and Public Services, Associate Professor Education, Equal Employment Officer and Liaison Officer of the College of Medicine* (1957) B.A., Ed.M., Ed.D., State University of New York at Buffalo, 1967.
- MICHAEL F. ROLPH**, *Instructor in Accounting* (1974) B.S., M.B.A., The University of Akron, 1973.
- WILLIAM ROOT**, *Professor of Education and Director of Teacher Placement and Educational Field Experience* (1968) B.S., M.A., Ph.D., The Ohio State University, 1958.
- HENRY ROSENQUIST**, *Associate Professor of Psychology* (1965) B.S., M.A., Columbia University; Ph.D., Tulane University, 1964.
- DAVID A. ROSS**, *Assistant Professor of Civil Engineering* (January 1979) B.E., M.E., University of Auckland (New Zealand); Ph.D., Lehigh University, 1978.
- MICHAEL B. ROSS**, *Associate Professor of Education* (1973) B.S.Ed., Shippensburg State College; M.Ed., Ed.D., University of Pennsylvania, 1974.
- MARION ALBERT RUEBEL**, *Dean of the General College and Associate Professor of Education* (1970) B.A., M.A., University of Northern Iowa; Ph.D., Iowa State University, 1969.
- HENRY J. RUMINSKI**, *Assistant Professor of Mass Media-Communication* (1975) B.S., M.S., Ph.D., Ohio University, 1972.
- PAMELA R. RUPERT**, *Coordinator of Developmental Reading* (July 1978) B.S.Ed., Kent State University; M.S.Ed., Ph.D., The University of Akron, 1979.
- HELEN LENORE RYAN**, *Instructor in Modern Languages* (1968) B.A., Ohio Wesleyan University; M.A., in Spanish Middlebury College, 1967; M.A., in French Middlebury College, 1973.
- ROGER N. RYAN**, *University Architect* (May 1976) B.S., University of Cincinnati, 1958.
- RICHARD W. RYMER**, *Counselor* (August 1970) B.S., M.A., Kent State University, 1961.
- DONALD E. SABATINO**, *Director of the Gardner Student Center and University Liaison Officer of the University Club* (1963) B.A., M.A.Ed., The University of Akron, 1968.
- ARJAN T. SADHWANI**, *Professor of Accounting* (1970) B.A., B.Com., M.Com., Bombay University; Ph.D., Michigan State University, 1971.
- CHARLES T. SALEM**, *Assistant Professor in the Community and Technical College* (1965) B.S., in S.S., M.A., John Carroll University, 1965.
- STANLEY A. SAMAD**, *Professor of Law* (1959) B.A., J.D., University of Cincinnati; LL.M., Case Western Reserve University, 1959; LL.M., J.S.D., New York University, 1968.
- RAYMOND E. SANDERS**, *Associate Professor of Psychology* (1969) B.A., M.A., Ph.D., University of Arizona, 1969.
- EVERETT SANTEE, JR.**, *Manager of the NMR Center and Research Associate in the Institute of Polymer Science* (1966) B.S., West Virginia State College, 1962.
- SIMSEK SARIKELLE**, *Professor of Civil Engineering* (1967) B.S., Robert College; M.S., Ph.D., West Virginia University, 1966; P.E., Ohio, West Virginia.
- RITA S. SASLAW**, *Assistant Professor of Education* (1975) B.S., M.A., Ph.D., Case Western Reserve University, 1971.
- MICHAEL SAVAGE**, *Associate Professor of Mechanical Engineering* (1979) B.M.E., Manhattan College; M.S.M.E., Ph.D., Purdue University, 1969.
- ROBERT F. SAVINELL**, *Assistant Professor of Chemical Engineering* (1979) B.Ch.E., Cleveland State University; M.S., Ph.D., University of Pittsburgh, 1977.
- BLIN B. SCATTERDAY**, *Professor in the Community and Technical College* (1964) B.A., M.A.Ed., The University of Akron, 1963.
- RUDOLPH J. SCAVUZZO, JR.**, *Professor of Mechanical Engineering* (1973) B.S.M.E., Lehigh University; M.S.M.E., Ph.D., University of Pittsburgh, 1962. P.E., Ohio.
- BEVERLY L. SCHERBA**, *Assistant Professor of Bibliography and Cataloger* (August 1970) B.A., M.A.L.S., University of Wisconsin, 1952.
- PHILLIP H. SCHMIDT**, *Associate Professor of Mathematics* (1972) B.S., M.S., Ph.D., Purdue University, 1972.
- ROBERT G. SCHMIDT**, *Associate Professor of Sociology* (1967) B.A., Illinois College; M.A.T., Harvard University; Ph.D., Washington University, 1955.
- STEVEN P. SCHMIDT**, *Assistant Professor of Biology* (1978) B.A., M.A., Depauw University; Ph.D., Idaho State University, 1978.
- RONALD E. SCHNEIDER**, *Associate Professor of Physics* (1962) B.S., The University of Akron; M.S., Virginia Polytechnic Institute; M.S., John Carroll University; Ph.D., Case Western Reserve University, 1964.
- H. PAUL SCHRANK, JR.**, *Professor of Bibliography, University Librarian and Curator for the Hower House* (January 1965) B.S., Ohio University; M.S., University of Illinois, 1963.
- WILLEANE V. SCHROCK**, *Assistant Professor of Nursing* (1974) B.S., Goshen College; M.S., Case Western Reserve University, 1962.
- FREDERICK M. SCHULTZ**, *Associate Professor of Education* (1969) B.S., M.S., Ph.D., Indiana University, 1969.
- SUSAN SCHUNK**, *Instructor in Modern Languages* (1971) B.S.Ed., Indiana University of Pennsylvania; M.A., The Ohio State University, 1968.
- HAROLD M. SCHWARZ**, *Director of Health Services* (1977) B.S., University of South Carolina; M.D., Saint Louis University, 1950.
- MARGARET E. SEENO**, *Assistant Professor of Nursing* (1976) B.S.N., University of Pittsburgh; M.A., Kent State University; M.S.N., Case Western Reserve University, 1976.
- JOAN C. SEIFERT**, *Associate Professor of Education* (1967) B.S., M.Ed., Ph.D., Kent State University, 1967.
- GARY E. SELLERS**, *Assistant Professor of Economics* (1976) B.A., Shippensburg State College; M.A., Ph.D., University of Cincinnati, 1977.
- A.R. SENTIERI**, *Assistant Professor of Music* (1978) Mus.B., Oberlin College; M.A., Ph.D., Ohio State University, 1978.
- JUDITH C. SENTIERI**, *Instructional Programmer, Computer Based Education Center* B.Ed., The Ohio State University, 1973.
- MICHAEL D. SERMERSHEIM**, *Legal Assistant in the Office of Student Services* (December 1976) B.A., J.D., The University of Akron, 1973.
- GAYLE A. SEYMOUR**, *Academic Programmer Analyst* (1975) B.A., The University of Akron, 1968.
- JAMES SHANAHAN**, *Associate Professor of Urban Studies* (1970) B.B.S., West Virginia State College; M.A., West Virginia University; Ph.D., Wayne State University, 1972.
- ROBERT J. SHARDY, SR.**, *Senior Academic Programmer/Analyst* (July 1978) B.S., The University of Akron, 1972.
- DOUGLAS V. SHAW**, *Associate Professor of Urban Studies* (1972) B.A., Lebanon Valley College; M.A., Brown University; Ph.D., University of Rochester, 1972.
- ROBERT J. SHERDLARZ**, *Associate Professor of Business Law* (1972) B.A., New York University; J.D., Notre Dame Law School, 1972.
- WALTER ALVIN SHEPPE**, *Associate Professor of Biology* (1968) B.S., College of William and Mary; M.A., Ph.D., University of British Columbia, 1958.
- ELDONNA M. SHIELDS**, *Assistant Professor of Nursing* (1977) B.S.N., The Ohio State University; M.S.N., Duke University, 1972.
- KARL A. SHILLIFF**, *Professor of Management* (1967) B.S.Ch.E., Pennsylvania State University; M.B.A., The University of Akron; Ph.D., Pennsylvania State University, 1971.
- RICHARD SHIREY**, *Associate Professor of Music* (1967) B.M., Oberlin College; M.M., University of Illinois, 1965.

- RAYMOND SIBBERSON**, *Instructor in Respiratory Therapy Technology* (1978) B.S.Ed., The University of Akron, 1978.
- MARTIN H. SIEGEL**, *Assistant Professor of Sales and Merchandising* (1972) B.F.A., M.A., Hunter College, 1965.
- KENNETH T. SILOAC**, *Associate Professor of Speech* (1971) B.S., M.Ed., Ph.D., Wayne State University, 1971.
- M. NOEL SIMEONE**, *Adviser of Students* (July 1978) B.A., University of Pennsylvania; M.A., Indiana University of Pennsylvania, 1978.
- ELSIE SIMMS**, *Associate Professor of Nursing and Director of Undergraduate Studies* (1978) B.S.N., University of Colorado; B.S.B.A., Idaho State University; M.S., Indiana University, 1976.
- ANDREW L. SIMON**, *Professor of Civil Engineering and Executive Director of Institute for Technological Assistance* (1965) C.E. Diploma, Technical University of Budapest; Ph.D., Purdue University, 1962; P.E., Ohio, West Virginia, Indiana.
- FRANK L. SIMONETTI**, *Professor of Management* (February 1942) B.S., The University of Akron; M.B.A., Boston University; D.B.A.,—Indiana University, 1954.
- ROBERT B. SLANEY**, *Assistant Professor of Psychology* (1977) B.A., College of Wooster; M.A., Ph.D., The Ohio State University, 1973.
- RAYMOND SLATTERY, JR.**, *Manager-Plant Engineering* (February 1968) B.S., Case Institute of Technology; M.S.T.E., The University of Akron, 1977; P.E., Ohio.
- HOWARD K. SLAUGHTER**, *Professor of Theatre Arts* (1967) B.A., University of California; M.A., University of Hawaii; Ph.D., University of Pittsburgh, 1966.
- SALLY KENNEDY SLOCUM**, *Associate Professor of English* (1966) A.B., Columbia College; M.A., Ph.D., University of Tennessee, 1968.
- DANIEL J. SMITH**, *Assistant Professor of Chemistry* (1977) B.S., Wisconsin State University, Ph.D., University of California-Berkeley, 1974.
- FORREST J. SMITH**, *Instructor in Biology (Wayne General and Technical College)* (January 1975) B.A., Hiram College; M.S., Purdue University, 1974.
- FREDERIK N. SMITH**, *Associate Professor of English* (1976) B.S., Loyola College; M.A., Ph.D., University of Virginia, 1970.
- HERBERT W. SMITH, JR.**, *Professor of Modern Languages* (1956) A.B., Brigham Young University; M.A., Ph.D., University of Wisconsin, 1956.
- LARRY D. SNIDER**, *Assistant Professor of Music* (1977) B.S., Illinois State University; M.M.E., North Texas University, 1971.
- GLENN H. SNYDER**, *Assistant Professor of Community Services Technology* (1973) B.A.Ed., The University of Akron; M.Ed., Kent State University, 1972.
- NANCY M. SOMERICK**, *Assistant Professor of Mass Media-Communication* (1978) B.S.J., Ohio University; M.A.J., Kent State University; Ph.D., Ohio University, 1974.
- MARK E. SOPPELAND**, *Instructor in Art* (1976) B.F.A., University of Colorado; M.F.A., Ohio State University, 1976.
- ROBERT SOVCHIK**, *Associate Professor of Education* (1973) B.S., Kent State University; M.A., Cleveland State University; Ph.D., Kent State University, 1974.
- NORMA L. SPENCER**, *Assistant Professor of Education* (1970) B.S., M.S., The University of Akron, 1970.
- GARY N. SPONSELLER**, *Academic Programmer/Analyst* (July 1977) B.A., The University of Akron, 1977.
- RICHARD H. STALLINGS, III**, *Assistant Professor of Military Science* (March 1978) B.A., LaSalle College; M.A., University of Oklahoma, 1976; Captain.
- SUSAN J. STEARNS**, *Associate Professor of Nursing* (1974) B.S.N., Saint John's College; M.S.N., Catholic University of America, 1963.
- RAMON F. STEINEN**, *Professor of Education* (1969) B.A., M.A., Montclair State College; Ph.D., The Ohio State University, 1966.
- RICHARD J. STEINLE**, *Editor, University News Service* (January 1975) B.A., University of Notre Dame, 1966.
- KAY E. STEPHAN**, *Instructor in Business and Office Technology (Wayne General and Technical College)* (January 1979) B.S.Ed., Wittenberg University; M.S., The University of Akron, 1978.
- HOWARD L. STEPHENS**, *Professor of Chemistry, Professor of Polymer Science and Manager of Applied Research and Executive Officer in the Institute of Polymer Science* (June 1950) B.S., M.S., Ph.D., The University of Akron, 1960.
- WALLACE STERLING**, *Associate Professor of Theatre Arts* (1966) B.A., M.A., University of Florida; Ph.D., Southern Illinois University, 1966.
- HARVEY L. STERNS**, *Associate Professor of Psychology and Director of the Institute for Life-Span Development and Gerontology* (1971) B.A., Bard College; M.A., State University of New York at Buffalo; Ph.D., West Virginia University, 1971.
- THERESA F. STICKLER**, *Lecturer in Nursing* (1977) B.S.N., Villa Maria College, 1968.
- DONALD P. STORY**, *Assistant Professor of Mathematics* (1976) B.A., Ph.D., M.A., University of Florida, 1976.
- WARREN P. STOUTAMIRE**, *Professor of Biology* (1966) B.S., Roanoke College; M.S., University of Oregon; Ph.D., Indiana University, 1954.
- RICHARD W. STRATTON**, *Assistant Professor of Economics* (1978) B.A., Drew University; M.A., Ph.D., University of Connecticut, 1977.
- FREDERICK JOHN STURM**, *Assistant to the Dean of the Community and Technical College and Assistant Professor in the Community and Technical College* (August 1968) B.A., M.A., Ed.D., The University of Akron, 1979.
- PHILLIP STUYVESANT**, *Associate Professor of Modern Languages* (1966) B.A., Thiel College; M.A., Western Reserve University; Ph.D., Case Western Reserve University, 1970.
- LINDA ELLISON SUGARMAN**, *Assistant Professor of Accounting* (1970) B.B.A., M.S.Ed., Hofstra University, 1968; C.P.A., New York State.
- MICHAEL N. SUGARMAN**, *Associate Professor of Education* (1970) B.S., M.Ed., Ed.D., State University of New York at Buffalo, 1966.
- RONALD C. SUICH**, *Associate Professor of Mathematics* (1970) B.B.A., John Carroll University; M.S., Ph.D., Case Western Reserve University, 1968.
- DENNIS K. SULLIVAN**, *Assistant Professor of Industrial Technology* (1977) B.S.B.A., M.S.T.E., The University of Akron, 1974.
- ROBERT C. SULLIVAN**, *Assistant to the Dean of the School of Law* (July 1976) B.S., M.Ed., Kent State University, 1976.
- GERARD M. SWEENEY**, *Associate Professor of English* (1971) B.S., Manhattan College; M.A., New York University; Ph.D., University of Wisconsin, 1971.
- LEONARD SWEET**, *Professor of Mathematics* (1959) B.A.Ed., The University of Akron; M.Ed., Kent State University; Ph.D., Case Western Reserve University, 1970.
- JAMES D. SWITZER**, *Assistant Professor in the Community and Technical College* (1965) B.A., College of Wooster; M.A., Kent State University, 1965.
- JOHN P. SZABO**, *Assistant Professor of Geology* (1975) B.S., University of Notre Dame; Ph.D., University of Iowa, 1975.
- GEORGE L. SZOKE**, *Assistant Professor of Mathematics* (1963) B.S.M.E., Polytechnical University of Budapest; M.S.E., The University of Akron, 1963.
- JAMES W. TAGGART**, *Associate Professor of Business Management Technology* (1969) B.S., Youngstown State University; M.B.A., Pennsylvania State University; J.D., The University of Akron, 1974.
- JOSEPH A. TAKACS**, *Assistant Professor of Electronic Technology* (1973) B.S.E.E., M.S.E.E., The University of Akron, 1961.
- CATHRYN TALIAFERRO**, *Assistant Professor of English* (October 1961) B.A., The University of Akron; M.A., Radcliffe College, 1940.
- VIRGINIA J. TAPPENDEN**, *Professor of Home Economics* (1969) B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University, 1962.
- HOWARD L. TAYLOR**, *Professor of Management* (1963) B.S., The University of Akron; M.S., Ph.D., Iowa State College, 1958.

- PATRICIA TAYLOR**, *Assistant Professor of Physical Education* (1962) B.S.Ed., The University of Akron; M.A., Kent State University, 1972.
- RONALD TAYLOR**, *Professor of Art* (1964) B.F.A., M.A., The Ohio State University, 1963.
- TIMOTHY D. TAYLOR**, *Assistant Director, Computer Based Education Center* (1973) B.A.Ed., M.A.Ed., Ph.D., The University of Akron, 1978.
- JAMES W. TEETER**, *Professor of Geology* (1965) B.S., M.S., McMaster University; Ph.D., Rice University, 1966.
- STUART M. TERRASS**, *Research Associate* (December 1957) B.A., B.S., M.A., The University of Akron, 1965.
- ROBERT M. TERRY**, *Professor of Sociology* (1971) B.A., M.A., Ph.D., University of Wisconsin, 1965.
- EDWIN THALL**, *Assistant Professor of Chemistry (Wayne General and Technical College)* (1974) B.S., Pratt Institute; M.S., New Mexico Highlands University; Ph.D., The University of Akron, 1972.
- FRANCIS B. THOMAS**, *Director of Computer Services* (December 1970) B.S., University of Cincinnati; M.A., Kent State University, 1966.
- BONNIE J. THOMAS-MOORE**, *Associate Professor of Food Service Management* (1969) B.A., M.A., Kent State University, 1969.
- JACQUELINE THOMASON**, *Director of the Edgewood Project* (November 1977) B.A., Talladega College; M.A., Ohio State University, 1977.
- JACK E. THOMPSON**, *Assistant Professor of Business Management Technology* (January 1974) B.S.B.A., Kent State University; M.S., The University of Akron, 1975.
- STEPHEN J. THOMPSON**, *Associate Professor of Education* (1973) B.S., University of Wisconsin; M.A., University of Northern Colorado; Ph.D., Syracuse University, 1973.
- DONALD C. THORN**, *Professor of Electrical Engineering* (1967) B.S.E.E., Texas A & M College; M.S.E.E., Ph.D., University of Texas, 1958. P.E., New Mexico, Ohio.
- DAVID H. TIMMERMAN**, *Associate Professor of Civil Engineering* (1962) (1967) B.S.C.E., M.S., Ohio University; Ph.D., Michigan State University, 1969.
- GENE TISDALE**, *Accountant in Controller's Office* (1969) B.S.B.A., Kent State University, 1953.
- PAUL D. TOLCHINSKY**, *Assistant Professor of Management* (1979) B.A., Bowling Green State University; Ph.D., Purdue University, 1978.
- VIOLET E. TOMI**, *Supervisor of the Day Care Center* (1974) B.S.Ed., M.S.Ed., The University of Akron, 1979.
- SANDRA K. TOPA**, *Adviser of Students* (May 1975) B.A., M.A., The University of Akron, 1975.
- ARLENE TOTH**, *Instructor in English* (1969) B.A., M.A., The University of Akron, 1969.
- BRUCE A. TRIER, JR.**, *Manager-Administrative Systems/Programming* (February 1971) B.S., Kent State University; M.S., The University of Akron, 1977.
- MARY ANN TRIPODI**, *Instructor in Physical Education and Assistant to the Athletic Director* (1971) B.S., M.Ed., Kent State University, 1970.
- RICHARD J. TUREK**, *Associate Professor of Mathematics* (1972) B.S., M.A., Ph.D., University of New Mexico, 1972.
- GENEVIEVE H. TURLIK**, *Instructor in Secretarial Science* (1971) B.A., The University of Akron, 1953; R.N.
- KAREN B. TURNER**, *Assistant Professor of Speech and Coordinator of Comprehensive Services for the Deaf* (April 1971) B.S., Kent State University; M.S.Ed., The University of Akron, 1974.
- SHERMAN D. VANDER ARK**, *Associate Professor of Music* (1973) A.B., Calvin College; M.A., Ph.D., The Ohio State University, 1970.
- DOLORES W. VANDERVORT**, *Assistant Professor of Nursing* (1978) B.S.N., M.S.N., Ph.D., Case Western Reserve University, 1978.
- KATHRYN VEGSO**, *Assistant Dean of Continuing Education and Public Services* (February 1959) B.S., University of Illinois; M.S.Ed., The University of Akron, 1964.
- WILBUR P. VEITH**, *Assistant Professor of Mathematics* (1971) B.S., Cleveland State University; M.S., Ph.D., The Ohio State University, 1971.
- VICTOR VELEZ**, *Assistant Director of Student Financial Aids* (July 1977) B.A., M.A., University of Tampa, 1977.
- BARBARA A. VINSON**, *Assistant Professor of Accounting* (1978) B.S., Indiana University; M.B.A., University of Washington, 1956.
- ERNST D. VON MEERWALL**, *Professor of Physics* (1971) B.S., M.S., Northern Illinois University; Ph.D., Northwestern University, 1970.
- ANNA M. VOORHEES**, *Associate Professor of Bibliography and Assistant Librarian for Technical Services* (1971) B.S.Ed., B. Mus., The Ohio State University; M.A., Kent State University, 1964.
- DIANE VUKOVICH**, *Coordinator of Developmental Mathematics and Assistant Director of Developmental Programs* (1973) B.S., Youngstown State University; M.Ed., Kent State University; Ph.D., The University of Akron, 1975.
- THOMAS J. VUKOVICH**, *Assistant to the Dean of the General College* (July 1972) B.S., Ohio Northern University; M.Ed., Kent State University, 1971.
- MARTHA W. VYE**, *Assistant Professor of Secretarial Science* (1973) B.S., Appalachian State University; M.Ed., Bowling Green State University, 1965.
- MELVIN C. VYE**, *Assistant Professor of Electronic Technology* (1972) B.S.E.E., Ohio University; M.E., Pennsylvania State University, 1969.
- CHARLES F. WADDELL**, *Assistant Professor of Music* (1975) B.S., Muskingum College; M.M., University of Cincinnati, 1974.
- EDWIN E. WAGNER**, *Professor of Psychology* (1959) B.A., M.A., Ph.D., Temple University, 1959.
- JANET WAISBROT**, *Assistant Professor of Modern Languages* (1965) B.A., Western Reserve University; M.A., Kent State University, 1966.
- JOHN R. WALKER**, *Staff Auditor* (March 1978) B.S., The University of Akron, 1974.
- WINIFRED J. WALTER**, *Assistant Professor of Nursing* (January 1978) B.S.N., St. Louis University; M.S.N., Case Western Reserve University, 1972.
- JOSEPH M. WALTON**, *Associate Dean of Graduate Studies and Research and Associate Professor of Education* (1970) B.S., University of Cincinnati; M.Ed., Xavier University; Ph.D., The Ohio State University, 1970.
- JOAN E. WARNER**, *Associate Professor of Secretarial Science* (1975) B.S., M.S.Ed., The University of Akron, 1966.
- THOMAS D. WARNER**, *Instructional Programmer, Computer Based Education Center* (July 1976) B.S., Walsh College; M.S., The University of Akron, 1976.
- VIRGINIA J. WATKINS**, *Associate Professor in the Community and Technical College* (1967) B.A.Ed., M.A.Ed., Arizona State University, 1953.
- LLOYD J. WATSON**, *Assistant Professor of Biology* (1970) B.S., Wheaton College; M.S., Northern Illinois University; M.A., Southern Illinois University; Ph.D., University of Arkansas, 1968.
- WINIFRED WATSON-FLORENCE**, *Instructor in Speech and Clinical Supervisor in Speech Pathology* (1976) B.A., M.A., Wichita State University, 1972.
- JOHN STEWART WATT**, *Associate Provost and Professor of Education* (1956) B.A., The University of Akron; M.A., Ph.D., University of Chicago, 1950.
- THOMAS DEWITT WEBB**, *Assistant Professor of Art* (1970) B.F.A., M.F.A., University of Michigan, 1970.
- WILLIAM V. WEBB**, *Assistant Professor in the Community and Technical College* (1968) B.A., University of Notre Dame; M.S., John Carroll University, 1960.
- WYATT M. WEBB**, *Assistant Professor of Physical Education* (1967) B.S., The University of Akron; M.S.Ed., University of Cincinnati; Ph.D., The Ohio State University, 1967.
- PAUL A. WEIDNER**, *Professor of Political Science* (1960) B.A., M.A., University of Cincinnati; Ph.D., University of Michigan, 1959.

- RUSSELL WEINGARTNER**, *Associate Professor of Modern Languages* (1970) B.A., University of Cincinnati; M.A., Ph.D., Princeton University, 1968.
- EDITH K. WEINSTEIN**, *Assistant Professor in the Community and Technical College* (1969) B.A., M.A.Ed., The University of Akron, 1968.
- DAVID M. WEIS**, *Professor of Education* (1967) B.A., Loras College; M.Ed., Ohio University; Ph.D., The Ohio State University, 1967.
- JOHN T. WELCH, JR.** *Associate Professor of Electrical Engineering* (1973) B.S., M.S., Ph.D., North Carolina State University, 1964.
- ANNE H. WEST**, *Associate Professor of Secretarial Science* (1971) B.S., Salem College; M.S.Ed., Madison College, 1965.
- KENNETH N. WEXLEY**, *Professor of Psychology* (1969) B.A., State University of New York at Buffalo; M.A., Temple University; Ph.D., University of Tennessee, 1969.
- ROBERT C. WEYRICK**, *Dean of the Community and Technical College and Professor in the Community and Technical College* (February 1965) B.E.E., The University of Akron; M.S., Case Institute of Technology, 1965; P.E., Ohio.
- JOHN WIANDT**, *Assistant Controller* (July 1967) B.S. Bus. Ed., Kent State University, 1965.
- LAWRENCE P. WILKINS**, *Associate Professor of Law* (1974) B.A., The Ohio State University; J.D., Capital University, 1973.
- JUDY B. WILKINSON**, *Assistant Professor of Marketing* (1978) B.S., M.B.A., Louisiana Polytechnic Institute; Ph.D., University of Alabama, 1972.
- JEAN WILLIAMS**, *Assistant Professor of Home Economics and Assistant Director University Nursery School* (January 1973) B.S., Iowa State University; M.S., The University of Akron, 1972.
- JOHN D. WILLIAMS**, *Associate Professor of Finance* (1969) B.S., Westminster College; M.B.A., D.B.A., Kent State University, 1971.
- MAURICE G. WILLIAMS**, *Professor of Education* (1966) B.A., The University of Akron; M.E., Kent State University; Ed.D., Western Reserve University, 1962.
- RICHARD A. WILLIAMS**, *Associate Professor of Electrical Engineering* (1968) B.S., M.S., Ph.D., The Ohio State University, 1965; P.E., Ohio.
- MAX. S. WILLIS, JR.**, *Professor of Chemical Engineering* (1968) B.S., Pennsylvania State University; M.S., Ph.D., Iowa State University of Science and Technology, 1962.
- CHARLES W. WILSON, III**, *Professor of Physics, Professor of Polymer Science and Research Associate in the Institute of Polymer Science* (1965) B.S.E., M.S., University of Michigan; Ph.D., Washington University, 1952.
- ERNEST LEE WILSON**, *Assistant to the Dean, College of Business Administration and Instructor in Business Administration* (1976) B.S.B.A., The Ohio State University; M.B.A., The University of Akron, 1969.
- JOHN WESLEY WILSON**, *Director of Black Cultural Center and Instructor in Education* (July 1970) B.S., Albany State College; M.S.Ed., The University of Akron, 1970.
- PAUL S. WINGARD**, *Associate Dean of Buchtel College of Arts and Sciences and Professor of Geology* (February 1966) B.A., M.S., Miami University; Ph.D., University of Illinois, 1960.
- DAVID WINKLER**, *Research Associate, Institute of Polymer Science* (October 1969) B.S., Ashland College; M.S., The University of Akron, 1972.
- BERNARD S. WINNICK**, *Assistant Professor of Business Law* (1979) B.S.B.A., Ohio State University; J.D., The University of Akron, 1964.
- JAMES L. WITHEROW**, *Assistant Professor of Physical Education* (1972) B.S., M.Ed., Kent State University, 1956.
- MARY O. WITWER**, *Assistant Professor of Secretarial Science* (1971) (1972) B.S., The University of Akron; M.E., Ohio University, 1951.
- NEAL WOLFE**, *Instructor in Electronic Technology* (July 1966) B.S., The University of Akron, 1965.
- CHARLES L. WOOD**, *Associate Professor of Education* (1966) B.A., Simpson College; M.A., Ph.D., University of Iowa, 1966.
- W. RICHARD WRIGHT**, *Assistant to the President-Off-Campus* (June 1967) B.A., The University of Akron, 1937.
- ISAAC YETIV**, *Professor of Modern Languages* (1975) B.A., Hebrew University of Jerusalem; Ph.D., University of Wisconsin, 1970.
- WALTER H. YODER, JR.**, *Assistant to the Dean, College of Education and Associate Professor of Education* (1971) B.A., Tufts University; M.A., New York University; Ed. D., Indiana University, 1971.
- LAVERNE C. YOUSEY**, *Instructor in Respiratory Therapy Technology* (1976) B.A., Goshen College; M.S. Tech.Ed., The University of Akron, 1979.
- EDWARD A. ZADROZNY**, *Instructor in Music* (1977) B.M.E., The Ohio State University; M.M., University of Illinois, 1975.
- ROBERT L. ZANGRANDO**, *Associate Professor of History* (1971) B.A., Union College; M.A., Ph.D., University of Pennsylvania, 1963.
- HANS ZBINDEN**, *Assistant Professor of Modern Languages* (1965) B.A., Wittenberg University; M.A., University of Pennsylvania; Ph.D., Penn State University, 1971.
- DONALD A. ZIMMERMAN**, *Assistant Professor of Sales and Merchandising* (1973) B.S.B.A., Defiance College; M.B.A., University of Pennsylvania, 1968.

# Full-Time Teaching Faculty

(by College, School and Department and the University Library)

August 1979

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## General College

### General Studies

**HEAD:** Professor David C. Riede.

**COURSE DIRECTORS:** J. Thomas Adolph, John Bee, Robert Holland, Douglas V. Shaw.

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## Community and Technical College

### Division of Allied Health Technology

**CHAIRMAN:** Professor Roger Keller.

**INSTRUCTOR:** Raymond Sibberson, Laverne C. Yousey.

### Division of Engineering and Science Technology

**CHAIRMAN:** Associate Professor Thomas P. Herbert

**PROFESSORS:** Thomas M. Brittain, Nathan F. Cardarelli, Milan F. Du-bravcic, Robert C. Weyrick.

**ASSOCIATE PROFESSORS:** Ronnie G. Adams, Marko Brdar, William M. Glazier, Richard L. Henry, Sebastian V. Kanakkanatt, Fred L. Mullen, David J. Robinson.

**ASSISTANT PROFESSORS:** Albert C. Buxton, Paul H. Dunham, Arthur V. George, Edward E. McDonald, Dennis K. Sullivan, Joseph A. Takacs, Melvin C. Vye.

**INSTRUCTORS:** John Arendt, Barbara A. Gsellman, Michael S. Had-dad, Minnie C. Pritchard, Neal E. Wolfe.

### Division of Associate Studies

**CHAIRMAN:** Professor Blin B. Scatterday.

**PROFESSOR:** William S. Fleming.

**ASSOCIATE PROFESSORS:** Richard M. Fawcett, Richard B. Hoskin, Dennis A. Kleidon, Jack F. Mercer, John B. Monroe, Arthur R. Pol-lock, Jr.

**ASSISTANT PROFESSORS:** Anna P. Barnum, Eugene M. Benedict, Michael S. Bennett, Stanley R. Bruns, Stephen J. Chylinski, Jr., Frank J. Guccio, Jr., Marion R. Heise, Wendell A. Johnson, Rose A. Kleidon, Michael T. Oravec, Jon R. Peske, Charles T. Salem, Frederick J. Sturm, James D. Switzer, William V. Webb, Edith K. Weinstein.

**INSTRUCTORS:** Richard A. Calkins, Leonard M. Calabrese, Phillip R. Hales, Walter M. Herip, Laura J. Johnson.

## Division of Business and Office Technology

**CHAIRMAN:** Associate Professor George J. Makar.

**PROFESSORS:** Mary Jean Johnston, Aloysius E. Misko.

**ASSOCIATE PROFESSORS:** Gerald R. Camp, Robert E. Collins, David T. Dolan, Jack D. Harpool, Linda J. Rodda, James W. Taggart, Bonnie J. Thomas-Moore, Joan E. Warner, Virginia J. Watkins, Anne H. West.

**ASSISTANT PROFESSORS:** John R. Cole, Russell K. Davis, Mary H. Dee, Arthur V. George, Lawrence G. Golden, Jack D. Huggins, Thora S. Kille, James W. Nolte, John C. Pizor, Martin H. Siegel, Jack E. Thompson, Martha W. Vye, Mary O. Witwer, Donald A. Zimmerman.

**INSTRUCTORS:** Lloyd Close, Janice L. Eley, Charles W. Flagg, Joyce E. Mirman, Genevieve H. Turlik.

## Division of Public Service Technology

**CHAIRMAN:** Associate Professor Joseph R. Lentini.

**ASSOCIATE PROFESSOR:** Kenneth L. McCormick.

**ASSISTANT PROFESSORS:** Harriet K. Herskowitz, Robert W. Higham, Joseph C. Mullin, Glenn H. Snyder.

**INSTRUCTOR:** John Mumper.

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## Buchtel College of Arts and Sciences

### Biology

**HEAD:** Professor Dale L. Jackson.

**PROFESSORS:** Roger F. Keller, Nada Ledinko, Lazarus Macior, John H. Olive.

**ASSOCIATE PROFESSORS:** Helmar H. E. Dollwet, Eugene Flaumen-haft, John L. Frola, Richard Mostardi, Richard F. Nokes, Dorothy Nunn, F. Scott Orcutt, Jr., Walter Sheppe.

**ASSISTANT PROFESSORS:** Daniel L. Ely, John F. Gwinn, Donald W. Ott, Steven P. Schmidt, Lloyd J. Watson.

### Chemistry

**HEAD:** Professor Michael F. Farona.

**PROFESSORS:** Lewis Fetters, Paul D. Garn, Claibourne E. Griffin, H. James Harwood, Joseph P. Kennedy, William G. Kofron, Ian R. MacGregor, Donald McIntyre, Howard L. Stephens.

**ASSOCIATE PROFESSORS:** Stephen Darling, John E. Frederick, John J. Houser, Gerald F. Koser, Alan F. Krivis, Henry A. Kuska.

**ASSISTANT PROFESSORS:** William D. Lyon, David H. O'Keefe, Daniel J. Smith.

### Classics

**HEAD:** Distinguished Professor Theodore T. Duke.

**ASSISTANT PROFESSOR:** Robert E. Gaebel.

**INSTRUCTORS:** Constantin Dimitriu, Jacqueline Hegbar.

### Economics

**ACTING HEAD:** Assistant Professor Dennis M. Byrne.

**PROFESSORS:** Ali Fatemi, William S. Hendon, Manoucher Parvin, Ethimios Pournarakis.

**ASSOCIATE PROFESSOR:** Robert R. Black.

**ASSISTANT PROFESSORS:** Elizabeth Erickson, Gasper A. Garofalo, Randall H. King, Lung-Ho Lin, Dvinder M. Malhotra, Steven C. Myers, Gary E. Sellers, Richard W. Stratton.

## English

**HEAD:** Associate Professor Frederik N. Smith.

**PROFESSORS:** Gerald H. Levin, Frank T. Phipps, John S. Phillipson.

**ASSOCIATE PROFESSORS:** Douglas R. Butturff, Robert L. Dial, James J. Egan, Bruce Holland, Robert M. Holland, David L. Jones, R. Paul Merrix, D'Orsay W. Pearson, Sally K. Stocum, Gerard M. Sweeney.

**ASSISTANT PROFESSORS:** Joseph Ceccio, Mary A. DeHaven, William A. Francis, Elton A. Glaser, Julia A. Hull, Walter D. Lehman, Lawrence T. Martin, Ruth L. Messenger, Arthur L. Palacas, Robert F. Pope, David N. Ranson, Cathryn C. Taliaferro.

**INSTRUCTORS:** Jutta T. Bendremer, Martene C. Hathaway, Alice MacDonald, Arlene A. Toth.

## Geography

**HEAD:** Professor Allan G. Noble.

**PROFESSORS:** Ashok Dutt, Edward W. Hanten, Gerald F. Pyle.

**ASSOCIATE PROFESSORS:** Vern R. Harnapp, Albert J. Korsok, Laurence J. C. Ma, John E. Mulhauser, Thomas L. Nash.

**ASSISTANT PROFESSOR:** Lathardus Goggins.

## Geology

**HEAD:** Professor Arthur E. Burford.

**PROFESSORS:** Robert C. Corbett, Paul C. Franks, James W. Teeter, Paul S. Wingard.

**ASSOCIATE PROFESSORS:** Roger Bain, Jim L. Jackson, A. W. Kunze.

**ASSISTANT PROFESSORS:** Laverne M. Friberg, John P. Szabo.

## History

**HEAD:** Professor Robert H. Jones.

**PROFESSORS:** Vincent H. Cassidy, Don R. Gerlach, George W. Knepper, Warren F. Kuehl, Noel L. Leathers, Sheldon B. Liss, Jerome Mushkat, Daniel Nelson, James F. Richardson, David C. Riede.

**ASSOCIATE PROFESSORS:** J. Wayne Baker, Boris Blick, June Burton, Barbara E. Clements, H. Roger Grant, David E. Kyvig, William McGucken, Howard S. Reinmuth, Jr., Robert L. Zangrando.

**ASSISTANT PROFESSOR:** Guy S. Allitto.

## Mathematical Sciences

**HEAD:** Professor William H. Beyer.

**PROFESSOR:** Leonard Sweet.

**ASSOCIATE PROFESSORS:** David Buchthal, Douglas E. Cameron, Robert C. Carson, Peter J. Gingo, William W. Hokman, Ernest A. Kuehls, Phillip H. Schmidt, Ronald C. Suich, Richard J. Turek.

**ASSISTANT PROFESSORS:** Joseph C. Hintz, Martha Lierhaus, Judith Palagallo, Wolfgang Pelz, Thomas E. Price, Harold Putt, Neal C. Raber, Donald P. Story, George L. Szoke, Wilbur P. Veith.

## Modern Languages

**HEAD:** Professor Isaac Yetiv.

**PROFESSORS:** Arno K. Lepke, Hugo Lijeron, Theodore Mackiw, Eugene A. Maio, Claude Y. Meade, Herbert W. Smith, Jr.

**ASSOCIATE PROFESSORS:** Allan McIntyre, Phillip Stuyvesant, Russell Weingartner.

**ASSISTANT PROFESSORS:** Jolita Kavaliunas, William I. Miller, Janet Waisbrot, Hans O. Zbinden.

**INSTRUCTORS:** Joseph J. Donatelli, Stephen A. Faria, Janice Houser, Sys Inman, Kriemhilde Livingston, Helen Ryan, Susan Schunk.

## Philosophy

**HEAD:** Associate Professor Carl Kordig.

**ASSOCIATE PROFESSORS:** David F. Cox, James H. Buchanan, Alan Hart, William McMahon.

**ASSISTANT PROFESSOR:** James Anderson.

## Physics

**HEAD:** Professor Charles W. Wilson, III.

**PROFESSORS:** Roger B. Creel, Alan N. Gent, C. Frank Griffin, Ernest D. von Meerwall.

**ASSOCIATE PROFESSORS:** Harry T. Chu, Walter H. Heintz, Peter N. Henriksen, II, Harry T. Pinnick, Ronald E. Schneider.

## Political Science

**HEAD:** Associate Professor Carl Lieberman.

**PROFESSORS:** Yong H. Cho, Yogendra Malik, Paul A. Weidner.

**ASSOCIATE PROFESSORS:** Vernon F. Cook, Frank J. Kendrick, David J. Louscher, Jesse F. Marquette.

**ASSISTANT PROFESSORS:** Richard Franklin, Katherine Hinckley.

## Polymer Science

**HEAD:** Professor Howard L. Stephens.

**PROFESSORS:** Lewis J. Fetters, Alan N. Gent, H. James Harwood, Frank N. Kelley, Joseph P. Kennedy, Donald McIntyre, Eberhard A. Meinecke, Charles W. Wilson, III.

**ASSOCIATE PROFESSORS:** John E. Frederick, Irja Piirma.

## Psychology

**HEAD:** Professor Gerald V. Barrett.

**PROFESSORS:** Alexis M. Anikeeff, John A. Popplestone, Edwin E. Wagner, Kenneth N. Wexley.

**ASSOCIATE PROFESSORS:** Alex Darbes, Richard H. Haude, Marion W. McPherson, Henry Rosenquist, Raymond Sanders, Harvey L. Sterns.

**ASSISTANT PROFESSORS:** Ralph Alexander, Faye Dambrot, Robert Deitchman, Stephen S. Fugita, Robert G. Lord, Martin D. Murphy, Robert B. Slaney.

## Sociology

**ACTING HEAD:** Associate Professor Carl A. Bersani.

**PROFESSORS:** Charles M. Barresi, Irwin Deutscher, Lloyd B. Lueptow, Robert M. Terry.

**ASSOCIATE PROFESSORS:** T. Neal Garland, Richard J. Gigliotti, John P. Marwitt, McKee J. McClendon, Donald J. Metzger, Samuel A. Mueller, David J. O'Brien, Margaret Poloma, Robert G. Schmidt.

**ASSISTANT PROFESSORS:** Rudy Fenwick, Jon Olson, Brian Pendleton.

## Urban Studies

**HEAD:** Professor Yong H. Cho.

**PROFESSORS:** Ashok Dutt, Edward W. Hanten, William S. Hendon, Gerald F. Pyle.

**ASSOCIATE PROFESSORS:** Frank Costa, David F. Cox, Frank J. Kendrick, Richard G. LeFevre, James L. Shanahan, Douglas V. Shaw.

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## College of Engineering

### Chemical Engineering

**HEAD:** Professor Howard L. Greene.

**PROFESSORS:** Glenn A. Atwood, Coleman J. Major, Robert W. Roberts, Max S. Willis, Jr.

**ASSOCIATE PROFESSORS:** Lawrence G. Focht, T. Henry Forsyth, John P. Lenczyk.

**ASSISTANT PROFESSOR:** Robert F. Savinell.

### Civil Engineering

**HEAD:** Professor Andrew L. Simon.

**PROFESSORS:** Tse-Yung Chang, D. G. Fertis, Alvin M. Richards, Jr., Simsek Sarikell.

**ASSOCIATE PROFESSORS:** Clarence B. Drennon, George P. Manos, David M. Timmerman.

**ASSISTANT PROFESSOR:** David A. Ross.

### Electrical Engineering

**ACTING HEAD:** Associate Professor Joseph A. Edminister.

**PROFESSORS:** Chiou-Shiun Chen, Chu-Fu Chen, Louis E. Roemer, Donald C. Thorn.

**ASSOCIATE PROFESSORS:** Robert S. Grumbach, Chaman N. Kashkari, Milton L. Kult, Malcolm R. Railey, John T. Welch, Jr., Richard A. Williams.

**ASSISTANT PROFESSORS:** Victor Burke, James Grover.

### Mechanical Engineering

**HEAD:** Professor Rudolph Scavuzzo.

**PROFESSORS:** Thomas M. Brittain, Eberhard A. Meinecke, Joseph Padovan.

**ASSOCIATE PROFESSORS:** Maurice L. Adams, Donald R. Burrowbridge, Mamerto L. Chu, Jr., Benjamin T. F. Chung, Phillip M. Gerhart, Richard J. Gross, Azmi Kaya, Michael Savage.

**ASSISTANT PROFESSOR:** Minel J. Negreanu.

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## College of Education

### Counseling and Special Education

**HEAD:** Professor Kenneth C. Hoedt.

**PROFESSORS:** James E. Doverspike, Robert H. Myers, David M. Weis.

**ASSOCIATE PROFESSORS:** William J. Arn, John R. Cochran, Dale Coons, Fred W. Fanning, Theodore L. B. Gloeckler, Gary W. Kane, Janko Kovacevich, Ruth Roberts, Joseph M. Walton, Michael Ross.

**ASSISTANT PROFESSORS:** William E. Nemec, Steven E. Perkins.

### Educational Administration

**HEAD:** Professor John Andrew Blough.

**PROFESSORS:** Don Birdsell, James C. King, Isobel L. Pfeiffer, Dick I. Rich, William Root.

**ASSOCIATE PROFESSORS:** W. Henry Cone, Norman M. Griggs, Jr., William A. Rogers, Charles L. Wood.

### Educational Foundations

**HEAD:** Professor Gerald J. Blumenfeld.

**PROFESSORS:** H. Kenneth Barker, Ralph O. Blackwood, Walden B. Crabtree, Ralph Darr, Jr., D. J. Guzzetta, John S. Watt.

**ASSOCIATE PROFESSORS:** Abdul Amir Al-Rubaiy, Charles M. Dye, Edward B. Lasher, Isadore Newman, Frederick Schultz.

**ASSISTANT PROFESSORS:** William A. Mavrides, Rita S. Saslaw.

**INSTRUCTOR:** C. Robert Blankenship.

### Elementary Education

**HEAD:** Associate Professor Bernard L. Esporite.

**PROFESSORS:** Caesar A. Carrino, Robert E. Ferguson, Loren L. Hoch, LaVerne J. Meconi, Ramon F. Steinen, Maurice G. Williams.

**ASSOCIATE PROFESSORS:** Walter E. Arms, David G. Barr, Angela R. Bruno, Hugh G. Christman, Blanche Clegg, Martha C. Leyden, Judith A. Noble, Joan C. Seifert, Robert Sovchik.

**ASSISTANT PROFESSORS:** Mary Ellen Atwood, Susan J. Daniels, Regis Q. McKnight, Janet R. Reuter, Norma Spencer.

**INSTRUCTOR:** John W. Wilson.

### Physical Education

**HEAD:** Associate Professor Andrew W. Maluke.

**ASSOCIATE PROFESSORS:** J. Thomas Adolph, Robert N. Gandèe, Gordon Larson, Robert J. Mravetz.

**ASSISTANT PROFESSORS:** T. Allen Campbell, James L. Dennison, Mary J. MacCreacken, Judith E. Maffett, Patricia J. Taylor, Wyatt M. Webb, James L. Witherow.

**INSTRUCTORS:** Alexander L. Adams, Charles E. Booms, Kenneth G. Cunningham, Ronald J. Curtis, Robert L. Dowdy, Thomas M. Flaherty, Jr., Larry H. Kindbom, Fritz M. Meyer, David L. Newell, Carlson Preer, Mary A. Tripodi.

### Secondary Education

**HEAD:** Professor Larry G. Bradley.

**ASSOCIATE PROFESSORS:** Madeline A. Cooke, Bill J. Frye, John J. Hirschbuhl, Joy S. Lindbeck, Marion A. Ruebel, Michael N. Sugarman, Stephen J. Thompson, Walter H. Yoder.

**ASSISTANT PROFESSORS:** Robert K. Eley, Harold M. Foster, Lillian M. King.



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## College of Business Administration

### Accounting

**HEAD:** Professor Dennis Gordon.

**PROFESSORS:** Hobart W. Adams, Orville R. Keister, Jr., Richard S. Roberts, Arjan T. Sadhwani.

**ASSOCIATE PROFESSORS:** Donald K. Berquist, Allen M. Cabral, Arthur D. Karlin, Dennis L. Kimmell, Alvin H. Lieberman, E. Darlene McCardel, Charles K. Moore, Jr.

**ASSISTANT PROFESSORS:** James L. Cress, James R. Emore, Vincent P. Kopy, David L. Nichols, Linda Sugarman, Barbara A. Vinson.

**INSTRUCTORS:** David T. Meeting, Michael F. Rolph.

### Finance

**HEAD:** Professor Michael P. Litka.

**PROFESSORS:** Arpad F. Banda, Thomas J. Coyne, James W. Dunlap, Frederick W. Moyer, Charles F. Poston.

**ASSOCIATE PROFESSORS:** David R. Durst, James E. Inman, Robert J. Shedlarz, John D. Williams.

**ASSISTANT PROFESSOR:** Edward L. Baxter, Bernars S. Winnick.

**INSTRUCTOR:** William J. Bertin

### Management

**HEAD:** Professor Frank L. Simonetti.

**PROFESSORS:** N. F. Davis, Bernard A. Deitzer, Joseph C. Latona, Jonathan S. Rakich, Karl A. Shilliff, Howard L. Taylor.

**ASSOCIATE PROFESSORS:** Donald E. Becker, Kenneth A. Dunning, Keith A. Klafehn, Alan G. Krigline, Richard C. Lutz, Gary E. Meek.

**ASSISTANT PROFESSORS:** Bonita Melcher, Jayprakash G. Patankar, Paul D. Tolchinsky.

### Marketing

**ACTING HEAD:** Associate Professor David Loyd.

**PROFESSOR:** Stephen S. Castle.

**ASSOCIATE PROFESSORS:** Michael F. d'Amico, Donald M. Jackson.

**ASSISTANT PROFESSORS:** Kenneth E. Mast, George E. Prough, Judy B. Wilkinson.

**INSTRUCTOR:** Ronald Paugh.

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## College of Fine and Applied Arts

### Art

**ACTING HEAD:** Professor William A. Neumann.

**PROFESSORS:** Irving A. Achorn, Ronald D. Taylor.

**ASSOCIATE PROFESSORS:** Earl L. Ertman, Charlotte M. Hanten, Dennis A. Kleidon.

**ASSISTANT PROFESSORS:** Bruce R. Armstrong, Gale Golembeski, Donald E. Harvey, Lorena M. Holshoy, James V. Lenavitt, Christopher P. Meyer, Dennis A. Meyer, Thomas D. Webb.

**INSTRUCTORS:** Walter M. Herip, Penny Rakoff, Kathleen A. Ricks, Mark E. Soppeland.

### Home Economics and Family Ecology

**HEAD:** Professor Barbara N. Armstrong.

**PROFESSOR:** Virginia Tappenden.

**ASSOCIATE PROFESSORS:** Doris J. Aldrich, Tomasita Chandler.

**ASSISTANT PROFESSORS:** Carolyn Albanese, Mary Ellen Atwood, Helen K. Cleminshaw, Donna J. Gaboury, Virginia L. Gunn, Barbara Heinzerling, Harriet K. Herskowitz, Kathryn E. Koch, Gary W. Peterson, Jean R. Williams.

**INSTRUCTORS:** Judy L. Foster, Renee Pipitone.

### Mass Media-Communication

**ACTING HEAD:** Professor Ruth B. Lewis.

**PROFESSOR:** James V. Fee.

**ASSOCIATE PROFESSORS:** John D. Bee, David L. Jamison.

**ASSISTANT PROFESSORS:** Terrell J. Book, Thomas T. Miles, Linda Moore, Henry J. Ruminski, Nancy Somerick.

### Music

**HEAD:** Associate Professor Frank V. Bradshaw.

**PROFESSORS:** Farley K. Hutchins, Gerard L. Knieter, John A. MacDonald, Wallace Nolin.

**ASSOCIATE PROFESSORS:** David S. Bernstein, Paul M. Biss, Richard Jackboice, Marian Lott, Barbara J. MacGregor, Eugene R. Mancini, Richard N. Shirey, Sherman D. Vander Ark.

**ASSISTANT PROFESSORS:** Tana Alexander, Clifford Billions, Frank C. Jacobs, Scott A. Johnston, Jerzy Kosmala, George S. Pope, A. Richard Sentieri, Larry D. Snider, Charles F. Waddell.

**INSTRUCTORS:** Jan Eberle, Roland Paolucci, Judith A. Pauley, Edward A. Zadrozny.

### Speech Pathology and Audiology

**HEAD:** Professor George D. Davis.

**PROFESSOR:** Elaine Z. Lasky.

**ASSOCIATE PROFESSORS:** Charlotte L. Essner, Donald E. Hall, John H. Ramey, Kenneth T. Siloac.

**ASSISTANT PROFESSORS:** Patsy B. Blackwell, Mary Capotosto, Bernard J. Clifford, Patricia B. Kricos, Sharon L. Richert, Karen B. Turner.

**INSTRUCTORS:** Jean L. Blosser, Winifred Watson-Florence.

### Theatre Arts and Dance

**HEAD:** Professor Joel Friedman

**ASSOCIATE PROFESSORS:** Paul A. Daum, Phyllis Hardenstein, Marc C. Ozanich, Wallace S. Sterling.

**ASSISTANT PROFESSORS:** Gregory K. Bell, Jerry J. Burr.

**INSTRUCTORS:** Alexander N. Davis, Kathleen M. Davis.

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## College of Nursing

**DEAN:** Lillian J. DeYoung.

**PROFESSOR:** Kathryn M. Homeler.

**ASSOCIATE PROFESSORS:** Marian L. Bauer, Perti Jane Bomar, Dorothy M. Dobrindt, C. Edward Gibney, Patricia P. Godfrey, Edna

P. Grist, Joanne Marchione, Virginia B. Newbern, Elsie Simms, Susan J. Stearns.

**ASSISTANT PROFESSORS:** Barbara S. Anandam, JoAnn Collier, Shirley Doherty, Gail Frankeberger, Marianne L. Glazer, Jean A. Haspeslagh, Ella J. Kick, Nancy C. Kilbane, Deborah D. Lumley, Margaret E. Seeno, Eldonna M. Shields, Dolores W. Van Dervort, Winifred J. Walter.

**INSTRUCTORS:** Mary A. Crawford, Victoria J. D'Ambrocio, Kristine M. Gill, Mary T. Goletz, Doreen D. Iafelice, Susan S. McLaughlin, Elizabeth K. Misko, Cheryl H. Morgan.

**LECTURERS:** Martha R. Conrad, Susan C. Landis, Marlene Peoples.

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## School of Law

**INTERIM DEAN:** Albert S. Rakas.

**PROFESSORS:** Hollis P. Allan, Merlin G. Briner, Hamilton DeSaussure, John P. Finan, Richard L. Grant, Donald M. Jenkins, Marvin M. Moore, Stanley A. Samad.

**ASSOCIATE PROFESSORS:** Ronald E. Alexander, Albert H. Leyerle, Lawrence P. Wilkins.

**ASSISTANT PROFESSORS:** Richard L. Aynes, Dana F. Castle, C. P. Goplerud, Margery B. Koosed, Jeffrey A. Parness, Paul Richert.

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## Wayne General and Technical College

**DEAN:** John G. Hedrick.

**BUSINESS MANAGER:** Martin Kemp.

**ASSOCIATE PROFESSORS:** Scott D. Hagen, Warner D. Mendenhall.

**ASSISTANT PROFESSORS:** R. Diane Arnold, Richard M. Dienesch, Elmore J. Houston, Armolene J. Maxey, Robert L. McElwee, Beverly J. Mugrage, Ellen Sue Politella, Janeane A. Reagan, Edwin Thall.

**INSTRUCTORS:** Carl L. Huston, Gregory C. Keck, Janet L. Minc, Kathleen A. Miller, Forrest J. Smith, Kay E. Stephan.

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## University Library

**UNIVERSITY LIBRARIAN:** Professor H. P. Schrank, Jr.

**ASSOCIATE PROFESSORS:** Ruth Clinefelter, Pauline Franks, Helen Livingston, Judith K. Mowery, Anna M. Voorhees.

**ASSISTANT PROFESSORS:** Virginia L. Allanson, Julie A. Gammon, Margart B. Guss, Jack E. Hibbs, Jr., Miriam A. Joliat, Nancy A. Knight John V. Miller, Beatrice Montgomery, Beverly L. Scherba.

**INSTRUCTORS:** David R. Brink, Barbara L. Clark, Roger W. Durbin, Judith L. Fitzgerald, Norma J. Pearson.

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## Reserve Officers' Training Corps

**August 1979**

**RICHARD L. HANSFORD**, *Vice President and Dean of Student Services, Civilian Coordinator.*

### Army

**LAWRENCE ONDECKER**, *Professor of Military Science* (July 1979) B.S., The University of Akron; M.B.A., The University of Dayton; Graduate of the U.S. Army Command and General Staff College; Lieutenant Colonel, Artillery.

**JAMES M. KELLY**, *Assistant Professor of Military Science* (1977) B.A., Cameron University, 1974; Major, Artillery.

**CHARLES L. KOHL, JR.**, *Assistant Professor of Military Science* (1977) B.A., Valparaiso University; M.B.A., Adelphi University, 1974; Major, Transportation.

**RICHARD H. STALLINGS, III**, *Assistant Professor of Military Science* (March 1978) B.A., LaSalle College; M.A., University of Oklahoma, 1976; Captain.

**PAUL LEWIS**, *Chief Enlisted Instructor* (1976) Sergeant Major.

**DOCK HUGHES**, *Operations NCO* (1979) Master Sergeant.

**JACK E. NYE**, *Supply Sergeant* (July 1979) Staff Sergeant.

### Air Force

**JAMES N. FARRELL**, *Professor of Aerospace Studies* (August 1978) B.G.S., University of Nebraska; M.B.A., University of West Florida, 1975; Lieutenant Colonel, USAF.

**MICHAEL P. ALTIERE**, *Assistant Professor of Aerospace Studies* (August 1978) B.S., Allegheny College; M.S., Central Missouri State University, 1976; Captain, USAF.

**WARREN N. CHALMERS**, *Assistant Professor of Aerospace Studies* (July 1978) B.S., University of Northern Colorado; M.Ed., Wichita State University, 1976; Captain, USAF.

**THOMAS K. FAGERHOLM**, *Assistant Professor of Aerospace Studies* (July 1979) B.S., M.S., Colorado State University, 1975; Captain, USAF.

**FRED W. BEER**, *NCOIC Administration* (1975) Technical Sergeant, USAF.

**DONALD E. HAZLETT**, *NCOIC* (1975) A.A.S., The University of Akron, 1978; Technical Sergeant, USAF.

**THOMAS E. WHITMYER**, *NCOIC Cadet Personnel* (June 1977) Staff Sergeant, USAF.

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## Institute of Polymer Science

**FRANK N. KELLEY**, *Director of the Institute of Polymer Science and Professor of Polymer Science* (1978) B.S., M.S., Ph.D., The University of Akron, 1961.

**ALAN N. GENT**, *Professor of Polymer Physics* (April 1961) B.S., Ph.D., University of London, 1955.

**LEWIS J. FETTERS**, *Professor of Polymer Science and Professor of Chemistry* (1971) B.A., College of Wooster; Ph.D., The University of Akron, 1962.

**EDWARD M. FIRER**, *Research Associate*, B.A., University of Bridgeport; M.S., University of Maryland; Ph.D., The University of Akron, 1973.

**T. HENRY FORSYTH**, *Research Associate, Associate Professor Chemical Engineering* (1970) B.S.C.E., University of Kentucky; M.S., Ph.D., Virginia Polytechnic Institute, 1967, P.E., Ohio.

---

**JOHN E. FREDERICK**, *Associate Professor of Polymer Science and Associate Professor of Chemistry* (1966) B.S., Glenville State College; Ph.D., University of Wisconsin, 1964.

**H. JAMES HARWOOD**, *Professor of Polymer Science and Professor of Chemistry* (October 1959) B.S., The University of Akron; Ph.D., Yale University, 1956.

**JOSEPH P. KENNEDY**, *Professor of Polymer Science and Professor of Chemistry* (1970) B.Sc., University of Budapest; Ph.D., University of Vienna; M.B.A., General Business, Rutgers University, 1961.

**DONALD MCINTYRE**, *Professor of Polymer Science and Professor of Chemistry* (1966) B.A., Lafayette College; Ph.D., Cornell University, 1954.

**EBERHARD A. MEINECKE**, *Professor of Polymer Science and Professor of Mechanical Engineering* (October 1963) D. Eng., Institute of Technology (Braunschweig, Germany), 1960.

**IRJA PIIRMA**, *Associate Professor of Polymer Science* (December 1952) Diploma in Chemistry, Technische Hochschule of Darmstadt; M.S., Ph.D., The University of Akron, 1960.

**EVERETT SANTEE, JR.**, *Manager of the NMR Center, Research Associate* (1966) B.S., West Virginia State College, 1962.

**HOWARD L. STEPHENS**, *Executive Officer, and Manager of Applied Research, Institute of Polymer Science, Professor of Polymer Science and Professor of Chemistry* (1950) B.S., M.S., Ph.D., The University of Akron, 1960.

**CHARLES W. WILSON, III**, *Research Associate, Professor of Physics and Professor of Polymer Science* (1965) B.S.E., M.S., University of Michigan; Ph.D., Washington University, 1952.

**DAVID WINKLER**, *Research Associate* (1969) B.S., Ashland College; M.S., The University of Akron, 1972.

## Deans of the Colleges of The University of Akron

### The Buchtel College of Arts and Sciences

- \*ALBERT I. SPANTON, 1913-1938, M.A., Litt.D.
- \*CHARLES BULGER, 1938-1948, Ph.D., Litt.D.
- ERNEST H. CHERRINGTON, JR., 1948-1960, Ph.D.
- \*THOMAS SUMNER, 1960-1962, Ph.D.
- GEORGE KNEPPER, 1962-1967, Ph.D.
- DON A. KEISTER, 1967-1969, Ph.D.
- JOHN BACHMANN, 1969-1970, Ph.D. (acting)
- ROBERT A. OETJEN, 1970-1977, Ph.D.
- CLAIBOURNE E. GRIFFIN, 1977-, Ph.D.

### The College of Engineering

- \*FREDERIC E. AYER, 1914-1946, C.E., D. Eng.
- R. D. LANDON, 1946-1963, C.E., M.S.
- \*W. M. PETRY, 1963-1964, M.S.M.E. (acting)
- \*MICHAEL J. RZASA, 1964-1970, Ph.D.
- COLEMAN J. MAJOR, 1970-, Ph.D.

### The College of Education

- \*W. J. BANKES, 1921-1931, M.A.
- \*ALBERT I. SPANTON, 1931-1933, M.A., Litt.D. (acting)
- \*HOWARD R. EVANS, 1933-1942, Ph.D.
- HJALMER W. DISTAD, 1942-1944, Ph.D. (acting)
- \*HOWARD R. EVANS, 1944-1958, Ph.D.
- D. J. GUZZETTA, 1958-1959, Ed.E., LL.D., D.S.Sc., L.H.D. (acting)
- CHESTER T. McNERNEY, 1959-1966, Ph.D., LL.D.
- H. KENNETH BARKER, 1966-, Ph.D.

### The College of Business Administration

- \*WARREN W. LEIGH, 1953-1962, Ph.D.
- RICHARD C. REIDENBACH, 1962-1967, Ph.D.
- ARTHUR K. BRINTALL, 1967-1968, Ph.D. (acting)
- \*WILBUR EARLE BENSON, 1968-1970, Ph.D.
- JAMES W. DUNLAP, 1970-, Ph.D.

### The School of Law

- STANLEY A. SAMAD, 1959-1979, J.S.D.
- ALBERT S. RAKAS, 1979-, J.D. (interim)

### The Graduate School

- \*CHARLES BULGER, 1933-1951, Ph.D., Litt.D. (Dean of Graduate Work)
- ERNEST H. CHERRINGTON, JR., 1955-1960, Ph.D. (Director of Graduate Studies)
- ERNEST H. CHERRINGTON, JR., 1960-1967, Ph.D. (Dean of the Division)

## Presidents of Buchtel College

- \*S. H. McCOLLESTER, 1872-1878, D.D., Litt. D.
- \*E. L. REXFORD, 1878-1880, D.D.
- \*ORELLO CONE, 1880-1896, D.D.
- \*CHARLES M. KNIGHT, 1896-1897, D.Sc. (ad interim)
- \*IRA A. PRIEST, 1897-1901, D.D.
- \*A. B. CHURCH, 1901-1912, D.D., LL.D.
- \*PARKE R. KOLBE, 1913-1914, Ph.D., LL.D.

## Presidents of The University of Akron

- \*PARKE R. KOLBE, 1914-1925, Ph.D., LL.D.
- \*GEORGE F. ZOOK, 1925-1933, Ph.D., LL.D.
- \*HEZZLETON E. SIMMONS, 1933-1951, M.S., D.Sc., LL.D.
- NORMAN P. AUBURN, 1951-1971, B.A., D.Sc., Litt. D., L.H.D., LL.D.
- D. J. GUZZETTA, 1971-, Ed.D., LL.D., D.S.Sc., L.H.D.

\*Deceased

\*Deceased

**ARTHUR K. BRINTALL**, 1967-1968, Ph.D. (Dean of Graduate Studies and Research)

**EDWIN L. LIVELY**, 1968-1974, Ph.D. (Dean of Graduate Studies and Research)

**CLAIBOURNE E. GRIFFIN**, 1974-1977, Ph.D. (Dean of Graduate Studies and Research)

**JOSEPH M. WALTON**, 1977-1978, Ph.D. (Associate Dean of Graduate Studies and Research)

**ALAN N. GENT**, 1978-, Ph.D. (Dean of Graduate Studies and Research)

### **The General College**

**D. J. GUZZETTA**, 1959-1962, Ed.D., LL.D., D.S.Sc., L.H.D.

\***THOMAS SUMNER**, 1962-1977, Ph.D.

**PAUL S. WINGARD**, 1977-1978, Ph.D. (acting)

**MARION A. RUEBEL**, 1978-, Ph.D.

### **The Evening College**

**L. L. HOLMES**, 1932-1934, M.A. (Director)

**LESLIE P. HARDY**, 1934-1953, M.S.Ed., L.H.D. (Director)

**E. D. DURYEA**, 1953-1956, Ed.D. (Dean)

**D. J. GUZZETTA**, 1956-1959, Ed.D., LL.D., D.S.Sc., L.H.D. (Dean)

**WILLIAM A. ROGERS**, 1959-1967, Ed.D. (Dean)

**CHARLES V. BLAIR**, 1967-1970, M.A. (Dean)

\*Deceased

**JOHN G. HEDRICK**, 1970-1974, M.A. (Dean)

**CAESAR A. CARRINO**, 1974-, Ph.D. (Dean)

### **The Community and Technical College**

\***W. M. PETRY**, 1964-1974, M.S.M.E.

**ROBERT C. WEYRICK**, 1974-, M.S.

### **The College of Fine and Applied Arts**

**RAY H. SANDEFUR**, 1967-1978, Ph.D.

**GERARD L. KNIETER**, 1978-, Ph.D.

### **The College of Nursing**

**ESTELLE B. NAES**, 1967-1975, Ph.D.

**LILLIAN J. DeYOUNG**, 1975-, Ph.D.

### **The Wayne General and Technical College**

**MARVIN E. PHILLIPS**, 1972-1974, M.A. (Acting Director)

**JOHN G. HEDRICK**, 1974-1974, M.A. (Director)

**JOHN G. HEDRICK**, 1974-, M.A. (Dean)

\*Deceased

# Current Members of College and School Advisory Committees

August 1979

## The Buchtel College of Arts and Sciences

Hon. John S. Ballard, Mrs. Sam Dupree, Dr. William H. Falor, Mr. David Ginaven, Mrs. Richard Irvin, Mr. W.P. Keith, Jr., Mr. Donald Kaufman, Mrs. G. Paul Kempel, Mr. Perth Killinger, Mr. Vern Odom, Dr. Robert Oetjen, Mr. Justin Rogers, Mrs. S.O. Schumacher, Dr. Charles Stem, Mr. Walter Warner.

## The College of Engineering

Mr. Robert M. Arnold, Mr. Harold Baker, Mr. G.L. Bruggemeier, Mr. Elza E. Hopkins, Mr. Morris Jobe, Mr. John David Jones, Mr. J. Robert Kessler, Mr. Robert B. Knill, Mr. Thomas A. Knowles, Mr. Wendell R. LaDue, Mr. Vern Oldham, Mr. Karl Rohrer, Mr. William Ruhlin, Mr. Theodore S. Sprague, Mr. Harry Warner.

## The College of Education

Mrs. Jonas Barenholtz, Judge Myron T. Brenneman, Mr. Ralph Gillman, Mr. James B. Haynes, Mr. J. David Klingensmith, Mr. Thomas Minter, Mr. Conrad Ott, Dr. Milan Pavkov, Dr. Willa Player, Dr. William Pletzer, Mr. Patrick Ross, Mr. E. H. Strobel, Mrs. David J. Towell, Mrs. Gene Waddell, Dr. Harold Wilson.

## The College of Business Administration

Mr. David C. Corbin, Mr. George Daverio, Mr. Willis Else, Mr. John L. Feudner, Mr. Harry E. Figgie, Jr., Mr. Arlin H. Greber, Mr. J.W. Keener, Jr., Mr. Clarence Kelley, Mr. John McCarter, Mr. James H. Miller, Mr. H.L. Mollenkopf, Mr. Howard A. Palmer, Mr. O.D. Taliaferro, Mr. H. Vernon Wolfe, Dr. Robert V. Yohe.

## The College of Fine and Applied Arts

Mrs. Fred I. Albrecht, Dr. James L. Berk, Mrs. L.A. Graham, Mrs. E.V.K. Jaycox, Mrs. Walter Keith, Dr. E. Gates Morgan, Mr. Louis Myers, Dr. Leon Neiman, Mr. Irving J. Olson, Mrs. John Renner, Dr. Bruce Rothmann, Mrs. Henry Saalfeld, Mrs. Sol Sacks, Mrs. Guido Stempel, Mrs. Walter Wojno.

## The College of Nursing

Hon. Kenneth R. Cox, Mr. Harold Funk, Dr. Albert Gilbert, Mrs. Betty Lawson, Miss Martha Nelson, Mrs. Alfred Nicely, Dr. R.R. Pliskin, Mr. Earl Raymer, Dr. John Schlemmer, Mr. Roger Sherman, Mr. Paul J. Stitzel, Mrs. Barbara Venesy, Judge William Victor, Mrs. Jason Wade.

## The School of Law

Mr. Randolph Baxter, Judge Sam H. Bell, Judge James M. Bierce, Mr. John F. Floberg, Mr. Bradford M. Gearinger, Judge Joyce J. George, Mr. Marion F. Graven III, Mr. Kean T. Grosenbaugh, Mr. Karl S. Hay, Mr. C. Blake McDowell, Sr., Mr. Marvin G. Manes, Mr. Frederick S. Myers, Mr. Dennis O. Norman, Judge John W. Reece, Mr. Bernard Winick.

## The Graduate School

Dr. S.L. Aggarwal, Dr. Glen Alliger, Dr. James D. D'Ianni, Mr. D. Eugene Dominic, Dr. Robert J. Fawcett, Mr. Bill E. Giermann, Dr. James R. Hodge, Dr. C. William Keck, Mr. Wallace Markert, Jr., Mr. Jay E. Smith, Mr. Frank Steere, Jr., Dr. Guido Stempel, Dr. Franklin Strain, Mr. Thomas Strouble, Mr. William H. Wells.

## The Evening College

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## The Community and Technical College

Mr. James Garber, Mr. Ronald Glosser, Mrs. Barbara Hiney, Mr. Robert N. Hughey, Mr. William Hulbert, Mr. G.J. Lambillotte, Mr. Phil Leonard, Mr. P.W. Perdriau, Mr. Melvin Pucci, Miss Faye Rafferty, Mr. Bruce Robertson, Judge Joseph Roulhac, Mr. Robert H. Schmidt, Mr. Robert Williamson.

## The Wayne General and Technical College

Mrs. Norma Amstutz, Mrs. Louise Anthony, Mr. William Beer, Mr. Stan Deen, Mr. R. Victor Dix, Dr. E.J. Feltes, Mr. Ralph Fisher, Mr. Gary Gehm, Mr. Carl Goldring, Mr. David Goldsberry, Mr. Robert Gumz, Mr. Donald L. Jones, Mr. Sterling G. Sechrist, Mr. Gene Skjorman, Mr. David Sprang.

# Directory of Student Organizations

August 1979

## Athletics

Archery Club  
Intramurals — Mens, Womens  
Karate Club (Tae Kwon Do)  
Ski Club  
Tennis Club  
Water Polo Club  
Women's Synchronized Swimming Club

## Communications and Publications

AKROS (literary magazine)  
Amateur Radio Club  
*The Buchtelite* (newspaper)  
Forensic Union  
*The Tel-Buch* (yearbook)  
WAUP-FM  
WRHA

## Departmental Organizations

Accounting Association  
Administrative Management Society  
American Chemical Society  
American Institute of Chemical Engineers  
American Society for Personnel Administration  
American Society of Civil Engineers  
American Society of Mechanical Engineers  
Collegiate Nursing Students  
Council for Exceptional Children  
Der Deutsche Studentenklub  
Economics Association  
Finance Club  
Institute of Electronic and Electrical Engineers  
Instrument Society of America  
Johnson Club (English)  
LaComunidad Hispanica  
LeCercle Francais Universitaire  
"Life" (Biology)  
Mathematics Club  
Medical Technology Club  
Office Education Association  
Philosophy Club  
Psychology Club  
Slavic Studies Club  
Social Work League  
Society of Physics Students  
Sociology Club  
Student Art League

## Evening College

AWARE (Association of Women for Awareness Recognition and Enterprise)  
Alpha Sigma Lambda  
Chi Sigma Nu  
Evening Student Council  
Gamma Beta  
*Nite-Life* (newspaper)  
Phi Beta Sigma Fraternity, Inc.  
Sigma Gamma Rho (social service)

## Graduate Student Groups

Chinese Student Association  
Graduate Student Council

## Association of College Honor Society Members

Alpha Kappa Delta (sociology)  
Alpha Lambda Delta (freshmen; 3.5 full-time enrollment toward bachelor's degree)  
Eta Kappa Nu (electrical engineering)  
Kappa Delta Pi (education)  
Kappa Omicron Phi (home economics)  
Mortar Board (seniors-scholarship, leadership, service)  
National Collegiate Players (theatre)  
Omicron Delta Kappa (student activities)  
Phi Alpha Theta (history)  
Phi Eta Sigma (freshmen)  
Pi Delta Phi (French)  
Pi Sigma Alpha (political science)  
Psi Chi (psychology)  
Sigma Delta Pi (Spanish)  
Sigma Pi Sigma (physics)  
Tau Beta Pi (engineering)

## Other Honor Societies

Alpha Alpha Alpha (social work)  
Beta Gamma Sigma (business administration)  
Delta Phi Alpha (German)  
Honor Society of Nursing  
Omicron Delta Epsilon (economics)  
Phi Sigma Alpha (arts and sciences)  
Phi Theta Kappa (Community and Technical College)  
Pi Mu Epsilon (mathematics)

## Professional Fraternities

Alpha Chi Sigma (chemical or paracheical studies)  
Beta Alpha Psi (accounting; 3.5 in accounting and 2.5 accum.)  
Delta Nu Alpha (transportation)  
Delta Sigma Pi (business)  
Lambda Alpha Epsilon (criminal justice)  
National Student Speech and Hearing Association  
Phi Chi Theta (business and economics)  
Phi Delta Kappa (education)  
Pi Lambda Theta (education)

## Recognition Societies

Gamma Theta Upsilon (geography)  
Kappa Kappa Psi (band)  
Pi Kappa Delta (forensic)  
Pi Sigma Epsilon (marketing)  
Society for Collegiate Journalists  
Tau Beta Sigma (band)

## Law Groups

ARETE  
Association of Student International Law Societies  
Black American Law Students Association  
Bracton's Inn  
Delta Theta Phi Law Fraternity  
Phi Alpha Delta Law Fraternity  
Student Bar Association

## Military Recognition Societies

Angel Flight (service corps)  
 Arnold Air Society — AFROTC  
 Beta Corps (service corps)  
 Pathfinders — Army ROTC  
 Pershing Rifles — Army ROTC  
 Scabbard and Blade  
 Valkyrie Drill Team

## Performing Arts

Chamber Ballet  
 Choral Ensembles  
     Symphony Chorus  
     Mens Glee Club  
     Womens Glee Club  
     Jazz/Pops Ensemble  
     University Concert Choir  
     Opera Theater  
 Experimental Dance Ensemble  
 Instrumental Ensembles  
     University Marching Band  
     University Symphony Band  
     University Wind Ensemble  
     Brass Choir  
     Jazz Sextet  
     Jazz Ensemble  
     Chamber Orchestra  
     University Orchestra  
     Percussion Ensemble  
     Woodwind Choir  
 University Theatre Guild

## Personal Interest

Advertising Club  
 African Student Association  
 American Congress on Surveying and Mapping  
 Arab Students Organization  
 Associated Student Government  
 Association for Women Students  
 The Black Scholar  
 Black United Students (BUS)  
 Campus Girl Scouts  
 Center for Concern  
 Chess Club  
 College Republicans  
 Council for International Relations and United Nations Affairs  
 Gospel Chorus  
 The Hellenic Club  
 Indian Students Association  
 International Students Club  
 Kriegspiel Society  
 Mosque of the Dawn Muslim  
 Outing Club  
 Photography Club

Pre-Law Club  
 Public Relations Student Society of America (PRSSA)  
 Residence Hall Council  
 Residence Hall Program Board  
 Senior Class  
 Student Toastmasters Club  
 Students' International Meditation Society  
 Survival Center  
 United for Life  
 Vietnamese Student Club  
 Young Democrats Club

## Religious Organizations

Akron Jewish Student Organization  
 Baha' Club  
 Baptist Student Union (formerly Brothers and Sisters in Christ)  
 Bread of Life  
 Christian Science Organizaton  
 Ecumenical Christian Association  
 Fellowship of Christian Athletes  
 Intersarsity Christian Fellowship  
 Kappa Phi Club  
 Students for Christ

## Social Fraternities

Alpha Phi Alpha  
 Delta Tau Delta  
 Lambda Chi Alpha  
 Omega Psi Phi  
 Phi Beta Sigma  
 Phi Delta Theta  
 Phi Kappa Psi  
 Phi Kappa Tau  
 Phi Sigma Kappa  
 Pi Kappa Epsilon (Lone Star)  
 Sigma Pi  
 Tau Kappa Epsilon  
 Theta Chi  
 Interfraternity Council

## Social Sororities

Alpha Delta Pi  
 Alpha Gamma Delta  
 Alpha Kappa Alpha  
 Chi Omega  
 Delta Gamma  
 Delta Sigma Theta  
 Delta Zeta  
 Kappa Kappa Gamma  
 Sigma Gamma Rho  
 Theta Phi Alpha  
 Zeta Phi Beta  
 Panhellenic Council

# THE UNIVERSITY OF AKRON CALENDAR 1979-80

## SUMMER SESSION I, 1979

June 11, Monday	First 5-Week and 8-Week Sessions Begin
*July 4, Wednesday	Independence Day
July 13, Friday	First 5-Week Sessions Ends

## SUMMER SESSION II, 1979

July 16, Monday	Second 5-Week Session Begins
August 3, Friday	Eight-Week Session Ends
August 17, Friday	Second 5-Week Session Ends

## FALL SEMESTER 1979

September 4, Tuesday	Day and Evening Classes Begin
November 12, Monday	Veterans Day (classes held)
*November 22-24, Thursday-Saturday	Thanksgiving Recess
December 17-22, Monday-Saturday	Final Examination Period

## SPRING SEMESTER 1980

January 21, Monday	Day and Evening Classes Begin
March 24-29, Monday-Saturday	Spring Recess
March 31, Monday	Classes Resume
May 12-17, Monday-Saturday	Final Examination Period
May 25, Sunday	Commencement

Founders Day will be observed the second Tuesday in February.

## SUMMER SESSION I, 1980

June 16, Monday	First 5-Week and 8-Week Sessions Begin
*July 4, Friday	Independence Day
July 18, Friday	First 5-Week Session Ends

## SUMMER SESSION II, 1980

July 21, Monday	Second 5-Week Session Begins
August 8, Friday	Eight-Week Session Ends
August 22, Friday	Second 5-Week Session Ends

\*University Closed



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