

GENERAL **BULLETIN 80/81**



THE UNIVERSITY OF AKRON

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SIGNATURE

Noel L. Leathers

TITLE VICE PRESIDENT AND PROVOST

DATE September 15, 1980

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CALENDAR

Summer Session II 1980

Second 5-Week Session Begins	Monday	July 21
Eight-Week Session Ends	Friday	August 8
Second 5-Week Session Ends	Friday	August 22

Fall Semester 1980

Day and Evening Classes Begin	Tuesday	September 2
Veterans Day (classes held)	Tuesday	November 11
* Thanksgiving Recess	Thursday-Saturday	November 27-29
Classes Resume	Monday	December 1
Final Examination Period	Monday-Saturday	December 15-20

**Spring Semester 1981

Day and Evening Classes Begin	Monday	January 19
Spring Recess	Monday-Saturday	March 23-28
Classes Resume	Monday	March 30
Final Examination Period	Monday-Saturday	May 11-16
Commencement	Sunday	May 24

Summer Session I 1981

First 5- and 8-Week Session Begins	Monday	June 15
† Independence Day Observed	Friday	July 3
† Independence Day	Saturday	July 4
First 5-Week Session Ends	Friday	July 17

Summer Session II 1981

Second 5-Week Session Begins	Monday	July 20
Eight-Week Session Ends	Friday	August 7
Second 5-Week Session Ends	Friday	August 21

* Begins November 26 at 5:00 p.m.

** Founders Day will be observed the second Tuesday in February

† University Closed.

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SECTION 1



ABOUT THE UNIVERSITY OF AKRON

Background

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.

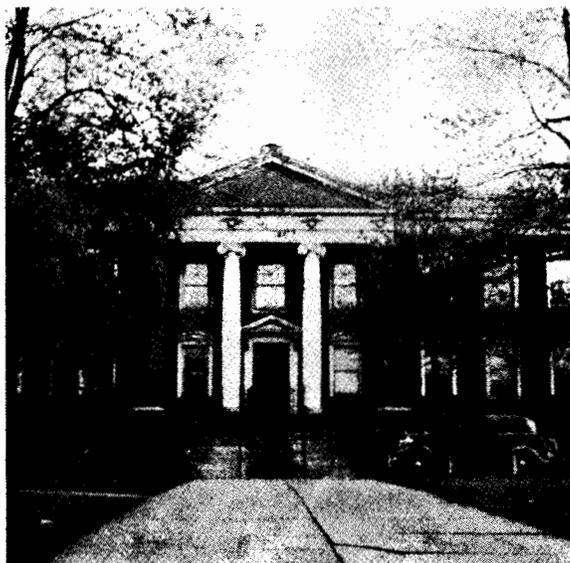
In undergraduate education, Akron was an early supporter of the free elective idea (1880s) and general education (1935), the latter program being developed into one of the most fully rationalized in the country. Graduate work evolved from awarding of the first master's degree (1882) to the beginning 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 1930s and 1940s.

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 140-acre campus with 53 modern buildings is located in a metropolitan area of 1.5 million persons. The University of Akron now enrolls more than 23,364 day and evening students in credit courses and an additional 7,000 in "informal" noncredit education courses. Its students come from 32 states and 60 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 110 years of service prepared it for a widening role in the future.



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 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 workloads, 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.

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 en-

deavor to attract more students from the rest of Ohio, other states and foreign countries. Program offerings, both credit and noncredit, 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 coursework, to develop their cultural awareness and to acquire those skills necessary to learning in a complex society.

Accreditation

Accreditation assures that degrees are recognized and approved by select regional and national education associations, societies and councils. The University of Akron has been approved by the North Central Association of Colleges and Schools since 1914 and was recently reaccredited at the highest level as a comprehensive doctoral degree-granting institution. This recognition illustrates the high academic standards maintained at the University. For a student 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. There is also security in knowing that the University will honor most credits earned at a similarly accredited college or university. Degrees earned at The University of Akron are respected and sought after by prospective employers.

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

American Assembly of Collegiate Schools of Business
 American Chemical Society
 American Dietetic Association
 American Speech and Hearing Association
 Committee on Allied Health Education and Accreditation of American Medical Association
 Council on Social Work Education (candidacy status)
 Engineers' Council for Professional Development
 National Accrediting Agency for Clinical Laboratory Sciences
 National Association of Schools of Art
 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 Association of State Colleges and Universities
 American Council on Education
 American Society for Engineering Education
 American Society for Training and Development
 Association for Continuing Higher Education
 Department of Baccalaureate and Higher Degree Programs (National League for Nursing)
 International Council on Education for Teaching (associate)
 National Association of Summer Sessions
 Ohio College Association
 Ohio Council on Continuing Higher Education
 United States Association of Evening Students
 University Council on Education for Public Responsibility

The School of Law is accredited by:

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

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

Academics

The University of Akron covers a broad educational spectrum academically. Programs are available leading to the associate (two-year), bachelor's (four-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, University College, School of Law or College of Nursing.



Criminal Justice Technology
 Corrections
 Data Processing
 Drafting Technology
 Educational Technology
 Child Development Aide
 Elementary Aide
 Library Aide
 Electronic Technology
 Fire Science Technology
 Food Service Management
 Instrumentation Technology
 Labor Studies Technology
 Manufacturing Technology
 Marketing and Sales Technology
 Retail
 Industrial
 Fashion
 Mechanical Technology
 Medical Assisting Technology
 Office Services Technology
 Radiologic Technology (degree completion program)
 Real Estate
 Respiratory Therapy Technology
 Secretarial Science
 Executive
 International
 Legal
 Surgical Assisting Technology
 Surveying and Construction Technology
 Construction
 Surveying
 Transportation
 Commercial Aviation

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
 Alcohol
 Gerontology
 Volunteer Programming

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 University College concept. Students seeking a baccalaureate degree and having attained less than 30 college semester credits, study in the University College before transferring to a degree-granting college. The University 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, entrance is granted to a degree-granting college, where studies are concentrated around the student's specific academic interest:

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
 Cytotechnology
 Economics
 Labor Economics
 English
 Geography
 Geology
 Geophysics
 History
 Humanities
 Mathematical Sciences
 Applied Mathematics
 Computer Science
 Statistics
 Cooperative Education
 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
 Social Sciences
 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
 Crafts
 Drawing
 Graphic Design
 Metalsmithing
 Painting
 Photography
 Printmaking
 Sculpture
 Studio Art
 Home Economics and Family Ecology
 Child Development
 Child Life Specialist
 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

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 the participant to discover the potential, capabilities and sense of direction inherent in the individual.

Participants are eligible for substantial honors scholarships. An honors student completes all requirements for a departmental or divisional major. The student also attends 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. An honors student is expected to complete a senior honors project reflecting an interest in the student's major field of study.

Certificate Programs

In order to add to the dimensions of the traditional disciplines, the University has established interdisciplinary and interdepartmental programs of study. In addition to a student's major, pursuit of one of these



programs 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
 Higher Education
 Latin American Study
 Life Span Development: Adulthood and Aging
 Mid Careers in Urban Studies
 Peace Studies
 Planning
 Public Policy
 Real Estate
 Secretarial Science
 Soviet Area Studies

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 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
 Business/Law Joint Program
 Finance
 International Business
 Management
 Marketing
 Taxation
 College of Fine and Applied Arts
 Family Ecology
 Child Development
 Family and Child Development
 Music
 Accompanying
 Composition
 Music Education
 Music History and Literature
 Performance
 Theory
 Speech Pathology and Audiology
 Mass Media-Communication
 Communication and Rhetoric
 Mass Media-Communication
 Speech (General)
 Theatre Arts and Dance
 Arts Management
 Theatre Arts
 College of Nursing
 Nursing

The following is a list of 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

degree from an accredited college or university in an appropriate field of study.

Evening College

The Evening College is a year-long, round-the-clock educational endeavor at The University of Akron. It provides educational opportunities for the student who is 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.

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 a University student's academic progress can be accelerated, or a high school graduate can enter college immediately after graduation. In addition to this, a teacher can work toward additional or advanced degrees as well as renew certification during summer vacation. Also, any credit earned at the University may be transferred back to the transient student's home institution.

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.

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.

School of Law

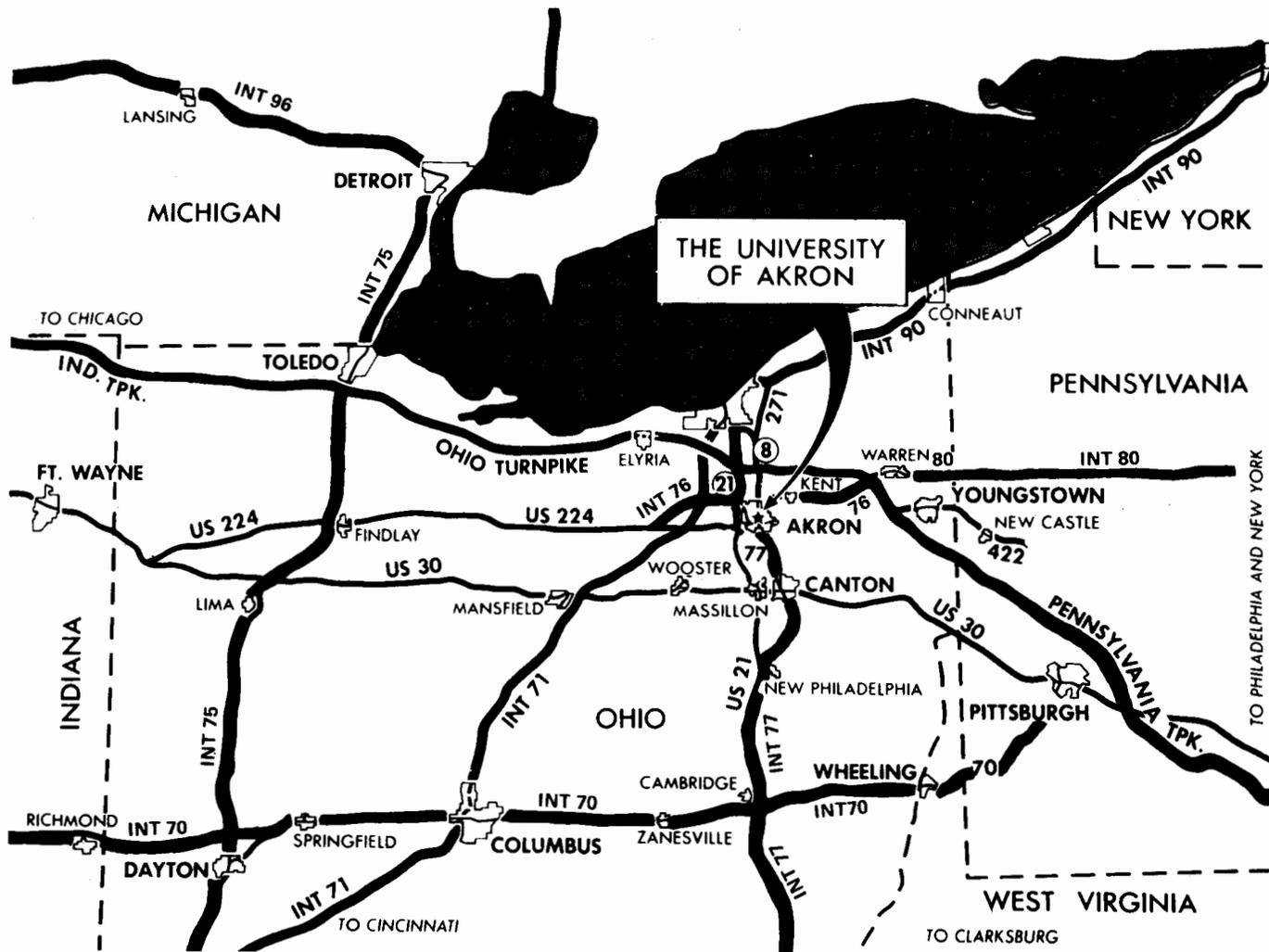
The School of Law provides legal education through day and evening classes leading to the Juris Doctor degree. An applicant must have an undergraduate

The Campus

The University of Akron is located in a large metropolitan area of 1.5 million persons. Although the campus is centrally located within the city, and the student has easy access to retail outlets, transportation and churches the 140-acre plot is set apart from the downtown business district. During recent years, the University campus has undergone many major changes. In 1951, the University's 13 acres encompassed but 10 buildings. Presently, the campus covers 140 acres and includes 53 buildings with plans to renovate and build additional academic, recreational and parking facilities. The campus is illuminated at night not only for safety purposes, but also to accentuate the surrounding hub of activity. Security personnel patrol the area hourly.

Location

The location of The University of Akron is ideal from a traveling standpoint. Automobile travelers find Akron only a short drive south of the Ohio Turnpike that ties together the whole eastern half of the nation. The city's suburbs touch on Interstate 71 that stretches from Lake Erie to the Gulf Coast, Interstates 76 and 80 which link the nation from the east coast to the west coast, Interstate 77 that links the area with the southeastern coast and Interstate 90 that ties in with the New York Thruway. Bus travelers will find the Greyhound station a short walk from the campus. Airline passengers will find Akron abundant in limousine service from the Cleveland-Hopkins International, which is located in Cleveland, Ohio, and the Akron-Canton airport located south of Akron.



Buildings

Most of the buildings on campus carry the names of prominent persons from the area who are recognized for their contributions in administration, education, 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 Office of Team Leadership Development and Institutional Research 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 48,000 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 Institute for Biomedical Engineering Research, 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.

Ballet Center: Located at 354 East Market Street, this center houses dance studios, a choreography laboratory, faculty offices, the Ohio Ballet studios and offices and the Dance Institute's offices.

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 1,164,375. The facility also houses the University Archives, an audio-visual center, Instructional Media Distribution 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 Departments of Counseling, Geography, 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.

Continuing Education Center: The new Continuing Education Center (Union Depot Building) was renovated in 1979 at a cost of \$2.8 million. The building houses offices for the dean of Continuing Education and Public Services, Adult Resources Center, Equal Employment Opportunity office, Department of Special Programs, Institute for Civic Education, Nursing Home Training Center, as well as a lecture hall and general classrooms.

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 artwork.

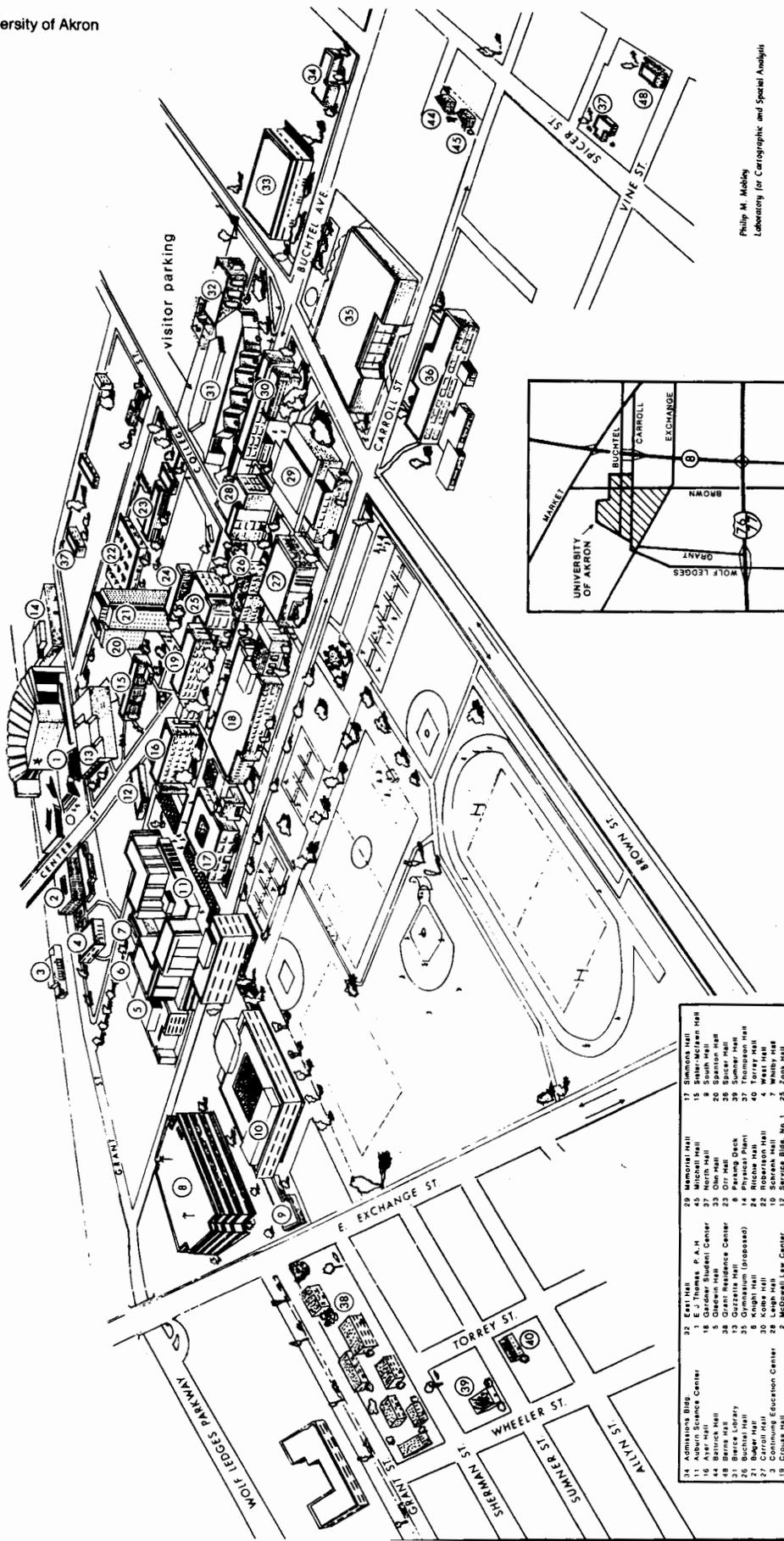
East Hall: Located on South Union Street the hall houses the University nursery school, International Students Center, Black Cultural Center and University Honors Program.

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

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



The University of Akron, Akron, Ohio



Philip M. Mabey
 Laboratory for Cartographic and Spatial Analysis

- | | | | | | | | |
|----|-----------------------|----|------------------------|----|---------------------|----|-------------------|
| 34 | Admission's Bldg. | 32 | East Hall | 29 | Memorial Hall | 17 | Simmons Hall |
| 11 | Admin. Science Center | 1 | E. J. Thomas, P.A.H. | 45 | Michael Hall | 15 | State-McLean Hall |
| 46 | Briggs Hall | 4 | Student Union | 22 | Oliver Hall | 34 | Spencer Hall |
| 48 | Briggs Hall | 5 | Student Union | 23 | Old Hall | 26 | Spanton Hall |
| 21 | Barce Library | 38 | Grant Residence Center | 8 | Perkins Deck | 35 | Spicer Hall |
| 27 | Carroll Hall | 15 | Guzzetta Hall | 16 | Perkins Deck | 39 | Sommer Hall |
| 18 | Cross Hall | 10 | Kobe Hall | 24 | Ricche Hall | 40 | Torrey Hall |
| 19 | Cross Hall | 2 | McDonald Law Center | 22 | Robertson Hall | 4 | West Hall |
| | | 2 | McDonald Law Center | 12 | Service Bldg. No. 1 | 25 | Zook Hall |

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 is the Office of Placement and Career Planning.

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 \$5.5 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 faculty 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 College of Business and the Departments of Environmental Studies and Social Work.

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, appellate — review office and clinic, 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, publications, purchasing, internal communications, public 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, Political Science, Philosophy, Sociology, Center for Peace Studies and Afro-American Studies and English Language Institute. 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** provides offices, classroom space and career placement service for the Community and Technical College. **Schrank Hall South** contains facilities for the Department of 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 1975. It houses the Registrar's Office, Division of Counseling and Advising, the Financial Aids Office, University College, the Evening College and Summer Sessions, the Parking Systems Office and offices for the University auditor, controller, cashier, accounts payable and receivable and the state examiner.

The 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, general classrooms, a handicrafts room, a teaching demonstration classroom, a microteaching laboratory, Center for Economic Education and the Student Teaching Office.

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.



Allied Health

The College of Nursing, Medical Technology Program and Allied Health Program have modern and innovative equipment housed in the recently opened Gladwin Hall. There is a multi-purpose nursing laboratory (a simulated six-bed hospital) containing a surgical-labor delivery and nursery suite. Additional equipment includes a complex cardiac monitoring system with wall oxygen and suction equipment. The clinical assessment laboratory permits students to examine well clients in a clinic-like atmosphere. Support facilities feature an independent study laboratory with 35 carrels, a graduate research room, media viewing room and a psychiatric nursing laboratory. This complex also has two microbiology laboratories which are connected to an inoculation room, media-prep room, autoclave and labware wash room. There is also a standard anatomy and physiology laboratory, an audio-tutorial laboratory with 60 audio-visually-equipped carrels and an x-ray room which may eventually include a very low power x-ray machine.

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 certified 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 laboratories, a commercial food preparation and hospitality center and textiles and clothing laboratories. 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 Languages' 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.

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 and Dance. 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 equipped 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 harpsicord, a harp, a nine-stop tracker organ, a Mohler practice organ, computer based instruction laboratory, electrophonic piano laboratory and 11 Baldwin concert grand pianos for the recital hall, classrooms and teaching studios. Forty 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.

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 10-minute presentation, the videotape 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.



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 dynamic 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 darkroom, a Phillips Norelco x-ray diffraction unit, a 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.

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 noncredit) 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 the student who encounters 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 30-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.

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.

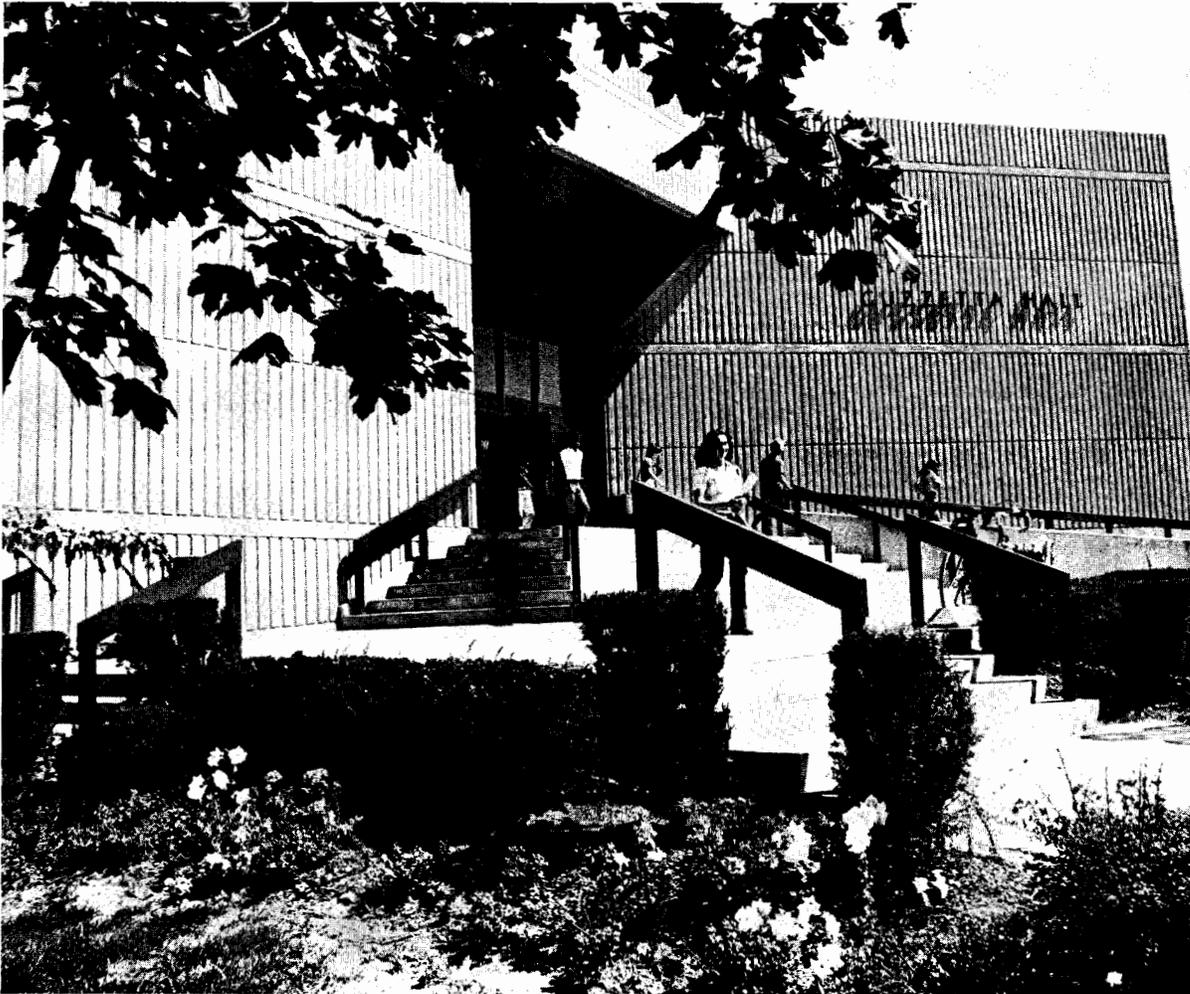
Audio-Visual Services contains a centralized collection of instructional materials (filmstrips, slides, etc.) for the purposes of supplementing University professors' lectures. An extensive collection of moveable media-hardware and mediated-software is housed in the audio-visual area for faculty and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



SECTION



STUDENT SEEKING AN ACTIVITY

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 the student 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.

Office of Student Development

Concerned with each student's University experience, the Office of Student Development provides a wide range of resources, programs and professional counseling to assist the student with individual growth and to assist the student in becoming involved and accepting responsibility within campus organizations. The office provides leadership and skill-building workshops for all students throughout the year. These workshops aid in enhancing the ability of each student to participate effectively.

The Office of Student Development has current information about all campus organizations and the variety of their activities. The office will provide assistance to a student wishing to explore the range of opportunities existing at The University of Akron that will enrich and expand the person's individual development and, in turn, University experience.

Student Financial Aids and Employment Office

The Student Financial Aids and Employment Office, a part of the Division of Student Services, provides assistance to people who, without financial aid, might not be able to attend The University of Akron. Seven 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*.

Career Planning and Placement Office

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

For the graduating student, 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. In addition, direct job referrals are made to registrants; credential files are maintained and mailed upon request; company literature is available; and career planning is provided.

The facilities and services of the Career Planning and Placement Office are for the student 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.

Student Health Service

Due to increased numbers of University students, expanded health service facilities immediately adjacent to the residence halls have developed. First aid services are available in the health services, and an infirmary area is provided for 12 inpatients. A registered nurse is on duty 24 hours a day (except vacations and holidays) and a physician is either on duty or on call.

A residence hall student receives bed care for up to 72 hours, without charge. A student 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 emergency. The University assumes no legal responsibility or obligation for the expenses of such transportation or for medical services at the hospital.

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

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

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

The completed health form and other health related records concerning the student are kept in the Student Health Services offices, where the information is treated as confidential.

Office of Student Legal Programs

This office represents an innovative and unique approach to providing necessary, but limited, legal assistance to the student. 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 with respect to private rights which a student believes exist.

In addition to limited legal counseling, this office offers programs and activities which expose the student and others to legal concepts which specifically affect the student 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 a student for purposes of employment, transfer to an-

other university or for other reasons. Since the collection, maintenance, use and dissemination of information concerning a student 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 a student with regard to records.

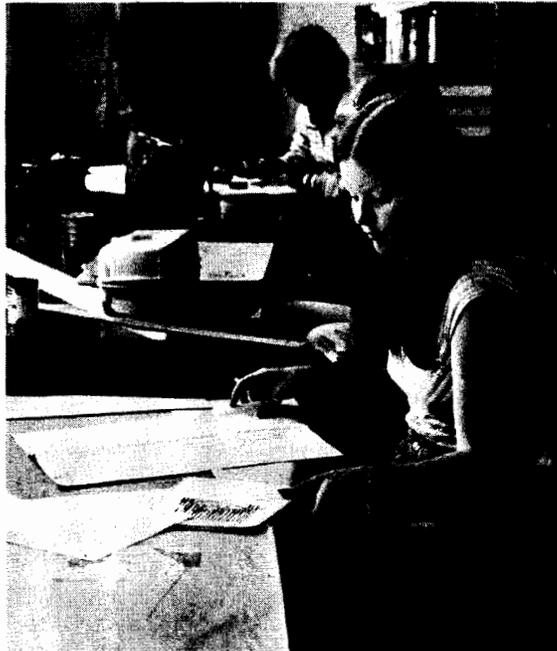
Counseling and Testing Center

The Counseling and Testing Center provides psychological counseling, therapy and testing without charge to any student enrolled for credit at The University and to faculty and staff.

Counseling Service

The center's Counseling Service offers assistance in the following areas:

- Career counseling involves discovering one's interests, needs, values, aptitudes, abilities and goals; relating these to the world of work; and exploring appropriate major subjects and career fields. A library of occupational information materials is available for use in connection with career exploration.
- Personal-emotional counseling deals with feelings of loneliness, inadequacy, guilt, anxiety and depression; interpersonal relationships especially with the immediate family, dating partners and roommates; and personality development, identity, self-image and self-esteem.



- Educational counseling relates to educational goals, motivation, attitudes, abilities and the development of effective study habits and skills.
- Group educational programs are offered in such areas as self-awareness and personal growth, improving grades, career counseling, improving relations with others, communications and listening skills, midlife career change and understanding and accepting an individual's sexuality.
- Consulting services deal with: concerns of nontraditional students; understanding individual and group behavior; problem-solving and decision-making skills; communication and human relations skills; referral for social, psychological and medical services; and counseling psychology theory and technique.



Testing Service

The center's Testing Service offers a variety of testing programs such as the American College Test, the Admissions Testing Program of the College Entrance Examination Board, foreign language placement testing, 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 University College).

In addition, a wide variety of individual testing is offered in conjunction with counseling. Such tests may cover vocational interests, aptitudes, achievement, personality, etc.

The Counseling and Testing Center is located on the third floor of Ayer Hall. Counseling service, individually or in groups, is available by appointment or on an immediate basis, when necessary.

dent 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 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 halls as well as a deck below the Robertson Dining Hall.

Residence Halls

The Office of Residence Halls has the responsibility for providing comfortable, safe and healthy living accommodations for the non-commuting student. 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 15 facilities housing approximately 2,000 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 resi-

Robertson Dining Hall

A student who lives in the residence halls must participate in the board plan. A residence hall occupant receives a meal ticket entitling the holder 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 \$1,860 per year (\$930 per semester).

Housing accommodations are also available during the summer on a limited basis. The charges are: per

night, \$5; per session, \$160; and for the entire summer school period, \$320. These prices reflect the cost of rooms only. A student is responsible for meals.

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 a student attending the University.

Sumner Hall (men) 430 Sumner Street	43
Thompson Hall (women) 261 Spicer Street	39
Torrey Hall (men) 282 Torrey Street	64

Residence Hall Program Board

The Residence Hall Program Board (RHPB) provides a series of activities designed to allow development and expansion of a student's social, cultural and educational interests. RHPB consists of the following committees: movies, media, music entertainment, special features, major events and technical.

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 residence hall students. 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
Berns Hall (men and women) 503/505 Vine Street	106
Bulger Hall (men) Buchtel Avenue Complex	491
Grant Residence Center Highrise (women) 151 Wheeler Street Townhouses (men) Sherman and Grant Streets	470
James Street (women) 277 E. James Street	12
Mitchell Hall (women) 419 E. Carroll Street	19
Orr Hall (women) Buchtel Avenue Complex	128
Ritchie Hall (women) Buchtel Avenue Complex	96
Sisler McFawn (women) Buchtel Avenue Complex	126
Spanton Hall (women) Buchtel Avenue Complex	316

Hourly Pre-School

The University of Akron Hourly Pre-School is open to children of a student or faculty member 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 anthropological differences among people. Children must be between the ages of two and one half through six years, and tuition is \$.90 - \$1.30 per hour. Registration is handled on a per-semester basis for all parents and space is allotted hourly on a "first-come" basis.

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

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

Extracurricular Activities

A student today is concerned about the 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, Association for 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.

A student 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 University-student resources for the younger students in the educational system of our community. The Center for Concern is a campus volunteer program designed to match the community human service needs with the skills and interests of the student.

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, the student who shows an ID card, may attend athletic, musical, ballet and theatrical events, hear nationally known speakers and receive campus publications with little or no additional charge.

A student 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.

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 artwork.

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 detailed scholarly articles are published in the *Akron Law Review*.



Performing Arts

A University student has ample opportunity to develop 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.

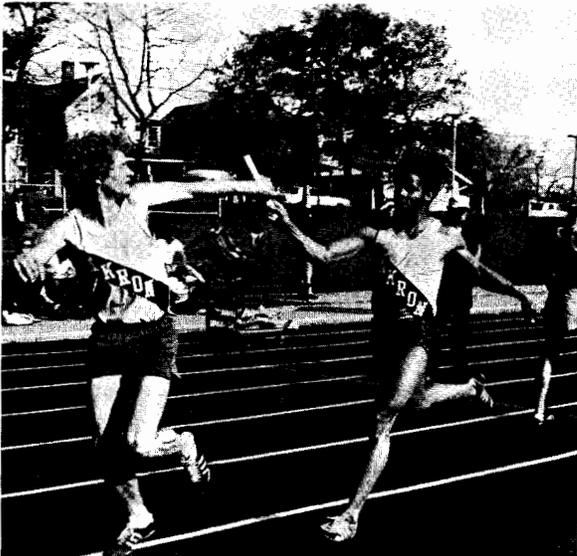
The Edwin J. Thomas Performing Arts Hall, complemented by Guzzetta Hall, provides the student with the most architecturally stimulating and functional facilities in which progress is made from the early learning stages to the final professional presentation of the arts. A student has opportunities to perform regularly on campus and to tour in state, national and international activities.

A University student 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.

A student who aspires to act, write or produce in theatre is 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. The University Theatre in Kolbe Hall, 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 while WRHA broadcasts directly to the residence halls. 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.



Sports Activities

The University aims to provide a broad and diversified program in intercollegiate, club and intramural sports. A student, regardless of athletic success or experience, is 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 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's Office.

Social Organizations

One of the best ways to learn about oneself 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 student's 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-Panhel-

lenic "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, 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 school year is highlighted with Dorm Week, Homecoming Week, and May Week where entire

weeks of social entertainment, dances, concerts, carnivals and inter-group competition take 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.

SECTION



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.

Recommended High School Courses

An applicant, in order to increase the possibility for success, is 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.



Classification of Students

With an enrollment of 23,364, The University of Akron has several classifications of students seeking an education according to their own needs and abilities. Classifications include:

- **Undergraduate** — A student who has not earned the baccalaureate degree and is eligible to enroll in undergraduate-level credit courses.
- **Postbaccalaureate** — A student who holds the baccalaureate degree from an accredited institution, who is eligible to enroll in credit courses on the undergraduate level and who has not been admitted to the Graduate School. A postbaccalaureate student applies for admission to the college (Arts and Sciences, Education, etc.) where undergraduate credit is to be earned.
- **Graduate** — A student who holds the baccalaureate degree from an accredited institution, has been admitted to the Graduate School and is eligible to enroll in graduate-level credit courses.
- **Professional** — A student who holds the baccalaureate degree from an accredited institution and has been admitted to the School of Law.
- **Special Student** — A student who does not meet the regular admissions requirement but qualifies by certain abilities or maturity and is admitted by the dean after special petition.
- **Auditor** — A student who wishes to enroll in a course without obtaining a grade-point value (A-F) or a grade of noncredit or credit. A student must indicate that the student is an auditor at the time of registration. Audit status may be denied if space is not available. An auditor is expected to do all prescribed coursework except the writing of examinations.
- **Transient — (from another institution)** A student who is regularly enrolled and eligible to continue at another institution, and who desires to enroll at The University of Akron for specified courses.
 - **(from The University of Akron)** A student enrolled at The University of Akron who must obtain written permission from the dean of the student's college before enrolling (transient student status) for credit work at another institution. Credit for such work may be granted at the discretion of the dean.

Admission Procedure

The University of Akron operates under a policy of rolling admissions which means an applicant receives a letter of admission as soon as all credentials are received. There is no set date for notification of admission; it is an ongoing process. However, it is advisable for a prospective student to submit all credentials as

early as possible to be assured the best selection of classes and/or a room in the residence halls.

Admission procedures vary slightly for different types of students. The various admissions categories include: recent high school graduate, adult student, transfer student, postbaccalaureate student, special student, transient student and international student. (For information on admission to Graduate School, see Section 5 of this *Bulletin*.)

Recent High School Graduates

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

- Obtain an application form from the Office of Admissions. If your request is by mail, use this address: Office of Admissions, 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 application, a student transcript must be sent to the Office of Admissions. This record must be received before any admission action can be taken by the University.
- Take entrance tests. Arrangements can be made through the student's 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 Office of Admissions after the student has been admitted. Please complete the form and return it to the appropriate processing agency. This provides the University with the information necessary for a complete health record on every student.
- In the letter of admission to the University, directions for academic counseling will be explained. All new freshmen receive academic advisement through the Counseling and Advising Division of the University College. Evening students at the same level will be advised by the Evening College.

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:

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

fice of Admissions, 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 the student is under 25** years of age the student must request a transcript from the local high school. This official record must be received and evaluated before admission action can be taken.
- **If the student is under 21** years of age the student 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 Office of Admissions after the student has been admitted. Please complete the form and return it to the appropriate processing agency. This provides the University with the information necessary for a complete health record on every student.
- In the letter of admission to the University, the student will receive directions as to academic counseling. All new freshmen receive academic advisement through the Counseling and Advising Division of the University College. Evening students at the same level will be advised by the Evening College.



Transfer Students

A student applying for admission who has formerly attended another institution of higher learning is eligible to transfer to the University if the student presents satisfactory scholastic records as judged by The University

of Akron officials and if the student is eligible to re-enter the institution from which he desires to transfer.

A transfer student should apply as follows:

- Obtain an application form from the Office of Admissions. If requested by mail, use this address: Office of Admissions, 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.
- A transfer applicant must request official transcripts from the records office of all institutions previously attended. The transcripts should be mailed to the Office of Admissions.
- A student under 25 years of age and with fewer than 12 credits of accredited transfer work must submit a high school transcript or G.E.D. scores along with the college transcript(s). A student under 21 years of age and having fewer than 12 transfer credits 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 a student with more than 12 credits, the appropriate admitting officer may require the ACT battery for this person 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 Office of Admissions after the student has been admitted. Please complete the form and return it to the appropriate processing agency. This provides the University with the information necessary for a complete health record on every student.
- In the letter of admission to the University, the student will receive directions as to academic counseling. University College freshmen and some sophomore day students receive academic advisement through the Counseling and Advising Division of the University College. 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.

Postbaccalaureate Students

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

This procedure should be followed:

- Obtain an application form from the Office of Admissions. If requested by mail, use this address: Office of Admissions, 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.

- A postbaccalaureate student must request the registrar of the institution(s) from which the student graduated or 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 Office of Admissions after the student has been admitted. Please complete the form and return it to the appropriate processing agency. This provides the University with the information necessary for a complete health record on every student.
- In the letter of admission, the student will receive information on registration and instructions for academic counseling by a faculty member in the appropriate department.

Special Students and the High School/College Program

A special student is one who does not qualify for regular admission to the University or who is participating in a special short-term academic program.

A special student may not take more than 15 credits unless he gains official status as a regular student.

This procedure should be followed:

- Obtain a special student application from the Office of Admissions, The University of Akron, Akron, OH 44325.



- A student presently enrolled in high school must also submit written permission from either the high school principal or guidance counselor to participate in the program.
- Information regarding registration for classes and academic advisement will be forthcoming in the letter of admission to the special student program.

Transient Students

An undergraduate transient student must apply directly to the Office of Admissions. A graduate student must apply through the Office of the Dean of the Graduate School.

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

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

- Obtain a transient student application from the Office of Admissions, The University of Akron, Akron, OH 44325. Complete it and return it with the non-refundable application fee (a one-time charge).
- Receive advice and written approval by the home institution of the coursework for which the student plans to enroll.
- After admittance, information regarding registration will be received. The admissions officers act as transient student counselors, and one day of open registration is set apart for transient students to register for classes.

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 1979-80 academic year, approximately 400 students with citizenship other than the United States attended the University. These students represent 60 countries and are pursuing studies in a number of major fields.

Admission Procedures

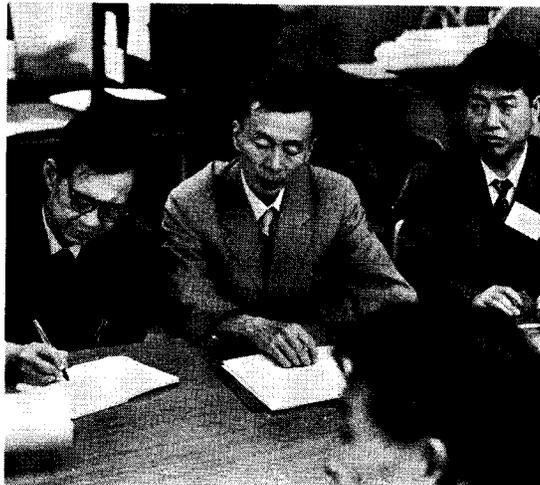
Applicants from abroad can be admitted to the University only in September, the beginning of the academic year. All admission requirements should therefore be completed by July 1 preceding the September in which the student desires to enroll.

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 each student 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 six to eight weeks for the University to receive the results of the TOEFL, the student is encouraged to take the examination in October or January. The University cannot guarantee the student who takes the examination in March that the records will be processed completely before the July 1 deadline. The English Language Institute at the University also offers a program in English for students who have not reached the level of proficiency required for full admission to the University. The student who has not yet taken or passed the TOEFL can still enroll in the English Language Institute.

- Proof of adequate financial support. An international student is requested to submit a *Declaration and Certification of Finances* showing that the student has sufficient funds to cover the cost of the student's education while attending The University of Akron and that these funds will be available to the student in our country. It is estimated that an international student will need a minimum of \$5,500 per year for undergraduate and graduate study for 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. A graduate student interested in applying for this aid should request the necessary forms at the time of application for admission to the Graduate School. Each international student will be held responsible for obtaining and maintaining appropriate health and accident insurance coverage while enrolled at this institution. This insurance coverage is mandatory.



Orientation

The international student is required to attend a special orientation program which begins two weeks before classes. The exact schedule for orientation will be mailed with the *Certificate of Eligibility* (I-20) from the international student adviser. During the orientation, the international student is given an English language placement examination. This is in addition to the proficiency examination overseas. The student may be required to participate in noncredit English classes if it is felt the results of this placement examination warrant such action.

proficiency test before the student can be admitted as a degree-seeking university student for full-time coursework.

Special Note

The University of Akron has a director of International Programs, a full-time international student adviser and instructors of *English as a Second Language*. If an international applicant has questions about housing, climate or immigration regulations, the student is encouraged to contact the international student adviser directly.

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

English Language Institute

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

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

Orientation

The first major contact the 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, the student learns a great deal about the University and about what it expects from students. The student will meet many of the University's administrative officers and faculty members and discuss particular problems and questions with upper-college students. In this way, the student will have an opportunity to become acquainted with the University and clear up many of the questions which arise when embarking on a new enterprise.

Counseling

During orientation, and each term thereafter, a student meets with a counselor individually to discuss the student's progress to date and the next logical step in the progression of the 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.



Registration

Each term it is necessary for a student 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.

Class Attendance

A student is expected to attend all class meetings for which the student is registered. A student may be dropped from a course by the dean if absence is repeated and the instructor recommends this action; a student can gain readmission only with permission of the dean and the instructor.

Student Schedules

Modification of Student Schedules

A student must register for a course before the end of the first week of the term. Alterations in the schedule of courses for which the student is registered can be made only with the permission of the dean or the dean's designate.

A day student in the University College and a first-term student in the Community and Technical College should make all changes through an adviser in the Counseling and Advising Office, Spicer Hall; an evening student in these colleges should contact the Evening College Office, Spicer Hall.

Withdrawal

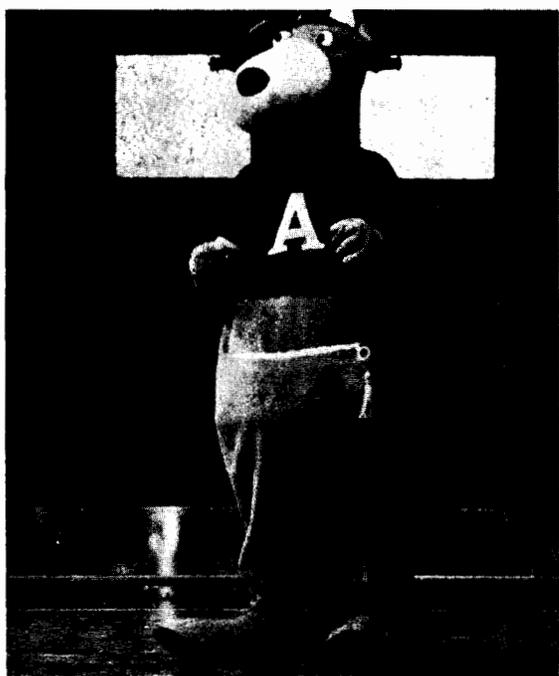
A student may withdraw from a course for any reason up to the midpoint of a semester or summer session (the end of the eighth week of a semester and the equivalent point of a summer session) with the signature of the student's adviser.

After midpoint of a semester or a summer session, a student must have the written approval of both the student's 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, the student may appeal to the dean of the college who shall make the final decision. This requirement need not be met when a student is 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.

A student may be dropped from a course by the dean if absences are repeated and the instructor recommends this action. A dismissed student may gain readmission only with the permission of the instructor and the dean. A student dropped from a course receives an "F" which counts as work attempted whenever grade-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 as a "G," "L," "P" or "I" listing in the *Transfer of 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 grade-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 University 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 has 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.

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, the student must obtain prior written permission from the dean of the college in which the student is enrolled; for general studies courses, prior written permission must be obtained from the dean of the University College. These courses will be listed on The University of Akron official academic record. Each course will reflect the course number, title, grade and credit value; no grade-point value will appear on the record and no grade-point average will be calculated for the coursework listed. 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.

Credit by Examination

A student interested in earning credits by special examination may do so with the permission of the dean of the student's college and the dean of the college in which a particular course is offered and 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.

Grade Policies

Credit/Noncredit Option (Undergraduate and postbaccalaureate only)

- A student who takes a course on a "credit" or "non-credit" (CR/NC) basis, and who earns a grade equivalent of "A" through "C-," shall receive credit (CR) for the course and have the grade, CR, placed on the permanent record; a grade equivalent of "D+" through "F" will be recorded with the noncredit grade, NC.
- A student who has completed 50 percent of the number of credits required for a degree with a grade-point average of at least 2.3, shall be allowed, with the consent of an adviser, to take one free elective (cannot be taken in major field)* course per term on a CR/NC basis.
- With the consent of the student's adviser, the first or second year of foreign languages may be taken on a CR/NC basis at any time the student is registered, regardless of the grade-point average.
- No more than 16 credits of 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. A student who elects to take a course on a CR/NC basis cannot withdraw and register to take that course for a letter grade after the first week of that term. The registrar will notify the instructor by means of the final class list of students who have elected to utilize the CR/NC option.
- Courses for which CR is awarded will be counted as *hours completed* only; courses for which NC is awarded shall *not* be counted as *hours attempted*; in neither case shall CR or NC be considered in calculating grade-point average, but in both instances the course shall be entered on the student's official academic record.
- A student may repeat a course for credit (CR), or a grade (A-F) after receiving a grade of NC.
- A college may, due to a closed class problem, designate in the printed schedule, on an annual basis, a course as not available to be taken on a CR/NC basis.
- A student taking a course on a noncredit basis is expected to meet the full 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.

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 grade (A-F) or a grade of NC, CR or AUDIT, a student may repeat a course in which the previously received grade was "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 courses must be repeated at The University of Akron.
- Grades for all attempts at a course will appear on the student's official academic record.
- Only the grade for the last attempt will be used in the grade-point average.
- All grades for attempts at a course will be used in grade-point calculation for the purpose of determining graduation with honors and 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

An undergraduate student who has not attended an institution of higher education* for at least three calendar years, enrolls at The University of Akron and maintains a grade-point average of 2.5 or better for the first 24 credits may petition the dean to delete from the grade-point average the grades attained under a 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 only 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

A student at the University will 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 a student's home address; 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 grade-point system.

This method of recording grades is explained as follows:

Grade	Grade 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 (Noncredit)	0.0

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

I — Incomplete: 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

- A student becomes either eligible or ineligible to remain at the University, according to the grade-point value of each grade for each course the student has completed.
- A student who maintains specified levels of scholastic achievement receives privileges to participate in extracurricular activities.
- On the basis of grades, a student receives opportunities to take additional courses in order to accelerate academic progress.
- A student must maintain a grade-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 University College. Acceptance is dependent on the approval of the dean of the college which the student has chosen to enter and on the academic performance to date.
- To receive a degree, each student must have attained a grade-point average of at least 2.0 for all work taken at The University of Akron.
- High grades are essential for a student who intends to go on to graduate work.



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 grade-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 grade-point average is
With Distinction	3.25 or higher

Graduation

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 the candidate plans to complete degree requirements at the end of fall semester, submit an application by or before March 15. If the plan is to complete degree requirements at the end of spring semester, submit an application by or before September 15.
- Earn a minimum 2.000 grade-point average as computed by the Registrar's Office for work attempted at The University of Akron consistent with the *Repeating Courses* policy. The grade-point average 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

Probation-Dismissal

A student who fails to maintain a grade-point average of 2.0 (C) is 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 a student is determined by the dean of the college from which the student was dismissed.

A student who has been dismissed from the University is not eligible to register for credit courses until readmitted.

years from the date of transfer, the University reserves 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 a student who has transferred from another institution wishes to present for the student's major, fewer than 14 credits earned at The University of Akron, written permission of both the dean and head of the department concerned is required.
- Discharge all other obligations at The University of Akron.

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.

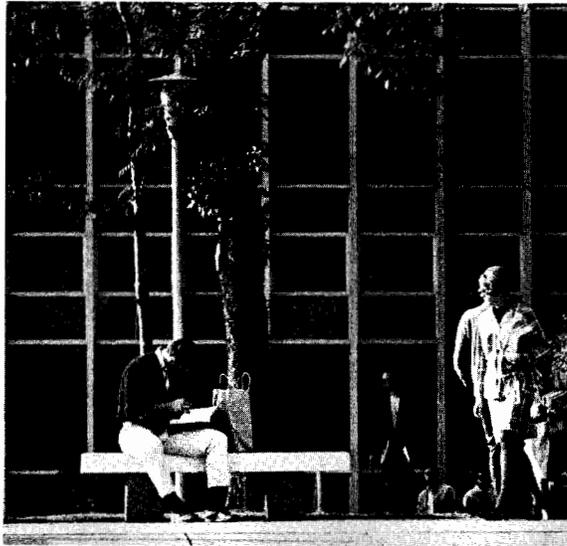
Unless the change in a rule or regulation specifies otherwise, it shall become effective immediately with respect to the student who subsequently enters the University, whatever the date of matriculation.

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 the student enrolled prior to the change by:

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



Credit and Grade-Point Requirements for Graduation Listed by College and Degrees Granted

	Min. Cr.	Min. Grade-Point Avg. Req.
Arts and Sciences		
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
Engineering		
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

Fees and Expenses

Fees subject to change without notice.

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

	Commuting Residents of Ohio	Residents of Ohio Living in Dorms	Non-Ohio Residents
Undergraduate Fee for regular load	\$ 790	\$ 790	\$1,910
General Service Fee	200	200	200
Books (average)	200	200	200
Food and Housing in Residence Halls	—	1,860	1,860
	\$1,190	3,050	4,170

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



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

In any question concerning fees, surcharge or residence, it is the responsibility of the student, parents or court appointed guardian, to furnish such proof as may be required by The University of Akron. 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	\$27.50 per credit
14½-16 credits	\$395 per semester
16½ credits and over	\$395 + \$27.50 per credit over 16
Graduate and Professional (Law)	
1 or more credits	\$42 per credit

• Tuition Surcharge**

(Non-residents of Ohio pay the surcharge in addition to the instructional fee)

Undergraduate	
1 or more credits	\$35 per credit
Graduate and Professional (Law)	
1 or more credits	\$20 per credit

• General Fee

Undergraduate	\$10 per credit to a maximum of \$100 per semester
(Maximum general fee for two combined summer sessions is \$100)	
Graduate and Professional (Law)	
1 - 10 credits	\$3 per credit
11 credits and over	\$30 per semester

• Admission Application Fee

(Non-refundable)

Undergraduate and postbaccalaureate	\$20
Entering graduate student	20
Entering School of Law student	20
Transient student (first enrollment only)	20

• Special Fees

Late Registration Fee

Charged to students who have not completed registration and paid fees by the end of open registration	\$20
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Music Fees**

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

One-hour lesson per week (undergraduate)	\$92
One-hour lesson per week (graduate)	92
One 45-minute lesson per week (undergraduate)	69
One 45-minute lesson per week (graduate)	69
One ½-hour lesson per week (undergraduate)	46
One ½-hour lesson per week (graduate)	46

Thesis and Binding Fees

Binding (per volume)	7
Microfilming (for Ph.D. degrees only)	36

* 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 instructional credit fee.

Graduation Fees	
Each degree	12
In Absentia, per degree (add'l)	2
Department of Special Programce & ICE	
Course charge based on number of Continuing Education Units.	
One CEU (13.5 contact hours)	26.50
• Miscellaneous Fees	
A.C.T. Test	\$11
Education Administration Battery	6
Miller Analogies Test	9.50
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	14
Student teaching fee	25
Locker fee (\$2 refundable September-May)	6
Locker fee, physical education and Schrank Hall (\$2 refundable) per semester	5
Change of course registration (add/drop)	6
Laboratory breakage and late service deposit (refundable)	10
"Insufficient Funds" or returned check charge	5
Co-op course fee	25
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	1,065
(Summer Sessions I and II)	765
• Parking Fees	
Students enrolled for 9 or more credits per semester	\$30
Students enrolled for 8 ½ or fewer credits per semester	15
Summer session students, per session	10
Workshop participants	up to 8
Department of Special Programs	
5-7 week	5 per course
10-15 week	5 per course
Off-Campus Instruction Students	up to 10
Temporary Permit (per week)	2

Room and Board

Residence hall facilities are available for the housing of a limited number of undergraduate students. The current total cost of housing accommodations and food service is \$930 per semester or \$1,860 per year. All students who live in the residence halls must participate in the provided 20 meals per week board plan.

A student living off campus may participate in the residence hall board program, the current rate being \$430 per semester.

Veterans' Expenses

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

A non-disabled veteran must pay fees at the time of registration. The non-disabled veteran will receive direct

payment from the V.A. after enrollment has been certified under the provision of USC Title 38.

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

Dependents of a veteran covered under other provisions of USC Title 38 must pay fees at the time of registration. The V.A. will make direct payment to the 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 12-month place or places of residence in Ohio, who is qualified as a resident to vote in Ohio and receive state welfare benefits, and who may be subjected to tax liability under section 5747.02 of the revised code; provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.
- "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 12 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 12 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 12 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 12 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 12 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 12 consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident.
- Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of 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 Residence 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 the student 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 the student qualifies as a bona fide resident. The Committee on Residence Status may require the student to submit evidence in support of the statements made on the student's "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 six 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 non-resident 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. A student who enlists voluntarily for active duty should see "in part" below.

- In full less \$5 per enrolled credit to a maximum of \$45 if the student requests in writing official withdrawal from all credit courses on or before the second 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
3 through 12 calendar days*	70%	70%
13 through 24 calendar days*	50%	50%
25 through 33 calendar days*	30%	30%
Thereafter	0%	0%

If the student requests in writing official withdrawal after the second day of any Summer Session for which he is enrolled, the following refund percentages apply:

3 through 7 calendar days*	60%	60%
8 through 15 calendar days*	40%	40%
Thereafter	0%	0%

For 12 weeks or less:

2 through 8 calendar days*	70%	70%
9 through 15 calendar days*	50%	50%
16 through 22 calendar days*	30%	30%
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 \$100 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

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

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 \$100 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 \$100 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 orderly 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 discipli-

nary 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.

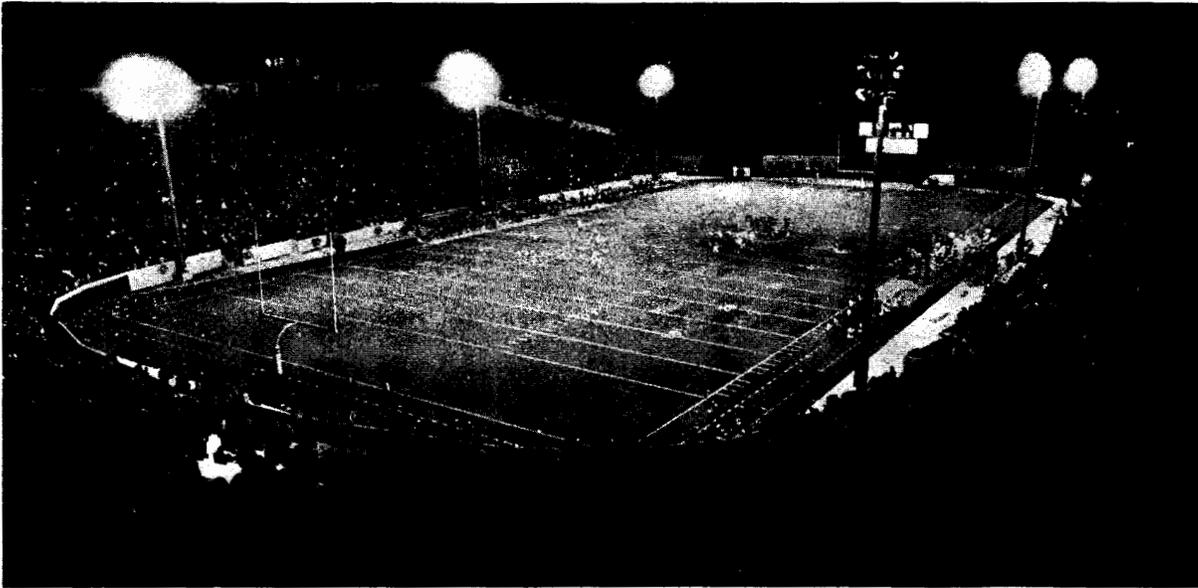
Refund Schedule

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.

<i>Refund Inclusive Dates</i>	<i>Applicable</i>
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 applying for financial aid at The University of Akron, the Financial Aid Office determines a budget that best suits the student's needs. The budget includes direct costs that must be paid to the University (instructional and general fees and 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 the financial aid applicant there are a number of sources from which aid can be received. The following programs represent those sources of aid for which The University of Akron selects recipients and/or distributes the funds. The application(s) for these programs can be obtained at the 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 the student does not have to repay. The grant is awarded to the student by the federal government. After applying for the grant, the student will receive a Student Eligibility Report (S.E.R.) which must be taken to the school which the student will attend. The Financial Aid Office will then calculate the amount of the grant that will be received. The grant amount is based on the costs of the school of attendance.

Supplemental Educational Opportunity Grant

The supplemental grant (SEOG) is a federal grant that is awarded by the school the student attends. It is awarded to a student 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 attended, and is based on the need and the costs at that school. Entering freshmen must have attained at least a 1.75 grade-point average to be eligible for the grant and continuing students must have at least a 1.75 grade-point average 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 can be earned, and places the student in a suitable job. The student and job supervisor adapt working hours to meet the student's 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 repaid, beginning nine months after ceasing to be at least a half-time student. Interest at three percent is calculated at the time repayment of the loan begins. If the student is teaching in certain fields or locations after graduation, eligibility for cancellation of all or part of the amount that was borrowed is possible. Entering freshmen must have attained at least a 1.75 grade-point average from high school to be eligible, and continuing students must have at least a 1.75 grade-point average 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. Application for the loan can be made at a bank,

savings and loan or credit union. This loan must be repaid to the lender beginning nine months after ceasing to be at least a half-time student. The interest on the loan is seven percent, and it is paid by the federal government while the student is in school.

Nursing Student Loan/Scholarship

Low-interest loans and grants are available to an eligible student who is 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. These programs are generally reserved for students who have been accepted by the College of Nursing.

Law Enforcement Education Program

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

Bureau of Indian Affairs

Grants are available to a student who is a Native-American Indian. For information contact your Regional Tribal Office.

State Programs

Ohio Instructional Grant

The Ohio Instructional Grant (OIG) is available to an eligible student who is an Ohio resident and is attending college in Ohio or Pennsylvania. Eligibility is based on family income. The grant is awarded by the Ohio Board



of Regents. If eligible, the student will receive an award certificate which is taken to the school that the student 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

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

Ohio War Orphans Scholarship

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

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 majority of awards for the 1980/81 academic year ranged from \$200 to \$400.

The **Presidential Scholarship Program** was initiated for the 1975/76 academic year. At the present time, over 20 scholarships are awarded each year to new freshmen. For the 1980/81 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 1980/81, the scholarships ranged from \$400-\$700. 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, Student Loan Office (Spicer Hall 105).

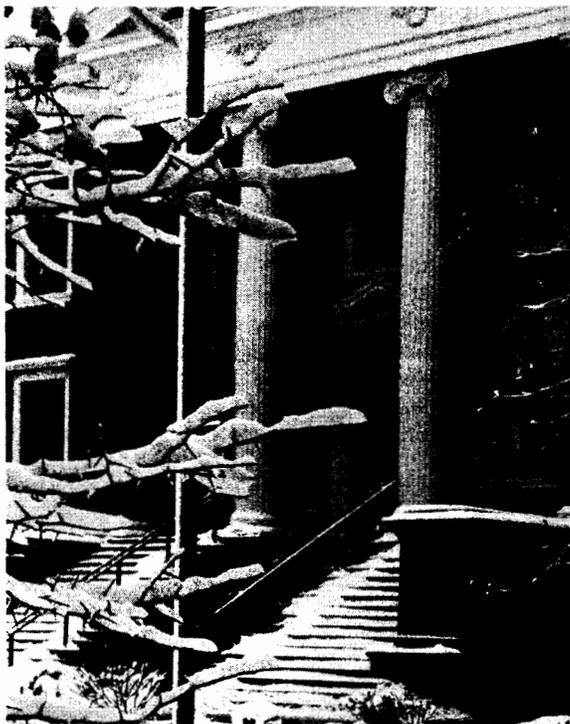
Special long-term loans are available to selected students in certain fields who need partial help in paying tuition.

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: the student 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 financial 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 the local bank, savings and loan associations or credit unions.
- The information sent to the College Scholarship Service through the Financial Aid Form is used to determine 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.



school year in which aid is received as well as the prior calendar year.

- Has not or will not live with one or both of his parents or adoptive parent(s) for more than six weeks in the calendar year in which aid is received as well as the prior calendar year.
- Has not or will not receive financial assistance of more than \$750 from one or both of the student's parents or adoptive parent(s) in the calendar year in which aid is received as well as the prior calendar year.

The University of Akron requires that the independent student (and spouse) complete the student's section of the *Financial Aid Form* (FAF). In addition to completing the FAF, if the independent student is 24 years of age or under, the student's parents must complete a *Non-Support Statement* to document the student's self-supporting status. If the student is over the age of 24 years, the student may complete this form. *Non-Support Statements* may be obtained through the Financial Aid Office. This form must be completed each year for which aid is desired.

Computation of Financial Aid

The College 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.

Independent Students

An independent student is one who:

- Has not been or will not be claimed as an exemption for federal income tax purposes by either of the student's parents or adoptive parent(s) for the

Notification of Award

A student will be notified of the aid package by a *Financial Aid Proposal* which will be mailed home. If accepting the proposal, the student must have it signed and notarized. It should be returned to the Financial Aids Office as soon as possible.

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



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

Distribution of Aid

Financial aid is disbursed by vouchers. The vouchers are based on full-time enrollment (12 semester credits). If the student is not taking at least 12 credits, contact the Financial Aid Office so that 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. A student receives financial aid for fall semester by mail during July. For spring semester, a student must pick up the 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 in paying for the invoice for instructional fees; if the aid is substantial, the student can apply it toward the residence hall bill (if applicable).

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.

A student may request a bookstore voucher to assist in purchasing textbooks. This voucher is an advance on the expense check. It is available one week before classes begin.

The remainder of the expense money is issued to a student during the third and eighth week of the semes-

ter. The expense check is picked up in the Financial Aid Office. The student must maintain satisfactory enrollment status to be eligible for the expense check.

Revision of Awards

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

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

Eligibility for Aid as it Applies to Certain Classifications of Students

Transfer Students

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

- Have the previous college complete a financial aid transcript and send it to our Financial Aid Office.
- If a student is transferring to The University of Akron during the academic year and has received BEOG and/or OIG the previous session, the student should have a duplicate *Student Eligibility Report* mailed to the Financial Aid Office. This *Student Eligibility Report* must be received before any funds can be dispersed to the student. Instructions for receiving a duplicate *Student Eligibility Report* can be obtained from the Financial Aid Office.
- Have the former Financial Aid Office provide a transfer of remaining funds request to have the 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. The student must reapply for these programs at The University of Akron.

Graduate Students, Law Students and Postbaccalaureate Students

A student who has already received a bachelor's degree is eligible for National Direct Student Loans and/or College Work-Study Programs. The Basic Educational

Opportunity Grants, Ohio Instructional Grants or Supplemental Education Opportunity grants may not be received.

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

Transient Students

A transient student is not eligible for financial aid because the degree pursued will not be issued by The University of Akron.

International Students

An international student is not eligible for federal funds or for the Ohio Instructional Grant. Eligibility for short-term loans or for regular student jobs (not the College Work-Study Program) exists.

Veterans

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

Student Rights and Responsibilities

A financial aid recipient has various rights and responsibilities. He has the right to expect confidentiali-

ty regarding his financial aid as well as a response in a reasonable amount of time after submitting financial aid applications.

Outside scholarships received must be reported.

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 the student must make satisfactory progress toward a degree. To make satisfactory progress, the student must maintain full-time status if the 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."

Inquiries

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

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

SECTION



Community and Technical College

Robert C. Weyrick, M.S., *Dean*

David T. Dolan, Ph.D., *Assistant Dean*

Frederick J. Sturm, Ed.D., *Assistant 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 the student no matter the age, background and need; 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 the student by providing the means to examine academic and career opportunities considering interests, abilities and achievements.
- The college provides quality instruction with the qualified and experienced teacher who is encouraged to use the community as a "laboratory" for achieving educational goals.

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

The college offers both pre-service and in-service training: pre-service for the recent high school graduate who can receive an associate degree upon the satisfactory completion of two years of full-time studies; and in-service through 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 the qualified engineering technology student to continue education to the baccalaureate degree. During the first and second years, a student follows an associate degree program in the corresponding engineering technology. The third and fourth years provide the additional study required for the baccalaureate degree. Emphasis is placed on advanced training in the student's field of specialization, 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 ABET 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
1100:112	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	Mathematics for Technical Applications	3
2840:101	Introductory Chemistry	3
2860:350	Advanced Circuits	3
2860:351	Industrial 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	Descriptive Statistics and Probabilities	1
3470:252	Distributions	1
4450:206	Fortran (Science and Engineering)	2
6500:301	Management Principles and Concepts	3
6500:331	Production and Systems Management	3
	Technical Electives	9
	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:

1100:112	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	Mathematics for Technical 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	3
2880:241	Quality Control Procedures	3
2900:231	Control Principles	3
2920:310	Economics of Technology	3
2920:346	Mechanical Design II	3
2920:347	Production Machines and Processes	2
2920:348	Introduction to Numerical Control	3
2920:401	Inspection Trips	1
2920:402	Mechanical Projects	1
2920:448	Numerical Control Programming	3
4450:206	Fortran (Science and Engineering)	2
6500:301	Management Principles and Concepts	3
6500:321	Quantitative Business Analysis I	3
	Technical Electives	6
	Total	67
	(including associate degree program)	135

Prior to enrolling in any mechanical technology or electronic technology course designated for the third or fourth years of the four-year mechanical technology program, a student must have completed at least 45 credits of the two-year program with: a grade-point ratio of 2.0 or higher in *Mathematics Analysis*, *Basic Physics* and technical courses (2920 and 2980 series) in the two-year program; and a grade-point ratio of 2.0 or higher overall.

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
1100:105	Introduction to Public Speaking	
	or	
1100:106	Effective Oral Communication	3
1100:111	English Composition	4
1100:112	English Composition	4
1100:22-	Science Requirement*	6
1100:33-	Eastern Civilizations	2
1100:33-	Eastern Civilizations	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
3450:—	Modern University Mathematics	3
	Electives	22
	Total	64

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

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

2100: Associate of Individualized Study Program

The Associate of Individualized Study (AIS) degree at the Community and Technical College of The University of Akron has been designed to enable the student to plan an individualized program of study. The intent, however, is not to prepare the student for a specific career. A student may apply for the AIS degree only if personal educational goals cannot be met through one of the more formalized two-year degrees offered by the Community and Technical College. Although a student assumes the responsibility for the selection of areas of study, the student must receive assistance and approval from the coordinator of the AIS program.

2200: Educational Technology

This program prepares the individual 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.

Core Program

		Credits
1100:	Physical Education	1
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	3
2020:242	American Urban Society	3
2200:297	Independent Study (may be repeated to six credits)	1-3
2540:150	Beginning Typewriting	3
3450:—	Modern University Mathematics*	3
3750:100	Introduction to Psychology	3
5100:150	Introduction to Professional Education	3
5100:250	Human Development and Learning	3
5100:410	Audio-Visual Education	2
5550:211	First Aid	2
5850:295	Education Technician Field Experience	5
	Option Requirements	23-26
	Total	64

Options

Elementary Aide**

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

Library Aide**

2200:100	Introduction to Library Technology	3
2200:201	Processing, Cataloging and 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 Technology	3
	Electives	9

Child Development†

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

2210: Handicapped Services

1100:	Physical Education	1
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	3
	or	
3750:100	Introduction to Psychology	3
2020:242	American Urban Society	3
2210:100	Introduction to Interpreting for the Deaf	3
2210:110	Specialized Interpreting I	3
2210:141	Practicum II	1
2210:200	Reverse Interpreting	3
2210:242	Practicum III	1
2210:230	Specialized Interpreting II	3
2210:243	Practicum IV	1
2420:170	Business Mathematics	3
2260:278	Techniques of Community Work	4
	or	
7750:276	Introduction to Social Welfare	4
7700:100	Ameslan I	4
7700:120	Introduction to Audiolog/Aural Rehabilitation	3
7700:121	Psycho-Social Aspects of Deafness	3
7700:150	Ameslan II	4
7700:200	Ameslan III	3
7700:222	History of Deafness and Education	3
7700:223	Language of Deaf Child and Adult	3
7700:260	Ameslan IV	3

2220: Criminal Justice Technology

This program prepares the young person seeking a career in criminal justice and provides additional education to the student 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.

1100:	Physical Education††	1
1100:106	Effective Oral Communication	3

*The child development option student may substitute 2420:170, *Business Mathematics*, two 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.

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

		Credits
2020:121	English	4
2020:131	Mathematical Analysis I	4
2020:222	Technical Report Writing	3
2200:100	Introduction to Criminal Justice	3
2200:102	Criminal Law for Police	3
2200:104	Evidence and Criminal Legal Process	3
2220:106	Juvenile Justice Process	2
2220:110	Social Values and Criminal Justice	3
2220:150	Criminal Justice Administration and Supervision	3
2220:200	Criminal Justice Theory and Practice	3
2220:240	Dynamics of Vice Crime and Substance Abuse	3
2220:250	Criminal Case Management	6
2840:100	Basic Chemistry	3
3750:100	Introduction to Psychology	3
3850:100	Introduction to Sociology	4
	General Electives	5
	Technical Electives	4
	Total	64

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	Mathematical 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 and Building Construction	2
2230:140	Fire Investigation Methods	2
2230:200	Fire Detection and Suppression Systems	2
2230:202	Fire Fighting Tactics and Strategy	2
2230:204	Fire Prevention Practices	2
2230:240	Fire Department Administration and Supervision	2
2230:250	Hazardous Materials	2
2230:252	Fire Hydraulics and 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
3750:100	Introduction to Psychology	3
5550:211	First Aid	2
	Technical Electives	8
	Total	64

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.

		Credits
1100:	Physical Education	1
2020:121	English	4
2020:131	Mathematical Analysis I	4
2240:124	Design in Commercial Art	3
2240:140	Typography and 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 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	10
	General Electives	7
	Total	64

2260: Community Services Technology

This program prepares the individual 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
2020:254	Black American	2
2220:100	Introduction to Criminal Justice	3
2260:100	Introduction to Community Services	3
2260:150	Introduction to Gerontological Services	3
2260:260	Alcohol Use and Abuse	3
2260:278	Techniques of Community Work	4
2260:279	Technical Experience: Community and Social Work	4
3750:100	Introduction to Psychology	3
3850:100	Introduction to Sociology	4
7750:270	Poverty in the United States	3
7750:278	Introduction to Social Welfare Electives	12
	Total	64

Option Electives

Alcohol (2260:01)		
2260:261	Alcoholism Treatment	3
2260:262	Basic Helping Skills in Alcohol Problems	4
2260:290	Special Topics: Alcohol Services	1-3

Gerontology (2260:02)

		Credits
2260:251	Community Services for Senior Citizens	3
2260:252	Resident Activity Coordination	3

Volunteer Programming (2260:03)

2260:280	Fundamentals of Volunteer Management	3
2260:281	Recruitment and Interviewing of Volunteers	3

Other Suggested Technical Electives

2200:245	Infant/Toddler Day Care Programs	3
2220:106	Juvenile Justice Process	3
2260:240	Drug Use and Abuse	3
2260:241	Drug Treatment	3
2260:290	Special Topics in Community Services Technology	2-4
2540:150	Beginning Typewriting	3

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
2420:170	Business Mathematics	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:280	Essentials of Law	3
2520:103	Principles of Advertising	3
2540:119	Business English	3
2540:263	Business Communications	3
7400:133	Nutrition Fundamentals Electives	4
Total		64

2270: Labor Studies

The purpose of this program is to prepare the graduate for a position 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	Introduction to Labor Studies	3
2270:111	Collective Bargaining I	3
2270:122	Legal Framework for Collective Bargaining	3
2270:123	Labor Legislation and Economic Security	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	3
2420:211	Basic Accounting I	3
2880:141	Safety Procedures	3
3700:100	Government and Politics in the United States	3
	Electives	12
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 the graduate to enter the banking and finance industry.

Options**General**

1100:	Physical Education	1
1100:106	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
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 Mathematics	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 Introduction to Psychology	3
3750:100	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
2420:113	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

2280: Food Service Management

Through this program, training is offered for the skilled and mid-management-level employee 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
1100:106	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

		Credits			Credits
2420:233	Installment Credit	2	2440:132	Assembler Programming and JCL	4
2420:243	Survey in Finance	3	2440:133	Cobol Programming	2
2420:253	Elements of Bank Management	2	2440:234	Advanced Cobol Programming	3
2420:273	Monetary Systems and the Payments Mechanism	3	2440:235	Current Programming Topics	2
2420:280	Essentials of Law	3	2440:239	RPG II Programming	1
2430:105	Real Estate Principles	2	2440:241	Data Processing Systems	3
2430:245	Real Estate Finance	2	2440:251	Data Processing Projects	5
2440:120	Introduction to Information Processing	2	2540:119	Business English	3
2540:119	Business English	3	2020:222	Technical Report Writing or General Elective	3
2540:263	Business Communications	3			
	Total	64		Total	64

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
2420:170	Business Mathematics	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:221	Administrative Office Supervision	2
2420:243	Survey in Finance	3
2420:280	Essentials of Law	3
2430:105	Real Estate Principles	2
2430:185	Real Estate Law	2
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
2440:120	Introduction to Information Processing	2
2520:212	Principles of Salesmanship	4
2540:119	Business English	3
2540:263	Business Communications Electives	6
	Total	64

2440: Data Processing

This program prepares the individual for a career in computer programming and systems analysis. It gives a practical understanding of computers in business functions and provides extensive programming experience through laboratory assignments.

1100:	Physical Education	1
1100:105	Introduction to Public Speaking or	
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:131	Mathematical Analysis I	4
2020:135	Mathematics for Data Processing	3
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	Introduction to Information Processing	2
2440:131	Introduction to Programming	2

A program is available for the student interested in both an Associate in Applied Science in Data Processing degree and a Bachelor of Science in Business Administration degree. Certain substitute courses must be selected in the associate degree program in order to obtain the bachelor's degree within the minimum required credits. The student interested in this unique transfer program should consult an academic adviser for appropriate course selection.

2520: Marketing and Sales Technology

This program equips the graduate to fill an entry-level position 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 Mathematics	3
2420:280	Essentials of Law	3
2420:211	Basic Accounting	3
2520:103	Principles of Advertising	3
2520:106	Visual Promotion	4
2520:202	Retailing Fundamentals	4
2520:210	Consumer Service Fundamentals	2
2520:211	Mathematics of Retail Distribution	3
2520:212	Principles of Salesmanship	4
2540:119	Business English	3
	Technical Requirements	13
	Total	64

Options

Retailing

2420:202	Personnel Practices	3
2420:243	Survey of Finance	3
2440:120	Introduction to Information Processing	2
	Technical Elective	5

Industrial

2420:202	Personnel Practices	3
2420:243	Survey of Finance	3
2440:120	Introduction to Information Processing	2
2520:201	Principles of Wholesaling	2
	Technical Electives	3

Fashion		<i>Credits</i>
7400:121	Textiles	3
7400:317	History of Costumes	3
7400:419	Clothing Communication	3
7400:439	Fashion	3
	Elective	1

2540: Secretarial Science

The student is 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 the graduate for work as an executive or legal secretary or as a medical assistant. 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	4
2540:241	Information Management	3
2540:257	Secretarial Machines	3
2540:263	Business Communications	3
2540:274	Advanced Dictation and Transcription	4
	Option Requirements	24
	Total	64

Options

Executive Secretarial Science

2020:240	Human Relations	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:247	Survey of Basic Economics	3
2540:121	Office Problems	3
2540:253	Advanced Typewriting	3
2540:276	Executive Dictation and Transcription	4
	Elective	2

Legal Secretarial Science

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

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

Certificate Program in Secretarial Science

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

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.

		<i>Credits</i>
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
2420:170	Business Mathematics	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:221	Administrative Office Supervision	2
2420:280	Essentials of Law	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	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

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

*Associate degree courses may be applied toward a full-year business education degree.

	<i>Credits</i>		<i>Credits</i>
2020:247	3	2740:120	3
2420:101	3	2740:130	3
2420:104	3	2740:230	3
2420:170	3	2740:231	2
2420:202	3	2740:232	2
2420:280	3	2740:240	2
2540:119	3	2740:241	3
2540:263	3	2740:250	3
2560:110	3	2840:100	3
2560:115	3	3100:206	3
2560:116	2	5550:211	2
2560:117	2		3
2560:118	3		Total
2560:220	2		64
2560:221	3		
2560:225	3		
2560:226	2		
	Total		
	64		

Commercial Aviation

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
2420:170	Business Mathematics	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:280	Essentials of Law	3
2440:120	Introduction to Information Processing	2
2520:212	Principles of Salesmanship	4
2540:119	Business English	3
2540:150	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 and Safety	2
2560:221	Transportation Traffic Principles and Practices	3
	Electives	7
	Total	64

2740: Medical Assisting

This program prepares the student to assist the physician in physical examinations, minimal laboratory tests and recordkeeping. A graduate may also perform receptionist, clerical or other office managerial duties in physicians' offices or hospital clinics.

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
2420:211	Basic Accounting I	3
2540:119	Business English	3
2540:121	Office Problems	3
2540:150	Beginning Typewriting	3
2540:151	Intermediate Typewriting	3
2540:257	Secretarial Machines	3
2540:263	Business Communications	3

2760: Radiologic Technology

The University of Akron has cooperated with area hospitals by offering credit courses to provide instructional support for their Schools of Radiology. Although the University has been authorized to offer the associate degree in radiologic technology, this degree program is not fully operational on campus at this time.

A student who satisfactorily completes an accredited program in radiologic technology at a hospital school having an affiliation with the University may earn the associate degree by completing additional courses at the University. The student will then receive a block of credit for the hospital program that is applicable only to the associate degree in radiologic technology.

The degree requirements for these students are:

1100:	Physical Education	1
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:130	Mathematics for Health Technology	3
2020:240	Human Relations	3
2760:106	Anatomy for Radiologic Technology I or	
3100:106	Anatomy and Physiology	3
2760:107	Anatomy for Radiologic Technology II or	
3100:107	Anatomy and Physiology	3
2760:161	Basic Physical Science for Radiologic Technology	2
2760:165	Radiographic Principles	3
2760:261	Physical Science for Radiologic Technology	3
3750:100	General Psychology	3
	General Electives	2
	Total Credits at University	33
	Credits for Hospital Program	41
	Total Credits for Degree	74

Radiology schools at the following hospitals are affiliated with The University of Akron:

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

Applications for admission to these programs should be made directly to the hospital school.

2770: Surgical Assisting Technology

This program prepares the graduate 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
2020:121	English	4
2020:130	Mathematics for Health Technology	3
2020:240	Human Relations	3
2020:242	American Urban Society	3
2740:120	Medical Terminology	3
2770:100	Introduction to Surgical Assisting Technology	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	Introduction to Microbiology	3
3100:206	Anatomy and Physiology	3
3100:207	Anatomy and Physiology	3
	General Elective	3
	Technical Electives	8
	Total	64

2840: Chemical Technology

This program prepares the student for a technical position 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 the graduate.

Core Program

		<i>Credits</i>
1100:	Physical Education	1
2020:121	English	4
2020:131	Mathematical 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
	Option Requirements	13
	Total	66

Options**Industrial**

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

Rubber and Plastics

2020:132	Mathematical Analysis II	3
	Technical Electives	10
	(3940:401 Introduction to Elastomers and 3940:402 Introduction to Plastics recommended)	
	Total	13

Geology

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

Environmental

3100:130	Principles of Microbiology	3
3370:200	Environmental Geology	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

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
2020:121	English	4
2020:130	Mathematics for Health Technology	3
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2020:242	American Urban Society	3
2790:121	Introduction to Respiratory Therapy	3
2790:122	Patient Care: Respiratory Therapy	3
2790:123	Pulmonary Functions and 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	Anatomy and Physiology: Cardiopulmonary System	3
2790:223	Advanced Respiratory Therapy	3
2790:224	Pulmonary Rehabilitation and the Respiratory Therapy Department	2
2840:100	Basic Chemistry	3
3100:103	Introduction: Microbiology	3
3100:206	Anatomy and Physiology	3
3100:207	Anatomy and Physiology	3
	General Elective	2
	Total	70

2860: Electronic Technology

(an ABET accredited engineering technology curriculum)

This program prepares the individual for work as a technician 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.

		<i>Credits</i>
1100:	Physical Education	1
2020:121	English	4
2020:131	Mathematical Analysis I	4
2020:132	Mathematical Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Mathematical 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 and Controls	4
2860:251	Communications Circuits	3
2860:255	Electronic Design and Construction Manufacturing	2
2860:260	Electronics Project	2
2900:231	Control Principles	3
	General Electives	4
	Total	68

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	Mathematical Analysis I	4
2020:132	Mathematical Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Mathematical 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
2880:227	Measurements	2
2880:237	Digital Circuits I	3
2880:242	Machinery and Controls	4
2860:270	Survey of Electronics I	3
2860:271	Survey of Electronics II	3
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

2880: Manufacturing Technology

This program prepares the student for an entry-level position 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	Mathematical Analysis I	4
2020:132	Mathematical Analysis II	3
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2420:211	Basic Accounting I	3
2880:100	Introduction 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

2920: Mechanical Technology

(an ABET accredited engineering technology curriculum)

This program prepares the individual 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	Mathematical Analysis I	4
2020:132	Mathematical Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Mathematical 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

		<i>Credits</i>
2920:247	Shop Methods	3
2920:249	Applied Thermal 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

		<i>Credits</i>
2980:233	Construction Administration	2
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

2940: Drafting Technology

1100:	Physical Education	1
1100:106	Effective Oral Communications	3
2020:121	English	4
2020:131	Mathematical Analysis I	4
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2920:121	Technical Drawing I	3
2920:122	Technical Drawing II	3
2920:247	Shop Methods	3
2940:140	Survey of Engineering Technology	3
2940:160	Manufacturing and Construction Processes	2
2940:170	Surveying Drafting	3
2940:200	Advanced Drafting	3
2940:210	Computer Drafting	3
2940:230	Mechanical Systems Drafting	3
2940:240	Electrical, Electronic and Instrumentation Drafting	3
2940:250	Architectural Drafting	3
2940:260	Drafting Technology Project	3
2980:250	Structural Drawing	2
3350:340	Cartography	3

Surveying

1100:	Physical Education	1
2020:121	English	4
2020:131	Mathematical Analysis I	4
2020:132	Mathematical Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Mathematical Analysis III	3
2840:15-	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
2980:222	Construction Surveying	3
2980:224	Land Surveying	3
2980:225	Advanced Surveying	4
2980:226	Subdivision Design	2
2980:232	Construction	3
2980:233	Construction Administration	2
2980:237	Materials Testing I	2
2980:241	Strength of Materials	3
3350:340	Cartography	3
	General Electives	9
	Total	68

General Electives

2020:241	Man and Technology	2
2020:242	American Urban Society	3
2020:247	Survey of Basic Economics	3
2020:251	Work Relationships	2
2020:254	The Black American	2

2980: Surveying and Construction Technology

(an ABET 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

1100:	Physical Education	1
2020:121	English	4
2020:131	Mathematical Analysis I	4
2020:132	Mathematical Analysis II	3
2020:222	Technical Report Writing	3
2020:233	Mathematical Analysis III	3
2840:151	Basic Physics: Mechanics	3
2840:15-	Basic Physics (Elective)	2
2920:121	Technical Drawing I	3
2980:122	Basic Surveying	3
2980:123	Surveying Field Practice*	2
2980:125	Statics	3
2980:222	Construction Surveying	3
2980:231	Building Construction	2
2980:232	Construction	3

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 Akron, provides a program of studies basic to a diploma in nursing.

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

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

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

The following courses are offered:

3100:106	Anatomy and Physiology	3
3100:107	Anatomy and Physiology	3
3100:130	Microbiology	3
3150:124	Chemistry	3
3750:100	Introduction to Psychology	3
3750:130	Developmental Psychology	4
3850:100	Introduction to Sociology	4
7400:133	Nutrition Fundamentals	3

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*.

*Faculty may select substitute course for student.

*Faculty may select substitute course for student.

Wayne General and Technical College

Tyrone M. Turning, Ed.D., *Dean*

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 the student 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.

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.

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 student who chooses 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 the individual higher levels of skill 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.

The student 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. A campus student of The University of Akron also may take courses at Wayne College concurrently with 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 the Wayne General and Technical College bulletin, *Wayne College, 1979-80*.

University College

Marion A. Ruebel, Ph.D., *Dean*

Dudley C. Johnson, Jr., M.S.Ed., *Associate Dean of Academic Advising Services*

Martin McKoski, Ph.D., *Director of Developmental Programs*

Thomas Vukovich, M.Ed., *Assistant to the Dean*

Objectives

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

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

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

1100: General Studies

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

The General Studies program provides a wide foundation of general knowledge to serve as the structural basis for the development of 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.

A student, well-grounded in the General Studies, is

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

A student who completes 30 semester credits and achieves a grade-point average of 2.0 (C) or better is eligible for transfer to a degree-granting college. A student should always check with the adviser to determine specific requirements for transfer to the programs of the student's choice.

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

Program of Instruction

The required General Studies courses are:

		<i>Credits</i>
1100:105	Introduction to Public Speaking 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 six credit requirement in the social science area may also be met through one of the following options:

A. Completion of a minimum of two courses totalling at least six credits selected from two of the following four sets of course offerings:

- 3250:244 *Introduction to Economic Analysis*, three credits. (A student majoring in engineering is advised to take this as one of the student's selections.)

or

- 3250:201 *Principles of Economics*, three credits. (A student majoring in business, economics, etc., is advised to take this as one of the student's selections. A student doing so should plan to take 3250:202, three credits.)

or

- 3250:100 *Introduction to Economics*, three credits.

- 3400:201 *United States History to Civil War*, four credits.

or

- 3400:202 *United States History since Civil War*, four credits.

- 3700:100 *Government and Politics in United States*, three credits.

- 3850:100 *Introduction to Sociology*, four credits.

or

- 3870:150 *Cultural Anthropology*, four credits.

B. For a Community and Technical College major only, completion of the following three courses (total of nine credits).

- 2020:240 *Human Relations*, three credits.

- 2020:242 *American Urban Society*, three credits.

- 2020:247 *Survey of Basic Economics*, three credits.

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

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

Academic Advising Services

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 a student through academic and personal counseling on an appointment or walk-in basis.

Academic counseling helps the student adjust to the requirements of the curriculum and utilize course offerings that will better prepare the student 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 the type of counseling which aids the student when problems of a personal nature seem to be obstructing academic careers or personal lives.

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 a student can develop the skills necessary for acceptable performance at the college level.

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

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



Reserve Officers' Training Corps

1500: Aerospace Studies

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

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

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

Programs

The Four-Year Program

A full-time day student of The University of Akron may pursue the four-year program. Enrollment procedures for the first two years of Air Force ROTC, known as the general military course (GMC), are the same as for any other university courses. The GMC consists of one hour of classroom work and one hour of *Aerospace Studies Laboratory* (Leadership Laboratory) each week and provides 1.5 semester credits.

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 United States Armed Forces.

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

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. A two-year program applicant must meet the qualifications described below. A student

in the POC receives a non-taxable monthly subsistence allowance of \$100. Applications for the two-year program should be made as early in the academic year as possible so that all 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 Laboratory* (Leadership Laboratory) each week, and provides 3 semester credits.

Field Training

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

The four-year program student spends four weeks at an encampment, while field training for the two-year program applicant lasts six weeks. The additional two weeks for the two-year program applicant are used to cover the academic work taken by the cadet 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, the cadet and applicant 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) the student can get an important start on an Air Force flying career.

When enrolled in FIP, the student 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.

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 Officer Course.

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 three years on active duty after commissioning; or, if accepted for a flying training program, agree to serve for five years after navigator training or six years after pilot training.

Scholarships

Air Force ROTC college scholarships are available to a qualified applicant in both the two- and four-year AFROTC programs covering periods of four, three and two years. 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 an applicant in pilot, navigator and scientific/engineering career fields. An applicant will be evaluated on the basis of:

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

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

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

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

Financial Allowances

A cadet enrolled in the Professional Officer Course will receive a non-taxable subsistence allowance of \$100 per month.

Uniforms and Textbooks

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

1600: Military Science

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

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

Programs

The Four-Year Program

A full-time student 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 a student to complete all semesters of the basic course. The professor of military science may award advance standing for a student who has participated in high school ROTC, military schools, the Reserve or National Guard or active military service.

A student who completes the basic military course may apply for enrollment in the advanced course which is described below.

The Two-Year Program

A student who completes the basic course or attends 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. A student in this program receives free books and uniforms and is paid \$100 monthly. The student is under obligation to complete the course and accept a commission as a Second Lieutenant in the Army. Upon graduation, the student 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 better 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.

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.

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:

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

Reserve Components Option

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

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 scholar-

ship. An Army scholarship student who qualifies as a distinguished military graduate may apply for a regular Army commission. All scholarship students must agree to spend four years on active duty.

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.

Financial Allowances

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



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*

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

When Buchtel College became the Municipal University of Akron the original name was retained in the Col-

lege 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:

Humanities Division

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

Natural Sciences Division

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

Social Sciences Division

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

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

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

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

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* and the remainder of the lower-division General Studies program.

The requirements for the bachelor's degree must include:

- Completion of 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).
- Demonstration of 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 1100:111-112 *English Composition*.
- Completion of requirements in a major field of study (see Programs of Instruction) and the recommendation of the student's major department.
- Attaining a minimum grade-point average of 2.0 in all work in the major field.
- Fulfilling 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 of all of these credits may be taken in specifically required courses depending upon the ma-

ior 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.

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:

		Credits	Clinical/ Field
5100:150	Introduction to Professional Education	3	6c/10f
5100:250	Human Development and Learning	3	12c
5100:350	Educational Measurement and Evaluation	2	8c
5100:450	Problems in Education	2	12f
5300:265	Introduction to Secondary Education	1	10c
5300:275	Exploratory Experience	1	6c/30f
5300:310	Principles of Teaching in the Secondary School	3	30c
5300:325	Content Reading in Secondary School	3	30c
5300:345	Human Relations in Secondary Education	1	3c/7f

		Credits	Clinical/ Field
5300:355	Managing Classroom Behavior at the Secondary Level	1	3c/7f
5300:375	Exploratory Experience	1	6c/30f
5300:411	Instructional Techniques Secondary Education	4	30c/20f
5300:445	Minicomputer Applications in Secondary Classroom	1	10c
	or		
5300:455	Career Options in Secondary Education	1	8c/2f
5300:403	Student Teaching Seminar	1	15c/10f
5300:495	Student Teaching	8	322c

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

		Credits
3100:111-112	Principles of Biology	6
3100:211	General Genetics	3
3100:218	Ecology-Evolution	4
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 and II	6
	or	
3150:263-4-5-6	Organic Chemistry	10
3450:147-148	Elementary Functions I and II	4
	or	
3450:111-2-3	Modern University Mathematics	3
3450:121-2-3	Mathematics	3
3470:251-2-3	Statistics	3

- 300/400-level courses: Students are required to complete one course in anatomy/physiology and two courses in organismal biology which has been approved by the department.
- 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 Thalophytes	4
3100:445	Plant Morphology	4

*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*.

3100:447	Plant Physiology	3
3100:449	Plant Biosystematics	2
Electives:		
3100:341-342	Flora and Taxonomy I and II	6
3100:441	Plant Development	4
3100:442	Plant Anatomy	3

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

Ecology

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 and 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 Thalophytes	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 I and	3
3100:342	Flora and Taxonomy II	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 Thalophytes	4
3100:355	Parasitology	4

Advisers: E. Flaumenhaft, N. Ledinko, D. Nunn

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 and II	8
Electives:		
3100:365	Histology I	3
3100:480	Radiation Biology	3
3450:221-2-3	Analytical Geometry-Calculus I, II and III	12
3650:267-268	Life Sciences Physics Computations I and II	2
3150:423-424	Analytical Chemistry	6
3150:425-426	Analytical Chemistry Laboratory	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

		Credits
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
3100:342	Flora and Taxonomy II	3
3100:444	Biology of Thallophytes	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 of this *Bulletin*.

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 Thallophytes	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
3100:206-207	Human Anatomy and Physiology	6
3100:383	Laboratory Techniques and Instrumentation	2
3100:437	Immunology	4
3150:335-336	Analytical Chemistry for Laboratory Technicians	8

The student will have the option of:

3100:218	Ecology-Evolution	4
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Also optional:

3100:212	Genetics Laboratory	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, Elyria Memorial Hospital, Mt. Sinai Hospital in Cleveland, Northern Columbiana County Community Hospital, 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. See advisers listed below for detailed program and hospital 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:

		Credits
3400:477	Western Science and Technology to 1800	4
3400:478	Western Science and Technology since 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
3100:218	Ecology-Evolution	4
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

3130: Cytotechnology

Bachelor of Science

A foreign language is not required.

The first three years of instruction are given in the University. The senior year consists of a maximum of 32 credits in the 3130 series.

These courses are available only to students selected for the clinical experience portion of the BSCT program in a CAHEA approved school. Normal tuition will be charged. The student must apply with a separate admission to an approved school. The University will assist in the process but cannot guarantee admission.

The University will grant the B.S. in Cytotechnology after receipt of satisfactory completion of the hospital instructional program.

- General Studies as required.

• The following credits are required:

		<i>Credits</i>
3100:111-12	Principles of Biology	8
3100:211	General Genetics	3
3100:212	Genetics Laboratory (Optional)	1
3100:218	Evolution-Ecology	4
3100:311	Cell Biology	3
3100:331-2	Microbiology	8
3100:361-2	Human Anatomy and Physiology	6
3100:365-6	Histology I and II	6
3100:383-4	Techniques and Instrumentation Laboratory	3
3100:437	Immunology	4
3150:132-3	Principles of Chemistry I and II	7
3150:201-2	Organic Chemistry and Biochemistry	8
3450:111-13	Modern University Mathematics	3
3450:121-23	Modern University Mathematics	3
3450:251-53	Statistics Modules	3

The fourth year will be in a hospital based School of Cytotechnology. This is the pattern followed by the medical technology programs.

The student will register for the courses listed below. All will be offered off campus.

3130:401	Introduction to Cytology	1
3130:410	Cytopreparation	2
3130:411	Gynecologic Cytopathology	5
3130:412	Genito-Urinary Cytopathology	3
3130:413	Respiratory Cytopathology	3
3130:414	Body Fluids Cytopathology	4
3130:415	Oral and Gastro-Intestinal Cytopathology	3
3130:416	Breast Secretion and Needle Aspiration Biopsy Smear	2
3130:417	Cytogenetics	1
3130:418	Cytology Seminars and Research	3
3130:420	Cytology Practicum	5

3150: Chemistry

Bachelor of Science

- The General Studies and the second year of German. Another language may be substituted with the approval of the chemistry faculty.
- 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
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

- Mathematics:

3450:235	Differential Equations	3
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- Physics:

3650:291-292	Elementary Classical Physics I and II	8
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Bachelor of Arts

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

- Chemistry:

		<i>Credits</i>
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	3
	or	
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 and II or	8
3650:261-2	Physics for the Life Sciences I and II or	8
3650:231-2	Concepts of Physics I and II	8

- Mathematics:

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

- Recommended

4450:206	Fortran Programming for Scientists and Engineers	2
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3200: Classics

3200: Classics; 3210: Greek; 3220: Latin

Bachelor of Arts

- The General Studies.

- At least 24 credits in the department including the following:

	<i>Credits</i>
3200:313-314 Archaeology of Greece and Rome	6
3200:361-362 Literature of Greece and Rome	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 and II	6
or	
3470:251 Descriptive Statistics and Problems	1
3470:252 Distributions	1
3470:253 Hypothesis Testing	1
3470:255 Regression and Correlation	1
3470:256 Experimental Design	1
3470:257 Time Series and Index Numbers	1
or	
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:

3250: 201-202 Principles of Economics	6
3250:330 Labor Problems	3
3250:410 Microeconomic Theory	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
3250:435 Human Resource Policy	5
Economics Electives	12

- Statistics (one of the following):

	<i>Credits</i>
6500:321-322 Quantitative Business Analysis I and II	6
or	
3470:251 Descriptive Statistics and Problems	1
3470:252 Distributions	1
3470:253 Hypothesis Testing	1
3470:255 Regression and Correlation	1
3470:256 Experimental Design	1
3470:257 Time Series and Index Numbers	1
or	
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:

3300:280 Poetry Appreciation	3
3300:301 English Literature I	4
3300:302 English Literature II	4
3300:316 Shakespeare: The Mature Plays	3
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
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.

*Of the 18 English elective credits, four courses totaling at least 10 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.

*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.

** 6200:355 may be substituted.

†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*.

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:

		<i>Credits</i>
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 and II	7
3150:134	Qualitative Analysis	2
3450:221	Analytic Geometry-Calculus I	4
3650:231-232	Concepts of Physics I and II	8
	or	
3650:291-292	Elementary Classical Physics I and 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 geology 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 (as approved by geophysics adviser)	6

- Non-geology required courses:

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

Bachelor of Arts

- The General Studies and the second year of a foreign language.
- At least 44 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
3370:230	Mineralogy: Minerals	3
3370:233	Petrology	2
3370:360	Introductory Invertebrate Paleontology	4

		<i>Credits</i>
3370:496	Geology Field Camp	6
	Elective geology courses (minimum eight credits at the 300/400 level)	17

- Non-geology courses required for majors:

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

- 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

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 *United States Survey* (eight credits); 3400:207-208 *Modern Europe* (eight 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 and III	12
3450:235	Differential Equations	3
3450:311	Abstract Algebra	3
3450:312	Linear Algebra	3
3450:421-2	Advanced Calculus I and II	6
3450:445	Introduction to Topology	3
	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 sciences beyond the Gen-

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

**The courses 3450:101-139 *Modern University Mathematics*, 3450:147-8 *Elementary Functions*, 3450:149 *Pre-Calculus Mathematics*, 3450:301 *History of Mathematics* do not meet major requirements.

eral 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:*

	Credits
3450:221-2-3 Analytic Geometry-Calculus I, II and III	12
3450:235 Differential Equations	3
3450:312 Linear Algebra	3
3450:421-2 Advanced Calculus I and II	6
3450:427 Numerical Analysis I	3
3450:436 Mathematical Models	3
3450:451 Theoretical Statistics I	3
Mathematics Electives	7

(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 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	2
or	
4450:206 Fortran Programming for Scientists and Engineers	2
3460:210 Introduction to Computer Concepts	3
4450:306 Assembler Programming	3

- One language from the following:

3460:202 Introduction to Cobol Programming**	2
3460:203 Introduction to APL Programming	2
3460:204 Introduction to PL/1 Programming	2
3460:205 Introduction to Pascal Programming	2

- Other required courses:

3460:307 Applied Systems Programming	3
or	
4450:407 Systems Programming	3
3460:416 Introduction to Data Structures	3
3460:418 Introduction to Discrete Structures	3
3460:420 Structured Programming	3
3460:425 Introduction 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 Introduction to Basic Programming	1
3450:327 Introduction to Numerical Methods	3
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
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
6600:300 Marketing Principles	3

Computer Science Certificate Program

A computer science certificate program is available for qualified students. See Section 4 of this *Bulletin* for complete details.

3470: Statistics

Bachelor of Arts

Bachelor of Science

- The General Studies and the second year of French, German or Russian.

*The courses 3450:101-138 *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.

** 6200:355 may be substituted.

†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*.

- At least 40 credits in the department including:*

		Credits
3450:221-2-3	Analytic Geometry-Calculus I, II and 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 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 sciences beyond the General Studies. The 18 credits are to be from more than one department.

- Electives — 17 credits.

Cooperative Education Program — Mathematical Sciences

Mechanics of Operation

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

Year	Fall	Spring	Summer
1	School	School	Vacation/School
2	School	School	Vacation/School
3	School	Work	School
4	Work	School	Work
5	School	School	

Admission to the Program

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

- Satisfactory completion of their freshman and sophomore years (60 credits) with a grade-point average of at least 2.00 out of a possible 4.00 in the program of mathematical sciences curriculum and be on schedule in their curriculum.
- Received acceptance by a cooperative education coordinator or director following a series of interviews.

Transfer students must meet the following requirements:

- Complete 16 credits of academic work at The University of Akron with a grade-point average of at least 2.00 out of a possible 4.00. Be on schedule in the mathematical sciences curriculum.

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

Registration

While no academic credits are assigned, each student must register for cooperative work periods in the same manner that a student registers for any other University course.

The courses are as follows:

3480:300	Cooperative Education Work Period
3480:301	Cooperative Education Work Period
3480:302	Cooperative Education Work Period
3480:303	Cooperative Education Work Period

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

- Satisfactory work performance as evaluated by the employer.
- Submission of a written work report and its approval by the department head and the cooperative education staff.
- Submission of a cooperative work period summary form.

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

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, six credits of electives in the major language and six credits in composition and conversation.

*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.

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:

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

		<i>Credits</i>
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
3650:421	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:

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

Credits

(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 cooperative plan requires a five-year period for the completion of the bachelor's degree program in physics, with the spring term of the third year plus the fall and summer terms of the fourth year typically spent off campus with a participating industrial employer.

Arrangements for student entry into the cooperative 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 cooperative plan, contact the Department of Physics.

3700: Political Science**Bachelor of Arts**

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

- At least 30 credits in the department including:

		Credits
3700:100	Government and Politics in the United States	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
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 United States	3
3700:210	State and Local Government and Politics	3
3700:341	The American Congress	4
3700:360	The Judicial Process	3
3700:370	The American Bureaucracy	4
3700:380	Metropolitan Politics	4
3700:391	Internship in Government and Politics	2-3

		<i>Credits</i>
3700:461	The Supreme Court and Constitutional 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:

3750:100	Introduction to Psychology	3
3750:110	Quantitative Methods in Psychology	3
3750:120	Introduction to Experimental Psychology	4
	Psychology Electives	20
- Electives — 45 credits.

The student should consult with a faculty adviser 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 and 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.

The student should consult with a 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:

		<i>Credits</i>
3850:100	Introduction to Sociology	4
3850:301-2	Methods of Social Research I and 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 disciplines of History and the creative and dramatic arts (art, music, theatre arts) are included in the divisional major. The divisional major must include the following:

- The General Studies and the second year of a foreign language.
- A minimum of 54 credits, at least 24 of which must be in courses at the 300/400 level. The 54 credits must include 18 credits in each of any three of the following six fields: classics, English, history, modern languages, philosophy and the creative and dramatic arts.
- The first two years of any language in either classics or modern languages will not be included in the 18-credit requirement for those disciplines.

By field, the 18-credit requirements must include the following:

- Classics:

3200:161-162	Comparative Literature	6
3200:189	Classical Mythology	3
- English

	300/400 level, including at least two courses at the 400 level (minimum)	9
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- History:

	300/400 level (minimum)	10
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- Modern Languages:

	Composition and Conversation	6
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	Literature	Credits
	Any combination of linguistics and culture-civilization	6
• Philosophy:		
3600:101	Introduction to Philosophy	3
3600:120	Introduction to Ethics	3
3600:170	Introduction to Logic	3
• Creative and Dramatic Arts:		
	Non-performance courses in art (7100), music (7500) and theatre arts (7800)	18

Courses for the Humanities Division Major must be selected with the approval of the division adviser. For further information, please contact the Office of the Dean, Buchtel College of Arts and Sciences.

Natural Sciences 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 eight credits in each of two other of these disciplines.
- A foreign language is strongly recommended.

The courses for the Natural Sciences Division major must be selected from those courses 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.

Social Sciences Division Major

The Social Sciences Division consists of the Departments of Economics, Geography, History, Political Science, Psychology, Sociology and Urban Studies (graduate program only). The divisional major must include the following:

- The General Studies and the second year of a foreign language.
- A minimum of 54 credits, at least 24 of which must be in courses at the 300/400 level. The 54 credits must include a minimum of 15 credits in each of any three of the following six fields: economics, geography, history, political science, psychology and sociology-anthropology.

By field, the 15-credit requirement is:

	Credits
• Economics:	
Any except 3250:100 Introduction to Economics* (must include 3250:201-202 Principles of Economics)	15
• Geography:	
Any credits	15
• History:	
Minimum of seven credits at the 300/400 level	15
• Political Science:	
At least seven credits at the 300/400 level	
3700:100 Government and Politics in the United States	
or	
3700:201 Introduction to Political Science	15
• Each student shall take at least one course in two of the four areas (American government and politics, comparative politics, international politics and political theory) shown below:	
American Government and Politics:	
3700:210 State and Local Government and Politics	3
3700:340 American Political Parties and Interest Groups	3
3700:341 The American Congress	3
3700:342 Minority Group Politics	3
3700:350 The American Presidency	3
3700:360 The Judicial Process	3
3700:370 The American Bureaucracy	4
3700:380 Metropolitan Politics	4
3700:381 State Politics	3
3700:402 Politics and the Media	3
3700:440 Public Opinion and Political Behavior	4
3700:441 The Policy Process	3
3700:461 The Supreme Court and Constitutional Law	4
3700:480 Urban Policy Problems	3
Comparative Politics:	
3700:200 Comparative Politics	4
3700:320 Britain and the Commonwealth	3
3700:321 Western European Politics	3
3700:322 Soviet and East European Politics	3
3700:323 Politics of China and Japan	3
3700:326 Politics of Developing Nations	3
3700:327 African Politics	3
3700:420 Issues and Approaches in Comparative Politics	3
3700:425 Latin American Politics	3
International Politics:	
3700:220 American Foreign Policy	3
3700:310 International Politics and Institutions	4
3700:415 Comparative Foreign Policy	3
Political Theory:	
3700:302 American Political Ideas	3
3700:303 Introduction to Political Thought	3
3700:304 Modern Political Thought	3
• Psychology:	
Any credits	15
• Sociology-Anthropology:	
Any credits	15

Courses for the Social Sciences Division Major must be selected with the approval of the divisional adviser.

*Course will not apply toward 54 credits in the major.

For further information, please contact the Office of the Dean, Buchtel College of Arts and Sciences.

Credits

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 Akron, 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:

3100:111-2	Principles of Biology	Credits
3100:381	Human Genetics	8
		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 Laboratory	2
3150:266	Organic Chemistry Laboratory (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 Laboratory	2
3750:100	Introduction to Psychology	3
3750:110	Quantitative Methods in Psychology	2

• Additional courses as follows:

1880:201	Medical Seminar and Practicum I	3
1880:301	Medical Seminar and Practicum II	1-3
3100:190-1	Health Care Delivery Systems	2
3100:290-1	Health Care Delivery Systems	2
3789:290	Special Topics in Allied Health	1

• Humanities:

1880:310	Seminar on 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 a 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 "Northeastern Ohio Universities College of Medicine," Section 4 of this *Bulletin*.



College of Engineering

Joseph A. Edminister, M.S.E., J.D., *Acting Dean*
 Donald R. Burrowbridge, M.S., *Director*
Cooperative Program

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 the student the ability to apply engineering principles to the economic and technological progress of society.
- To promote in the student a high sense of ethics and professional responsibility.
- To foster in the student 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.

A graduate is 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.

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 class-

room and for their application in industrial practice. The student has the opportunity to find the type of work and industrial organization in which the student can best apply individual ability. The student gains an appreciation of the problems of labor and management by first-hand experience. The student develops mature judgment by coping with the everyday problems of the industrial world. The employer of a cooperative student has the ability to train and select a student whose abilities and aptitudes can be adapted to the needs of technical staff requirements.

While a student is at work, all rules and regulations prescribed by the employer must be obeyed. In addition, the student is subject to all current labor laws and conditions. The student is considered a full-time student by the University while in industrial assignments.

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

Requirements for Admission

In addition to the general requirements for admission to the University, a student 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.

The beginning student must register in the University 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 listed in the appropriate schedule of required courses.
- Recommendation of the student's department.
- Any junior or senior engineering student with a grade-point average of 2.50 overall and 2.75 or better in engineering may substitute not more than two approved upper division courses in mathematics, science or engineering for an equal number of certain required engineering courses.

Programs of Instruction

4200: Chemical Engineering

The goal of chemical engineering education is the development of the student's intellectual capacity and ability to apply the principles of transport phenomena, equilibria and kinetics, involving chemical and physical transformations, to the creative resolution of technological problems for the benefit of mankind and his surroundings.

The chemical engineer, like all other engineers, is trained in mechanics, materials and their properties, economics, systems and their controls, etc. The chemical engineer differs from all other engineers because the chemical engineer is responsible for materials separations and the conversion of matter — separations such as air into components of oxygen, nitrogen, argon and conversions such as natural gas into plastics and coal into liquid fuel.

The chemical engineer finds satisfying and rewarding careers mainly in the chemical process industries, usually becoming involved with inorganic and organic chemicals, rubber and plastics, detergents, petroleum products, metals, pharmaceuticals, dyestuffs and food products.

The chemical engineer will usually be employed in one or more of the following activities: research and development, plant design and construction, process control, plant operations, sales and management. In addition to the processing industries, the chemical engineer is increasingly in demand in such areas of current interest as water and air pollution, biological engineering and energy engineering.

		Credits
General Studies		28
Natural Science		
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
3450:235	Differential Equations	3
3450:—	Advanced Mathematics Elective	2
		34
Advanced Chemistry Courses		
3150:263,4	Organic Chemistry I, II	6
3150:265	Organic Chemistry Lab	2
3150:313,4	Physical Chemistry I, II	6
		14
Engineering Core Courses		
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
Chemical Engineering Courses		
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
Electives		
	Advanced Chemistry or Polymer Science	3
	Chemical Engineering Design	3
	Free Elective, adviser approved	3
		9
Total		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.

The civil engineering graduate works for consultants, manufacturers, construction companies, utilities and for government bodies of all levels. Many civil engineers own their own businesses.

Credits are listed below by design (D) and construction (C) options.

	(D) Credits	(C) Credits
General Studies	28	28
Natural Science		
3150:132,3 Principles of Chemistry I, II	7	7
3370:101 Introductory 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 or 3450:— Mathematics		
3470:— Statistics Elective	3	3
3650:291,2 Elementary Classical Physics I, II	8	8
	<u>40</u>	<u>40</u>
Engineering Core Courses		
4200:305 Materials Science	2	2
4300:130 Introduction to Engineering	1	1
4300:201 Statics	3	3
4300:202 Introduction to Mechanics of Solids	3	3
4400:320 Basic Electrical Engineering	4	4
4450:206 Fortran (Science and Engineering)	2	2
4600:125 Engineering Graphics	2	2
4600:203 Dynamics	3	3
4600:305 Thermal Science	2	—
4600:310 Fluid Mechanics	3	3
	<u>25</u>	<u>23</u>
Civil Engineering Courses		
4300:230 Surveying	4	4
4300:306 Theory of Structures	3	3
4300:311 Geotechnical Engineering	5	5
4300:323 Water Supply and Wastewater Disposal	3	—
4300:341 Hydraulics Engineering	2	2
4300:361 Transportation Engineering	3	—
4300:380 Engineering Materials Laboratory	1	1
4300:401 Steel Design	2	—
4300:403 Reinforced Concrete Design	3	—
4300:424 Water/Wastewater Laboratory	1	—
4300:445 Hydrology	3	—
4300:448 Hydraulics Laboratory	1	1
4300:471 Construction Administration	2	2
4300:472 Construction Engineering	—	3
4300:481 Civil Engineering Systems	2	2
	<u>34</u>	<u>22</u>
Business Courses		
6200:201,2 Accounting I, II	—	8
6200:321 Business Law I	—	3
6400:371 Business Finance	—	3
		<u>14</u>
Construction Technology Courses		
2980:231 Building Construction	—	2
2980:241 Cost Analysis and Estimating	—	3
Technical Electives	9	4
Total	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. A student wishing to specialize in computer engineering will find a set of appropriate electives available.

The wide use of electrical means for measurement, control and computation has resulted in the need for electrical engineers in all types of industries. A student wishing employment upon graduation will find many varied opportunities.

A student wishing to continue education in graduate school, law school or medical school will find specialized programs of preparation are available within the framework of the Department of Electrical Engineering.

	Credits
General Studies	28
Natural Science	
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
	<u>35</u>
Engineering Core Courses	
4200:305 Materials Science	2
4300:201 Statics	3
4300:202 Introduction to Mechanics of Solids or 4600:203 Dynamics	3
4400:101 Engineering Design	1
4450:206 Fortran (Science and Engineering)	2
4600:125 Engineering Graphics	2
4600:305 Thermal Science	2
	<u>15</u>
Electrical Engineering Courses	
4400:231,2 Circuits I, II	6
4400:333 Circuits III	3
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
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
	<u>41</u>
Technical Electives	15
Free Electives	2
Total	136

4600: Mechanical Engineering

The mechanical engineer designs and analyzes physical systems. A high level of professional competence in this field can only be achieved through an extensive study of mathematics, mechanics, fluid flow and the thermal sciences. Among the many subtopics included in these 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.

The mechanical engineer is employed in a variety of industries in different capacities. Specific positions include management, design, analysis, safety, production and plant engineering. The types of companies include automotive, petroleum, energy generation, aerospace, tire, consulting, publishing, insurance and manufacturers in general.

The curriculum is designed to emphasize fundamentals which will place the graduate in a strong position to either pursue further education through formal or informal channels or to begin a career in government or industry.

	<i>Credits</i>
General Studies	28
Natural Science	
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
	<u>34</u>
Engineering Core Courses	
4300:201 Statics	3
4300:202 Introduction to Mechanics of Solids	3
4300:380 Engineering Materials Laboratory	1
4400:320 Basic Electrical Engineering	4
4600:160 Engineering Design-Mechanical Engineering	1
4600:125 Engineering Graphics	2
	<u>14</u>
Mechanical Engineering Courses	
4600:203 Dynamics	3
4600:300,1 Thermodynamics I, II	7
4600:310 Fluid Mechanics	3
4600:315 Heat Transfer	3
4600:321 Kinematics of Machines	3
4600:336 Analysis of Mechanical Components	3
4600:337 Design of Mechanical Components	3
4600:360 Engineering Analysis	3
4600:380 Mechanical Metallurgy	2
4600:400 Thermal System Components	3
4600:401 Design of Energy Systems	2
4600:431 Vibrations	3
4600:440 Control Systems	3
4600:460 Concepts of Design	3
4600:461 Design of Mechanical Systems	2
4600:493 Measurements Laboratory	2
4600:494 Mechanical Engineering Laboratory	1
	<u>49</u>
Technical Electives (includes 3 credits design)	8
Free Electives, adviser approval	3
Total	<u>136</u>

4980: Construction Technology

The curriculum in construction technology is designed to produce a graduate with a strong fundamental knowledge of technology, combined with management ability and a familiarity with business, economics and personnel management. The program is designed to provide graduates for employment at all levels of the construction industry and allied support industries.

The program is a "two-plus-three" arrangement with the Community and Technical College and includes one full year of on-the-job experience. All students must meet the requirements of both the associate and baccalaureate programs. Transferees from other two-year programs where the course content compares favorably may be admitted to the program.

	<i>Credits</i>
General Studies*	21
Required Courses, Technical	
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
	<u>16</u>
Required Courses, Business	
6200:201,2 Accounting I, II	8
6400:371 Business Finance	3
6500:301 Management Principles and Concepts	3
	<u>14</u>
Group 1, Electives Business and Management	
3250:330 Labor Problems	3
3250:432 Economics and Practice of Collective Bargaining	3
6200:301 Cost Accounting	3
6400:318 Risk Management and Insurance	2
6400:321 Business Law I	3
	<u>6</u>
Group 2, Statistics	
3470:251 Descriptive Statistics & Probability	1
3470:252 Distributions	1
3470:253 Hypothesis Testing Parameters	1
6500:321 Quantitative Business Analysis I	3
	<u>3</u>
Group 3, Economics	
2920:310 Economics of Technology	3
3250:202 Principles of Economics	3
4400:421 Engineering Economy	2
	<u>2</u>
Technical Electives*	
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
4300:311 Geotechnical Engineering	5

*When the eight semester 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.

		<i>Credits</i>
4300:414	Design of Earth Structures	3
4300:418	Soil and Rock Exploration	3
4300:450	Urban Planning	2
4300:474	Underground Construction	2
4300:482	Special Projects	1
4980:351	Construction Quality Control	2
5550:211	First Aid	2
	Total	68

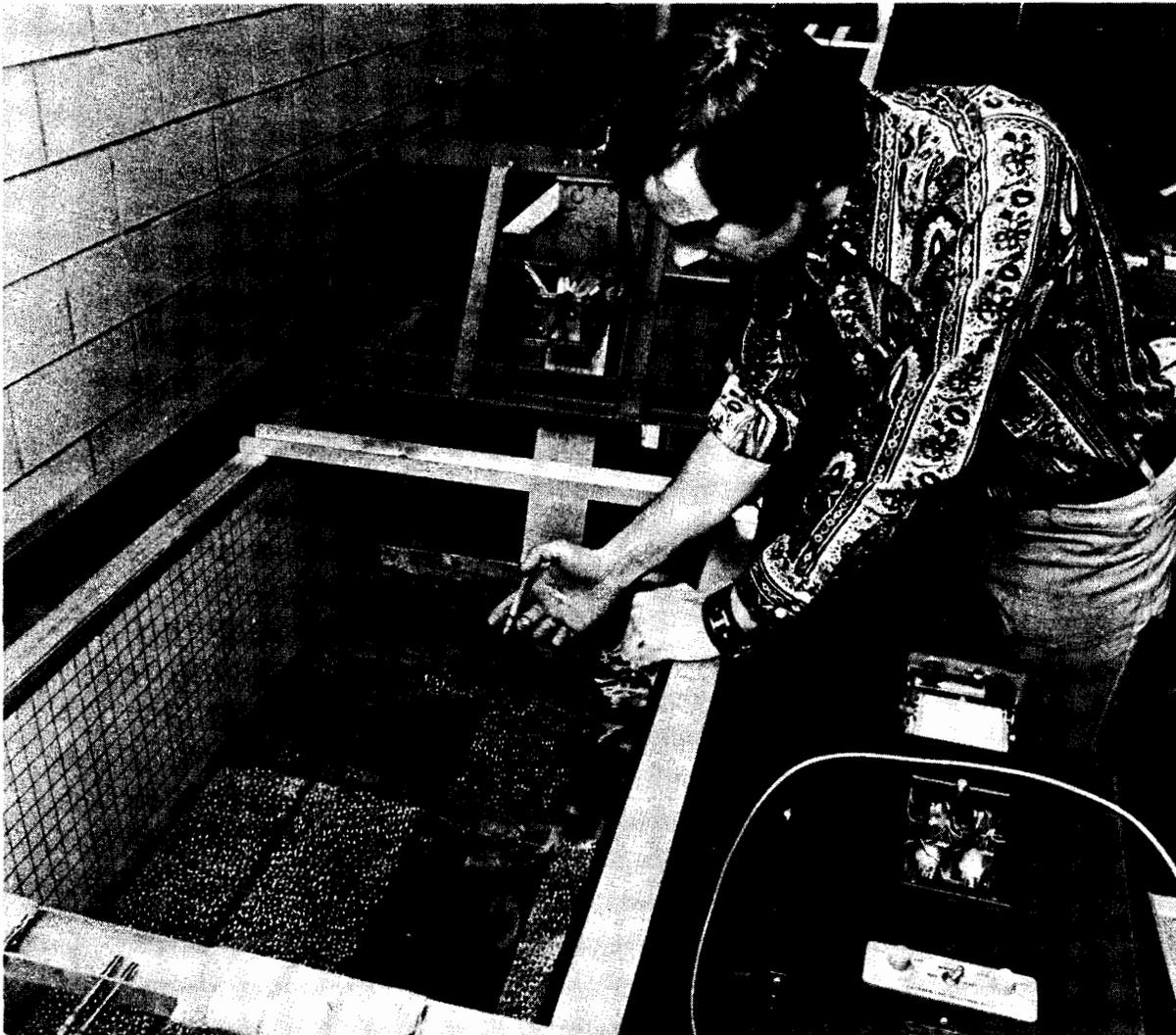
student wishing to specialize in structural design, foundations and soil mechanics. For another student interested in patent law, the program may be broad, touching on chemical, mechanical and electrical engineering subjects. The individual's program is designed to meet each student's announced goals.

Entrance to this program is restricted. A student requests admission by letter to the dean of the College of Engineering, outlining in some detail the particular objective and how the B.S.E. program may enable the student to prepare for career goals. The mathematics, physics and chemistry requirements are identical to those of the four departments of the College of Engineering.

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, a student can pursue courses in business administration, industrial management, environmental science, pre-medicine or any other field along with engineering studies. The program of study may be very narrow as in the case of a

	<i>Credits</i>
General Studies and Science Core	60
Program Options - Engineering	40
Program Options	26
Free Electives, adviser approval	10
Total	136



College of Education

H. Kenneth Barker, Ph.D., *Dean*
 Don Birdsell, Ph.D., *Assistant Dean*
 Walter Yoder, Ed.D., *Assistant to the Dean*

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 the student of education and by helping the student attain the following:

- Special experiences, knowledge and skills particularly useful for teaching in urban and inner-city educational institutions, in keeping with the urban mission of the University.
- A knowledge of a major field and related fields of inquiry and the ability to use this knowledge in explaining the realities of life today.
- A knowledge of instructional materials and new technology and skill in recognizing and utilizing instructional tools most suitable for specific purposes.
- A knowledge of the social issues relevant to education and living in a pluralistic society and the competence to translate implications of changes in society into 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 as well as with adults, and the ability to develop relationships in a wide variety of professional and social roles in educational institutions 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. The 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 school personnel.

The College of Education maintains a close relationship with area schools. Educators in 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.

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 2.00 grade-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 University College, by the staff in Academic Advising Services, and if necessary, by measuring performance through standardized evaluation instruments.
- Demonstrated evidence of the ability to attain a 2.50 grade-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 eight credits in teaching field with a 2.50 average.

- 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.

Student Advisers

A student should confer with the following persons depending upon the field in which teaching is anticipated. A student 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 and Family Ecology	Mrs. Tappenden
Music	Mr. Nolin
Physical Education	Mr. Maluke
Special Education	Mr. Am, Mr. Kovacevich
Mass Media-Communication	Miss Lewis
Theatre Arts and Dance	Mr. Slaughter
Speech Pathology and Audiology	Mr. Davis
Technical Education	Mr. Sugarman
Graduate	Mr. Adolph, Mr. Bradley, Mr. Esprite, Mr. Blough, Mr. Hoedt, Mr. Rich

Bachelor's Degrees

A student prepares 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 average of 2.00 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 Bachelor of Science in Technical Education is awarded to those who complete the requirements of that program.

Clinical and Field-Based Experiences

Each teacher education student is required to satisfactorily participate in clinical (c.) and field-based (f.) experiences for a minimum of 600 hours prior to recommendation for certification for teaching in Ohio. The accumulated hours will be accounted on the EDATA-I system.

Through clinical experiences under the direction, evaluation and supervision of faculty, the teacher education student shall be involved in the use of diagnostic testing instruments and observational techniques to enable an analysis of pupil-learning progress or difficulties, on both an individual and group basis, and prescriptions of instructional strategies, educational media and materials to maximize pupil-learning outcomes.

Field-based experiences are a series of planned, supervised and evaluated off-campus activities for which specific learning objectives have been set to assure increasing proficiency in performing the various teaching responsibilities under actual school conditions. Field-based experiences shall be completed under a variety of urban and suburban or rural settings. The clinical and field-based experiences are components to the developmental course programs.

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 2.50 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.*

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.

*Music majors, before assignment for student teaching, are required to pass the General Musicianship Examination described in the music section of the College of Fine and Applied Arts. To avoid possible delay in graduation, it is necessary for the student to take the examination six months prior to the anticipated assignment for student teaching.

The student is expected to receive recommendations for certification from the institution granting the degree. A student who expects to receive degrees from other institutions but who wishes to qualify for certification at The University of Akron will be expected to meet all the certification requirements of The University of Akron.

Students Enrolled in Other Colleges at The University of Akron

A student who receives degrees from other colleges in the University also may wish to qualify for teaching. They will be recommended for certification after completing respective 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.

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:

- General Studies — 39 credits.*
- Pre-Professional Education

		Credits
3350:100	Introduction to Geography	3
3350:350	Anglo-America	3
3750:100	Introduction to Psychology	3
7100:191	Design	2
One of the following three courses:		
3400:201	United States History to Civil War	4
3400:202	United States History since Civil War	4
3700:100	Government and Politics in the United States	3

- Professional Education

		Credits	Clinical/ Field
Basic:			
5100:150	Introduction to Professional Education	3	6c/10f
5100:250	Human Development and Learning	3	15c
5100:350	Educational Measurement and Evaluation	2	8c
5100:450	Problems in Education	2	12f
Elementary Education:			
5200:141	Handicrafts	2	15c
5200:286	Children's Literature	3	15c
5200:321	Art for the Grades	2	15c
5200:333	Science Elementary Grades	2	15c
5200:335	Teaching of Language Arts	5	15c
5200:336	Teaching Elementary School Mathematics	3	15c
5200:337	Teaching of Reading	3	15c
5200:338	Teaching of Social Studies	3	15c
5200:339	Principles of Diagnostic Teaching of Reading	3	15c
5200:365	Comprehensive Musicianship for the Elementary Classroom Teacher	4	25c
5550:334	Games and Rhythms — Elementary Grades	2	20c
5570:101	Personal Health	2	10c
Laboratory Experience:			
5200:100	Student Participation	1	30f
5200:200	Student Participation	1	30f
5200:300	Student Participation	1	30f
5200:343	Laboratory in Science Education	1	2c
5200:346	Laboratory in Mathematics	1	2c
5200:347	Laboratory in Reading	1	2f
5200:348	Laboratory in Social Studies	1	2f
5200:349	Laboratory in Reading	1	2f
5200:403	Seminar in Student Teaching	1	15c
5200:495	Student Teaching	8	322f

- Area of Specialization — 10-20 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 (10-20) is above and beyond the number of credits required in any other part of the program.

- Electives — 6 credits.

Kindergarten Primary

The kindergarten-primary program is for the student 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:

		Credits
Required		
5200:330	Early Elementary Education I	3
5200:331	Early Elementary Education II	3
7400:265	Child Development	3
Electives (choose seven credits from the following)		
3750:130	Developmental Psychology	4
5100:410	Audio Visual Education	2
5200:497	Independent Study	1-3
5550:211	First Aid	2
5610:440	Developmental Characteristics of Exceptional Individuals	3

*Six credits of science are included in the General Studies requirements. Two of these six credits must be in biological sciences to meet certification requirements.

Nursery Schools

The student in the elementary program may also receive University recommendation as director of teaching in nursery schools by taking the following courses:

• Required

5200:310	Introduction to Early Childhood Education	2
5200:311	Curriculum for Preschool Learning Centers	2
5200:360	Nursery School Laboratory	3
7400:265	Child Development	3

• Electives (choose six credits from the following)

3750:130	Developmental Psychology	4
5100:410	Audio Visual Education	2
5200:497	Independent Study	1-3
5550:211	First Aid	2
5610:440	Developmental Characteristics of Exceptional Individuals	3
7400:275	Play and Creative Expression Activities	4
7400:290	Administration of Child Care Centers	3
7400:401	Family Life Patterns in the Economically Deprived Home	2
7400:460	Organization and Supervision of Child Care Centers	2

Certification for Teaching Foreign Language in the Elementary School

A person desiring certification to teach modern foreign language on the elementary level must meet the 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

Basic:		Credits	Clinical/ Field
5100:150	Introduction to Professional Education	3	6c/10f
5100:250	Human Development and Learning	3	15c
5100:350	Educational Measurement and Evaluation	2	8c
5100:450	Problems in Education	2	12f

Elementary Education:		Credits	Clinical/ Field
5200:141	Handicrafts	2	15c
5200:286	Children's Literature	3	15c
5200:300	Student Participation	1	30f
5200:321	Art for the Grades	2	15c
5200:333	Science for Elementary Grades	3	15c
5200:335	Teaching of Language Arts	5	15c
5200:336	Teaching Elementary School Mathematics*	3	15c
5200:337	Teaching of Reading	3	15c
5200:338	Teaching Social Studies	3	15c
5200:339	Principles of Diagnostic Teaching of Reading	3	15c
5200:365	Comprehensive Musicianship for the Elementary Classroom Teacher	4	
5200:403	Seminar in Student Teaching	1	15c
5200:495	Student Teaching	8	322f
5550:334	Games and Rhythms — Elementary Grades	2	20c
5570:101	Personal Health	2	10c

- If certification for teaching kindergarten is desired, the following courses must be scheduled:

5200:330	Early Elementary Education I	3	15c
5200:331	Early Elementary Education II	3	15c

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 one-eight) upon submitting evidence of the satisfactory completion of the following credits:

5100:250	Human Development and Learning	3	15c
5200:336	Teaching Elementary School Mathematics	3	15c
5200:337	Teaching of Reading	3	15c
5200:451	Elementary Education	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	15c
5200:286	Children's Literature	3	15c
5200:300	Student Participation	1	30f
5200:321	Art for the Grades	2	15c
5200:333	Science for Elementary Grades	3	15c
5200:335	Teaching of Language Arts	5	15c
5200:338	Teaching of Social Studies	3	15c
5200:339	Principles of Diagnostic Teaching of Reading	3	15c
5200:365	Comprehensive Musicianship for the Elementary Classroom Teacher	4	
5550:334	Games and Rhythms — Elementary Grades	2	20c
5570:101	Personal Health	2	10c

*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.

- If additional credits are needed in the social sciences, a choice should be made from the following:

		Credits	Clinical/ Field
3350:100	Introduction to Geography (if no previous geography credits are recorded)	3	
3400:201	United States History to Civil War	4	
3400:202	United States History Since Civil War	4	
3700:100	Government and Politics in the United States	3	

- If the student desires certification for teaching kindergarten, the following six credits must be scheduled:

5200:330	Early Elementary Education I	3	15c
5200:331	Early Elementary Education II	3	15c

- 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 2.50 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:

5200:323	Music Teaching Elementary Grades	2	
5200:395	Field Experience	2	15-45f
5200:497	Independent Study (Music Student Teaching)	2	
7500:107	Class Voice	2	
7500:151-2	Music Theory I and II	6	
7500:154-5	Music Literature I and II	4	
7500:161	Sight Singing I	2	
7500:261	Keyboard Harmony I	2	
7500:356	Music Teaching Handicapped or		30f
7500:358	Functional: Class Guitar	2	20f
7510:—	Music Organization	2	

Dual Certification Program Elementary and Secondary

This curriculum prepares teachers for both elementary and secondary school. A student completing this

curriculum will receive the Four-Year Provisional Certificate to teach in the secondary school and a certificate which will qualify the holder to teach in grades one-eight in the elementary school.

A student 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	Clinical/ Field
5100:150	Introduction to Professional Education	3	6c/10f
5100:250	Human Development and Learning	3	12c
5100:350	Educational Measurement and Evaluation	2	8c
5100:450	Problems in Education	2	12f
5300:265	Introduction to Secondary Education	1	10c
5300:275	Exploratory Experience	1	6c/30f
5300:310	Principles of Teaching in the Secondary School	3	30c
5300:325	Content Reading in Secondary School	3	30c
5300:345	Human Relations in Secondary Education	1	3c/7f
5300:355	Managing Classroom Behavior at the Secondary Level	1	3c/7f
5300:375	Exploratory Experience	1	6c/30f
5300:411	Instructional Techniques Secondary Education	4	30c/20f
5300:445	Minicomputer Applications in Secondary Classroom or		10c
5300:455	Career Options in Secondary Education	1	8c/2f
5300:403	Student Teaching Seminar	1	15c/10f
5300:495	Student Teaching	8	322f

- Courses in Teaching Field(s) and Electives — 58 credits.

*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.

**Student teaching in both fields is required.

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, the student should consult the head of the Department of Secondary Education who will appoint an adviser.

Minimum Number of Credits Required for Approval in Various Teaching Fields*

Comprehensive Subjects by 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 by Field

	First Field Credits	Second 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 and 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. 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

	Credits	Clinical/Field
5100:150 Introduction to Professional Education	3	6c/10f
5100:250 Human Development and Learning	3	15c
5100:350 Educational Measurements and Evaluation	2	8c
5100:450 Problems in Education	2	12f
5300:310 Principles of Secondary Education	3	
5610:403 Student Teaching Seminar	1	12c
5610:495 Student Teaching EMR	8	24f

• Related Competency Studies

3750:100 Introduction to Psychology	3	
5200:335 Teaching the Language Arts	5	15c
5200:336 Teaching of Elementary School Mathematics	3	15c
5200:337 Teaching of Reading	3	15c
5600:410 Personnel Services in Schools	2	
7700:430 Aspects of Normal Language Development	3	
Choose one of the following:		
5550:211 First Aid	2	15c
5570:101 Personal Health	2	10c
Choose two of the following:		
5200:321 Art for the Grades	2	15c
5200:323 Music Teaching		
Elementary School	2	
5550:334 Games and Rhythms — Elementary Grades	2	20c

• Special Education Studies

5610:440 Developmental Characteristics of Exceptional Individuals	3	12f
5610:441 Developmental Characteristics of Mentally Retarded Individuals	4	

*Many fields require more than the minimum. Please see the department for specific program

		Credits	Clinical/ Field
5610:443	Developmental Characteristics of Learning Disabled Individuals	3	12c
5610:450	Educational Adjustment for Preschool and Primary Level Exceptional Individuals	3	18f
5610:451	Educational Adjustment for Intermediate Level Exceptional Children	3	18f
5610:452	Educational Adjustment for Secondary Level Exceptional Children	3	18f
5610:456	Classroom Behavior Management for Exceptional Individuals	2	12f
5610:457	Clinical Teaching Practicum Children with Learning Problems*	3	48c

In addition, the student must complete the following courses:

Plan A

5610:201	Participation EMR-LD	1	48f
5610:446	Developmental Characteristics of Behaviorally Disordered Individuals	3	
5610:495	Student Teaching Electives**	4-8 5	240f

Plan B

5610:203	Student Participation: EMR/TMR	1	48f
5610:454	Educational Adjustment for Moderate, Severe and Profound Mentally Retarded Individuals	3	
5610:459	Seminar: Interdisciplinary Programs for MSPR	2	
5610:459	Seminar: Education and Management for Parents of MSPR	2	
5610:495	Student Teaching Electives**	8 1	

Plan C

5610:202	Participation EMR-OH	1	48f
5610:495	Student Teaching	8	240f
5610:445	Developmental Characteristics of Orthopedically Handicapped 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 including personnel for post-secondary educational institutions, industry and public and private agencies engaged in the education and training of technicians. The program is divided into the following major classifications: business 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.

A student may elect other areas when the courses are available and the adviser approves.

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 2.00 average in all major departmental professional courses (5400), all professional education courses and a 2.50 average in all technical courses directly related to the student's teaching field.

*Final course before student teaching, advanced permission required.

**Chosen in consultation with Special Education adviser.

College of Business Administration

James W. Dunlap, Ph.D., *Dean*

Objectives

The College of Business Administration is a professional college of the University that is dedicated to teaching, business research and public service. The college, a member of the American Assembly of Collegiate Schools of Business, the national accrediting agency for colleges of business administration, offers undergraduate and graduate degree programs during the day and evening.

The purpose of the College of Business Administration is to further the objectives of The University of Akron by providing a quality program of collegiate education in business to prepare the student for a professional career in commerce, industry and government. This is to be secured with the following aims:

- To instill in the student competence in the basic functional areas of business enterprise.
- To develop in the student an analytical ability and balanced judgment in the solution of business problems.
- To promote in the student an understanding of human behavior and the impact of social, political and economic forces in the decision-making process.
- To cultivate in the student a facility for the use of management tools of accounting, quantitative techniques and communications.
- To encourage in the student the development of a business code of ethics.
- To foster in the student a desire to continue the pursuit of knowledge and the achievement of excellence in the area of administration.

Additional objectives of the College of Business Administration are: to act as a service division by offering courses to the student in another college; to serve the business community of the state and region by sponsoring conferences, short courses and management development programs; to foster and encourage research in business; to offer graduate instruction and opportunities for research to the student at the master's level; to prepare the student for entering law school; and to prepare the student for advanced research and study in business and economics.

At The University of Akron there has been a long and eventful history of education relating to the field of commerce and industry. Beginning in 1919, courses were offered in the Department of Commerce. Eventually the department became the nucleus of the College of Business Administration, which was established in 1953.

Since its inception, the college curriculum has been designed with equal emphasis on broad basic principles as well as immediate practices. Classroom knowledge is consistently made more significant by field trips and inspection tours to witness business operations.

Similarly, the college maintains a sound balance between education in the arts, humanities and sciences and professional business courses. Half of the courses of study at the undergraduate level are in the areas of liberal arts and sciences; the remaining courses are divided between general business subjects and the student's indicated area of specialization.

College Requirements

Requirements for Admission

The college will accept the student who has completed sufficient 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 college business courses is limited to a student who has:*

- 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.

Transfer of Courses and Advanced Standing

In order for courses taken outside of the University College or the College of Business Administration to be accepted as part of an approved program of study in lieu of college and departmental requirements, the courses to be transferred must be of an equivalent level. The College of Business Administration will consider the following in granting credit: the content, complexity and grading standards of courses taken elsewhere, and the

*Exceptions to any or all of these may be granted by the dean.

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 grade-point average. Not more than one credit of physical education may be included.
- Obtain at least a 2.0 grade-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		Credits
3250:201,202	Principles of Economics*	6
3450:149	Pre-Calculus Mathematics*	3
3450:221	Analytic Geometry-Calculus I	4
3450:138	Mathematics of Finance	1
	or	
3450:111,2,3,4	Modern University Mathematics*	4
3450:121,2,3	Modern University Mathematics	3
6200:201,202	Accounting*	8
	Two sequential courses in psychology or sociology (minimum)	6
The following core program in business administration:		
6200:355	Electronic Data Processing	3
6400:320	Legal Environment of Business**	4
	or	
6400:321	Business Law I	3
6400:371	Business Finance	3
6500:301	Management: Principles and Concepts	3
6500:321,322	Quantitative Business Analysis I and II	6
6500:323	Computer Applications for Business**	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. An accounting graduate who chooses public accounting may become a senior, manager, principal or partner in public accounting firms. A student who chooses an accounting career in private industry may hold the position of accountant, cost accountant, senior accountant, budget director, internal auditor, treasurer or controller. Federal, state and local governments provide a wide variety of job opportunities at the professional level for well-educated accountants. There are exceptional opportunities for professional advancement regardless of the type of institution a graduate may choose.

The accounting curriculum is designed to prepare the student for professional service, including 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:

		Credits
6200:301	Cost Accounting	3
6200:317,318	Intermediate Accounting I and 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†	3
	or	
6400:338	Financial Intermediaries†	3

A student preparing for a career in public accounting is advised to take 6200:420 *Advanced Accounting*, 6200:431 *Taxation II* and 6200:425 *Current Developments in Accounting*. A major preparing for a career in industrial accounting should take elective courses in management.

Because of the increasing demand for accountants with a knowledge of computer theory and practice, the major is advised to elect 6200:454 *Accounting Systems*. Mathematics and computer science courses are also strongly recommended.

†Grade not included in major grade-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>
3250:400	Macro Economics*	3
	or	
3250:410	Micro Economics*	3
6200:317,318	Intermediate Accounting I and II	8
6400:338	Financial Intermediaries	3
6400:343	Investments	3
6400:479	Problems in Finance	3
Two Finance Department electives selected from:		
6400:314	Credits and Collections	2
6400:318	Risk Management and Insurance	2
6400:436	Commercial Bank Management	3
6400:447	Security Analysis	3
Electives should be considered especially by the student who aims for a career in financial management from the following courses:		
6400:322	Business Law	3
6400:400	Investing in Real Estate	3
6400:425	Business and Society	3

6500: Management

The University of Akron was one of the first institutions of higher learning to establish an industrial management curriculum. Important factors in the decision to establish such a program were the location of the University in a major industrial area and the recognition of an emerging educational need.

The emphasis on education for management is the result of several factors. First, managers are becoming

increasingly aware that a professional approach to management requires understanding of quantitative methods 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	3
6500:332	Production Operations	3
6500:341	Personnel Management	3
And one of the following:		
6500:401	Management Problems	3
6500:402	Management Problems-Production	3
6500:403	Management Problems-Personnel	3

The student, then, must select one of the options listed below:

Production Option		
6500:433	Operations Planning	3
6500:434	Production Planning and Control	3
Personnel Option		
6500:342	Personnel Relations	2
6500:443	Advanced Personnel	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 C.P.A. The courses selected are those which will furnish the student with a background in the operational management of production activities as well as in the accounting and budgeting procedures utilized in the control of these activities. The curriculum leads to the Bachelor of Science in Industrial Management degree.

*Grade not included in major grade-point average.

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	Introduction to Electronic Data Processing	3
	or	
6500:323	Introduction to Computer Applications for Business	3
6200:460	Controllership Problems	3
6500:341	Personnel Management	3
6500:331	Production and Systems Management	3
6500:332	Production and Operations Management	3
6500:433	Business Operational Planning	3
6500:434	Production Planning and Control	3
Recommended electives:		
6200:317	Intermediate Accounting I	4
6200:318	Intermediate Accounting II	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, operation-

al 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:		
6600:310	Buyer Behavior	3
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

A student wishing to concentrate electives according to either the consumer or industrial markets may use the following as a guide:

Consumer

6600:310	Buyer Behavior	3
6600:340	Merchandising	3
6600:350	Advertising	3
6600:430	Promotional Strategies	3

Industrial

6600:310	Buyer Behavior	3
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



College of Fine and Applied Arts

Gerard L. Knieter, Ed.D., *Dean*

Kelvie Comer, Ed.D., *Assistant to the Dean*

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 a student majoring in these areas.
- To prepare such a student 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 the student seeking diversity and enrichment in the academic programs.
- To encourage the development of technical knowledge and professional skills which underlie the communicative functions of human expression.
- To nurture and expand, through this congregation of the arts, not only a knowledge of man's creative and cultural heritage but also a perceptual and aesthetic awareness of direct sensory experience through creation and performance.

The college recommends each student for the appropriate bachelor's or master's degree in accordance with the student's specialization.

College Requirements

Requirements for Admission

To be admitted to the College of Fine and Applied Arts, the student must have completed at least 30 credits of work with at least a 2.00 grade-point average or above and have the approval of the dean. A student transferring to the Department of Art from another insti-

tution must submit a portfolio of his work for approval before admission. A student transferring from another college or institution into the Department of Music must submit to a departmental placement examination.

Requirements for Baccalaureate Degrees

- University requirements set forth in the section on "Requirements for Graduation" in Section 3 of this *Bulletin*.
- 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.

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

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 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* (eight 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

- General Studies — 39 credits.
- *Survey of History of Art I and II* (7100:100-1) plus two additional advanced-level art history courses (except graphic design emphasis) — 12-14 credits.
- Electives — 13-15 credits.
- Senior exhibition
- Portfolio review as specified for student's area of emphasis.

Areas of Major Emphasis

- Studio art courses must include one area of major emphasis as described below, plus studio electives to total no less than 62 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	Watercolor Painting	3
7100:247	Oil Painting	3

Sculpture

Prerequisites before first major course:		Credits
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 and 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:		Credits
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

Prerequisites before first major course:		Credits
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	Watercolor 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

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
7100:144	Two-Dimensional Design	3
7100:231	Drawing II	3

Crafts

Prerequisites before first major course:		
7100:100	Survey of History of Art I	4
7100:131	Drawing I	3
Additional prerequisite courses depending on which beginning craft courses are taken.		

Major courses:
A minimum of 36 credits in the craft areas of ceramics, fibers, metalsmithing and enameling to include at least nine credits in three of these areas.

Additional required courses:		
7100:101	Survey of History of Art II	4
7100:121	Three-Dimensional Design	3
7100:144	Two-Dimensional Design	3

Metalsmithing

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:		
2920:247	Shop Methods and Practices	3
7100:232	Instrument Drawing	3
7100:283	Drawing Techniques	3

Photography

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:		
3650:137	Light-Color-Camera and Perception	3
7100:101	Survey of History of Art II	4

7100:121	Three-Dimensional Design	3
7100:213	Lithography or Serigraphy	3
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

Graphic Design

Prerequisite before first major course:		
7100:131	Drawing I	3
7100:232	Instrument Drawing	3
Major courses:		
7100:283	Drawing Techniques	3
7100:284	Introduction to Graphic Design	3
7100:286	Commercial Design Theory	3
7100:288	Letter Form and Typography	3
7100:387	Advertising Layout Design	3
7100:388	Advertising Production and Design	3
7100:389	Corporate Identity and 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 nine credits)	3
7100:486	Packaging Design	3
7100:488	Publication Design	3
Additional required courses:		
2240:222	Advertising Photography	3
7100:100	Survey of History of Art I	4
7100:101	Survey of History of Art II	4
7100:231	Drawing II or Life Drawing	2
7100:275	Photography I	3

NOTE: A student 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 12 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

A student wishing certification in art education has 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 — College of Fine and Applied Arts/Certification in Teacher Education
Bachelor of Fine Arts — College of Fine and Applied Arts/Graphic Design Emphasis and Certification in Teacher Education
Bachelor of Arts — College of Fine and Applied Arts/Certification in Teacher Education
Bachelor of Science — College of Education/Certification in Teacher Education
Bachelor of Science — 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
7400:422	Advanced Home Management or Elective in Textiles and Clothing	3
7400:419	Clothing Communication	3
7400:439	Fashion	3
7400:449	Design and Draping	3

- Completion of one of the following options:

Business Option

2420:170	Business Mathematics	2
7100:141	Two-Dimensional Design or Mathematics of Retail Distribution	3
2520:211	Mathematics of Retail Distribution	3
6200:201	Accounting I or Basic Accounting I	4
2420:211	Basic Accounting I	3
6600:300	Marketing Principles or Elements of Distribution	3
2420:101	Elements of Distribution	3
6600:340	Merchandising or Retailing Fundamentals	3
2520:202	Retailing Fundamentals	4
6600:350	Advertising or Principles of Advertising	3
2520:103	Principles of Advertising	3

Communication Option

7100:141	Two-Dimensional 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
7400:132	Early Childhood Nutrition	2
7400:141	Food for the Family	3
7400:147	Home Economics Survey	1
7400:159	Family Housing	3

*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.

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 Economically Deprived Home	2
7400:422	Advanced Home Management	3
7400:485	Seminar in Home Economics	3
7750:276	Introduction to Social Welfare	4

- 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 Supervision of Child Care Centers	2

Child Life Specialist

2200:250	Observing and Recording Children's Behavior	3
3750:130	Developmental Psychology	4
3750:340	Social Psychology	4
3750:350	Psychology of Small Group Behavior	3
3750:430	Psychological Disorders of Children	4
3850:342	Sociology of Health and Illness	3
5610:440	Developmental Characteristics: Exceptional Individual	3
5610:452	Recreational Programs for Exceptional Child	1
7400:201	Relational Patterns in Marriage and Family	2
7400:265	Child Development	3
7400:275	Play and Creative Expression	4
7400:285	Orientation to the Hospital Setting	2
7400:350	The Child in the Hospital	4
7400:355	Practicum: Establishing and Supervising a Child Life Program	3
7400:401	Family Life: Economically Deprived	2
7400:485	Seminar: Parent-Child Relations	2
7400:495	Internship: Guided Experiences in a Child Life Program	6
7400:496	Parenting Skills	3

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.

• General Studies — 42 credits.*

Credits

	Credits
Home Economics Department Requirements:	
7400:147 Home Economics Survey	1
7400:201 Relational Patterns in Marriage and Family	3
7400:265 Child Development	3
7400:301 Consumer Education	3
7400:362 Home Management Theory	3
Total	13
Basic ADA Requirements for CUP and Traditional Dietetics:	
2420:211 Basic Accounting or	3
6200:201 Principles of Accounting	4
3100:130 Principles of Microbiology	3
3100:265 Introduction to Human Physiology	4
3150:203 Nutrition Biochemistry	3
6500:341 Personnel Management	3
7400:245 Basic Nutrition and Foods	5
7400:281 Introduction to Dietetics	1
7400:316 Science of Nutrition	5
7400:381 Promotional Techniques: Dietetics	4
7400:416 Quantity Food Preparation	4
7400:420 Experimental Foods	3
7400:484 Professional Dietetics	2
Total	40-41

	Credits
Coordinated Undergraduate Program (CUP) Requirements:	
7400:313 Introduction to Food Systems Management	4
7400:314 Introduction to Food Systems Management - clinical	2
7400:328 Introduction to Nutrition in Medical Science	3
7400:329 Introduction to Nutrition in Medical Science - clinical	2
7400:413 Food Systems Management	6
7400:414 Food Systems Management - clinical	4
7400:428 Nutrition in Medical Science	6
7400:429 Nutrition in Medical Science - clinical	4
7400:480 Community Nutrition I	3
7400:481 Community Nutrition I - clinical	1
7400:482 Community Nutrition II	3
7400:483 Community Nutrition II - clinical	1
7400:486 Staff Relief	2
Total	41

	Credits
Traditional Dietetics Requirements:	
2280:135 Quantity Food Purchasing	3
2280:236 Menu Planning and Cost Controls	3
2280:243 Food Equipment and Plant Operations	3
2280:290 Special Problems: Food Maintenance and Sanitation	2
7400:412 Institutional Management	3
7400:422 Advanced Home Management	3
7400:426 Therapeutic Nutrition	4
7400:430 Computer-Assisted Food Service Management	3
Total	24

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 Introduction to Information Processing	2

*The General Studies requirement is 39 credits; of the additional three credits (42 minus 39) two come from the use of chemistry in meeting the natural sciences requirement and one comes from the use of sociology in meeting the social sciences requirement in both the dietetics and the General Studies program simultaneously.

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 Economics in the Community	1
7400:245 Basic Nutrition and Foods	5
7400:265 Child Development	3
7400:301 Consumer Education	3
7400:316 Science of 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. A student must contact the office of the Department of Music to arrange for the examination.

Bachelor of Arts

• General Studies — 39 credits.

• Core curriculum in music:

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

	<i>Credits</i>
• Additional Courses:	
7510 Music Organization (four semesters)*	4
7520: Applied Music*	8
7500:157 Student Recital (four semesters)*	0

• **Electives — 47 credits (includes second year of a foreign language).**

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.
- Core curriculum in music — 30 credits (see above).
- **Additional Courses:**

7500:157 Music Recital (eight semesters)	0
7510: Music Organization (eight semesters)	8
7520: Applied Music-primary instrument**	32
Fourteen additional credits in music selected from the following:	
7500:361 Conducting	2
7500:371 Analytical Techniques I	2
7500:451 Introduction to Musicology	2
7500:452 Composition	2
7500:453 Bibliography and Research	2
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

- General Studies — 39 credits.
- **Additional Courses:**

7500:157 Student Recital (eight semesters)††	0
7510: Music Organization (eight semesters)	8
7520: Applied Music-primary instrument††	16
7520: Applied Music-composition	8
The following additional credits in music:	
7500:361 Conducting	2
7500:362 Choral Arranging	2
7500:371 Analytical Techniques I	2
7500:372 Analytical Techniques II	2
7500:451 Introduction 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

*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 student attend Student Recital, participate in music organizations and continue the study of applied music beyond the minimum requirements.

** Passage to the 500 level in the primary applied area is required prior to graduation.

†A junior recital is recommended but not required.

†† Passage to the 300 level in the primary applied area is required before graduation.

- 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:

	<i>Credits</i>
7500:361 Conducting	2
7500:371 Analytical Techniques 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 (eight semesters)	0
7510: Music Organization Major Conducted	8
Jazz Ensembles	8
7520: Applied Major-Level: Jury to 300-level Senior Recital	0
Saxophone major must pass flute and clarinet proficiency (promotion to 200 level)	32

- **Electives — 10 credits.**
- Bachelor of Music — Music Education**
- General Studies — 39 credits.

• **Additional courses are:**

7500:157 Student Recital (eight semesters)	0
7510: Music Organization (eight semesters)	8
7520: Applied Music-primary instrument★★	16
• The following credits:	
7500:254 String Instruments I	2
7500:340 General Music	3
7500:342 Wind/Percussion Techniques	3
7500:361 Conducting	2
Vocal and Keyboard majors must take:	
7500:340 General Music (second semester)	3
7500:381 Choral Techniques	2
7500:362 Choral Arranging	2
Approved electives	4
Instrumental (non-keyboard) majors must take:	
7500:342 Wind/Percussion Techniques (second semester)	3
7500:455 Advanced Conducting	2
7500:454 Orchestration	2
Approved electives	4
String majors must take:	
7500:255 String Instruments II	2
7500:455 Advanced Conducting	2
7500:454 Orchestration	2
Approved electives	5

★ Acceptance in the jazz program by permission of director of Jazz Studies.

★★ Passage to the 300 level in primary applied area required before graduation.

- 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.
- A wide range of music electives are available and should be selected upon the advice of the coordinator of music education.

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.

7600: Mass Media-Communication

Bachelor of Arts

- General Studies and second year of a foreign language — 53 credits.
- Departmental core curriculum — 12 credits.

		<i>Credits</i>
7600:202	Introduction to Journalism	3
7600:245	Argumentation	
	or	
7600:344	Public Discussion	3
7600:252	Ethical Persuasion	
	or	
7600:393	Interpersonal Communication	3
7600:351	Survey of Speech Communication	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

- General Studies — 39 credits.
- 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 or 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 the student to the theory and production techniques and capabilities needed to pursue a career 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 student must complete a minimum of 24 credits within the department. The following are suggested:

		<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. The following are suggested:

7600:190	Public Speaking	2
7600:245	Argumentation	
	or	
7600:344	Public Discussion	3
7600:252	Ethical Persuasion	
	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

		Credits
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:

7700:110	Introduction to Speech Disorders	3
7700:111	Introduction to Phonetics	2
7700:130	Bases and Structure of Languages	3
7700:140	Introduction to Audiology	3
7700:210	Applied Phonetics	3
7700:211	Introduction to Speech Science	2
7700:230	Speech and Language Development	3
7700:240	Aural Rehabilitation	4
7700:241	Principles of Audiometry	3
7700:250	Observation and Clinical Methods	2
7700:271	Language of Signs I	3
7700:321	Speech Pathology I	4
7700:322	Speech Pathology II	4
7700:330	Language Disorders	4
7700:340	Audiologic Evaluation	2
7700:350	Clinical Practicum: Articulation	1
7700:351	Clinical Practicum: Language	1
7700:352	Clinical Practicum: Aural Rehabilitation	1
7700:450	Introduction to Speech and Hearing Diagnostics	3
7700:451	Clinical Practicum: Hearing Diagnosis	1
	Total	52

- Electives — 24 credits.

A student 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.**

*Courses in the Department of Biology are required to fulfill the natural sciences requirement (see adviser for specific courses) — BA and BFA. A BFA in Speech Pathology and Audiology student substitutes for the language requirement a core of courses in psychology and related disciplines (see adviser for specific courses).

**The student must complete 3850:100 *Introduction to Sociology* as part of the social sciences requirement and 1100:221 *Natural Science: Biology* or some other human biology course as part of the natural sciences requirement and 3450:112 *Algebraic Functions and Graphing*, 3470:251 *Descriptive Statistics and Probability* and 3470:252 *Distributions* as the mathematics requirement.

		Credits
• Social Work courses:		
3750:420	Abnormal Psychology†	3
7750:270	Poverty in the United States	3
7750:276	Introduction to Social Welfare	4
7750:401	Social Work Practice I	3
7750:402	Social Work Practice II	3
7750:403	Social Work Practice III	3
7750:410	Minority Issues in Social Work Practice	3
7750:421	Field Experience Seminar (two semesters, one credit each)	2
7750:430	Human Behavior and Social Environment	3
7750:440	Social Work Research	3
7750:445	Social Policy Analysis for Social Workers	3
7750:495	Field Experience: Social Agency (two semesters, three credits each)	6
7750:	Elective in Social Work	3
7750:	Elective in Social Work	3
	Total	45

7800: Theatre Arts and Dance

Bachelor of Arts Bachelor of Arts in Theatre Arts Bachelor of Arts in Ballet

- General Studies program and second year of a foreign language — 53 credits.††
- Departmental core curriculum — 10 credits.
- Core Curriculum:

7800:124	Introduction to Ballet	2
7800:175	Oral Interpretation I	3
7800:261	Introduction to Theatre	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

†3750:100 *Introduction to Psychology* and 3750:130 *Developmental Psychology* should be completed as prerequisites to *Abnormal Psychology*.

††The student in Bachelor of Arts in Theatre Arts and Bachelor of Arts in Ballet program substitutes 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.

order to do remedial work on those aspects of basic technique that need attention.

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.

A major 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>
7800:116-7	Ballet Analysis I and II	4
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 and II	4
7800:229,329	Contemporary Dance Techniques I and II	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
7800:261	Introduction to Theatre	3

		<i>Credits</i>
7800:320	Dance Notation	2
7800:322,422	Ballet Technique III and IV	20
7800:423	History of the Dance	2
7800:424	Twentieth Century Dance	2
7800:425	Development of Ballet	2
7800:426-7	Techniques of Teaching Ballet I and 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 45 credits from departmental offerings including the following:

7800:275	Oral Interpretation II	3
7800:330	Theatre Arts and Dance Participation (may be repeated to four credits)	1
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.



College of Nursing

Lillian J. DeYoung, R.N., Ph.D., *Dean*

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 is further defined as a thinking, interacting, adapting, valuing being constantly in the process of becoming and whose goal is self-actualization. Man is an ecological being who affects and is affected 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 professional nurse utilizes theories and research from nursing and other disciplines to add to the body of nursing knowledge and to improve health care services to clients. The professional nurse is accountable to clients and col-

leagues in the health professions and accepts responsibility for quality nursing care in any environment.

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 who assumes the responsibility for making those decisions necessary for optimal health.

The faculty views general education at the baccalaureate level as the base for rational thinking, which 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.

The faculty defines education as a life-long process which implies that the concept of learning is an essential part of the educational process. The student and faculty work in concert to achieve learning goals. The student is self-directed in meeting learning goals. Both faculty and students have a responsibility to collaborate in the planning, implementation and evaluation of the education program.

It is the faculty's responsibility to facilitate an environment conducive to learning. A student has 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. The faculty recognizes that positive reinforcement motivates learning and, therefore, endeavors to design experiences with expectations for success.

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, biologic, 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.

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 postbaccalaureate student and d) the transfer student from other colleges and universities. A transfer student may receive credit for quality work earned in approved colleges. Enrollment of a transfer student is contingent upon availability of University facilities.

A registered nurse (RN) who receives preparation in hospital or associate degree programs is evaluated individually. An RN student is expected to meet the same course requirements as the 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.

A student who wishes to be considered for admission must meet the following requirements.

- Complete all University 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.

All applicants will be considered at once and will be selected each spring. Applicants will be rank ordered from the highest grade-point average (GPA) to 2.5. Therefore, it cannot be assured that having a GPA of 2.5 will guarantee admission to the college. A student will be notified of provisional admission to the College of Nursing prior to fall scheduling requirements and will be given final approval at the end of spring semester.

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.

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 University College and the Admissions Committee of the College of Nursing. Admission to the program in nursing does not guarantee the student's placement in the nursing courses at the time the student may wish to pursue them. *The college reserves the right to approve admission to those individuals whose abilities, attitudes and character promise satisfactory achievement to the college objectives.*

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.

Probation and Retention

A student 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.

A student receiving a "D" or "F" in any clinical nursing course (theory and/or practice) will be required to repeat the course. A student may repeat the course only once.

Upon completion of the repeated course, the student shall withdraw from the College of Nursing if a grade of 2.5 is not attained. The student may not apply for re-admission for at least one semester.

A student may be on probation only twice in the College of Nursing, and each academic probation period is to be no longer than one semester.

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		Credits
1100:111	English Composition	4
1100:115	Institutions*	3
3150:129	General Chemistry I	4
3450:111, 112	Mathematics Modules	2
3470:251	Descriptive Statistics	2
8200:100	Introduction to Nursing	
	or	
8200:101	Introduction to Nursing for R.N.	1
		<u>16</u>

Semester II

1100:112	English Composition	4
1100:116	Institutions*	3
3150:130	General Chemistry II	4
3850:100	Introduction to Sociology*	4
1100:120-188	Physical Education	1
		<u>16</u>

Sophomore Year

Semester I

1100:106	Effective Oral Communication	3
3100:130	Principles of Microbiology	3
3100:206	Human Anatomy and Physiology	3
3750:100	Introduction to Psychology	3
3600:101	Introduction to Philosophy	
	or	
3600:120	Introduction to Ethics	
	or	
3600:170	Introduction to Logic	3
		<u>15</u>

Semester II

3100:105	Ecology and Biological Resources	2
3100:362	Human Anatomy and Physiology	3
3100:381	Human Genetics	2
3750:130	Developmental Psychology	4

*The six-credit requirement in the social science area usually designated by 1100:115-116 *Institutions in the United States* can be met through several options as listed in the University College requirements. A nursing student who elects to use 3850:100 *Introduction to Sociology* as one part of the social science requirement for University 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.

3850:340	The Family or	
7400:201	Relational Patterns in Marriage and Family	3
		<u>14</u>

Summer Session

(between sophomore and junior years)		
8200:200	Nursing Theories and Concepts	5

Junior Year

Semester I

1100:320	Western Cultural Traditions	4
8200:300	Nursing: Health	12
		<u>16</u>

Semester II

1100:321	Western Cultural Traditions	4
8200:320	Nursing: Diminished Health I	12
		<u>16</u>

Senior Year

Semester I

1100:330	Eastern Civilizations	2
8200:400	Nursing: Diminished Health II	10
	Elective	5
		<u>17</u>

Semester II

1100:330	Eastern Civilizations	2
8200:420	Nursing: Synthesis	10
		<u>12</u>

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.

It is mandatory that the student provide transportation to meet requirements of the 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

Northeastern Ohio Universities College of Medicine

William A. Rogers, Ed.D., *Liaison Officer*

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.

Admission

High school seniors and recent high school graduates, having demonstrated appropriate academic competence and motivation toward a career in medicine, will be considered for admission into year one of the program. These students, who have not attended college, should write to the Office of Admissions, The University of Akron, Akron, OH 44325 for application forms. Complete application indicating interest in the Phase I, BS/MD Program and return prior to December 31.

Other applicants with a conventional college background, including premedical requirements and at least three years of college-level work, will be considered by the College 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 program. Applicants to Phase II should have taken the new MCAT test by May.

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.

Cost

Normal undergraduate fees will be assessed for years one and two. Fees for years three through six are set by the College of Medicine Board of Trustees and are commensurate with those at publicly supported medical schools elsewhere in this state.

Location

The 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.

University Honors Program

Arno K. Lepke, Ph.D., *Master*

Introduction

The University of Akron's Honors Program is designed to recognize and to support the highly motivated and achievement-oriented student in any major program. In order to help the participant discover the inherent potential, capabilities and sense of direction this unique learning experience emphasizes a close student-faculty relationship.

Admission

The requirements for admission to the University Honors Program are:

- 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.
- An interview with a member of the University Honors Council.
- Enrollment in a baccalaureate degree program.

For information on the annual deadline for applications call (216) 375-7423 or the Office of Admissions (216) 375-7100.

Program

General Studies

An honors student is not required to complete the General Studies except for physical education. Instead, each student completes an individualized distribution requirement which includes a balanced amount of diversified coursework in the humanities, the social sciences and the natural sciences. The major objective of this

requirement is to expose the student to a broad spectrum of knowledge which is both reasonable and appropriate to the student's major field. The student and preceptor plan the components of this requirement which is subject to the approval of the Honors Council.

Colloquia

Beginning at the sophomore level, an honors student attends one colloquium per year: one in the humanities; another in the social sciences; the third in the natural sciences. These one-semester, two-credit lecture and discussion sessions are interdisciplinary in scope. They provide an opportunity for all honors students to meet 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 the previous sphere of intellectual curiosity.

Major Requirements

An honors student completes all requirements for a departmental or divisional major. If honors work exists in the major department, at least one of the contributing honors courses must be completed.

A faculty preceptor serves as a special adviser for the student in each department. The preceptor assists in the development of the student's major program, the selection of courses which are appropriate for the distribution requirement and in all other aspects of academic and professional planning.

Senior Honors Project

Every honors student is expected to complete a senior honors thesis, an original or creative work which reflects the student's area of interest in the major field. This senior project may well become the basis for a future master's thesis in graduate school. Study abroad or field experience may be recognized as part of the project.

The citation "University Scholar" will appear on the diplomas and the transcripts of the student who completes the University Honors Program. At commencement exercises, they will be properly recognized as University Scholars.

Other Features

Scholarships

An honors student who maintains a minimum 3.25 cumulative grade-point average is eligible for substantial honors scholarships which are renewable annually.

Acceleration

To meet degree requirements, an honors student may use credits awarded for satisfactory achievement on Advanced Placement high school tests (AP), the College Level Examination Program (CLEP) and/or other approved placement procedures — including bypassed credits — to a maximum of 20 credits. Credits may also be earned through "credit by examination" when approved by the department in which the examination is to be administered.

Open Classroom

An honors student may attend undergraduate classes or lectures for which the student is not formally enrolled. Free access to all courses and programs is available.

Access to Graduate Courses

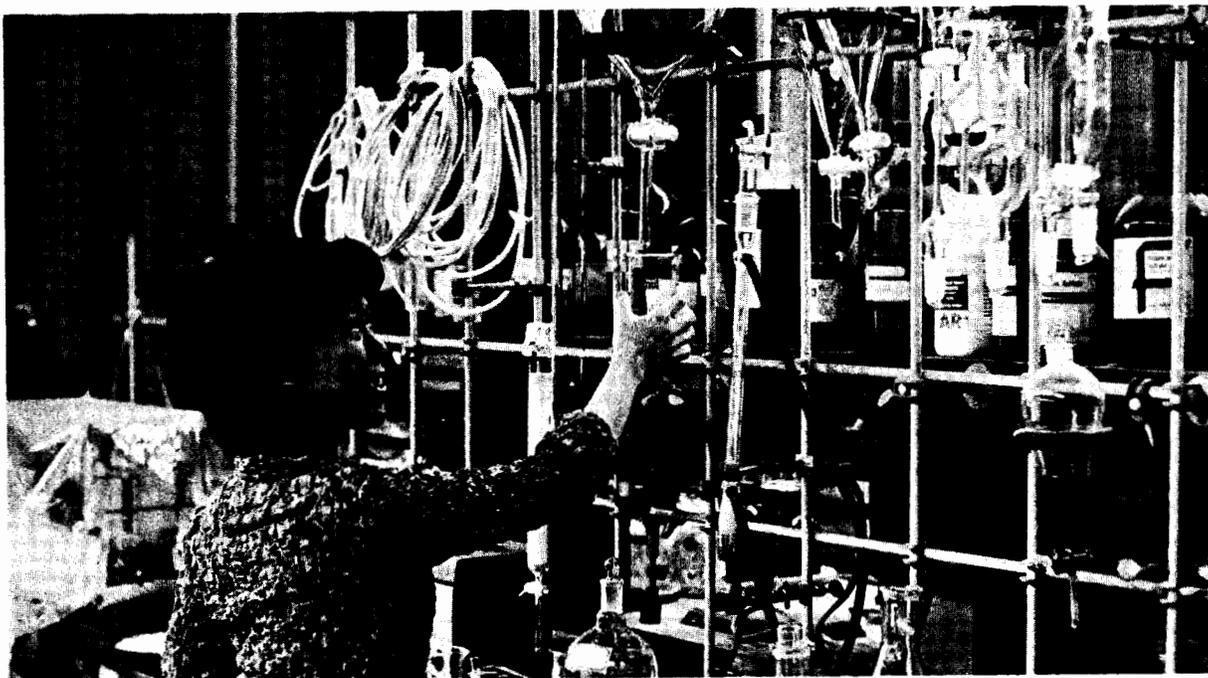
With the permission of the student's preceptor and the instructor, an honors student may be enrolled in graduate courses for either undergraduate or graduate credit. This provision applies especially to graduate courses which may be of immediate benefit to the completion of the senior honors project and/or the specific requirements for a given research paper.

Credit/Noncredit Option

Upon completion of one-half of all degree requirements, an honors student may enroll in one course per semester on a credit/noncredit basis. All elective credits thus earned are not considered in calculating grade-point average, but they count as credits completed toward graduation requirements.

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 14 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 and 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:

- Dr. William Beyer, Head, Department of Mathematical Sciences (regarding computer science).
- Dr. William Frye, Director, Higher Education Certificate Program.
- 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. Hugo Lijeron, Program Coordinator of Latin American Studies.
- Dr. Theodore Mackiw, Program Coordinator of Soviet Area 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.
- Mrs. Anne West, Coordinator of Secretarial Science.
- Mr. John W. Wilson, Acting Director of Afro-American Studies.

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:

		Credits
1810:401	General Seminar in Afro-American Studies (a research paper in Afro-American Studies will be written in this course)	3
3400:220	Black People of the United States	3

Acceptable Courses

1100:335	Eastern Civilizations — Africa	2
1810:401	General Seminar in Afro-American Studies	3
2020:254	The Black American	2
3250:486	Ghetto Economic Development	3
3300:350	Black American Literature	3
3350:363	Africa South of the Sahara	3
3400:220	Black People of the United States	3
3400:413	Black Social and Intellectual History	3
3700:327	African Politics	3
3850:421/521	Racial and Cultural Intergroup Relations	3
7750:270	Poverty in the United States	3
7750:276	Introduction to Social Welfare	4

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.

A student 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 it is eminently practical, has a strong component of theory. For this reason, a student may elect to take cartographic courses simply because they are focused on an interesting and exciting liberal arts subject. Other students choose cartography courses with the thought of increasing their potential of finding a position subsequent to graduation. There is a well documented need for persons trained in cartographic awareness and skills in business, industry and government, as well as the academic community.

Requirements

Core Courses

Complete five of the following basic courses:

		<i>Credits</i>
3350:240	Maps and Map Reading	3
3350:340	Cartography	3
3350:442	Thematic Cartography	3
3350:444	Map Compilation and Reproduction	3
3350:447	Introduction to Remote Sensing	3
3350:449	Advanced Remote Sensing	3
3350:448	Automatic Computer Mapping	3

Elective Courses

Each student must complete at least seven credits distributed between professional, technical and research offerings in departments other than the Department of Geography. These courses will be selected in consultation with the program's director. Similar courses completed at other universities, up to five years prior to admission 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, political, 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.

Internship

Internship in an agency, firm or office engaged in related graphic and cartographic work; or an internship in the University's Laboratory for Cartographic and Spatial Analysis.

Final Examination and Defense of Cartographic Works

After the completion of coursework each student undergoes an oral examination covering samples of the student's cartography, conducted by two members of the department and one from the elective area. Questions cover the specific projects and topics covered in the coursework completed specifically for the program. One week before the scheduled examination, the student submits samples of cartographic work.

The works must be acceptable by the examination committee and reduced photographic copies will be kept for permanent record in the laboratory's file. After passing the oral examination and the acceptance of the samples of cartography, the student is considered to have completed the program.

A minimum grade of "C" is required in all elective courses taken as part of the certificate program. In the five core courses, an average grade of "B" is required.

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 in the program. A student 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	
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 Pascal Programming	2
All of the following:		
3460:210	Introduction to Computer Concepts	3
3460:420	Structured Programming	3

		<i>Credits</i>
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

The student will be required to select courses from areas other than the major since the purpose of the program is to broaden the student's background. 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.

Acceptable Courses

1830:201	Man and the Environment	3
1830:401	Seminar in Environmental Studies	3
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
3250:365	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	Introduction to 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
3400:434/534	American Environmental History	3
3850:321	Population	3
3850:425/525	Sociology of Human Life	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 Laboratory	2
5800:491/591	Workshop: Arithmetic or in Physical Science	3

Latin American Studies

Requirements

The student in the Latin American Studies Certificate Program will major in the respective disciplines (economics, geography, history, political science, sociology and Spanish).

In addition, the student will take 12 credits in the three separate disciplines chosen from the following list:

Political Science		<i>Credits</i>
3700:425	Latin American Politics	3
History		
3400:415/515	Latin America: National Origins	3
3400:416/516	Latin America: Twentieth Century	3
3400:417/517	United States, Latin America and Imperialism	3
3400:418/518	Mexico	3
Geography		
3350:353	Latin America	3
Sociology (Anthropology)		
3870:257	Indians of South America	3
3870:356	New World Prehistory	3
Economics		
3250:460	Economic Development and Planning for Underdeveloped Countries	3

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, an undergraduate student at The University of Akron must complete at least 15 credits from the list of acceptable courses. These must be distributed so that work will be included from three separate departments. The student will major in one of the traditional disciplines, but the area concentration is meant to add a further dimension of depth through concentrated work focusing on peace studies. Where specialized training is relevant to a particular student's interest, alternatives to those on the list of acceptable courses may be approved by the director. A paper or project is to be completed in conjunction with one of the 300/400-level courses chosen and in consultation with the instructor involved. The student undertaking the Peace Studies Certificate Program must have prior consultation with the director of the Center for Peace Studies.

The following two courses are required for everyone in the program:

1860:301	Value Concepts on Peace and War	3
3400:340	Peace, War and Mankind	3

Acceptable Courses

		<i>Credits</i>
1860:300	Special Topics in Peace Studies	1-3
1860:301	Value Concepts on Peace and War	3
1860:350	Independent Study in Peace Studies	1-3
1860:378	Human Rights Concepts	3
1860:390	Workshop on Peace Studies	1-3
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	United States-Latin American Relations	3
3400:460	War and Western Civilization	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

		<i>Credits</i>
3350:438	World Metropolitan Areas	3
3400:436	The American City	3
3700:380	Metropolitan Politics	4
3850:425	Sociology of Urban	3
4300:450	Urban Planning	2

Electives

Each student's program (subject to the program director's approval) is to include six elective courses distributed between professional, technical and research offerings. Three courses will be from the professional listing and three from the technical-research listing. In consultation with the program director, elective courses will be selected from 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 significant for a person who will be or is already engaged in planning for present and changing future urban, regional, environmental, resource, energy and societal needs. The truly comprehensive planner must have academic acquaintance with a variety of professional and technical approaches 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.

Project

Upon completion of the core and elective course requirements, the student will take 3350:385 *Planning Seminar* (one credit). In this seminar the student will produce a final paper covering a city or regional resource planning topic chosen by the student and approved by the director of the program. Each project will be presented to the seminar class and critically analyzed.

A grade of "C" or better is required in all courses undertaken as part of the certificate program. In the five core courses an average grade of "B" is required.

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.

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. 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	Introduction to Economic Analysis	3
3350:220	Economic Geography	3
3350:433	Urban, Regional and Resource Planning	3

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>
2430:105	Real Estate Principles	2
2430:185	Real Estate Law	2
2430:245	Real Estate Finance	2
2430:255	Valuation of Residential Property	2
2430:265	Real Estate Brokerage	2
2520:212	Principles of Salesmanship	4

Electives

At least four of the following must be completed:

2430:115	Housing Design and Construction	2
2430:125	Land and Real Estate Development	2
2430:205	Introduction to Real Estate Management	3
2430:215	Real Estate Economics	2
2430:225	Industrial Real Estate	2
2430:235	Commercial Real Estate	2
2430:285	Applied Real Estate Mathematics	2
2430:299	Special Topics in Real Estate (may be repeated for a total of four credits)	2

In addition, upon completion of the core and elective course requirements, the student will complete the following:

2430:275	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.

Certificate Program in Secretarial Science

Administrative Secretarial

Requirements

The administrative secretarial program provides intensive administrative secretarial training in two 15-week semesters. It is designed for the individual who has completed at least two years of college and who wishes to add administrative secretarial skills to enhance career opportunities. Training is provided to type at 50-65 net words-a-minute and to transcribe accurately business correspondence dictated at 70-90 net words-a-minute. The student will develop effective letter writing ability, use new office machines and correlate secretarial skills and administrative ability.

To enroll in the administrative secretarial option, a student must have completed at least two years of college.

Core Courses

2420:211	Basic Accounting I	3
2540:121	Office Problems	3
2540:125	Business Machines	2
2540:151	Intermediate Typewriting	3
2540:241	Information Management	3
2540:257	Secretarial Machines	3
2540:263	Business Communications	3
	Total	20

Administrative Secretarial Option

2420:103	Role of Supervision in Management	3
2540:150	Beginning Typing	3
2540:171	Shorthand Principles	4
2540:173	Shorthand and Transcription	4
	Total	14

Word Processing

Requirements

The word processing option is designed to enable the student who has some beginning typing skills to prepare for an entry-level job in word processing. The program is a study of the applied use of word processing procedures and equipment in a simulated word processing office environment. The total work flow of office communications will be covered from input through output. Using automated typewriting equipment, the student will produce office documents from machine transcription, handwritten copy and type-written copy. All courses taken may be applied toward an associate degree in secretarial science.

Core Courses

2420:211	Basic Accounting I	3
2540:121	Office Problems	3
2540:125	Business Machines	2
2540:151	Intermediate Typewriting	3
2540:241	Information Management	3
2540:257	Secretarial Machines	3
2540:263	Business Communications	3
	Total	20

Word Processing Option

2540:119	Business English	3
2540:253	Advanced Typewriting	3
2540:280	Word Processing Concepts	3
	Electives	5
	Total	14

Soviet Area Studies

Requirements

The student in the Soviet Area Studies Program will major in the respective disciplines (economics, geography, history, philosophy, political science and Russian).

In addition to the requirements for the major, the student will take 12 credits in three or more separate disciplines with a concentration in the area of Soviet studies.

		<i>Credits</i>
Economics		
3250:450	Comparative Economic Systems	3
Geography		
3350:358	USSR	3
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.		

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 knowledge and skills a student is able to offer in the many professions that are becoming specialized in adapting the student's 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.

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 the 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.

Program

Graduate (12-credit minimum)

Required Courses:

1850:680	Interdisciplinary Seminar in Life-Span Development and Gerontology	1
1850:695	Practicum/Internship	3

Electives: *

		<i>Credits</i>
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
1850:495	Practicum/Internship (within institute individual department)	2
3100:192	Biology of Aging	3
5550:300	Physiology of Exercise for the Adult and Elderly	2

Electives: *

Two of the following:		
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

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.

Public Policy

This program will assist persons in understanding, formulating, and implementing decisions in the public realm. A person who is interested in government service, administration of publicly-supported institutions and the teaching of government at the college level

*Select a minimum of three courses. Students are required to take two of the three electives outside their major or degree department.

should find such an interdisciplinary program to be of great value.

Admission

A person is eligible for admission to the Graduate Certificate Program in Public Policy if the person has been admitted to graduate study and is pursuing a master's or doctoral degree in the Departments of Economics, Political Science or Sociology. A student who is pursuing a graduate degree in any other department at The University of Akron may be admitted upon the recommendation of the head of the department in which the student is enrolled.

A student may 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 the application has been made.

Requirements

Core Course:

		<i>Credits</i>
3700:541	The Policy Process	
	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 and Constitutional Law	4
3700:580	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

- The student 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 3750:691 *Internship in Political Science*, a course which will permit a student to gain experience working with public officials, government agencies, political parties or interest groups. A student will normally enroll in this course after having completed at least 12 semester credits of work relating to public policy. A person with extensive administrative or governmental experience may be permitted, with the approval of the student's adviser, to substitute another course dealing with public policy in place of the *Internship in Political Science*.
- At least two-thirds of the credits earned for this certificate must be in 600- or 700-level courses. No more than three courses in which the student enrolls, of the seven required for the Graduate Certificate in Public Policy, may also apply toward meeting requirements for a graduate degree at The University of Akron.
- The student must maintain at least a "B" (3.0) average in coursework for the certificate.

Certificate

Upon completion of all requirements for this program and for the graduate degree which each student is pursuing, a participant 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 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 a student has 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

A student must satisfy the requirements for entrance in graduate programs or have a bachelor's degree and the equivalent of five years' experience in a professional, administrative or leadership position, in which case the student shall be admitted as a special non-degree student. A student may wish to pursue additional electives. However, a student admitted to this program will be limited to 20 credits. If the student wishes to pursue more than 20 credits, the student must be admitted to the 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		<i>Credits</i>
3980:600	Basic Analytical Research*	
	or	
3980:601	Advanced Research and Statistical Methods*	3
Options		
Urban Public Administration		
3980:611	Urban Administration	4
3980:640	Fiscal Analysis	3
3980:681	Urban Policy Analysis	3
	Elective(s)	3
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

*Both required in urban research methods option.

Urban Service Systems		<i>Credits</i>
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	
	or	
3980:681	Urban Theory and Value	3
	Elective(s)	10

Certificate Program in Higher Education

A certificate program in higher education is offered to the student pursuing the Ph.D. in an existing program with a career goal of teaching in higher education.

This program is designed to provide an examination of the development of higher education; the opportunity to interact with practicing administrators; and studies in institutional program planning, curriculum and instruction.

Required

5100:703	Seminar: History and Philosophy of Higher Education	3
5900:700	Introductory Administrative Colloquium in Higher Education	1
5900:800	Advanced Administrative Colloquium in Higher Education	1
5900:801-2	Internship and Internship Seminar	2
	Independent Study or coursework to support concentration and bring total hours to a minimum of 15.	8
	Total	15

Options

A student may select all three courses listed as "A" and omit "B" or may select an area of concentration and take one course from "A" under I, II or III and the supporting course from "B" from the same heading.

Organization and Administration in Higher Education (I)

5700:704	Administrative Organization in Education (A)	2
5900:715	Seminar in Higher Education: Administration in Higher Education (B)	3

Student Services in Higher Education (II)

5600:649	Counseling and Personnel Services in Higher Education (A)	2
5900:725	Seminar in Higher Education: Student Services (B)	3

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

5900:730	Higher Education Curriculum and Program Planning (A)	3
5900:735	Instructional Strategies and Techniques for the College Instructor (B)	
	or	
5700:710	Principles of Curriculum Development (B)	3

Evening College and Summer Sessions

Caesar A. Carrino, Ph.D., *Dean*

Gordon A. Hagerman, B.A., *Assistant to the Dean*

Elmore J. Houston, M.A., *Assistant to the Dean*

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.

Evening College

The University of Akron has a rich and historic tradition of service to those students who attend classes after 5 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.

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 noncredit 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.



SECTION 5



**GRADUATE, PROFESSIONAL AND LAW
ACADEMIC PROGRAMS**

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*

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

The Nature of Graduate Education

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

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

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

understanding essential to leadership in many areas of human endeavor.

History of the Graduate School

Graduate study 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 a qualified student, 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, the College of Education provides a year of study beyond the master's degree in the area of school superintendent.

Several departments offer a limited amount of work which may be taken on the graduate level. Such courses may supplement the major program of study for the student who does not wish to devote his entire attention to one field.

Graduate Faculty and the Graduate Council

The graduate faculty is comprised of those members of the faculty who hold 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 a student who has 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.

Graduate School Regulations

Student Responsibility

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

Admission

Every person who desires to enroll in or audit any graduate credit 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 (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. An accepted applicant may begin graduate work in the fall, spring or summer semester. The offer of admission is void, however, if the applicant does not register for courses within two years from the time of admission. An individual whose offer of admission has lapsed must submit a new application to be reconsidered for admission.

The student is admitted only for the purpose or objective stated on the application for admission. A new request for admission must be filed when the original objective has been attained or when the student wishes to change objectives. The admitted status terminates when the time limits have been exceeded or other conditions for continued admitted status have not been met.

No student will be admitted without approval and acceptance by a department within the University, but admission to a department does not necessarily imply admission to or candidacy for any graduate degree program in that department. Admission for graduate study in any program can only be granted by the dean of Graduate Studies and Research and staff.

Classification

A student is identified by the Graduate School as being in one of the following categories. Any change must be arranged through the Graduate School.

- *Full Admission* may be given to any applicant who desires to pursue a graduate degree and has a baccalaureate degree from an accredited college or university with an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent); or holds an advanced degree from an accredited college or university in or appropriate to the intended field; or holds a baccalaureate or master's degree from a foreign college or university with first class standing or 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 a person who does not qualify for full admission under the criteria above but for whom there is reason to believe that completion of a graduate program is possible. A department head may recommend a person for special admission by attaching a statement to the recommendation elaborating reasons. A person admitted as a special student 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 a person 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 re-evaluated and recommendation provided by the admitting department for each additional course or program. A person admitted as a special non-degree student must reapply for any other status and be judged in accordance with the requirements for that status.
 - *Special Workshop* status is for a person permitted to take workshops for graduate credit *without being admitted to Graduate School*. Such permission is granted by the workshop director upon receipt of a signed statement of possession of a baccalaureate degree by the applicant, and terminates upon completion of this workshop. A student admitted to special workshop status must apply through regular channels for any other category. A 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 a person who is a regularly enrolled graduate student in good standing in a degree program at another accredited university and has written permission to enroll at The University of Akron. Such permission is valid only for the courses and semester specified, with a maximum of 10 semester credits allowable, and is subject to the approval of the instructor, department head and Graduate School. A transient student is subject to the same rules and regulations as a regularly enrolled student of The University 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 term (if a student does not have a 3.00 or better in the major field, special justification will be required);
 - written approval is given by the instructor of the course and the student's adviser.

These courses may later be applied to a degree program if not used to satisfy baccalaureate degree requirements.
 - *Post-Doctoral* status is divided into three categories:
 - a *Fellow* is a person holding an earned doctorate who is engaged in advanced research. A fellow shall be considered a guest of the University and provided space and use of facilities within limits of practical need of the undergraduate and graduate programs. Tuition and fees shall be collected if allowed under sponsoring contract for any courses the fellow may choose to take;
 - a *Special* is a person holding an earned doctor's degree who desires an additional graduate degree. A special may be admitted to any program upon submission of application forms, application fee (if new student) and an official transcript from the institution awarding the doctorate. This student will be treated as a regular student
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subject to registration fees and program degree requirements;

- a *Guest* is a person holding an earned doctorate who desires to attend courses and seminars relevant to his 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. A guest is welcome to any course or seminar provided space is available. Normally, space and facilities for research cannot be provided for a post-doctoral guest but special requests will be considered. Requests should be submitted, in writing, to the dean of Graduate Studies and Research who will review such requests with the appropriate college dean and department head.

Non-Accredited American School Graduates

A student holding a baccalaureate degree from a non-accredited American college or university, if otherwise qualified, is normally required to complete at least 10 semester credits of post-baccalaureate work at a 3.00 level before being considered for admission to the Graduate School. The accreditation status of the school at the time of the student's graduation shall apply. A student should consult with the department head in the 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 3.00 average (4.00=A) at all times. A grade-point average of 3.00 or better is required for graduation. Any student whose average falls below 3.00 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. A student dismissed from the Graduate School for academic reasons may not be readmitted for one calendar year, and then only if evidence for expecting 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.

Standards: International Students

An international student is 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. An international student seeking admission should not plan to leave the home country until notice of admission has been received from the Graduate School.

An entering graduate student from a country other than the United States and one in which English is the major language in daily life is 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, an applicant should make arrangements to take the test as soon as he contemplates 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, a student may be required to take an English language course for credit.

An international student, coming to The University of Akron in good standing from an accredited American college or university, may have the English proficiency requirement waived upon written request.

Course Load

A full load of coursework at the graduate level is normally 15 semester credits including audit. A student who is employed should reduce the academic load in proportion to the extent and obligations of such employment.

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.

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.

Graduate Fees

All fees reflect charges in 1980-1981 and are subject to change without notice.

Application Fee		
This fee is not refundable under any circumstances		\$20
Tuition Fees		
Resident student per credit		42
Non-resident student per credit		62
(auditors pay same fees)		
General Service		
1-10 credits per semester	3 per credit	
11 credits and over per semester	30 per semester	
Parking Permit Fee		
9 or more credits per semester		30
8½ or fewer credits per semester		15
One summer session		10
Workshop participants		up to 8
Graduation Fees		
Each degree		12
In absentia (additional)		2
Late application charge		5
Thesis and binding		
(payable at time of application for degree)		
binding per volume		7
Microfilming (Ph.D. only)		
(payable at time of application for degree)		31
Change of schedule fee		4
Transcripts		2
Late Registration Fee		20

Refunds

Regulations regarding refunds are the same as for an undergraduate student.

Commencement

A student earning a graduate degree is expected to participate in the Commencement exercises. A degree candidate who has legitimate reasons for graduating "In Absentia" should make a written request to the registrar within the established dates and pay the designated fee.

Financial Assistance

The University awards a number of graduate assistantships to qualified students. 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. A graduate assistant renders service to the University through teaching, research and other duties. For information and/or applications, contact the head of the department.

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.

Master's Degree Requirements

Admission

When a student is admitted to graduate study, an adviser is appointed by the head of the major department. A student who is academically qualified in general but deficient in course preparatoin 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.

Residence Requirements

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

Time Limit

All requirements must be completed within six years after beginning graduate-level coursework at The University of Akron or elsewhere. Extension by up to one year may be granted in unusual circumstances by the dean of Graduate Studies and Research upon written request by the student and recommendation by the adviser and department head.

Credits

A minimum of 30 semester credits of graduate work is required in all master's degree programs. This includes thesis credit. Some departments require more (see departmental requirements). A minimum of two-thirds of the total graduate credits required in any master's program must be completed at The University 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 a fully-qualified student.

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.

Transfer

Up to one-third of the total graduate credits required may be transferred from an accredited college or university. All transfer credit must be at the "A" or "B" level in graduate courses. The credits must be relevant to the student's program and fall within the six-year time limit. A University of Akron student must receive prior approval for transfer courses taken elsewhere.

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

Optional Department Requirements

Each department may set special requirements with regard to entrance examinations, qualifying examina-

tions, foreign language, required courses and thesis. Details are available from the head of the major department.

Advancement to Candidacy

A student should apply for Advancement to Candidacy after completion of one-half of the credits required for the degree in 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.

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.

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

*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.

Admission

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

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

Residence Requirements

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

The minimum residence requirement for a doctoral candidate in all programs is at least two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 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.

Time Limit

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

Credits

A doctorate is conferred in recognition of high attainment and productive scholarship in some special field of learning as evidenced by the satisfactory completion of a prescribed program of study and research; the preparation of a dissertation based on independent research; and the successful passing of examinations covering the special field of study and the general field of which this subject is a part. Consequently, the emphasis is on mastery of the subject rather than a set number of credits. Doctoral programs generally encompass the equivalent of at least three years of full-time study at the graduate level. A minimum of 50 percent of the total credits above the baccalaureate required in each student's doctoral program must be completed at The University 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.

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. A student already admitted to The University of Akron must receive prior approval for transfer courses taken elsewhere.

A student admitted with a master's degree or equivalent will have work evaluated in relation to the student's program to determine transfer credit. Credits transferable for a master's degree holder may be up to 30 semester credits.

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

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"
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in the second year of a college-level course in a language will be accepted as evidence of proficiency in reading knowledge for that language; English may be considered as one of the approved foreign languages for a student whose first language is not English; and demonstrated competence in a research technique (e.g., statistics and/or computers) may be substituted for one of the two foreign languages. Under the last option, each department should define competence and publicize.

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

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 requirements.

Optional Department Requirements

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

Advancement to Candidacy

A student 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.

Dissertation and Oral Defense

The ability to do independent research and demonstrate competence in scholarly exposition must be demonstrated by the preparation of a dissertation on some topic related to the major subject. It should represent a significant contribution to knowledge, be presented in a scholarly manner, reveal the candidate's ability to do independent research and indicate experience in research techniques.

A doctoral dissertation committee supervises and approves the dissertation and administers an oral examination upon the dissertation and related areas of study. This examination is open to the graduate faculty. The dissertation and oral examination must be approved by the committee before the student 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.

Graduation

To be cleared for graduation, a candidate must have completed the academic program with a grade-point average of at least 3.00; have been advanced to candidacy; submitted an approved dissertation and passed an oral examination; filed an application for graduation with the registrar; paid all applicable fees; and met any other department and University requirements applicable.



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*

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, a student 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 credit).
- 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 to meet 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, the applicant must present evidence of a reading knowledge of one relevant foreign language, or knowledge of another research skill such as statistics or computer techniques. Those whose native tongue is not English must demonstrate proficiency in 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, United States to 1865, United States 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 the instructor's supervision.
- Complete all general requirements for the Doctor of Philosophy degree.
- Each Ph.D. candidate will have classroom teaching experience as a part of the program.

Doctor of Philosophy in Polymer Science

An interdisciplinary program leading to the Doctor of Philosophy in polymer science is administered by the Department of Polymer Science. Graduates from the three main disciplines (chemistry, physics and engineering) are guided into the appropriate courses of study and research in that field under the supervision of a departmental staff member. Research facilities of the Institute of Polymer Science are available for thesis research.

In addition to satisfying the general requirements of the Graduate School, a student 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 the committee's 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 the graduate program.
- Pass an oral examination upon completion of the research dissertation.

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

Doctor of Philosophy in Psychology

The Department of Psychology offers a doctoral degree in psychology with specialization in industrial/organizational psychology, experimental/developmental psychology, counseling psychology or industrial gerontological psychology.

A degree will be awarded to a student who, besides fulfilling the general requirements, has met the following specific requirements:

- 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;
 - attainment of a graduate grade-point average (GPA) of 3.25;
 - completion of Graduate Record Examination Aptitude and Advanced Psychology Test;
 - completion of Miller Analogies Test (MAT);
 - securing of three letters of recommendation;
 - successful performance on Department of Psychology first-year examination.
- Major Field
 - a minimum of 90 graduate credits including a 30-credit master's program. A student may be required to complete additional credits beyond the 90 minimum credit requirement.
 - completion of Ph.D. core courses in industrial/organizational psychology or doctoral core courses, developmental psychology or doctoral core courses in industrial gerontological psychology or counseling psychology. Core courses are specified in the *Department of Psychology Graduate Student Manual*. The student is required to maintain at least a 3.00 GPA in core courses;
 - 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, industrial gerontological psychology or counseling 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.

Doctor of Philosophy in Sociology Akron-Kent Joint Ph.D. Program

The University of Akron and Kent State University Departments of Sociology offer a joint program leading to the Ph.D. degree. Faculty and students engaged in the joint doctoral program are for all intents and purposes involved in a single graduate program. 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 also includes emphasis on urban processes.

Admission to the Program

A student may apply with a completed master's degree or equivalent; or apply to the doctoral program after at least one year of full-time coursework 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, a student working toward the Doctor of Philosophy degree in sociology must meet the following requirements:

- Take *Seminar in Urban Processes* (3850:656) 3 credits.
- Take two doctoral-level courses in theory. These courses are to be selected from the predetermined group of courses (see *Department of Sociology Graduate Student Handbook*).

- Complete two doctoral-level courses in methods/statistics. These courses are to be selected from the predetermined group of courses (see *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 a student 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 the student who already has sufficient research experience.
- Completion of a minimum of 60 credits of graduate-level (600 or higher) coursework beyond the bachelor's degree.

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 graduate 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 the student who will pursue a research career, including the student who intends 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 — minimum of 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 the student for whom the Master of Science degree will probably be the terminal scientific degree and who does 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 admission standards, degree requirements, and selection of options, refer to the *Department of Biology, Graduate Student Guide*.

Chemistry

Master of Science

- Chemistry coursework — with the approval of the adviser, up to 12 credits may be taken in related areas — 24 credits.
- Research and thesis — 6 credits.
- Participation in departmental seminars.
- Demonstration of reading proficiency in a foreign language appropriate to the field of study prior to the last semester of enrollment.

Economics

Master of Arts

Thesis Option

A minimum of 30 credits of coursework including a thesis equivalent to six credits 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:

		Credits
3250:520	Mathematical Economics I*	3
3250:526	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:

3250:521	The Economics of Human Resources	
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

Industrial Relations Track (for individuals interested in a career in industrial relations)

3250:636	Collective Bargaining II	3
3250:637	Labor Law II	3

• Electives:

3250:606	Public Finance	3
3250:615	Industrial Organization	3
3250:616	Antitrust Policy	3
3250:617	Economics of Regulation	3
3250:639	Public Employee Bargaining	3
3750:610	Industrial Psychology	4
3850:649	Sociology of Work	3

- A total of 30 credits is required for the degree.

English

Master of Arts

Thirty credits of coursework (at least 16 of these must be at the 600 level) are required. The program will include the following unless previously taken:

3300:506	Chaucer	3
3300:570	History of the English Language	3
	or	
3300:670	Modern Linguistics	3
3300:615	Shakespearean Drama	3
3300:691	Bibliography and Literary Research	2

A thesis (3300:699) or two thesis essays are required. Before enrolling in the final semester, a student

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

**The student should have a B.A. degree from an accredited college or university and some background in labor and industrial relations. An interested student who has no background may take the following courses:

3250:201-2	Principles of Economics	6
3250:330	Labor Problems	3
3470:251-7	Introductory Statistics	7

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 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.

The student who has undergraduate deficiencies in cartography, geographic research techniques and spatial analysis will be expected to remedy these by taking appropriate courses with the advice of the head of the department.

Courses taken outside the Department of Geography must be approved by the department prior to enrollment.

Geology

Master of Science

- Complete a minimum of 30 credits of which at least 10 credits shall be at the 600 level and no more than two in research problems and six in thesis research.
- Proficiency examination at the beginning of program to determine weaknesses in undergraduate preparation. The student who demonstrates a lack of basic knowledge will be required to take appropriate undergraduate courses. Field camp can be taken for graduate credit, however, it will not count toward the 30 credits for the Master of Science in the geology or geophysics options.
- Core requirements:

		<i>Credits</i>
3370:680	Seminar in Geology	2
3370:699	Thesis Research	6
- Pass comprehensive examination after completion of 18 credits. Examination may be attempted two times only.
- Oral presentation and defense of thesis.
- General areas of courses:
 - Solid Earth: 510, 532, 533, 550, 610, 631, 632, 833, 834, 838, 875.
 - Earth History: 510, 511, 525, 535, 563, 623, 636, 660.
 - Applied Geology: 535, 537, 570, 574, 610, 636, 643, 874, 875, 878.
 - Geophysics: 504, 541, 546, 608, 645, 656, 4300:518.

Degree Specialization

Geology

Equivalents of the science and mathematics requirements for The University of Akron Bachelor of Science degree in geology are required. At least one course must be selected from each of the four general areas.

Earth Science

Equivalents of the geology courses for The University of Akron Bachelor of Arts degree in geology are required. At least one course must be selected from each of the four areas. Those who will be teachers must take 5300:780 *Seminar in Secondary Education: Earth Science* or equivalent.

Geophysics

Equivalents of the science and mathematics requirements for The University of Akron Bachelor of Science degree in geophysics are required. At least two courses must be selected from the general area of applied geology and two from the general area of geophysics.

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

*In Master of Arts degree, at least 24 credits must be in coursework.

either engineering or geology may have to satisfy one or more of the following requirements while proceeding with graduate studies.

		<i>Credits</i>
3370:101	Introductory Physical Geology	4
3370:210	Geomorphology	3
3370:350	Structural Geology	4
3450:221,2,3	Analytical Geometry Calculus I, II, III	12
4300:201	Statics	3
4300:202	Introduction to Mechanics of Solids	3
4300:311	Geotechnical Engineering	5

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

Equivalents of the science and mathematics requirements for The University of Akron Bachelor of Science degree in geology are required. A minimum of one course must be selected from the general area of applied geology and one from the general area of geophysics. (Strongly recommended: 3370:541, 570, 574, 678). As many as eight credits may be selected from engineering, biology and/or geography with the approval of a geology adviser.

- Student's programs beyond the stated requirements will be designed in consultation with the approval of an adviser.

History

Master of Arts

- Admission to the program requires completion of at least 15 semester or 22 quarter credits in history as an undergraduate. *Historical Methods* or an equivalent course should be a part of the entering student's preparation. If it is not, this course must be taken at the earliest opportunity but will not be counted toward fulfillment of the graduate credit requirement.
- Satisfactory completion of a minimum of 30 credits of graduate study in history, of which six may be in individual reading courses.
- Three fields of study, one of which must be unrelated to the other two, and two of which must be chosen from among the following fields:

Ancient	America to 1865
Medieval	United States Since 1865
Europe, Renaissance to 1815	Latin America
Europe, 1815 to the Present	Far East
England and the Empire	History of Science

The third field may be chosen from the above history fields or from an approved cognate discipline.

The student must pass an appropriate written examination in two of the three fields. The third field requirement will be met by at least seven credits of work at the graduate level. If the student does not pass an examination unconditionally, the examining faculty may reexamine the student orally or require the student to take

another written examination after a lapse of three months. No written examination may be repeated more than once.

- A course in historiography (may be waived if such a course has been taken on the undergraduate level).
- An appropriate foreign language or other research skill shall be required by the student's master's committee if it is necessary to a student's program of study. The student should remember that a reading knowledge of a foreign language is desirable and may be necessary for admission to a doctoral program.
- At least 16 hours of 600-level work, exclusive of historiography and individual reading. May be fulfilled in one of the following ways:*

Option I

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

Option II

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

Option III

Two reading seminars, one writing seminar, and a thesis which must be read and approved by two faculty members.

Mathematical Sciences

Master of Science — Mathematics

- Thirty credits of graduate work.

	<i>Credits</i>	
3450:611	Algebraic Theories I	3
3450:612	Algebraic Theories II	3
3450:621	Functions of a Real Variable I	3
3450:622	Functions of a Real Variable 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.

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Thesis Option

In addition to the core requirements, eight credits in 500/600-level mathematics or statistics courses and two credits in 3450:699 *Research and Thesis* must be completed.

- With the consent of the department, up to six credits of approved graduate-level electives outside the

*Where disagreement occurs between readers in Option I, II or III, the director of Master's Studies will choose a faculty member to arbitrate the disagreement.

department may be substituted in the thesis or non-thesis option.

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

Non-thesis Option

In addition to the core requirements, 10 credits in 500/600-level mathematics or statistics courses must be completed.

Master of Science — Statistics

- Thirty credits of graduate work.
- Core Requirements:

		Credits
3450:610	Matrix Algebra	3
3450:692	Mathematics and Statistics Seminar	2
3470:564	Experimental Design II	2
3470:650	Advanced Probability and Stochastic Processes	3
3470:651-2	Mathematical Statistics I and II	6
3470:665	Regression and Correlation	3
3470:655	Linear Models	3
		22

Thesis Option

In addition to the core requirements, six credits in 500/600-level mathematics or statistics courses and two credits in 3450:699 *Research and Thesis* must be completed.

- 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 examination, taking the form suggested by the department, must be completed in the thesis or non-thesis option.

Non-thesis Option

In addition to the core requirements, eight credits in 500/500-level mathematics or statistics courses must be completed.

Master of Science — Applied Mathematics

- Thirty credits of graduate work.
- Core Requirements:

3450:610	Matrix Algebra	3
3450:621	Functions of a Real Variable I	3
3450:627	Advanced Numerical Analysis I	3
3450:692	Mathematics and Statistics Seminar	2
3470:651	Mathematical Statistics I	3
	either	
3450:625	Analytic Function Theory	3
3450:633-4	Continuous Systems I and II	6
	or	
3450:635	Optimization	3
3450:636	Advanced Combinatorics and Graph Theory	3
3470:650	Advanced Probability and Stochastic Processes	3
		23

Thesis Option

In addition to the core requirements, five credits in 500/600-level mathematics or statistics courses and

two credits in 3450:699 *Research and Thesis* must be completed.

- With the consent of the department, up to six credits of approved graduate-level work outside the department may be substituted for elective courses in the thesis or non-thesis option.
- A comprehensive examination, taking the form suggested by the department, must be completed in the thesis or non-thesis option.

Non-thesis Option

In addition to the core requirements, seven credits in 500/600-level mathematics or statistics courses 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. A student with inadequate background in philosophy will be expected to make up the deficiency.
- Complete at least 30 semester credits with a 3.00 cumulative grade-point average.

		Credits
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.

Physics

Master of Science

- Complete 30 credits with a 3.00 cumulative grade-point average.

- **Courses normally include:**

		<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:

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
3700:628	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, a candidate may be asked to take undergraduate courses to overcome serious deficiencies.

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.

Non-thesis Option

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.

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 3.00 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 3.00 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.

Thesis Option

Completion of a minimum of 30 credits of graduate work including thesis.

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.

Sociology

Master of Arts

- Complete three required core courses with at least a 3.00 grade-point average:

		<i>Credits</i>
3850:603	Sociological Research Methods	3
3850:604	Social Research Design	3
3850:617	Sociological Theory	3

Thesis Option

This degree option is intended for the student who either plans 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 six credits in 3850:699 *Thesis*. No more than six credits will count toward the degree.

Completion of master's thesis and successful oral defense.

Non-thesis Option

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

Completion of 32 credits of graduate work with no more than six credits taken at the 500 level.

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.

Anthropology

There is no graduate degree in anthropology. However, there are many graduate courses available.

Students interested in taking such courses for graduate credit must be admitted to the Graduate School through an existing graduate program, or they may apply for *Special Non-Degree* status through the Department of Sociology. Students should enroll in graduate courses only for specific professional preparation or enhancement and with the permission of the instructor. Inquiries should be directed to the graduate director in the Department of Sociology.

Spanish

Master of Arts

- Core Requirements:

Thirty-two semester credits of graduate work, which may include a thesis amounting to four 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

Courses may be taken outside the Department of Urban Studies for the purpose of fulfilling any of the requirements listed below but must be approved by the department prior to registration.

Each student will, upon entering the program and in consultation with a faculty adviser, plan a complete course of study.

Core Requirements:		<i>Credits</i>
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 34 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 the student without professional planning experience — 1-3 credits.



College of Engineering

Joseph A. Edminister, M.S.E., J.D., *Assistant to the Dean*

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 coursework and 30 for dissertation, must be earned.
- Pass a candidacy examination which may be taken after 90 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 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.

Master's Degree

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

Master of Science in Chemical Engineering

Thesis Option

		Credits
4200:800	Transport Phenomena	3
4200:805	Chemical Reaction Engineering	3
4200:810	Classical Thermodynamics	3
	Chemical Engineering Electives**	6
	Approved Electives	6
	Approved Mathematics	3
	Thesis	6

The thesis must be satisfactorily defended in an oral examination. The student must pass a comprehensive examination. The student is expected to attend and participate in the Department of Chemical Engineering seminars.

Non-thesis Option

4200:800	Transport Phenomena	3
4200:805	Chemical Reaction Engineering	3
4200:810	Classical Thermodynamics	3
	Chemical Engineering Electives**	6
	Approved Electives	18
	Approved Mathematics	3

The student must pass a comprehensive examination and is expected to attend and participate in the Department 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 thesis must be satisfactorily defended in an oral examination.

Non-thesis Option

	Civil Engineering Coursework	15
	Approved Mathematics or Science	3
	Approved Electives	12
	Special Problem	2

* A student without a Bachelor of Science degree 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.

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

Master of Science in Electrical Engineering

After completing one semester of coursework, a student is required to take a comprehensive proficiency examination on six undergraduate topics covering circuit theory, circuit applications, electronics, electromagnetic fields, machines and power and controls. A student who demonstrates 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		Credits
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*	9
	Approved Engineering, Mathematics or Science	9
	Thesis	9
Total		30

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*	9
	Approved Engineering, Mathematics or Science	9
Total		30

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

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

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

Credits	
Approved Electives †	6
Thesis	6

The thesis must be satisfactorily defended in an oral examination.

Non-thesis Option

Mechanical Engineering Coursework†	15
Approved Mathematics	3
Approved Electives†	12
Special Problems	2

Master of Science in Engineering

This program is intended for the student whose educational objectives cannot be met by one of the four departmental programs.

Thesis Option

Credits	
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. A student should declare to the dean of the College of Engineering the intention to study toward the Master of Science in Engineering degree before the completion of 10 graduate credits. Later admission to the program may be granted upon petition to the dean 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 a student 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.

College of Education

H. Kenneth Barker, Ph.D., *Dean*
 Don Birdsell, Ph.D., *Assistant Dean*
 Walter Yoder, Ed.D., *Assistant to the Dean*

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 the student who, in addition to filling the general requirements of the Graduate School, has 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. A student 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:
 - a student in the Department of Counseling and Special Education may elect to develop appropriate research skills prescribed by the adviser in lieu of the foreign language requirements;
 - a student in the Department of Elementary Education may elect to develop appropriate alternative research skills prescribed by the adviser, subject to review by the department head, depending upon the career goal of the student and upon the academic and/or scientific requirement of the dissertation in lieu of the foreign language requirement;
 - a student in the Department of Secondary Education may elect to develop appropriate research skills prescribed by the adviser, subject to review by the department head in lieu of the foreign language requirement.
- 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 doctoral 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.

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, and the language requirement is waived.

Foundation Studies Education — Doctoral Program Requirements

Behavioral Studies		<i>Credits</i>
5100:620	Behavioral Bases of Education or	
5100:624	Seminar in Educational Psychology	3
5100:721	Learning Processes or	
5100:723	Teaching Behavior and Instruction	3
Humanistic Studies		
5100:701	History of Education in American Society or	
5100:703	Seminar in History and Philosophy of Higher Education	3
Social and Philosophical		
5100:600	Philosophies of Education or	
5100:602	Comparative and International Education	3
5100:604	Seminar in Cultural Foundations of Education or	
5100:705	Seminar in Social-Philosophical Foundations	3
Research		
5100:640	Techniques of Research	3
5100:741	Statistics in Education	3
5— :899	Dissertation	10-20

Higher Education Administration

This option addresses such major institutional functions as: administration, academic, student

services, finance, planning, development and public relations. Students undertaking the higher education option within the Ed.D. will have the opportunity to direct aspects of their studies toward courses which directly support a particular career goal.

In addition to the above listed *Foundation Studies Education — Doctoral Program Requirements*, the following courses are required:

Educational Administration		<i>Credits</i>
5700:605	Decision Making	3
5700:606	Evaluation of Educational Institutions	3
5700:704	Administrative Organizations in Education	2
5900:700	Introductory Colloquium in Higher Education	1
5900:715	Seminar: Administration in Higher Education	3
5900:800	Advanced Colloquium in Higher Education	1
5900:801	Internship in Higher Education	4
5900:802	Internship Seminar in Higher Education	1
Curriculum, Instruction and Student Services		
5600:649	Counseling and Personnel Services in Higher Education	3
5900:730	Higher Education Curriculum and Program Planning	3
Doctoral Residence Seminars (two consecutive semesters)		
5700:730	Seminar in Educational Administration	3
5700:731	Problems of the Educational Administrator	2
5700:697	Independent Study	1
	General Electives*	17
	Cognate Area Electives*	12

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.

The student who expects to earn the master's degree for advancement in the field of teaching must meet the general requirements for admission to the Graduate School and must be qualified to hold a standard teaching certificate. Exceptions to this latter requirement will be made for the qualified student who does not wish to teach or perform duties in the public schools provided the student presents or acquires an appropriate background of study or experience. The student who expects to earn the master's degree in guidance and administration also should have had successful teaching experience. A physical examination may be required if and when indicated. Any student who exhibits a deficiency in English or other skills may be required to correct it before recommendation for an advanced degree.

*Planned with the student's committee.

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

		<i>Credits</i>
5100:600	Philosophies of Education or	
5100:604	Seminar in Cultural Foundations of Education	3
5100:620	Behavioral Bases of Education or	
5100:624	Seminar in Educational Psychology	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 and Instruction	2
5200:699	Research in Education	2
5200:780	Seminar in Elementary Education**	4-8
- Electives — 9-13 credits.

Total 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.

**Two seminars are required.

Secondary Education

Objectives:

This program is intended to prepare the teacher of grades seven through 12 for the following areas: master teacher, department head, supervisor and resource teacher. The student planning to major in physical education should consult the adviser for alternate course requirements. This program may also serve as preliminary preparation for the student who wishes to apply for the Doctor of Philosophy degree in secondary education.

Program

- Foundation Studies Courses — 9 credits.
 - Secondary Education: Credits

5300:780	Seminar in Secondary Education: Improvement of Instruction in the area of concentration	2
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 - Ten credits from the following:

5300:525	Reading Programs in Secondary Education	2
5300:619	Secondary Curriculum and Instruction	2
5300:695	Field Experience	1-6
5300:699	Master's Problem or Thesis	1-4
5300:721	Supervision of Instruction	2
5300:780	Seminar: Secondary Education*	2
	Topics: Senior High Junior High Computer Assisted Instruction Individualized Instruction	
5400:505	Vocational Education for Youth and Adults	2
 - Area of Concentration (500 level or above) — 10 credits.
 - Electives — 2 credits.
- | | | |
|--|-------|----|
| | Total | 33 |
|--|-------|----|

Elementary School Principal

Objectives

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

*Only two seminars for this option may be counted towards the degree.

Program

- Foundation Studies Courses — 9 credits.
 - Administration: Credits

5200:630	Elementary School Curriculum and Instruction	2
5200:732	Supervision of Instruction in the Elementary School	2
5600:602	Introduction to Counseling	2
5700:601	Principles of Educational Administration	3
5700:610	Principles of Educational Supervision	3
5700:631	Elementary School Administration	2
5700:697	Field Experience for the Elementary Administrator	2
5700:699	Master's Problem or Thesis	
	or	
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 | 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 the individual and the group successfully to improve the educational program.
- Implement the technical aspects of secondary education.

Program

- Foundation Studies Courses — 9 credits.
- Administration:

5300:619	Secondary School Curriculum and Instruction	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
5600:602	Introduction to Counseling	2
5700:601	Principles of Educational Administration	3
5700:607	Legal Basis of Education	2
5700:610	Principles of Educational Supervision	3

		Credits
5700:620	Secondary School Administration	3
5700:696	Field Experience for the Secondary School Administrator	3
	Total	33-34

Supervisor

Program

- Foundation Studies Courses — 9 credits.

- Major Field:

5200:630	Elementary School Curriculum and Instruction*	2
5200:732	Supervision of Instruction Elementary School*	2
5300:619	Secondary School Curriculum and Instruction**	2
5300:721	Supervision of Instruction Secondary School**	2
5610:601	Seminar: Special Education Curriculum Planning†	3
5610:602	Supervision of Instruction Special Education†	3
5700:610	Principles of Educational Supervision	3
5700:695	Field Experience of Supervisors	2
5700:710	Principles of Curriculum Development	3
Total		30

5100:701	History of Education in American Society	3
5100:741	Statistics in Education	3
5700:740	Theories of Supervision	3
5700:699	Master's Problem or Thesis	2
Total		30

Program

- Foundation Studies Courses — 9 credits.

- Major Field:

		Credits
5700:601	Principles of Educational Administration	3
5700:604	School and Community Relations	2
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
5700:699	Master's Problem or Thesis	2
5700:710	Principles of Curriculum Development	3
5700:895	Field Experience for the Superintendent	2
Total		34

Counseling and Special Education

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

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.

Elementary School Counseling Certification Program

Program

- Foundations Studies Courses — 9 credits.

- Major Field:

5800:600	Seminar in Counseling	1
5800:631	Elementary School Guidance	3
5800:643	Counseling: Theory and Philosophy	3
5800:645	Group Testing in Counseling	3
5800:647	Career Counseling: Theory and Practice	3
5800:651	Techniques in Counseling	3
5800:653	Group Counseling	3
5800:657	Consultant: Counseling	3
5800:659	Organization and Administration of Guidance Services	3
5800:661	Seminar in Elementary School Counseling	2
5800:675	Practicum in Counseling	4
5810:540	Developmental Characteristics of Exceptional Individuals	3
Total		43

* Required only of elementary students.

** Required only of secondary students.

† Required only of special education students.

Secondary School Counseling Certification Program

Program

- Foundation Studies Courses — 9 credits.

- Major Field:

	<i>Credits</i>
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 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
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 41

Special Education

A program of studies in special education will be selected from the following course listings. A student in special education who holds 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 depend-

ing 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):

	<i>Credits</i>
5600:651 Techniques of Counseling	3
5610:540 Developmental Characteristics of Exceptional Individuals	
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 of Special Education	3
5610:604 Educational and Management Strategies for Parents of Exceptional Individuals	3

- Master's paper (candidate required to choose one):

5610:600 Seminar in Special Education	3
5610:699 Special Education — Thesis or Problem	3

Options

The student 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.

5100:600 Philosophies of Education*	3
5100:620 Behavioral Bases of Education*	3
5100:640 Techniques of Research*	3
5610:601 Seminar: Special Education Curriculum Planning	3
5610:602 Supervision of Instruction Special Education	3
5700:610 Principles of Educational Supervision	3
5700:695 Field Experience — Supervisors	2
5700:710 Curriculum Development	3
	<u>23</u>

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

* A part of foundation core courses.

School Educational Consultant — Special Education

		Credits
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.

• Electives: Select from the following areas after consultation with an adviser:

Psychology	Sociology
Educational Foundations	Elementary Education
Secondary Education	Physical Education
Counseling	Special Education
Inner-City Education	Educational Administration
Family Ecology	Speech Pathology and Audiology

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.

Multicultural Education

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

Objectives

- To acquire/extend knowledge of:
 - early, recent and current literature and research on multicultural education and the culturally different learner;
 - 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:

5100:840	Techniques of Research	3
5300:780	Seminar in Secondary Education	2

		Credits
5300:780	Seminar in Secondary Education	2
5600:645	Group Testing in Counseling	3
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

• Electives in related special fields in education — 17 credits.

Total 35

Physical Education

Program

• Foundation Studies Courses — 9 credits.

• 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
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 30

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>

*In addition to other requirements peculiar to Elementary and Secondary Programs.

Technical Education

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

Program

- Foundation Studies Courses — 9 credits.

- Professional Technical Education: Credits:

5400:510	The Two-Year College	3
5400:521	Instructional Techniques in Technical Education	4
5400:530	Course Construction in Technical Education*	2

- Teaching Internship:

The student entering the program without teaching experience is required to take a teaching internship at a cooperating two-year institution.

5400:690	Internship: Teaching Vocational Education or	
5400:691	Internship: Teaching Technical Education or	
5400:692	Internship: Teaching Post-Secondary Education	2

The student 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. The student who already holds a four-year provisional certificate in home economics and who desires 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 8-12 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
5600:675	Practicum in Counseling	4
		10

Guidance — Option B

5600:635	Community and College Counseling	3
5600:645	Group Testing in Counseling	3
5600:647	Career Counseling Theory and Practice	3
Select one of the following:		
5600:526	Career Education	2
5600:649	Counseling and Personnel Services in Higher Education	2
5600:665	Seminar: Community and College Counseling	3
		11-12

Curriculum and Supervision

5700:810	Principles of Educational Supervision	3
5700:710	Principles of Curriculum Development	3
	Elective in Curriculum or Supervision	2
		8

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
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	32

School Psychologist

Program**

- Foundation Studies Courses — 9-10 credits.

- Major Field:

3750:500	Personality or	
3750:704	Theories of Personality	3
3750:510	Psychological Tests and Measurements or	4
5600:645	Group Testing in Counseling	3

*The student selecting the vocational home economics option may take 5400:511 Vocational Home Economics in place of 5400:530. The student selecting this option must take an additional two credits in a course emphasizing the adult in vocational education.

**Inquiry related to program requirements, admission standards and enrollment limitations should be addressed to the Department of Counseling and Special Education.

		<i>Credits</i>
3750:620	Methods and Theories of Human Development	4
	or	
5620:601	Cognitive Function Models: Principles Educational Planning	3
3750:700	Survey of Projective Techniques	2
3750:702	Principles and Practices of Individual Intelligence Testing	4
3750:703	Theories of Psychotherapy	
	or	
5600:643	Counseling: Theory and Philosophy	3
5100:741	Statistics in Education	3
5610:540	Developmental Characteristics of Exceptional Individuals	
	or	
5610:543	Developmental Characteristics of Learning Disabled Individuals	3
5610:556	Classroom Behavior Management for Exceptional Children	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
5620:699	School Psychology: Thesis or Problem	2
	Total	48-51

Certification

The student completing this program of study who holds a valid Ohio teaching certificate must also 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
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:

5100:600	Philosophies of Education	3
5200:630	Elementary School Curriculum and Instruction	2
5225:681	Diagnosis of Reading Problems	5
5620:895	Field Experience: Master's	3
5700:631	Elementary School Administration	2

The student must complete a minimum of 60 carefully programmed semester credits beyond the baccalaureate degree.

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:

		<i>Credits</i>
5200:699	Research in Education	2
5200:780	Elementary Education Seminar: Children's Literature — Reading	2
5250:681	Diagnosis of Reading Problems*	5
5250:682	Clinical Practices in Reading	5
5250:692	Advanced Study and Research in Reading Instruction	3
5250:693	Supervision and Curriculum Development in Reading Instruction	2

- Two credits from the following list of electives:

5200:780	Elementary Education Seminar: Reading	2
5250:511	Materials and Organizations in Reading Instruction	3
5250:680	Trends in Reading Instruction	2
5800:592	Workshop in Reading	2
	Total	30

The student in a graduate program with another area of concentration may elect any specialized course in reading, provided the student meets the prerequisites.

Certification as Administrative Specialist: School and Community Relations

Program

- Foundation Studies Courses — 9 credits.
- Required Courses:

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
5700:699	Research in Education (Master's Thesis or Problem)	2
5700:710	Principles of Curriculum Development	3
5700:732	Organizational Communications and the School Administrator	3
5700:895	Field Experience — Superintendent	2
7600:686	Studies in Communication Media	3
7600:687	Studies in Communication Media	3
7600:688	Studies in Communication Media	3
	Total	46

*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.

Sixth-Year Program: City School Superintendent

Program

• Required Courses:		<i>Credits</i>
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
5100:640	Techniques of Research	3
5100:701	History of Education in American Society	3
	or	
5100:703	Seminar: History and Philosophy of Higher Education	3
5100:721	Learning Processes	3
	or	
5100:723	Teacher Behavior and Instruction	3
5100:741	Statistics in Education	3
5700:601	Principles of Education Administration	3
5700:604	School and Community Relations	2
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
5700:699	Master's Problem or Thesis*	2
5700:701	School Buildings and Construction	2
5700:703	Administration of Staff Personnel	2
5700:710	Principles of Curriculum Development	3
5700:895	Field Experience — Superintendent	2
	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.

Educational Foundations

This program area is designed for either the student interested in improving present educational skills or the student interested in educational or instructional positions in business, industry and social services.

A student's program of study will be determined jointly by the student and an academic adviser. Emphasis 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:† *Credits*

The student 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 nine credits from one of these areas and six credits from the other (college requirements may be included). 15

• Thesis

5100:699 Research in Education 3-4

• Inter-Departmental Electives

A minimum of six credits will be taken outside the Department of Educational Foundations 6

Total 30

* Required of those completing the master's degree.

** Electives should be selected with adviser's approval.

† After accumulating 20 credits, the student will take a written qualifying examination. Student and program committee will then determine the remainder of the program.



College of Business Administration

James W. Dunlap, Ph.D., *Dean*

Master's Degree

The College of Business Administration (CBA) offers graduate programs which lead to the degrees of Master of Business Administration, Master of Science in 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 p.m. 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.

Admission Policy

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

- Hold a 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 (GPA) (A=4.0) times 200 plus the Graduate Management Admissions Test (GMAT) score.
- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,050 or more points based 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, the applicant should register for it sufficiently in advance to the filing of the graduate application so evaluation for admission will not be delayed. GMAT registration bulletins can be obtained from the Graduate Programs in Business Office or the Educational Testing Service, Box 966-R, Princeton, NJ 08540. Those who have taken the GMAT (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; 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 3.00 GPA upon the completion of 12 graduate credits will be dismissed from the program.

In rare instances, the applicant who has taken the GMAT but does not meet requirements may be considered for admission. Also, those who have previously been denied admission may, upon presentation of new information, be reconsidered. In either case, the applicant must petition, in writing, the CBA Graduate Admissions Committee giving those reasons relevant to the situation which demonstrate the likelihood of success — the burden of proof is on the applicant.

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), Phase II (core courses) and Phase III (area of concentration courses). The program consists of 54 graduate credits. Phase I courses may be waived for those who have had previous study in the areas.

Phase I: 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
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

		<i>Credits</i>
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
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
6600:660	Marketing Management and Policy (6600:600 or equivalent)	3
	Elective**	3
	(any graduate credits offered by the College of Business but not in the area of concentration chosen)	
	Total	27

Phase III: Area of Concentration Courses

There are five areas of concentration in the M.B.A. 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, the student who has taken a 400-level course for undergraduate credit at The University of Akron (or an equivalent course elsewhere) is 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 equivalent and 6200:610)	3
6200:699	Seminar in Accounting (3+3) (15 post M.B.A. Phase I credits)	6
	Phase II and III Total Credits	36

Accounting — Non-Paper Option

6200:637	Advanced Accounting Theory (6200:318 or equivalent and 6200:610)	3
	Electives	6
	Any six graduate credits of accounting (department 6200)	
	Phase II and III Total Credits	36

Finance — Paper Option

6400:699	Seminar in Finance (3+3) (15 post M.B.A. Phase I credits)	6
	Electives	3
	Any three graduate credits of finance (department 6400)	
	Phase II and III Total Credits	36

*Those seeking the M.B.A. accounting concentration degree must also have equivalent preparatory coursework in intermediate and cost accounting.

**A student may petition the director, in writing, for permission to enroll in a course related to the field of study in another college of the University.

Finance — Non-paper Option		<i>Credits</i>
Electives		9
Any nine graduate credits of finance (department 6400)		
Phase II and III Total Credits		36

Management — Paper Option		
6500:653	Organizational Theory and Policy Formulation (6500:652)	3
6500:699	Seminar in Management (3+3) (15 post M.B.A. Phase I credits)	
Phase II and III Total Credits		36

Management — Non-paper Option		
6500:653	Organizational Theory and Policy Formulation (6500:652)	3
Electives		6
Any six graduate credits of management (department 6500)		
Phase II and III Total Credits		36

Marketing — Paper Option		
6600:699	Seminar in Marketing (3+3) (15 post Phase I credits)	6
Electives		3
Any three graduate credits of marketing (department 6600)		
Phase II and III Total Credits		36

Marketing — Non-paper Option		
Electives		9
Any nine graduate credits of marketing (department 6600)		
Phase II and III Total Credits		36

International Business — Paper Option		
Reading and conversational proficiency in one language other than English.		
6600:690	Seminar in International Business (3+3) (15 post M.B.A. Phase I credits)	6
Electives		3
(Must be approved by the director of Graduate Programs in business)		
Phase II and III Total Credits		36

International Business — Non-paper Option		
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

Master of Science in Accounting

The Master of Science in Accounting program is designed to give the student additional exposure to the functional areas of business plus an advanced concentration in accounting. 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
6500:601	Quantitative Decision-Making	3
6600:600	Managerial Marketing	3
		18

Postbaccalaureate (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 equivalent 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 equivalent and 6200:610)	3
		15
	M.S. Phase II Total Credits	

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, a student who has taken a 400-level course for undergraduate credit at The University of Akron (or an equivalent course elsewhere) is 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.

Paper Option

6200:699	Seminar in Accounting (3+3) (15 post Phase I credits)	6
Electives		9
Any six graduate credits of accounting (department 6200) and any three graduate credits offered by the College of Business (departments 6200, 6400, 6500, or 6600)		
Phase II and Phase III (Option A)		30
	Total Credits Required	

Non-Paper Option

Electives		15
Any 12 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 B)		30
	Total Credits Required	

Master of Taxation in Accounting

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

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

The Master of Taxation curriculum is structured in three phases of coursework: Phase I: foundation courses; Phase II: required courses; and Phase III: elective courses. A minimum of 30 semester credits is required for the degree.

Phase I: Foundation Courses

All are required except for the student who has earned baccalaureate, graduate or professional; i.e. law, coursework credit which is equivalent in content may be granted by waivers.

		<i>Credits</i>
3250:600	Foundation of Economic Analysis	3
6200:430	Taxation I	3
6200:431	Taxation II	3
6200:601	Financial Accounting	3
6400:320	Legal Environment of Business	4
6400:602	Managerial Finance (6200:601)	3
6500:409	Business Policy	4
6500:600	Management Concepts	3
6500:601	Quantitative Decision Making	3
6600:600	Managerial Marketing	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
	Corporate Taxation II	3
6200:643	Tax Accounting	2
6200:644	Income Taxation of Trusts and 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	United States Taxation of Transnational Operations	2
6200:652	Tax Exempt Organizations	2
6200:653	Business Planning	2

6200:654	Individual Studies or other electives (not more than six credits) by consent of the program director	<i>Credits</i> 1-3
	Total	18

Master of Science in Management

The Master of Science in Management program is designed to provide the student with strong quantitative backgrounds an opportunity to pursue advanced study utilizing previously acquired knowledge. The student with undergraduate training in engineering, mathematics and the physical sciences will apply 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

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
	M.S. 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
	M.S. Phase II Total Credits	6

Phase III: Required Courses

6400:655	Government and Business (3250:600 and 6500:600 or equivalent)	3
6500:654	Industrial Relations (6500:600 and equivalent)	3
6500:652	Organizational Behavior (6500:600 or equivalent)	3
6500:653	Organizational Theory and Policy Formulation (6500:652)	3
6500:663	Applied Industrial Statistics I (6500:601)	3
6500:664	Applied Industrial Statistics II (6500:663)	3
6500:671	Advanced Operations Research (6500:601)	3
6500:672	Manufacturing and Operation Analysis (6500:601)	3
6500:699	Seminar in Management (3+3) (15 post Phase I credits)	6
	Phase II and III Total Credits	30

Joint Programs M.B.A./J.D. and M.T./J.D.

The College of Business Administration, in cooperation with the School of Law offers a joint program in legal and administrative studies (M.B.A./J.D.) and a joint program in legal and taxation studies (M.T./J.D.).

The School of Law and the College of Business Administration each separately and independently determine admission and curricular requirements. Therefore, the applicant to the joint programs will have to be separately admitted to the School of Law and the College of Business Administration.

M.B.A./J.D.

The M.B.A. student may select electives (6 credits) from courses offered in the School of Law to apply toward the M.B.A. degree. One course in the School of Law selected by the M.B.A. student with the approval of the director of Graduate Programs in the College of Business Administration will replace 6400:655 Govern-

ment and Business, a "legal environment" course required in the M.B.A. program. The second course in the School of Law is permitted in lieu of the M.B.A. required "free elective." In this manner, the M.B.A. student may satisfy six credits of work toward the M.B.A. degree by selecting law courses from the School of Law which have been previously approved by the director of Graduate Programs in the College of Business Administration.

M.T./J.D.

In the joint Master of Taxation and Juris Doctor program, the Master of Taxation student may select 10 credits of coursework required for the Master of Taxation degree from courses offered in the School of Law. No more than six credits from the School of Law may be in non-tax courses. The other four credits taken in the School of Law must be in tax courses. All courses from the School of Law must be approved by the director of Graduate Programs in the College of Business Administration.



College of Fine and Applied Arts

Gerald L. Kneiter, Ed.D., *Dean*

Kelvie Comer, Ed.D., *Assistant to the Dean*

Master's Degree

Home Economics and Family Ecology

A program of study is offered leading to the Master of Arts in Home Economics and Family Ecology degree with an emphasis in either family development or child development. 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:		Credits
7400:501	Family Patterns in Economically Deprived Homes	2
7400:560	Organization and Supervision 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
• Internship or Thesis (select one):		
7400:690	Internship Student must have 7400:342 <i>Community Involvement</i> or equivalent.	
7400:699	Thesis Student must have background in research design and statistical analysis appropriate to proposed research.	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
7400:585	Seminar: Analysis and Interpretation of Family Literature	3
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
• Internship or Thesis (select one):		
7400:690	Internship Student must have 7400:342 <i>Community Involvement</i> or equivalent.	
7400:699	Thesis Student must have background in research design and statistical analysis appropriate to proposed research.	5

- Cognates (outside home economics and family ecology) — 8 credits.
- Electives — 4 credits.

Music

The Master of Music degree 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-point average (GPA) or 3.00 for the last two years and a 3.00 GPA or better in the major field.
- The Graduate School's general requirements for admission.
- Please contact the coordinator of Graduate Studies for all auditions and interviews.
- The performance option requires an audition on the student's major instrument. Please contact the coordinator of graduate studies for an audition time. Italian and German are required for the performance option in voice. If the student has lack of background in any of these language requirements, auditing of undergraduate courses is required.
- The music education option requires an oral interview with the music education faculty.
- The theory option requires submission of theoretical analysis and an oral interview with the theory faculty.
- The music history and literature option requires an interview with the music history and literature faculty.
- The accompanying option requires an audition on the piano.
- Within the composition option, compositions representing the applicant's composition techniques are required.
- Ensemble requirements are made for several options. The student is to sign for ensembles with the 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 which is individualized for each candidate's unique program.

Music Education Option

• Core Courses — 9 credits:		
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 and Renaissance	2
7500:622	Historical Survey: Music of the Baroque	2
7500:623	Historical Survey: Music of the Classic and Romantic Eras	2
7500:624	Historical Survey: Music of the 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
7500:551	Introduction to Musicology	2
7500:553	Bibliography and Research	2
7500:560-564	Repertoire and Pedagogy	3
7500:590	Workshop in Music	4
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 two, one-hour ensembles required)	2
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:		
7500:551	Introduction to Musicology	2
7500:553	Bibliography and Research	2
7500:560-564	Repertoire and Pedagogy	3
7500:590	Workshop in Music	4
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 and Renaissance	2

* Elective credits are determined by the student and adviser.

		Credits
7500:622	Historical Survey: Music of the Baroque	2
7500:623	Historical Survey: Music of the Classic and Romantic Eras	2
7500:697	Advanced Problems in Music	1-4
7520:5—	Applied Music	1-4

• Cognate Electives — 3 credits.

Total 32

Performance 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
7500:619	Theory Pedagogy	2
7500:621	Historical Survey: Music of the Middle Ages and Renaissance	2
7500:622	Historical Survey: Music of the Baroque	2
7500:623	Historical Survey: Music of the Classic and Romantic Eras	2
7500:624	Historical Survey: Music of the Twentieth Century	2
7510:—	Ensemble (participation in two, 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 and Document (approved by committee)	2

• Music Electives* — 5 credits:

7500:551	Introduction to Musicology	2
7500:553	Bibliography and Research	2
7500:590	Workshop in Music	4
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

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:—	Ensemble (participation in two, one-hour ensembles required)	

• Required Courses — 8 credits:

7500:553	Bibliography and Research	2
7500:555*	Advanced Conducting	2
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:

5900:640	Techniques of Research	4
7500:551	Introduction to Musicology	2
7500:560-563	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
7500:621-624	Music History Survey Seminars (select one of these)	2
7500:5—	Applied Music	2-4

• Cognate Electives* — 4 credits.

Total 32

Music History and Literature Option

• Core Courses — 16 credits:

7500:555	Advanced Conducting	2
7500:621	Historical Survey: Music of the Middle Ages and Renaissance	2
7500:622	Historical Survey: Music of the Baroque	2
7500:623	Historical Survey: Music of the Classic and Romantic Eras	2
7500:624	Historical Survey: Music of the 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 and 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:

7500:5—	Applied Music	1-4
7500:561-564	Repertoire and Pedagogy	3
7500:590	Workshop in Music	4
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
7520:542	Applied Composition	1-4

• Cognate Electives* — 3 credits.

* Elective credits are determined by the student and adviser.

* Elective credits are determined by the student and adviser.

Accompanying Option

Credits

• **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
7500:619	Theory Pedagogy	2
7500:621	Historical Survey: Music of the Middle Ages and Renaissance	2
7500:622	Historical Survey: Music of the Baroque	2
7500:623	Historical Survey: Music of the Classic and Romantic Eras	2
7500:624	Historical Survey: Music of the Twentieth Century	2
7520:5—	Applied Music (Piano, Organ, and/or Harpsichord)	8

• **Required Courses — 9 to 12 credits:**

7500:561	Repertoire and Pedagogy (Piano and Harpsichord) either/or	3
7500:562	Repertoire and Pedagogy (Organ)	3
7500:697	Advanced Problems in Music (to select topics in Song Literature and Chamber Music in consultation with adviser)	4
	Accompaniment of a minimum of three solo/ensemble recitals (instrumental and vocal)	0
7500:699	Master's Recital and Document (to be completed in a minimum of two performance media)	2

• **Music Electives — 2 to 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	Practice 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

• **Note the Following Requirements:**

- a minimum pronunciation proficiency is required in Italian, German and French;
- cognate electives should be satisfied generally with courses selected outside the field of music and may be in education, theatre arts and dance or other areas for which the student has adequate prerequisite training or interest. Up to four hours of applied music study may be applied to the elective requirement;
- any student who demonstrates knowledge, proficiency or skills equal to or exceeding those required for the degree may substitute elective courses at the graduate level. Such substitutions may be made only when approved by the student's adviser and the coordinator of graduate studies in music;
- 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

Credits

7600:600	Introduction to Graduate Studies in Mass Media-Communication*	
7600:601	Introduction to Quantitative Research**	3
7600:610	Seminar: Communication Problems (600, 601)	3
7600:683	Mass Media Research Seminar (601)	2

Track II — Media Production

7600:588	Cinematography	3
7600:590	Media Workshop	1-3
7600:685	School Administrator: Communication Design	2
7600:686	Studies in Communication Media: Radio	3
7600:687	Studies in Communication Media: Television	3
7600:688	Studies in Communication Media: Film	3

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

*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.

The courses 7600:680 *Special Problems in Communication and Mass Media*, two credits, and 7600:697 *Graduate Research in Mass Media Communication*, one to six credits, and any electives taken outside 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 36 credits, including 7800:600 and 7800:699, from the following courses or from approved courses in the cognate field.

		<i>Credits</i>
7800:562	Playwriting	2
7800:567	Contemporary Theatre Styles	3
7800:568	Children's Theatre	3
7800:600	Introduction to Graduate Studies (required)	1
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
7800:699	Research and Thesis (required)	1-6

- Complete an oral defense of the thesis.

Arts Management

• Required Courses:

7800:600	Introduction to Graduate Studies	1
7800:665	Audiences for the Arts: Research and Analysis	2
7800:666	Introduction to Arts Management	2
7800:691	Seminar: The Role of Arts Administrator	3
7800:692	Legal Regulations and the Arts	2
7800:698	Arts Management Internship	1-3
7800:699	Research and Thesis	1-6

• Electives in Business:

6200:601	Financial Accounting	3
6400:602	Managerial Finance	3
6500:600	Management Concepts, Practices and Theory	3

6500:652	Organizational Behavior	3
6600:600	Managerial Marketing	3
• Electives in Urban Studies:		
3980:610	Urban Politics	4
3980:611	Urban Administration	4
3980:640	Fiscal Analysis	3
3980:680-81	Topics (such areas as cultural policy and personnel management)	1-3
3980:695	Internship	1-3
Total		36

• Related Fields:

Options here include work in computer science, grantsmanship and advertising/promotion.

Please see the director of Graduate Studies of the Department of Theatre Arts and Dance regarding this program.

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. The student anticipating dual ASHA certification — that is, clinical certification in both the areas of speech pathology and audiology — may need to complete eight or more additional credits in the non-thesis option. Academic requirements within the department include:

7700:611	Research Methods in Communicative Disorders I	3
7700:650	Advanced Clinical Practicum: Differential Diagnosis	1
7700:612	Research Methods in Communicative Disorders II	2
	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

The student must take four credits of 7700:695 *Externship: Speech Pathology and Audiology*.

The audiology major must take four credits in speech pathology.

The speech pathology major must take four credits in audiology. It is recommended that the speech

pathology major elect 7700:639 *Advanced Clinical Testing* as the first of the audiology courses.

- The following limitations on work toward the degree may be exceeded only with 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. A student 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. A student should enroll in graduate courses only for specific professional preparation and with the permission of the instructor. Courses presume a background in social welfare institutions, social work practice, social welfare policy and history. Inquiries should be directed to the coordinator of the social work program.



College of Nursing

Lillian L. DeYoung, R.N., Ph.D., *Dean*

Master of Science in Nursing

Philosophy

The master's degree program in nursing prepares a family health nurse who: facilitates self-direction in families and encourages their knowledgeable participation in the management of their health; generates knowledge through research; engages in a self-selected leadership role of administrator, educator or practitioner; and acquires the foundation for doctoral study in nursing.

The philosophy of graduate education in nursing evolves from the undergraduate philosophy. The faculty believe the perspectives of health are eclectic, pluralistic and complex and acknowledge the family unit as the focus of 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 total environment, and is assisted in sustaining that quality of life which enables that member to survive and prevail.

Graduate study in nursing prepares a scholarly individual who functions as a leader in current and emerging health care systems and who generates knowledge through research. 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.

Objectives

A graduate of the program shall be able to:

- Clarify own values in relation to family health nursing.
- Critique nursing and borrowed theories for use in the practice of family health nursing.
- Select one or more theories for use in the practice of family health nursing.
- Evaluate the ecological model as a focus for the care and study of family units of practice.
- Advance the development of nursing science through the generation of family health nursing research.
- Construct innovative models for family health nursing based on the results of nursing inquiry.
- Implement the leadership role of the family health nurse.

- Develop the role of the family health nurse as administrator, educator or practitioner.
- Pursue doctoral study in nursing.

Admission

Policies

An applicant 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 3.00 on a 4.00 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.

An applicant with a grade-point average of 3.00 or better from an undergraduate program will be granted "full admission."

An applicant with an undergraduate grade-point average of 2.75 to 2.99 will be admitted as Special Admission as defined in the *Graduate School Bulletin*.

An applicant with an undergraduate grade-point average of 2.50 to 2.74 will be assigned to "deferred status" and advised to take postbaccalaureate courses — the number of courses to be taken is dependent on the applicant's undergraduate grade-point average and will be determined by the use of a "sliding scale." A grade of "B" or better for each course must be attained. Once such work is completed the student may reapply for a change in status.

The applicant with an undergraduate grade-point average of below 2.50 will be "denied admission."

The applicant with a low undergraduate grade-point average, who has successfully completed graduate or postbaccalaureate courses with a 3.00 or better grade-point average for each course, will be considered on an individual basis for "special admission."

An applicant whose upper-division grades in the baccalaureate program are all pass/fail will be considered on an individual basis.

The student in "special non-degree status" who has a 2.75 or better upper-division grade-point average in the baccalaureate program may take up to 10 graduate credits and then must reapply.

The individual who does not meet the above criteria will be considered on an individual basis.

A graduate from a non-accredited baccalaureate program 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 this student 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 the director of the graduate program, the College of Nursing. The director of the graduate program along with the administrative assistant will review all applications for completion.

An admissions committee of four will meet and review all applications and make recommendations to the director regarding the status accorded the student.

The director will send recommendation first to the dean of the college, then to the dean of the Graduate School who will notify the student.

Second, the completed application must be in the office of the College of Nursing by March 1 or November 1. The student will be notified of status by April 1 or December 1.

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.

Nursing Concentration

The program provides opportunities for the student to develop competence in nursing practice. A student admitted will select nursing practice within the framework of family health nursing.

The nursing component is implemented through five courses (23 credits) which span both years of the curriculum. Theoretical content and intensive related and supervised nursing practice is provided.

Theoretical Basis for Nursing Practice is offered in the first year of the curriculum and is taken by all students regardless of the area of focus. These courses reflect such widely applicable theoretical constructs as: appraisal of physical, emotional, social and cultural needs; nursing diagnosis and the decision-making process; growth and group dynamics; therapeutic communication; cultural needs; health care education through problem solving for families and individuals to encourage self-help; continuity and coordination of nursing care to clients and families; application of research in nursing practice and use of epidemiological

methods in identifying researchable problems having implications for nursing. These courses provide the framework for the integration of physiological, psychosocial, economic, political and cultural theoretical concepts applicable to nursing practice.

Research

The research component fosters inquiry directed toward the solution of nursing problems. This component is comprised of one course in *Nursing Inquiry* taught by the nursing faculty and taken by all students regardless of the area of focus, and one statistics course (cognate) provided by other selected University departments. Additionally, each student elects a thesis or non-thesis option in the second year (11 credits).

Functional Area of Nursing

Options are provided for study in a functional area of either teaching, administration or nursing practice. There are seven credits allocated to the functional option which includes the equivalent of two courses and one colloquium in the second year.

Cognates

Students select courses (10-13 credits) from natural, behavioral or medical sciences areas. Two courses are related to the functional area and two are nursing electives. The free elective cognate must have the adviser's approval.

A student is required to take the minimum credits in each component area. Additional electives in nursing will provide opportunities to individualize and strengthen the nursing major.

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
8200:689 Colloquium	1
8200:698 Research Option II (non-thesis)	
or	
8200:699 Research Option I (thesis)	4
Statistics	3
Total Foundations	35
Cognate electives in support of functional area	6-9
Nursing electives	4
Students will also select a functional role of either <i>Nursing Administration, Nursing Education or Nursing Practice</i>	6
Total credits for a degree	51-54

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.

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:

- Prepare the student for a career in the profession of law by imparting information concerning legal institutions, basic principles of the substantive and procedural law and jurisprudential thought concerning the role of law in society.
- Help to develop in the student an active and critical attitude rather than a passive approach toward the rules of law and their social implications.
- Develop in the student a high sense of professional responsibility in terms of technical competency, appreciation of professional standards and the responsibility of the lawyer to achieve a more nearly perfect system of civil and criminal justice.

The school recommends each student for the degree of Juris Doctor upon satisfactory 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 during 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. The student is encouraged to observe this schedule in planning programs so that the student can continue advantageous progression of subject matter.

The primary purpose of a student 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 the student to become an attorney, counselor at law or leader in governmental affairs. The ultimate aim of the school is the development of a graduate who will serve society not only through the representation of the individual, corporate or governmental client, but who will also serve as an architect of the future of society.

The student is trained to develop powers of legal analysis and synthesis, to develop the technical skills of legal advocacy and legal draftsmanship and to learn practical skills of research and 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. Undergraduate courses should have developed the student's ability in expression and comprehension of the English language, afforded basic information about human institutions and cultivated the 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 the student have a liberal arts background with a major in any of these fields: English, economics, history, mathematics, philosophy, political science, psychology, sociology or a science. Also, acceptance is granted to a student with a degree in an area 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).

Admission Procedures

The School of Law accepts the beginning student 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 the day and evening applicant apply and complete applications (with LSAT and LSDAS) as soon as possible after October 1. The student 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 a vacancy 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 the 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 the student 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.

The student admitted to the Juris Doctor degree program is 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

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 trans-

fer; 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.

Auditors

A member of the Bar and a graduate of a law school who is not yet a member 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.

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	Noncredit	0.0

Academic averages are computed by dividing the quality points by the credits attempted. When a course is failed and repeated, the credits and the quality points involved each time are included in the computation as if the repeated course were an independent course.

A grade-point average (GPA) 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 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.

Requirements for a Degree

The degree of Juris Doctor is conferred upon the student of good moral character who has been recommended by the dean and faculty of the School of Law and who has:

- Completed satisfactorily all required courses, seminars and electives to earn at least 84 credits, the writing requirement and met residency requirements.
- Attained at least a 2.00 GPA for all courses taken and at least a 2.00 GPA for the senior year.
- Spent the last year at the University unless excused by the dean.

Fees and Expenses**

Fees are as follows:

Application fee (payable once, nonrefundable and inapplicable to a student previously enrolled at the University for credit)	\$20
General Fees, 1-10 credits	\$3 per credit
General Fees, 11 credits and over	\$30 per semester
Tuition Surcharge	\$20 per credit

A student taking less than nine credits in any semester pays a General Service Fee of \$10 for that semester. A student taking nine or more credits pays \$24.

University housing is not available for a graduate or professional student. However, a meal ticket may be purchased at a cost of \$420 per semester.

Books (new) will cost approximately \$200 per year for a full-time student and about \$125 per year for a part-time student.

Loan Funds

University loans, by which tuition and maintenance 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.

A law student may apply for the following loans: National Direct Student Loans, the Phillip H. Schneider

*Not calculated in cumulative average.

** All fees subject to change without notice.

Scholarship Loan Fund and the Ohio Higher Educational Assistance Commission Loans (available to a full-time student who is a resident 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.

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.

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 the student 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.

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 the student 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 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. 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.

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. The entering student is urged to become familiar with the honor code.

Placement

The School of Law assists the student and alumnus 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.

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 the student of superior academic achievement or of demonstrated writing skill who desires to engage in legal research, analysis, writing and editorship. Membership on the board of student editors is indicative not only of scholarship, but of uniquely valuable training in skills important to the profession of law.

Law Students Associations

ARETE Publications, a student-managed organization, publishes two student legal works — the “*News-letter*” (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 the student 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.

BRACTON'S INN, a student-managed organization, conducts an appellate moot court program. BRACTON'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 BRACTON'S INN is the Client Counseling Competition which offers the student experience in participation in regional and national competition with other law schools in simulated exercises of lawyer-client interviews and consultations. BRACTON'S INN also sponsors the Mock Trial program which gives the student 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. A law student successfully completing the appellate advocacy program of BRACTON'S INN is 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. A law student in good standing is eligible for membership after the 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 the law student 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. “P.A.D.” welcomes all students in good standing after the first semester.

The STUDENT BAR ASSOCIATION is designed to introduce the law student to the professional responsibilities and problems faced 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 the law student 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.

Scholarships, Honors and Awards

A limited amount of tuition-remission assistance is available to the full-time (day) student 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 Robert 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 24 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, Esq., the income from which is used to assist a financially deserving student or students of high academic potential and achievement residing in Summit County, on the recommendation of the dean, School of Law. The award may be renewed.

The 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.

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. The student also is 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. A student may participate in these programs by enrolling in the legal aid courses upon completion of 28 credits and receiving permission of the clinical director.

A student who has completed at least 56 credits toward the degree of Juris Doctor, is in good academic standing, is enrolled as a candidate for the Ohio bar examination and whose academic work is current, may be admitted to the Limited Practice of Law in Ohio as a legal intern 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.

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 the law student as counselor in business, government and private practice in international business transactions, and the student's education in a global awareness of the economic and political problems of other nations, as reflected in other nations' 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.

Curriculum

Full-Time Program

These courses are offered during the day.

First Year, Required

Fall Semester		<i>Credits</i>
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
9200:684	Computer Research	1

Spring Semester

9200:602	Civil Procedure II	3
9200:606	Contracts II	3
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	3
9200:608	Evidence I	3
9200:612	Legal Profession	1

Spring Semester

9200:604	Constitutional Law II	2
9200:609	Evidence II	1

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
9200:684	Computer Research	1

Spring Semester

9200:606	Contracts II	3
9200:607	Criminal Law	3
9200:613	Legal Research and Advocacy	1
9200:617	Torts II	3

	Credits		Credits		
<i>Second Year, Required</i>					
Fall Semester					
9200:601	Civil Procedure I	3	9200:645	Government Contracts	3
9200:614	Property I	3	9200:646	Injuries To Relations	2
Spring Semester					
9200:602	Civil Procedure II	3	9200:647	Juvenile Law	3
9200:615	Property II	3	9200:648	Insurance Law	3
<i>Third and Fourth Year, Required</i>					
Fall Semester					
9200:603	Constitutional Law I	3	9200:649	International Law	3
9200:608	Evidence I	3	9200:650	Labor Law	3
Spring Semester					
9200:604	Constitutional Law II	2	9200:651	Labor Arbitration and Collective Bargaining	2
9200:609	Evidence II	1	9200:652	Land Use Planning	3
<hr/>					
Electives					
9200:621	Accounting For Lawyers	2	9200:668	Remedies I	3
9200:622	Administration of Criminal Justice	3	9200:669	Remedies II	2
9200:623	Administrative Process	3	9200:671	Securities Regulation	3
9200:624	Air Law	3	9200:672	Seminar in Business Planning	3
9200:625	Antitrust Law	3	9200:673	Seminar in Comparative Legal Systems	3
9200:626	Basic Business Associations	3	9200:674	Seminar in Corrections and Prisoners' Remedies	3
9200:627	Commercial Transactions: Negotiable Instruments	3	9200:675	Seminar in Estate Planning	3
9200:628	Commercial Transactions: Sales	2	9200:676	Seminar in International Transactions and Relations	3
9200:629	Commercial Transactions: Secured Transactions	3	9200:677	Seminar and Judicial Administration	2
9200:630	Admiralty	3	9200:678	Seminar in Jurisprudence	2
9200:631	Conflict of Laws I	3	9200:679	Seminar in Labor Law	2
9200:633	Corporations I	2	9200:680	Seminar in Pension and Profit Sharing	2
9200:634	Corporations II	2	9200:681	Seminar in Legal Problems of the Disadvantaged	2
9200:635	Creditors' Rights	3	9200:682	Seminar in Political and Civil Rights	2
9200:636	Development of Law and Legal Institutions	2	9200:683	Seminar in Product Liability	2
9200:637	Equal Opportunity Law	3	9200:684	Seminar in Selected Legal Problems	1-3
9200:638	Family Law	3	9200:685	Wills, Trusts and Estates I	3
9200:639	Federal Estate and Gift Taxation	3	9200:686	Wills, Trusts and Estates II	3
9200:641	Federal Income Taxation I	3	9200:691	Selected Problems, International Law	2
9200:642	Federal Income Taxation II	2	9200:692	Problems in Trial Advocacy	3
9200:643	Federal Jurisdiction and Procedure	3	9200:696	Clinical Seminar	2-3
9200:644	Financing State and Local Government	2	9200:698	Individual Studies and Research	2



SECTION 6



**RESEARCH CENTERS AND INSTITUTES
CONTINUING EDUCATION AND PUBLIC
SERVICES**

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 the graduate and undergraduate student have the opportunity to participate, depending on the nature of the project and the skills and knowledge required.

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.

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 United States 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 13 full-time faculty members in various disciplines, a combined technical and non-technical staff of 10 and 65 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 government and industry, performed by a special staff of investigators.

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.

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 to 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.

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.

Institute for Biomedical-Engineering Research

Robert Herron, Ph.D., *Director*

The Institute for Biomedical-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.

Other Research Areas

Center for Environmental Studies

Jim L. Jackson, Ph.D., *Director*

The Center for Environmental Studies matches the expertise of 95 affiliates in 33 disciplines with the needs of 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.

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.

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.

Institute for Futures Studies and Research

Gary Gappert, Ph.D., *Director*

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.

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 the student who wishes 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.

Center for International Programs

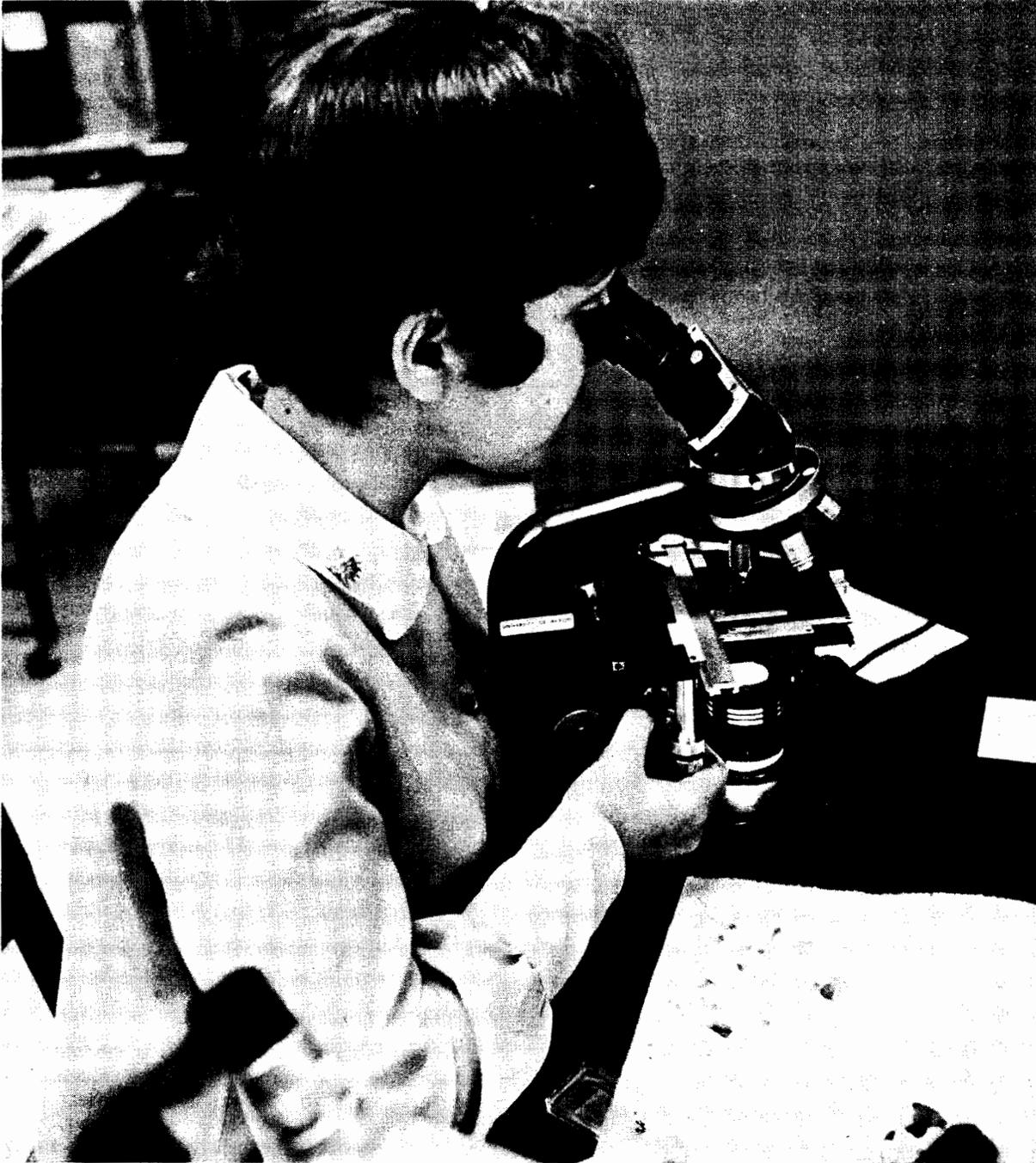
Laurence J. C. Ma, Ph.D., *Director*

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 oppor-

tunities 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*

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.

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 University's 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.

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.

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; 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-sponsoring the Community and College Ambassador programs.
- Coordinating the formation of the Speakers Bureau with more than 100 faculty members covering 300 topics.
- Sponsoring the World-at-Our-Door travel film series.
- Publishing the monthly Civic Educalendar listing events and programs.
- Presenting the Great Decisions discussion group.
- Initiating the weekly Current Issues Forum.
- Cooperating 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.

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 and 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.

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; 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 the person who has experienced career/life changes and recognizes 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."

SECTION 7



COURSES OF INSTRUCTION

Course Numbering System *

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Department of Developmental Programs

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1500 Aerospace Studies

Army R.O.T.C.

1600 Military Science

Interdisciplinary Programs

1800 Career Planning
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

Community and Technical College

2020 Associate Studies
2100 Individualized Study
2200 Educational Technology
2210 Handicapped Services
2220 Criminal Justice Technology
2230 Fire Science Technology
2240 Commercial Art
2280 Community Services Technology
2270 Labor Studies
2280 Food Service Management
2420 Business Management Technology
2430 Real Estate
2440 Data Processing
2520 Marketing and Sales Technology
2540 Secretarial Science
2560 Transportation
2740 Medical Assisting
2760 Radiologic Technology
2770 Surgical Assisting
2780 Allied Health
2790 Respiratory Therapy
2840 Chemical Technology
2880 Electronic Technology
2880 Manufacturing Technology
2900 Instrumentation Technology
2920 Mechanical Technology
2940 Drafting Technology
2980 Surveying and Construction Technology

Buchtel College of Arts and Sciences

3100 Biology
3120 Medical Technology
3130 Cytotechnology
3150 Chemistry

3200 Classics
3210 Greek
3220 Latin
3250 Economics
3300 English
3350 Geography
3370 Geology
3400 History
3450 Mathematics
3460 Computer Science
3470 Statistics
3480 General Mathematical Sciences
3500 Modern Languages
3520 French
3530 German
3550 Italian
3570 Russian
3580 Spanish
3600 Philosophy
3650 Physics
3700 Political Science
3750 Psychology
3850 Sociology
3870 Anthropology
3940 Polymer Science
3980 Urban Studies

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

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
5900 Higher Education Administration

College of Business Administration

6200 Accounting
6400 Finance
6500 Management
6600 Marketing

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

College of Nursing

8200 Nursing

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*.

Department of Developmental Programs

1020: Developmental Programs

1020:041 DEVELOPMENTAL ENGLISH

Provides basic instruction in composition skills: grammar, sentence structure, sentence combining and punctuation. Develops skills necessary 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. May enroll for a second semester.

1020:061 DEVELOPMENTAL READING

Designed to develop 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 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. May enroll for a second semester.

1020:299 SPECIAL TOPICS IN DEVELOPMENTAL PROGRAMS

Selected topics and subject areas of interest in developmental education.

University College

1100: General Studies

✓ 1100:105 INTRODUCTION TO PUBLIC SPEAKING

3 credits

Introduction to principles and practice of speaking by reading examples of speeches, studying techniques and methods employed and applying them in a variety of speaking situations.

1100:106 EFFECTIVE ORAL COMMUNICATION

3 credits

Principles of communication in speaker-audience, group and informal settings, and application of the principles in speeches, group discussions and other oral and written assignments.

1100:111-112 ENGLISH COMPOSITION

4 credits each

Sequential. Proficiency in reading and writing of English is obtained. Reading materials used are literary works of our Western tradition.

1100:115-116 INSTITUTIONS IN THE UNITED STATES

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

½ 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. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (1100:170-190).*

1100:120 ARCHERY

1100:121 BADMINTON

1100:122 BASKETBALL

1100:123 BOWLING

1100:124 CANOEING

1100:125 DIVING

1100:126 FITNESS

1100:127 GOLF

1100:128 GYMNASTICS (apparatus)

1100:129 GYMNASTICS (tumbling)

1100:130 HANDBALL

1100:131 INDOOR SOCCER

1100:134 MODERN DANCE

1100:135 RACQUETBALL

1100:136 RUGBY

1100:137 SAILING

1100:138 SCUBA

1100:140 SKIING (cross country)

1100:141 SKIING (downhill)

1100:142 SOCCER

1100:143 SOCIAL DANCE

1100:144 SQUARE AND FOLK DANCE

1100:145 SQUASH RACQUETS

1100:146 SWIMMING (beginning)

1100:147 SWIMMING (intermediate)

1100:148 SWIMMING (advanced)

1100:149 TEAM HANDBALL

1100:150 TENNIS (beginning)

1100:151 VOLLEYBALL

1100:152 WATER POLO

1100:154 WRESTLING

1100:132 KARATE**

1100:133 LIFE SAVING**

1100:139 SELF DEFENSE**

1100:153 WATER SAFETY**

1100:170 VARSITY BASEBALL

1100:171 VARSITY BASKETBALL

1100:172 VARSITY CROSS COUNTRY

1100:173 VARSITY FOOTBALL

1100:174 VARSITY GOLF

1100:175 VARSITY SOCCER

1100:176 VARSITY SOFTBALL

1100:177 VARSITY SWIMMING

1100:178 VARSITY TENNIS

1100:179 VARSITY TRACK

1100:180 VARSITY WRESTLING

1100:181 VARSITY VOLLEYBALL

1100:184 VARSITY WRESTLING

1100:185 VARSITY SWIMMING

1100:186 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.

*Varsity sports are one credit each.

**One credit each. Two periods each week.

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. Introduction to human experiences of the past as manifested in the ideas, music and visual arts of Western Civilization, the Greeks to the present. Two lectures/two discussions per week.

Courses 1100:331-336 are designed to give a basic knowledge of past human experiences and an understanding of current events in some key areas of the non-Western world.

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.

1100:391 SPECIAL TOPICS IN GENERAL STUDIES*1-4 credits*

Prerequisite: permission. Selected topics or subject areas of interest in general studies.

Air Force R.O.T.C.

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 Laboratory.

1500:303-304 THIRD YEAR AEROSPACE STUDIES

3 credits each

(AS300), Professional Officer Course.

Management concepts in the military. Leadership theory, functions and practices; professionalism; and responsibilities. Communicative skills are developed. Leadership Laboratory.

1500:453-454 FOURTH YEAR AEROSPACE STUDIES

3 credits each

(AS400), Professional Officer Course.

Focuses attention on the military profession, military justice systems, civil-military interactions, and the framework and formulation of defense policy. Communicative skills are developed. Leadership Laboratory.

Army R.O.T.C.

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. Selection of two modules for practical exercise laboratory.

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. Selection of two modules for practical exercise laboratory.

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. Selection of two modules for practical exercise laboratory.

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 service reserve service; or by successful completion of basic camp or campus summer program between sophomore and junior years.

Interdisciplinary Programs

1800: Career Planning

1800:100 CAREER PLANNING

credit/non-credit

Prerequisite: permission. Teaches the individual the skills necessary to make effective educational and career decisions. Emphasis will be placed on self-understanding, career exploration, career planning and decision making. Through active participation, a student will learn skills that are applicable to recurring decisions throughout the lifespan. May not be counted toward a degree.

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.

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.

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 two credits)

Prerequisite: A certificate program student only. Guest speakers from various disciplines and services which have life-span development and gerontological components and from government and community facilities and services. A certificate program student 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

1850:680 INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY

1 credit

Prerequisite: permission. The certificate program student only. Explores interdisciplinary issues in life-span development and gerontology. Guest speakers from various disciplines and services which have life-span development and gerontological components and from government and community facilities and services.

1850:690 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.

1850:695 PRACTICUM IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY

3 credits

Prerequisite: permission. Supervised experience in research or community agency work.

1860: Peace Studies

1860:300 TOPICS IN PEACE STUDIES

1-3 credits

(May be repeated for a total of three 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 three 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.

1860:390 WORKSHOP IN PEACE STUDIES

1-3 credits

(May be repeated for a total of four credits)

Group studies in peace and war-related subjects and issues.

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.

1870:280-360-460 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.

Universities College of Medicine and The University of Akron. Student directed in supervised roles of professional and paraprofessional in meeting health care needs of community. Open to first-year student in Phase 1 of BS/MD program, others by permission.

1880:301 MEDICAL SEMINAR AND PRACTICUM

1-3 credits

(May be repeated to a maximum of three credits)

Prerequisite: 201 and permission. Continuation of 201 offered at an advanced level of professional involvement. Open to second-year student 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; others 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.

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

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 mathematics 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 TECHNOLOGY AND HUMAN VALUES

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 the student taking only one course in economics. Coverage includes economic sys-

tems, 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.

2100: Individualized Study

2100:190 INDIVIDUALIZED STUDY EVALUATION

1 credit

Prerequisite: admission to program. Analysis of interests, talents, goals expressed in three assigned papers; first shortly after enrollment in program, second after completing 12 to 16 credits; third after completing 52 credits. Topics include student's background of career and personal activities, effect of current coursework, opportunities resulting from educational experiences and application of ideas in planning areas of study. Student is required to enroll in this course in first semester of program.

2200: Educational Technology

2200:100 INTRODUCTION TO LIBRARY TECHNOLOGY

3 credits

Introduces student 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, in-

tellectual 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 caregiving. 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 four credits)

Prerequisite: permission. Selected topics on subject areas of interest in educational technology.

2200:297 INDEPENDENT STUDY

1-3 credits

(May be repeated for a total of six 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.

2210: Handicapped Services

2210:100 INTRODUCTION TO INTERPRETING FOR THE DEAF

4 credits

Prerequisite: admission to program. Introduction to basic theories, principles and practice of interpreting for the deaf in general and in specialized settings. A survey course intended to familiarize the student with ethics and guidelines appropriate in situational settings. Will also emphasize interpreting/translating processes and skill building.

2210:110 SPECIALIZED INTERPRETING

3 credits

Prerequisites: 100, 7700:100. Introduction to interpreting in counseling, mental health, medical and social work settings with an overview and development of specific translations in these areas.

2210:140 PRACTICUM I

1 credit

Prerequisite: permission. Sequential. Provides student with varied experience and exposure in interpreting settings and types of communication problems with the deaf and hearing impaired. An ongoing campus seminar will be held as part of each practicum. All four practicums are required.

2210:141 PRACTICUM II

4 credits

Prerequisites: 140. Sequential. Provides student with varied experience and exposure in interpreting settings and types of communication problems with the deaf and hearing impaired. An ongoing campus seminar will be held as part of each practicum. All four practicums are required.

2210:200 REVERSE INTERPRETING

3 credits

Prerequisites: 100, 7700:150. Designed to enhance skills in comprehending the various sign language systems; a continuum from gestural signs to Ameslan to systems based on English. Deaf speakers, guests and videotapes will be featured to provide situational practice. Principles and problems of reverse interpreting manual, oral and written communications of deaf persons into its proper English equivalent will be covered.

2210:230 SPECIALIZED INTERPRETING II

3 credits

Prerequisites: 200, 7700:200. Introduction to interpreting in the vocational/technical, legal, educational and religious settings with an overview and development of specific translations in these areas.

2210:242 PRACTICUM III

2 credits

Prerequisites: 140, 141. Sequential. Provides student with varied experience and exposure in interpreting settings and types of communication problems with the deaf and hearing impaired. An ongoing campus seminar will be held as part of each practicum. All four practicums are required.

2210:243 PRACTICUM IV

2 credits

Prerequisites: 140, 141 and 242. Sequential. Provides student with varied experience and exposure in interpreting settings and types of communication problems with the deaf and hearing impaired. An ongoing campus seminar will be held as part of each practicum. All four practicums are required.

2220: Criminal Justice Technology

2220:100 INTRODUCTION TO CRIMINAL JUSTICE

3 credits

Overview of criminal justice system, its history, development and evolution within United States 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 six 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 student during internship.

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.

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 four credits)

Prerequisite: permission. Selected topics or subject areas of interest in fire science technology.

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 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.

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.

2260: Community Services Technology

2260:100 INTRODUCTION TO COMMUNITY SERVICES**3 credits**

Introductory course to familiarize student with role of community services technician in service delivery. Use, history and rationale for para-professionals, programs, volunteer experiences, self awareness and interaction in community services.

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.

2260:230 COMMUNITY BASED RESIDENTIAL SERVICES**3 credits**

Orientation to community-based residential services and role of community services technician in delivery of services to mentally disabled. Includes historical, social and legal forces in community-based services and practical aspects of operation of a residential facility.

2260:240 DRUG USE AND ABUSE**3 credits**

Basic introduction to drug use and abuse. Includes pharmacology, basic helping and crisis intervention skills, motivations, theories of treatment and exploration of some typical drug crisis situations.

2260:251 COMMUNITY SERVICES FOR SENIOR CITIZENS**3 credits**

Prerequisite: 150. A study of national and community resources for social service delivery to senior citizens. Specific agencies, program needs and senior citizens and resultant services.

2260:252 RESIDENT ACTIVITY COORDINATION**3 credits**

Designed to prepare student to qualify as resident activity coordinator in Ohio nursing homes. General topics include: assessing and understanding the patient, administration of activities program, techniques of program planning.

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 the student 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.

2260:278 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.

2260:279 TECHNICAL EXPERIENCE IN COMMUNITY AND SOCIAL SERVICES**5 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.

2260:280 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.

2260:281 RECRUITMENT AND INTERVIEWING OF VOLUNTEERS**3 credits**

Prerequisite: 280 or permission. To provide knowledge for recruitment and interviewing of persons seeking volunteer positions. Will cover writing of volunteer job descriptions, methods of recruitment, techniques of interviewing; concentration on interviewing skills.

2260:290 SPECIAL TOPICS IN COMMUNITY SERVICES TECHNOLOGY**1-3 credits**

Prerequisite: permission. Selected topics or subject areas of interest in community services technology.

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.

2270:122 LEGAL FRAMEWORK FOR COLLECTIVE BARGAINING**3 credits**

Prerequisite: 101. Legal framework within which the collective bargaining process takes place. Rights of employees, union and employer under applicable federal and state laws discussed in context of organizing, election and bargaining.

2270:123 LABOR LEGISLATION AND ECONOMIC SECURITY**3 credits**

Prerequisite: 122 or permission. Examines federal and state legislation governing employment conditions and standards. Includes minimum wage, health and safety, unemployment compensation, TDI, civil rights and anti-discrimination, social security, labor management reporting and disclosure.

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.

2270:224 LABOR LAW IN THE PUBLIC SECTOR*3 credits*

Prerequisite: 101. Provides basic understanding of legal requirements and restraints placed upon parties when bargaining within federal, state and local sectors as well as postal and educational areas. Legal framework of collective negotiations or contract administration.

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.

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.

2270:261 WAGE ADMINISTRATION*3 credits*

Prerequisite: 101. Wage and salary determination: structure of wages, salaries and fringe benefits and use of merit and incentive plans. Methods of compensation analyzed. Impact of federal and state laws governing the payment of wages.

2270:271 PUBLIC SECTOR LABOR RELATIONS*3 credits*

Prerequisite: 101. Analyzes current problems, developments and issues in public sector collective bargaining from growth of public employee unions to the nature of bargaining in the public sector. Includes bargaining issues, right-to-strike and use of arbitration in public sector.

2270:290 SPECIAL TOPICS IN LABOR STUDIES*1-2 credits*

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics or workshops of interest in labor studies.

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 four credits)

Prerequisite: permission. Selected topics or subject areas of interest in food service management.

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.

2280: Food Service Management

2280:121 FUNDAMENTALS OF FOOD PREPARATION*4 credits*

Develops skills and working knowledge of food preparation in laboratory situation. Involves 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.

2280:238 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.

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 four credits)

Prerequisite: permission. Selected topics or subject areas of interest in business management technology.

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. A student learns and applies 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. The student is 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.

2430: Real Estate**2430:105 REAL ESTATE PRINCIPLES****2 credits**

Introduction to real estate as a profession, process, product, and measurement of its productivity. The student is responsible for reading and discussions relative to real estate and the American system.

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 the student 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 RGP 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 the accomplished student to thoroughly apply learned material. 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.

2520: Marketing and Sales Technology

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.

2520:106 VISUAL PROMOTION

4 credits
Studio course in retail display and promotion techniques. Window, interior, and point of purchase categories; principles of design as applied to commercial art; function in visual design, elements of design, color theory, lettering, printing process, layout to camera-ready art.

2620:201 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 four credits)
Prerequisite: permission. Selected topics or subject areas of interest in sales and merchandising.

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, proration, expense reports, percentages, inventories and basic statistics.

2540:150 BEGINNING TYPEWRITING

3 credits
For the beginning student or one who desires 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 wpm and taking dictation from new material at 80 wpm for 3 minutes. Credit allowed if taken after 171.

2540:173 SHORTHAND AND TRANSCRIPTION*4 credits*

Prerequisite: 171, corequisite or prerequisite: 151. Emphasis on developing skill in taking shorthand dictation and transcribing at typewriter. Minimum speed attainment of 70 wpm 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 wpm 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.

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 wpm 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 wpm.

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 wpm.

2540:279 LEGAL OFFICE PROCEDURES*4 credits*

Prerequisite: 254; corequisite: 277. Provides an understanding of various facets of the law, when and how to use documents, important legal procedures and typical office routine.

2540:280 WORD PROCESSING CONCEPTS*3 credits*

Modern word processing and administrative management principles and practices in the organization, operation and control of office functions. Special emphasis given to secretary's role as an administrative assistant and corresponding secretary.

2540:290 SPECIAL TOPICS IN SECRETARIAL SCIENCE*1-2 credits*

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics or subject areas of interest in secretarial science.

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 four credits)

Prerequisite: permission. Selected topics or subject areas of interest in transportation.

2740: Medical Assisting**2740:120 MEDICAL TERMINOLOGY***3 credits*

Prerequisites: 3100:106, 2840:100. Vocabulary and terms used by medical personnel. Usage and spelling of medical terms.

2740:130 MEDICAL ASSISTING TECHNIQUES I*3 credits*

Corequisite: 120. Theory and practice in medical assisting duties most often performed in physician's office. Includes medical ethics and law; microbiology; care of instruments; methods of sterilization; surgical and medical asepsis.

2740:230 PHARMACOLOGY IN MEDICAL ASSISTING*3 credits*

Prerequisite: 130. Introduction to history of drugs; standardization; legislation; principles of action and classification with emphasis on responsibilities of administration; and the metric system.

2740:231 MEDICAL ASSISTING 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 MEDICAL ASSISTING TECHNIQUES III*2 credits*

Prerequisite: 231. Continuation of 231. Knowledge of diagnoses and disease; special diets; theory and practice in taking vital signs; parenteral injections; and orientation to physical examination.

2740:240 MEDICAL MACHINE TRANSCRIPTION*2 credits*

Prerequisites: 231 and 2540:257. This course is designed to correlate medical terminology with secretarial skills and includes practice in various machines used in dictation and transcription found in medical offices.

2740:241 MEDICAL RECORDS*3 credits*

Prerequisites: 130 and 2540:150. Preparing and handling medical records and reports used in hospitals and physicians' offices; filing procedures and systems; insurance forms; billing.

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.

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. A student performs experiments to demonstrate effects of these factors. Energized but nonclinical equipment utilized.

2760:261 PHYSICAL SCIENCE FOR RADIOLOGIC TECHNOLOGY II*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: 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.

2760:161 PHYSICAL SCIENCE FOR RADIOLOGIC TECHNOLOGY I*2 credits*

Prerequisite: 2020:131 and permission. Introduction to systems of measurement. Matter, force, motion, work, power, energy, basic electricity and magnetism.

2760:165-188 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.

2780:290 SPECIAL TOPICS IN RADIOLOGIC SCIENCE

1-3 credits

(May be repeated with a change in topic)

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.

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.

2770:241 SURGICAL ANATOMY

3 credits

Prerequisites: 100 and 3100:106. Surgical anatomy of the human body as it relates to the various surgical specialties.

2770:290 SPECIAL TOPICS IN SURGICAL ASSISTING

1-2 credits

Prerequisite: permission. Selected topics or workshops of interest in surgical assisting technology.

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

1-2 credits

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics or subject areas of interest in allied health.

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 hands-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 lungler. Includes essentials of establishing a respiratory therapy department. Lecture/Laboratory.

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 compound

er'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 four credits)

Prerequisite: permission. Selected topics or subject areas of interest in chemical technology.

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.

2860:227 MEASUREMENTS**2 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.

2860:237 DIGITAL CIRCUITS**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.

2860:238 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.

2860:242 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.

2860:251 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 student of an electronic circuit of 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**3 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 IN ELECTRONIC TECHNOLOGY**1-2 credits**

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics or subject areas of interest in electronic technology.

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.

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 six credits)

Prerequisites: senior standing in Honors Program, permission of department preceptor and major in electronic technology. Independent research leading to completion of Senior Honors Thesis or other original work.

2880: Manufacturing 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.

2880:200 MANUFACTURING PROFITABILITY**3 credits**

Prerequisites: 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 four credits)

Prerequisite: permission. Selected topics or subject areas of interest in industrial technology.

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 IN INSTRUMENTATION TECHNOLOGY

1-2 credits

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics or subject areas of interest in instrumentation technology.

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 four 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 six 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.

2940:230 MECHANICAL SYSTEMS DRAFTING

3 credits

(One hour lecture/six hours laboratory) Prerequisite: 2920:122. Familiarizes student with terms and drawing layouts for installations of systems concerning plumbing, heating and air conditioning. Also includes welding, gears, cams and fluid power drawings.

2940:240 ELECTRICAL, ELECTRONIC AND INSTRUMENTATION DRAFTING

3 credits

(One hour lecture/six hours laboratory) Prerequisite: 140 or permission. Familiarizes student with terms and layouts concerning electronic, electrical and instrumentation systems.

2940:250 ARCHITECTURAL DRAFTING

3 credits

(One hour lecture/six hours laboratory) Prerequisite: 2920:121. Fundamentals of architectural drafting, including projection, sectioning, pictorial drawing, perspective, shades, shadows and architectural representation. Emphasis on good construction details, interior space use, traffic patterns and exterior materials.

290:280 DRAFTING TECHNOLOGY PROJECT

3 credits

Prerequisite: last semester or permission. Provides opportunity to work on a special drafting project within chosen field of interest.

2940:290 SPECIAL TOPICS IN DRAFTING TECHNOLOGY

1-3 credits

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics on subject areas of interest in drafting technology.

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.

2940: Drafting Technology

2940:140 SURVEY OF ENGINEERING TECHNOLOGY

3 credits

Prerequisite: 2020:131. Introductory course in basic concepts pertaining to mechanical, civil and electrical technology. A study of technical terminology, applied mathematics and applied physics. Graphical solutions will be emphasized.

2940:160 MANUFACTURING AND CONSTRUCTION PROCESSES

2 credits

(One hour lecture/three hours laboratory) Films and field trips in various technologies to familiarize student with manufacturing and construction processes. Written or oral reports will be required after each film or field trip.

2940:170 SURVEYING DRAFTING

3 credits

(One hour lecture/six hours laboratory) Prerequisite: 2920:121. Provides basic understanding of drafting procedures, techniques and tools required for the various phases of survey office work. Included will be production of topographic maps, plan and profile drawings, cross-section drawings and earthwork calculations.

2940:200 ADVANCED DRAFTING

3 credits

(One hour lecture/six hours laboratory) Prerequisite: 2920:122. Descriptive geometry and geometric dimensioning. Principles of descriptive geometry applied to practical problems pertaining to the civil and mechanical fields of technology. Geometric dimensioning.

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.

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.

3100:104 ECOLOGY AND BIOLOGICAL RESOURCES FIELD LABORATORY

1 credit

Corequisite: 105. Short field trips and laboratory studies illustrating natural and man-modified characteristics of selected local ecosystems.

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.

3100:111 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 NEOUCOM, 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.

3100:206-207 ANATOMY AND PHYSIOLOGY

3 credits each

Sequential. Structure and function of human body with emphasis on physiological processes. Background of high school chemistry or equi-

valent strongly recommended. Not open to biology or B.S.M.T. majors. Laboratory.

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.

3100:215 ORGANIC EVOLUTION DISCUSSION

1 credit

Corequisite: 214. Informal discussions of various aspects of organic evolution of general or special interest.

3100:218 EVOLUTION-ECOLOGY

4 credits

Prerequisites: 112 and 211. Early concepts of evolution, mechanisms of evolution, evolutionary trends, and a study of ecological interrelationships between organisms and their 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.

3100:290-291 HEALTH CARE DELIVERY SYSTEMS

1 credit each

Health Care principles and practices. A continuation of 190-191 for second year students in NEOUCOM 6 year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences. Some field trips.

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.

3100:381 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.

3100:383 LABORATORY TECHNIQUES AND INSTRUMENTATION IN BIOLOGY*2 credits*

Prerequisite: 112; corequisite: 384. Instruction in techniques and instrumentation used in biological laboratories.

3100:384 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.

3100:428/528 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.

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.

3100:445/545 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.

*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.

3100:465/565 ADVANCED CARDIOVASCULAR PHYSIOLOGY**3 credits**

Prerequisite: 462 or 562, or permission. Study of biological mechanisms involved in heart attack, strokes, fluid balance, hypertension and heart disease. Controversial issues in each area will be examined and current research presented.

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.

3100:480/580 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****(May be repeated)**

Prerequisite: permission of instructor. Group studies of special topics in biology. May not be used to meet undergraduate or graduate major requirements in biology. May be used for elective credit only.

3100:495 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. A maximum of six 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 five 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.

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.

3100:681 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****(May be repeated)**

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.

3100:699 MASTERS RESEARCH**1-6 credits****(May be repeated)**

A minimum of 6 credits is required for thesis option student.

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.

*Field trips involved; minor transportation costs.

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.

3120:460 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.

3120:461 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.

3120:462 CLINICAL MYCOLOGY*1 credit*

Study of pathogenic fungi, basic methods of cultivation and identification, treatment and safety precautions.

3120:463 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.

3130: Cytotechnology**3130:401 INTRODUCTION TO CYTOLOGY***1 credit*

A brief course in which by means of lecture and demonstration the student becomes familiar with the cytotechnologist's role and with cytology laboratory. Areas covered include historical background of clinical cytology, microscopy and basic histology.

3130:410 CYTOPREPARATION*2 credits*

Combined lecture and laboratory of different cytologic techniques, stain preparation, staining procedures, mounting and cover slipping of specimens. Also included are pertinent laboratory measurements, record keeping and safety measures for cytopreparation laboratory.

3130:411 GYNECOLOGIC CYTOPATHOLOGY*5 credits*

Anatomy, histology and cellular morphology of female reproductive system. Study of disease, processes and endocrinopathies, inflammation and benign lesions. Stressed are premalignant lesions of cervix and endometrium, as well as malignant neoplasms and their cytologic characteristics. A study of extrauterine and metastatic tumors is included.

3130:412 GENITO-URINARY CYTOPATHOLOGY*3 credits*

Study of anatomy, histology, pertinent physiology and cellular morphology of kidneys, ureters, bladder and lower urinary tract. Emphasis on recognition of cancer cells and various benign pathologic conditions in the urinary tract by microscopic studies of urine sediment.

3130:413 RESPIRATORY CYTOPATHOLOGY*3 credits*

Study of disease processes as related to cytology of respiratory tract. Covers general anatomy, normal histology and cytology, inflammatory and mycotic diseases, benign proliferative disorders and malignant neoplasms with emphasis on their associated cell morphology.

3130:414 BODY FLUIDS CYTOPATHOLOGY*4 credits*

Anatomy, histology and clinical aspects of benign and malignant diseases involving body cavities, central nervous system and synovial cavities are presented. Emphasis is placed in cellular morphology of primary and metastatic tumors and in different cytodagnosis.

3130:415 CYTOPATHOLOGY OF THE ALIMENTARY TRACT*3 credits*

Study of anatomy, histology and pertinent physiology of the oral cavity, esophagus, stomach, small and large intestines, rectum and anal canal. The biologic behavior, clinical presentation, and cellular morphology of various benign epithelial lesions and malignant tumors is given emphasis.

3130:416 BREAST SECRETION AND NEEDLE ASPIRATION SMEARS*2 credits*

The study of anatomy and histology of body organs subject to needle aspiration biopsy with emphasis on cellular morphology of both benign and malignant tumors.

3130:417 CYTOGENETICS*1 credit*

Basic genetic principles are taught to lay foundation for study of chromosomal aberrations and their pathological manifestations. Include techniques of sex chromatin determination, culturing and harvesting of blood cells, preparation of metaphase plate and preparation of karyotypes.

3130:418 CYTOLOGY SEMINARS AND RESEARCH**3 credits**

Collections of American Society of Cytology Seminars are presented. Current cytology cases from within department are also utilized. Based on projected slides and pertinent clinical history, students formulate their opinions on each case. Each case presented is discussed in depth by students with faculty moderator. A term paper on an independently selected topic in cytology is to be submitted and presented to the class and faculty.

3130:420 CYTOLOGY PRACTICUM**5 credits**

Involves five hours of daily prescreening of routine gynecologic and non-gynecologic specimens. Abnormal cases are reviewed with a proctor who is a registered cytotechnologist or pathologist. Correlation of clinical data, follow-up of patients and proper reporting is emphasized. The goal is to be able to screen accurately at least 40 cases of gynecologic specimens per day.

3150: Chemistry**3150:121-122 INORGANIC CHEMISTRY I, II****3 credits each**

Sequential. Designed primarily for a student in medical technology. Fundamental laws and theories of chemistry; the more important elements and their components. Laboratory.

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 major, premedical student 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 major, premedical student 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**4 credits each**

Sequential. Prerequisite: 122. Designed especially for student 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.

3150:263-264 ORGANIC CHEMISTRY LECTURE I, II**3 credits each**

Sequential. Prerequisite: 134 or permission. Structure and reactions of organic compounds, mechanism of reactions.

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 preparing to become a laboratory or hospital technician. 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 non-chemical 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.

3150:418/518 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

(May be repeated)

Group studies of special topics in chemistry. May not be used to meet undergraduate or graduate major requirements in chemistry.

3150:498 SPECIAL TOPICS

1-3 credits

3150:499 RESEARCH PROBLEMS

2 credits

(May be repeated for a total of eight credits)

Prerequisite: permission. Assignment of special problems to student, designed as an introduction to research problems.

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.

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

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.

3150:610 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.

3150:670 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.

3150:685-686 EXPERIMENTAL PHYSICAL CHEMISTRY OF POLYMERS I, II

2 credits for 685; 2-3 credits for 686

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 is 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 a properly qualified student accepted as a candidate for degree of Doctor of Philosophy in chemistry. Supervised original research may be undertaken in organic, inorganic, physical, analytical or biochemistry.

3200: Classics**3200:189 MYTHOLOGY OF ANCIENT GREECE**

3 credits

Myth, legend and folktale in ancient Greece, with some attention to religion (Olympian deities, Orphism, etc.) and the transmission of Greek myth to Rome and the West. No foreign language necessary.

3200:313 ARCHAEOLOGY OF GREECE

3 credits

The ruins and monuments of Greece; history reconstructed by examination of the material remains. No foreign language necessary. Required of majors.

3200:314 ARCHAEOLOGY OF ROME

3 credits

The ruins and monuments of Rome; history reconstructed by examination of the material remains. No foreign language necessary. Required of majors.

3200:350 SELECTED TOPICS IN ANCIENT CULTURES

3 credits

(May be repeated with change of subject)

Varied offerings in literature, art and archaeology and religion. No foreign language necessary.

3200:361 THE LITERATURE OF GREECE

3 credits

Major writers of Ancient Greece and their influence on later European literature. No foreign language necessary. Required of majors.

3200:362 THE LITERATURE OF ROME

3 credits

Major writers of Ancient Rome and their influence on later European literature. No foreign language necessary. Required of majors.

3200:401-402/501-502 EGYPTOLOGY*3 credits each*

(May be repeated with change of subject)

Prerequisite: permission of instructor. Classical Egyptian (standard hieroglyphic of 18th Dynasty); history and antiquities of Egypt as far as Roman occupation.

3200:404-405/504-505 ASSYRIOLOGY*3 credits each*

(May be repeated for credit with another cuneiform language)

Prerequisite: permission of instructor. The Akkadian language; history and antiquities of Mesopotamia.

3200:407-408/507-508 ANCIENT NEAR EASTERN ARCHAEOLOGY*3 credits each*

(May be repeated for credit with change of subject)

Prerequisite: permission of instructor. Palestine, Mesopotamia, Asia Minor and adjacent lands; Old Testament reviewed in light of material evidence.

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*

(May be repeated for credit with change of subject)

Prerequisite: permission of instructor. Homer, Sophocles, Plato or the like.

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*

(May be repeated for credit with change of subject)

Prerequisite: 243-244 or equivalent. Sequence by semesters: satirists, dramatists, historians, philosophical and religious writers, medieval writers, lyric and elegiac poets, novelists.

3220:497-498/597-598 LATIN READING AND RESEARCH*3 credits each*

(May be repeated for credit with change of subject)

Prerequisite: permission of instructor. Generally Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered.

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*

Sequential. Economic activity in modern industrial society, preparation for responsible participation in process of shaping public policy. No credit to a student who has 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 a student who has 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*

Prerequisite: 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.

3250:389 ECONOMICS OF ENERGY*3 credits*

Prerequisites: 201-202 or permission of the instructor. Frame of economic theory is applied to analyze the energy sector. Theoretical issues relating energy with inflation, economic growth and public policy will also be examined.

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.

3250:408/508 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*

Prerequisite: 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 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*

Prerequisite: 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*

Prerequisite: 201-202. Evolution of theory and method, relation of ideas of economists to contemporary conditions.

3250:461/561 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*

Prerequisite: 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 six 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*

(May be repeated)

Group studies of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only.

3250:497 HONORS PROJECT*1-3 credits*

(May be repeated for a total of six credits)

Prerequisite: senior standing in Honors Program. Individual Senior Honors Thesis on a creative project relevant to economics, approved and supervised by faculty member of the department.

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.

3250:606 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 ef-

fects 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. Student decides on issues, positions and tactics, then negotiates contract.

3250:637 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.

3250:639 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.

3250:664 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.

3250:665 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.

3250:666 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.

3250:670 INTERNATIONAL MONETARY ECONOMICS

3 credits

International financial relations. Foreign exchange market and exchange rate adjustments. Balance of payments adjustment policies. International monetary system.

3250:671 INTERNATIONAL TRADE

3 credits

Traditional trade theory. Recent developments in trade theory and their policy implications in trade relations among developed and developing economics.

3250:683 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 six 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.

3250:699 RESEARCH AND THESIS

3 credits

(May be repeated for a total of six credits)

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 University College requirements, 1100:111-112.

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

(May be repeated for different topics, with permission)
Principles and practice of style, structure and purpose in writing, with special applications to writing demands of a specific career area.

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.

3300:260 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

(May be repeated for separate credit as a text or a film appreciation course)

Explores dramatic material in terms of theme, characterization and style.

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.

3300:289 STUDIES IN LITERATURE

3 credits

(May be repeated for credit, with permission, as different topics are offered, but not for credit toward an English major.)

Concentrated, in-depth study of thematically-grouped fiction, drama, poetry and/or exposition.

3300:301 ENGLISH LITERATURE I

4 credits

Studies in English literature from Old English to 1800, with emphasis upon specific representative works and upon the cultural and intellectual background which produced them. Literature to be read will include both major and minor poetry, prose and drama.

3300:302 ENGLISH LITERATURE II

4 credits

Studies in English literature 1800-1950. Emphasis will be given to cultural and intellectual backgrounds and to the development of various modes and genres.

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 10 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 Emile Bronte, Dickens, Eliot, Thackeray and Hardy. Characterization, theme and attitude toward life emphasized.

3300:341 AMERICAN LITERATURE I

3 credits

Historical survey of major and minor American writers to 1865.

3300:342 AMERICAN LITERATURE II

3 credits

Readings in major and minor American writers from 1865 to the present.

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

(May be repeated for credit as different topics are offered)
Prerequisite: 1100:112. Traditional and nontraditional topics in English literature and language, supplementing course listed in *University Bulletin*, generally constructed around theme, genre and language study.

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. Student becomes 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 six 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**

(May be repeated with different topics)

Group studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English; for elective credit only.

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.

3300:627 KEATS AND HIS CONTEMPORARIES**3 credits**

Writings of John Keats, studied against background of romantic poetic theory and poetry of Keat's contemporaries.

3300:632 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.

3300:639 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.

3300:670 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*

(Can be repeated as different topics are offered)

Special topics within the general field of literature and language, usually focusing on major figures or themes.

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.

3300:698 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.

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 United States and Canada, with emphasis on environmental, economic and cultural patterns and their interrelationships.

3350:351 OHIO: ENVIRONMENT AND SOCIETY*3 credits*

Regional and topical analysis of cultural, economic and environmental patterns; also in comparison with other states.

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: 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.

3350:383 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 five 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 six 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.

3350:498/598 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.

3350:498 HONORS RESEARCH IN GEOGRAPHY*1-3 credits*

(May be repeated for a total of six 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.

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 six 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 five 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.

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 six 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: 3450:222, 3650:292 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

3 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 or permission. 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

3 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 four 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 six 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 four credits)

Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.

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.

3370:633 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.

3370:638 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.

3370:639 NUCLEAR GEOLOGY**3 credits**

(Two hour lecture, three hour laboratory) Prerequisites: minimum of seven credits in chemistry, eight credits in physics, eight credits in calculus and eight credits in geology or permission. Discusses nature of radioactive and stable isotopes, their applications in geology, radioactive minerals, radioactive background, and disposal of radioactive wastes. Nuclear analytical techniques will also be discussed; lecture, laboratory and field study.

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: nine credits of chemistry, nine 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.

3370:678 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 six credits)

Discussion of selected topics with reference material from original sources.

3370:684 SELECTED TOPICS IN GEOLOGY

1-3 credits

(May be repeated for a total of eight credits)

Prerequisite: permission. Topics not regularly offered as formal courses, generally of classic 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 four credits)

Prerequisite: permission. Field trip course emphasizing phases of geology not readily studied in Ohio. Includes pretrip preparation, field observations and data gathering, posttrip examination and/or written report. Student will bear trip expenses.

3370:698 GRADUATE RESEARCH PROBLEMS

1 credit

(May be repeated for a total of six credits)

Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.

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.

3400:338 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 four 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 student seeking to graduate with honors in history and for student in Honors Program.

3400:403/503 UNITED STATES 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 UNITED STATES 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 major, and for graduate major who has 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.

3400:410/510 HISTORICAL AGENCY ADMINISTRATION

3 credits

Organization and administration of non-academic historical agencies (e.g. societies, museums, libraries, etc.). Some field experience in a local historical agency.

3400:411/511 FUNCTIONS OF HISTORICAL AGENCIES

3 credits

Prerequisite: 410/510 or permission. The functions and programs of historical agencies. Student will develop a project that involves participating in an agency function.

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.

3400: History**3400:201 UNITED STATES 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 UNITED STATES HISTORY SINCE THE CIVIL WAR

4 credits

Survey of United States 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.

3400:304 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.

3400:308 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.

3400:337 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.

3400:415/515 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 UNITED STATES, LATIN AMERICA AND IMPERIALISM

3 credits

Inter-American relations, militarism, dependency, Marxism and recent international and ideological trends.

3400:418/518 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 *belles epoques* 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 1840*3 credits*

Yorkists and Tudors, transition from medieval to early modern times; Elizabeth and early Stuarts.

3400:472/572 EARLY MODERN ENGLAND, 1640-1783*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 1783*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 1600, impact of the west and modernization process.

3400:490/590 WORKSHOP IN HISTORY*1-3 credits**(May be repeated)*

Group studies of special subjects pertaining to history. May be used for elective credit only. May not be used to meet undergraduate or graduate major requirements in history.

3400:497 HONORS PROJECT*1-3 credits**(May be repeated for a total of six credits)*

Prerequisite: senior standing in Honors Program. An individual research project relevant to history, supervised by a member of the History Department, culminating in an undergraduate thesis.

3400:625 READING SEMINAR IN MEDIEVAL HISTORY*4 credits*

Study of historical literature, sources of materials and major interpretations of medieval European history.

3400:626 WRITING SEMINAR IN MEDIEVAL HISTORY*4 credits*

Prerequisite: 625. Research and writing in selected topics of European medieval history from barbarian invasions through later Middle Ages.

3400:631 READING SEMINAR 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 WRITING SEMINAR IN MODERN EUROPEAN HISTORY TO 1815*4 credits*

Prerequisite: 631. Research and writing in selected topics of early modern European history, occasionally including social, economic and intellectual subjects.

3400:634 READING SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815*4 credits*

Study of historical literature, sources of materials and major interpretations of modern European history since early 19th century.

3400:635 WRITING SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815*4 credits*

Prerequisite: 634. Research and writing in selected topics of modern European history, occasionally including social, economic and intellectual subjects.

3400:640 READING SEMINAR IN HISTORY OF SCIENCE*4 credits*

Study of historical literature, sources of materials and major interpretations in history of science.

3400:641 WRITING SEMINAR IN HISTORY OF SCIENCE*4 credits*

Research and writing in selected topics in history of science.

3400:651 READING SEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE*4 credits*

Study of historical literature, sources of materials and major interpretations of English and British imperial history.

3400:652 WRITING SEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE*4 credits*

Prerequisite: 651. Research and writing in selected topics of English and British imperial history.

3400:666 READING SEMINAR IN AMERICAN HISTORY TO 1865*4 credits*

Study of historical literature, sources of materials and major interpretations of American colonial and United States history to Civil War.

3400:667 WRITING 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 READING SEMINAR IN AMERICAN HISTORY SINCE 1865*4 credits*

Study of historical literature, sources of materials and major interpretations of United States history since Civil War.

3400:670 WRITING SEMINAR IN AMERICAN HISTORY SINCE 1865*4 credits*

Prerequisite: 669. Research and writing in selected topics of United States history since Civil War.

Graduate Courses

3400:822 READING SEMINAR IN ANCIENT HISTORY*4 credits*

Study of historical literature, sources of materials and major interpretations of ancient history, especially Greek and Roman periods.

3400:623 WRITING SEMINAR IN ANCIENT HISTORY*4 credits*

Prerequisite: 622. Research and writing in selected topics of ancient history, particularly Greek and Roman eras.

3400:677 READING SEMINAR IN LATIN AMERICAN HISTORY

4 credits

Prerequisite: two courses in Latin American studies, or permission of instructor. Study of historical literature, sources of materials and major interpretations of Latin American history.

3400:678 WRITING SEMINAR IN LATIN AMERICAN HISTORY

4 credits

Prerequisite: 677. Research and writing in selected topics in social, cultural, diplomatic, intellectual and political history of Latin America.

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.

3400:894 THESIS RESEARCH

3 credits

Research for Master of Arts degree thesis.

3400:897-898 INDIVIDUAL READING FOR M.A. STUDENT

1-3 credits each

(May be repeated for a total of six credits)

Directed reading to fit individual student programs. Written permission of instructor required.

3400:899 THESIS WRITING

3 credits

Prerequisite: 694. Writing of Master of Arts degree thesis.

3400:797-798 INDIVIDUAL READING FOR PH.D. STUDENT

1-4 credits each

(May be repeated for a total of twelve 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.

3450:115 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.

3450:126 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.

3450:138 MATHEMATICS OF FINANCE

1 credit

Prerequisite: 112 or equivalent. 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: 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.

3450:112 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.

3450:149 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.

3450:211-212 CALCULUS FOR THE LIFE SCIENCES

4 credits

Prerequisite: 149 or equivalent. A calculus course for student majoring in the biological and health sciences. Functions, differentiation, exponential and logarithmic functions, applications of derivatives, trigonometric functions, integration, functions of several variables, differential and difference equations, vectors and matrices, probability.

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 AND 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: 223 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 SYSTEMS OF ORDINARY 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.

3450:438/538 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: 232 and either 3460:201 or 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 six 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*

(May be repeated)

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.

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.

3450:498 SENIOR HONORS PROJECT*1-3 credits*

Prerequisite: 3450:489 (honors). Directed study for senior student in the University Honors Program who have completed 3450:489 (honors). An introduction to research problems in mathematical sciences under the guidance of selected faculty.

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 AND 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 OPTIMIZATION*3 credits*

Prerequisite: 422/522 or permission. Unconstrained and constrained optimization theory and methods in applied problems.

3450:636 ADVANCED COMBINATORICS AND GRAPH THEORY*3 credits*

Prerequisite: 235. Theory and techniques of combinatorics as applied to network problems and graph theoretic problems.

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 six 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 four credits)

For properly qualified candidate for Master's degree in mathematics and statistics. Seminar-type discussions involving special problems dealing with mathematics and statistics. Includes a supervised research project.

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 four 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 four credits)

Prerequisite: permission. Properly qualified candidate for master's degree may obtain four credits for research experience which culminates in presentation of faculty-supervised thesis.

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, the eigenvalue problem and canonical forms.

3450:611-612 ALGEBRAIC THEORIES I AND 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.

3450:621-622 FUNCTIONS OF A REAL VARIABLE I AND 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 AND 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.

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 or 149 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/I PROGRAMMING

2 credits

Prerequisites: 201; and 3450:111, 112, 113 or equivalent.

3460:205 INTRODUCTION TO PASCAL 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.

3460:307 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 student 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.

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 six 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

(May be repeated)

Prerequisite: permission. Computer science major only. Directed studies designed as introduction to research problems, under guidance of designated faculty member.

3460:498 SENIOR HONORS PROJECT

1-3 credits

Prerequisite: 3450:489 (honors). Directed study for senior student in the University Honors Program who has completed 3450:489 (honors). An introduction to research problems in the mathematical sciences under the guidance of selected faculty.

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 AND 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.

3470:489/589 TOPICS IN STATISTICS

1-3 credits

(May be repeated for a total of six credits)

Prerequisite: permission. Selected topics in advanced statistics, including quality control, reliability, sampling techniques, decision theory, advanced inference, stochastic processes and others.

3470:491/591 WORKSHOP IN STATISTICS

1-3 credits

(May be repeated with change of topic)

Group studies of special topics in statistics. May not be used to meet undergraduate or graduate major requirements in mathematics and statistics. May be used for elective credit only.

3470:497 INDIVIDUAL READING

1-2 credits

(May be repeated for a total of four credits)

Prerequisites: senior standing and permission. Directed studies in statistics designed as introduction to research problems under guidance of selected faculty member.

3470:498 SENIOR HONORS PROJECT

1-3 credits.

Prerequisite: 3450:489 (honors). Directed study for senior student in the University Honors Program who has completed 3450:489 (honors). An introduction to research problems in the mathematical sciences under the guidance of selected faculty.

Graduate Courses

3470:650 ADVANCED PROBABILITY AND STOCHASTIC PROCESSES

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 AND II

3 credits each

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 AND 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: four 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.

3470:668 MULTIVARIATE STATISTICAL METHODS

3 credits

Prerequisites: 463/563, 662. Multivariate techniques including distance concept, Hotelling T^2 , multivariate ANOVA, regression and correlation, linear contrasts, factorial experiments, nested and repeat measure designs, Bonferroni X^2 tests, linear discrimination analysis, canonical correlation, application.

3470:689 ADVANCED TOPICS IN STATISTICS*1-3 credits*

(May be repeated for a total of six credits)

Prerequisite: 652. Selected topics in statistics including concepts in order, statistics, advanced inference, sequential analysis, stochastic processes, reliability theory, Bayesian statistics and regression.

3470:697 INDIVIDUAL READING*1-2 credits*

(May be repeated for a total of four credits)

Prerequisites: graduate standing and permission. Directed studies in statistics under guidance of selected faculty member.

3480:300-302, 403 COOPERATIVE EDUCATION WORK PERIOD*0 credits*

For Cooperative Education student only. Work experience in industry and business. Comprehensive written reports of the work experience will be required.

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 18TH CENTURY FRENCH LITERATURE*4 credits*Prerequisite: 302 or 306 or permission. Reading and discussion of selected authors with special emphasis on the *Philosophes*. 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*

3500: Modern Languages

PLACEMENT PROCEDURES FOR NEW STUDENT

Student who has 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 AND II*4 credits each*

(May be repeated for a different language)

Sequential. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation; short stories, outside reading and supplementary work in Language Laboratory.

3500:201-202 INTERMEDIATE MODERN LANGUAGE I AND II*3 credits each*

(May be repeated for a different language)

Sequential. Prerequisite: 102 or equivalent. Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level.

3500:490/590 WORKSHOP*2 credits*

(May be repeated)

Group studies of special topics in modern languages.

3500:498 SENIOR HONORS PROJECT IN MODERN LANGUAGES*1-3 credits*

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and approval of Honors preceptor. Open only to language major enrolled in Honors Program. Independent study leading to completion of Senior Honors Thesis or other original work.

3520:French

3520:101-102 BEGINNING FRENCH I AND 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 AND II*3 credits each*

Sequential. Prerequisite, 102 or equivalent. Audio-oral sections. 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 AND 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.

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.

3520:603-640 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.

3520:819-820 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 AND II*4 credits each*

Sequential. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation; short stories, outside reading and supplementary work in Language Laboratory.

3530:201-202 INTERMEDIATE GERMAN I AND 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 AND 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 dramatics 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 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.

3550: Italian**3550:101-102 BEGINNING ITALIAN I AND II***4 credits each*

Sequential. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation; short stories, outside reading and supplementary work in Language Laboratory.

3550:201-202 INTERMEDIATE ITALIAN I AND 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 AND 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.

3570: Russian**3570:101-102 BEGINNING RUSSIAN I AND 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 AND II*3 credits each*

Prerequisite: 102 or equivalent. Grammar review, practice in reading, writing, speaking; short stories, novels on intermediate level; outside reading and supplementary work in Language Laboratory.

3570:207-208 INTERMEDIATE RUSSIAN I AND 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 AND II***4 credits each*

Sequential. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation; short stories, outside reading and supplementary work in Language Laboratory.

3580:201-202 INTERMEDIATE SPANISH I AND 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 AND 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.

3580:305-306 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 two 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 Neoclasicismo, 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

3580:801 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.

3580:805-806 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**

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 six 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.

3600:380 JUNIOR TOPICS IN PHILOSOPHY*1-3 credits*

(May be repeated for a total of six 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.

3600:418/518 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.

3600:482/562 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*

(May be repeated)

Prerequisite: permission of instructor.

3600:461/561 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 six credits)

Prerequisite: 390 or senior standing in Honors Program or senior honors standing as philosophy major or permission of instructor or nomination by department faculty member. Research leading to completion of Senior Honors Thesis involving original work under guidance of faculty member.

3600:497/597 INDIVIDUAL STUDY*1-3 credits*

(May be repeated for a total of six 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.

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 nine credits)

3600:699 SEMINAR: THESIS SUPERVISION*2 credits*

(May be repeated)

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 AND 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 AND 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 AND 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 AND 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 AND 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 AND 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 AND 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.

3650:488/588 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 symmetry. 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 AND 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.

3650:681 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.

3650:682 QUANTUM MECHANICS II*3 credits*

Prerequisite: 681. Angular momentum, spin, Pauli matrices, Clebsch-Gordon coefficients, spin-orbit interaction, scattering theory, Born approximation, perturbation theory; time independent and time dependent, sudden and adiabatic approximations.

3650:684 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 UNITED STATES

4 credits

Examination of American political system with emphasis on fundamental principles, ideas, institutions and processes of modern government. Lecture and discussion sections (day classes only).

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 United States.

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

3 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 the United States.

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 the United States. 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 three credits can be applied to major in political science)

Topics of substantial current importance, specialized topics within political science or experimental courses.

3700:395 INTERNSHIP IN GOVERNMENT AND POLITICS*2-3 credits*

(May be repeated for a total of six credits. No more than four 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 four 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 120 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: eight credits in political science. Intensive study of policy-making process, emphasizing roles of various participants in executive and legislative branches as well as private individuals and groups.

3700:461/561 THE SUPREME COURT AND CONSTITUTIONAL LAW*4 credits*

Prerequisite: 100 or 201 or permission. Interpretation of the United States Constitution by Supreme Court; judicial review in democratic political process. Special emphasis on judicial policymaking in areas of civil rights and liberties.

3700:480/580 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 six 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.

Graduate Courses

3700:800 SEMINAR IN POLITICAL THEORY*3 credits*

Prerequisite: six credits of political science or permission. Selected topics in political theory investigated in depth.

3700:810 SEMINAR IN INTERNATIONAL POLITICS*3 credits*

Prerequisite: six credits of political science or permission. Analysis of current problems in theory and practice of international politics and organization.

3700:820 SEMINAR IN COMPARATIVE POLITICS*3 credits*

Prerequisite: six credits of political science or permission. Research on selected topics in comparative politics. Comparative method in political science.

3700:828 SEMINAR IN POLITICS OF DEVELOPING NATIONS*3 credits*

Prerequisite: six credits of political science or permission. Selected topics investigated in depth. Emphasis on theories of political development.

3700:830 SEMINAR IN NATIONAL POLITICS*3 credits*

Prerequisite: six 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.

3700:840 SEMINAR IN POLITICAL BEHAVIOR*3 credits*

Prerequisite: six credits of political science, including 440, or permission. Techniques of quantitative research in political science; utility and limitations of quantitative analysis.

3700:841 SEMINAR IN INTERGOVERNMENTAL RELATIONS*3 credits*

Prerequisite: six credits of political science or permission. Graduate-level examination of problems resulting from changing relations

between levels of government in the United States; comparisons with other federal systems.

3700:660 SEMINAR IN CIVIL LIBERTIES AND THE JUDICIAL PROCESS

3 credits

Prerequisite: six 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: six 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: six 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: six 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 six 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 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 affecting 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 three credits in psychology. Survey of 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. 498-Selection of research topic, review of relevant literature, research design and data collection. 499-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.

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.

3750:706 COUNSELING PSYCHOLOGY*4 credits*

Prerequisite: 630 and permission. Study of the background, theoretical foundations, techniques, research and application of counseling psychology as an applied science.

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.

Graduate Courses

3750:800 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.

3750:810 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.

3750:820 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.

3750:830 CLINICAL PSYCHOLOGY*4 credits*

Clinical techniques and approaches to study, evaluation and treatment of abnormal behavior.

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 reviews 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 change. 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 psychology. Study of psychometric theory and principles.

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 promo-

tion. 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*2 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.

3750:785 ADVANCED COUNSELING PRACTICUM*4 credits*

(May be repeated for a total of eight credits)

Prerequisites: 706, two semesters (eight credits) of 695 and permission. This course provides graduate student in counseling with actual client contacts under supervision.

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.

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 INEQUALITY*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.

3850:335 SOCIAL BEHAVIOR IN ORGANIZATIONS*3 credits*

Prerequisite: 100 or permission. Analysis of the structure of such complex organizations as voluntary associations, business organizations and public bureaucracies, in relation to issues including organizational effectiveness, organizational design and change, job satisfaction and quality of work experience. 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*

(May be repeated)

Prerequisite: permission. Special topics of interest to sociology majors and nonmajors not covered in regular course offerings.

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 ETHNIC RELATIONS*3 credits*

Prerequisite: 100 or permission. Analysis of structure and dynamics of race and ethnic relations from a variety of perspectives emphasizing both historical and contemporary issues. 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 lifestyles 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 six additional credits of sociology courses or permission. Survey of theories of deviant behavior and relevant empirical research. Special emphasis given to interaction processes and social control. 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 six additional credits of sociology courses or permission. Social origins and consequences of law and legal processes. Emphasis on uses of law, social change and aspects of legal professions. Lecture.

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: six 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.

3850:444 ISSUES IN SOCIAL GERONTOLOGY*3 credits*

Prerequisite: 343 or permission. A look into the major issues and problems facing older persons. Special attention is given to the unmet needs of the elderly as well as an examination of current societal policy and programs to meet these needs.

3850:494/594 WORKSHOP IN SOCIOLOGY*1-3 credits*

(May be repeated)

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.

3850:495 RESEARCH INTERNSHIP*2-4 credits*

(May be repeated for credit)

Prerequisites: 302, 321; 3.00 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.

3850:496 SENIOR HONORS PROJECT*1-3 credits*

(May be repeated for a total of six 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.

3850:603 SOCIOLOGICAL RESEARCH METHODS*3 credits*

Advanced research methods including advanced statistical techniques. (Same as KSU 72211) Lecture/Laboratory.

3850:604 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.

3850:605 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.

3850:606 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)

3850:607 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.

3850:608 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.

3850:609 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.

3850:611 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.

3850:612 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.

3850:613 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.

3850:614 QUALITATIVE METHODOLOGY*3 credits*

Prerequisites: 603, 604 or permission. Theory building and theory testing through the application of such techniques as participant-observation, open-ended interviewing, content analysis, historiography (diaries, records from churches, schools, social agencies and other contemporary sources) and qualitative statistics. (Same as KSU 82122). Seminar.

3850:617 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.

Graduate Courses**3850:800 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.

3850:618 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.

3850:619 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.

3850:620 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.

3850:621 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.

3850:623 SCHOOLS OF SOCIOLOGICAL THOUGHT*3 credits*

(May be repeated once for credit)

Prerequisite: 617 or permission. Two distinct schools of sociological thought will be selected by the instructor for in-depth reading and comparative analysis. (Same as KSU 82105) Seminar.

3850:631 SOCIAL PSYCHOLOGY*3 credits*

Intensive examination of social psychological theory and research, both classic and contemporary. Provides student 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 72546) 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 SEMINAR IN RACE RELATIONS*3 credits*

Prerequisite: permission. Analysis of the structure and dynamics of race and ethnic relations with attention given to both historical and contemporary issues. (Same as KSU 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 subsumable 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 LIFESTYLES*3 credits*

Prerequisite: permission. Examination of various lifestyles in contemporary urban society. Explores issues of theory and methodology in urban lifestyles research through evaluation of both classic and contemporary studies. Includes application of concepts and techniques in actual field research. Seminar.

3850:663 DEVIANCE AND DISORGANIZATION*3 credits*

Prerequisite: permission. Examination of nature and types of deviance. Problems and issues in theory and research. (Same as KSU 72760) Seminar.

3850:664 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 72763) Seminar.

3850:665 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.

3850:666 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.

3850:667 SPECIAL TOPICS IN DEVIANCE AND DISORGANIZATION*1-3 credits*

Designed to meet needs of student with interest in selected topics in deviance and disorganization. (Same as KSU 82769) Seminar.

3850:668 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.

3850:677 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.

3850:678 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.

3850:679 POLITICAL SOCIOLOGY*3 credits*

Description, analysis and interpretation of political behavior through application of sociological concepts. (Same as KSU 72544) Seminar.

3850:680 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.

3850:681 CROSS CULTURAL PERSPECTIVES IN AGING*3 credits*

Prerequisite: permission. A comparison of aging in various cultures and societies around the world.

3850:668 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.

3850:687 SOCIAL CHANGE*3 credits*

Advanced seminar in theories of social change. (Same as KSU 72320) Seminar.

3850:688 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.

3850:689 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.

3850:690 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.

3850:691 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.

3850:692 RESEARCH IN HUMAN ECOLOGY*1 credit*

Prerequisite: 688. Intensive research on selected aspect of human ecology by individual student with previous training in this area. Topic to be arranged between student and instructor. (Same as KSU 72651) Research.

3850:697 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.

3850:699 THESIS*2-6 credits*

(May be repeated for a total of six 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*

(Must be repeated for a minimum of 30 credits)

Dissertation. (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 on variations in ecological adaptations, social organization and modern American Indians in anthropological perspective. Lecture.

3870:358 NEW WORLD PREHISTORY

3 credits

Prerequisite: 150 or 3850:100, or permission. Survey of prehistoric 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 causal relationships between culture and individual cognition and behavior. Lecture.

3870:481/561 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

(May be repeated)

Prerequisites: 150 and permission. Designed to meet needs of students with interests in selected topics in anthropology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research or advanced coursework not presently offered by department on regular basis.

3870:494/594 WORKSHOP IN ANTHROPOLOGY

1-3 credits

(May be repeated)

Group studies of special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only.

Graduate Courses**3870:851 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.

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.

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.

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.

3940:699 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.

3980:600 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.

3980:601 ADVANCED RESEARCH AND STATISTICAL METHODS*3 credits*

Prerequisite: 600. Extends study of social science to include more advanced research designs and multivariate statistical techniques.

3980:602 AMERICAN URBAN DEVELOPMENT*3 credits*

Examination of major literature on processes of urbanization in United States and selected facets of urban institutional development.

3980:610 URBAN POLITICS*4 credits*

Prerequisite: permission. Empirical analysis of urban political structure and major political problems.

3980:611 URBAN ADMINISTRATION*4 credits*

Prerequisite: permission. Organization and management characteristics of various types of governmental units examined within framework of organization and management theory.

3980:612 NATIONAL URBAN POLICY*4 credits*

Prerequisite: permission. Major federal policies that relate to urban problems examined in regard to policymaking processes, implementation and impact.

3980:620 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.

3980:621 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.

3980:630 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.

3980:631 URBAN FACILITIES PLANNING*3 credits*

Study of need, process and limitation of urban facilities planning.

3980:640 FISCAL ANALYSIS*3 credits*

Prerequisite: permission. Study of revenue and expenditure patterns of the city's government.

3980:641 URBAN ECONOMIC GROWTH AND DEVELOPMENT*4 credits*

Prerequisite: permission. Examination of urban economic unit and its susceptibility to social, economic, political and physical change.

3980:650 COMPARATIVE URBAN SYSTEMS*3 credits*

Prerequisite: permission. Conceptual schemes and methodology for comparative urban analysis among a number of major cities selected from each continent.

3980:670 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.

3980:660-661 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 ur-

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.

ban policy and administrative issues. (A maximum of 27 credits may be earned in 680 and 681.)

3980:690 URBAN STUDIES SEMINAR

3 credits

Prerequisite: 16 credits of urban studies core plus quantitative methods. Urban research methods applied to specific urban research area. Comprehensive paper required.

3980:695 INTERNSHIP

1-3 credits

(May be repeated for a total of three 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 four 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.

3980:708 URBAN TUTORIAL

3 credits

Prerequisite: permission. Intensive study of a particular approved field or topical area of urban studies with a tutor. Student enrolls in a total of 12 hours of tutorial credit and more than 12 only if tutorial field is changed, as approved by Committee on Doctoral Studies. 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.

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.

4100:300 COOPERATIVE EDUCATION WORK PERIOD

0 credit

Elective for Cooperative Education Program students who have completed sophomore year. Practice in industry and comprehensive written reports of this experience.

4100:301 COOPERATIVE EDUCATION WORK PERIOD

0 credit

Required for Cooperative Education Program students only. Practice in industry and comprehensive written reports of this experience. Offered spring semester of third year.

4100:302 COOPERATIVE EDUCATION WORK PERIOD

0 credit

Required for Cooperative Education Program students only. Practice in industry and comprehensive written reports of this experience. Offered fall semester of fourth year.

4100:403 COOPERATIVE EDUCATION WORK PERIOD

0 credit

Required for Cooperative Education Program students only. Practice in industry and comprehensive written reports of this experience. Offered summer after fourth year.

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.

4200:481/561 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

1-3 credits

(May be repeated for a total of six 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

1-3 credits

(May be repeated for a total of six credits)

Prerequisite: permission. Individual research project pertinent to chemical engineering under faculty supervision. Report required.

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.

4200:835 ADVANCED POLYMER ENGINEERING

3 credits

Prerequisite: 322 or 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer rheology.

4200:840 ADVANCED PLANT DESIGN

3 credits

Prerequisite: permission. Topical treatment of process and equipment design, scale-up, optimization, process syntheses, process economics. Case problems.

4200:898 SPECIAL PROBLEMS

1-4 credits

(May be repeated for a total of four 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.

4200:899 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 six 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

(May be taken more than once)

Prerequisite: completion of preliminary examination and approval of Advisory Committee. Original research by Ph.D. candidate.

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.

4300:210 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 HYDRAULIC ENGINEERING*2 credits*

Prerequisite: 4600:310. Flow in closed conduits and open channels. Design of pipe networks, pumping stations and simple weirs.

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 con-

struction 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 hydraulics, steam channel mechanics, sedimentation and coastal engineering.

4300:445 HYDROLOGY*3 credits*

Prerequisite: 341. Surface water hydrology, water cycle, precipitation, evaporation, stream flow. Principles of hydrologic systems and their analysis. Hydrologic simulation, reservoir planning and water supply studies. Analysis of rainfall and floods.

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

3 credits

Prerequisite: senior standing or permission. Organization for construction, construction contracts, estimating, bidding, bonds and insurance. Construction financial management and supervision of construction, scheduling using critical path method.

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 six credits)

Prerequisite: senior standing in Honors Program. Individual creative project or design relevant to civil engineering, supervised by faculty member of the department.

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.

4300:812 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.

Graduate Courses
4300:801 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.

4300:802 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.

4300:618 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 a student 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.

4300:681 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 nine 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.

4300:896 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

(May be taken more than once)

Prerequisite: completion of preliminary examination and approval of Advisory Committee. Original research by Ph.D. candidate.

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.

4400:382 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

(May be taken more than once)

Prerequisite: permission of department head. Select comprehensive problems, supervised discussions and computation periods.

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

Prerequisites: 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.

4400:460/560 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.

4400:461 ELECTRICAL POWER SYSTEMS I

3 credits

Prerequisite: 382. Introduction to electricity utility load flow, fault analysis, stability, surge protection and relaying.

4400:462 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 six 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

(May be taken more than once)

Prerequisite: permission of department head. Special topics in electrical engineering.

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.

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.

4400:665 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

(May be taken more than once)

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.

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.

4400:776 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

(May be taken more than once)

Prerequisite: permission of department head. Advanced level coverage of various specialized topics. Intended for students seeking Ph.D. in Engineering.

4400:898 PRELIMINARY RESEARCH

1-15 credits

(May be repeated)

Prerequisite: completion of Qualifying Examination and approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

4400:899 DOCTORAL DISSERTATION

1-15 credits

(May be repeated)

Prerequisite: completion of Candidacy Examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.

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

(May be taken more than once)

Prerequisite: permission of department head. Special topics in computer engineering.

Graduate Courses
4450:610 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.

4450:611 COMPUTER ALGORITHMS II

3 credits

Prerequisite: 610 or permission. Data structures and algorithm design for minimum execution time and memory requirements.

4450:693 SPECIAL PROBLEMS

1-3 credits

(May be taken more than once)

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.

4450:794 ADVANCED SEMINAR

1-3 credits

(May be taken more than once)

Prerequisite: permission of department head. Advanced level coverage of various topics. Intended for students seeking Ph.D. in engineering.

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.

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.

4600:305 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.

4600:380 MECHANICAL METALLURGY*2 credits*

Prerequisite: 336. Structures of common metallic materials and study of their macroscopic mechanical behavior. Phase changes and heat treatment. Theories of failure.

4600:393 INTERNAL COMBUSTION ENGINES LABORATORY*1 credit*

Prerequisite: 301. Study of application and performance in 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.

4600:411/511 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.

4600:442/522 INDUSTRIAL AUTOMATIC CONTROL*2-3 credits*

Prerequisite: 440 or equivalent. Operation of basic control mechanisms. Study of mechanical, hydraulic, pneumatic and fluidic control systems, including their application areas. Tuning of control devices for optimum performance of system. Case studies on control applications from industry, such as boilers, furnaces and process heaters.

4600:443/543 OPTIMIZATION METHODS IN MECHANICAL ENGINEERING*3 credits*

Prerequisite: 360. Development and method of solution of optimization problems in mechanical engineering. The use of dynamic programming and operational research methods for optimization including computer utilization and applications.

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

Prerequisite: 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: 483; corequisites: 315 and 431. Laboratory experiments in area 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.

4600:497 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.

4600:498 EXPERIMENTAL INVESTIGATION 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.

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.

4600:617 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 to 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.

Graduate Courses**4600:800 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.

4600:806 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.

4600:809 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.

4600:810 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.

4600:815 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.

4600:680 POLYMER PROCESSING

2 credits

Prerequisite: permission. Study of process engineering in polymer conversion industry, emphasizing analytical treatment of heat transfer, mass flow, mixing, shaping and molding of 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 nine 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.

4600:896 PRELIMINARY RESEARCH

1-15 credits

Prerequisite: approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

4600:899 DOCTORAL DISSERTATION

1-15 credits

(May be taken more than once)

Prerequisite: approval of Advisory Committee. Original research by Ph.D. candidate.

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.

4980:461 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.

4980:462 MECHANICAL SERVICE SYSTEMS

3 credits

Introduction to materials and equipment used in mechanical heating, ventilating, air conditioning, water and waste systems.

4980:463 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.

College of Education

5100: Educational Foundations

5100:150 INTRODUCTION TO PROFESSIONAL EDUCATION

3 credits (6 clinical hours, 10 field hours)

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 (12 clinical hours)

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 three 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 (8 clinical hours)

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.

5100:414/514 ORGANIZING AND SUPERVISING EDUCATIONAL MEDIA PROGRAMS

3 credits

Prerequisite: 410 or permission of the instructor. Procedures for planning, organizing and evaluating educational media programs including media facilities and services will be examined.

5100:420/520 INTRODUCTION TO COMPUTER BASED EDUCATION

3 credits

Prerequisite: graduate or senior standing. Techniques for developing, implementing and evaluating computer based education will be learned. Participants will work with instructional paradigms and instructional computing languages. Both the hardware and software considerations associated with current applications will be examined.

5100:430 SENIOR HONORS PROJECT: FOUNDATIONS

1-6 credits

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5100:450 PROBLEMS IN EDUCATION

2 credits (12 field hours)

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 six 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 six 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 six credits)

Prerequisite: 250 or equivalent. In-depth study of research in selected areas of learning, development, evaluation and motivation.

5100:630 TOPICAL SEMINAR IN COMPUTER BASED EDUCATION

3 credits

(May be repeated for a total of six credits)

Prerequisite: 420/520. Advanced topics related to development, implementation, research and evaluation in CBE. Student involvement will be emphasized and required. Knowledge of a programming language is recommended.

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.

5100:642 TOPICAL SEMINAR IN MEASUREMENT AND EVALUATION*3 credits*

(May be repeated for a total of six credits)

Prerequisite: 350 or 3750:410/510. Topics of current interest and need will be emphasized. Students will develop extended competence with contemporary measurement and evaluation techniques.

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 six 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 six 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.

5100:798 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 six 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 eight 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.

5200: Elementary Education**5200:100 STUDENT PARTICIPATION***1 credit (30 field hours)*

Planned field experience emphasizing tutorial settings in reading and other curricular areas.

5200:141 HANDICRAFTS IN THE ELEMENTARY SCHOOL*2 credits (15 clinical hours)*

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 (30 field hours)*

Prerequisite: 100. Planned field experience emphasizing field settings where students work with small groups in elementary school classrooms.

5200:286 CHILDREN'S LITERATURE*3 credits (15 clinical hours)*

Survey of materials for children in prose, poetry and illustrations from early historical periods to modern types; criteria of selection and methods of presentation critically examined.

5200:300 STUDENT PARTICIPATION*1 credit (30 field hours)*

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.

5200:312 INTRODUCTION TO EARLY CHILDHOOD EDUCATION — LABORATORY*1 credit*

Corequisite: 310. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus, or to develop materials for use by learner.

5200:313 CURRICULUM FOR PRESCHOOL LEARNING CENTERS — LABORATORY*1 credit*

Corequisite: 311. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus, or to develop materials for use by learner.

5200:321 ART FOR THE GRADES*2 credits (15 clinical hours)*

Prerequisite: 141. Art requirements in elementary grades; laboratory work to give teachers knowledge of materials and mediums and 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 (15 clinical hours)*

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 (15 clinical hours)*

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 (15 clinical hours)*

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 (15 clinical hours)*

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 (15 clinical hours)*

Prerequisite: 5100:250. Social studies in elementary school and varied means of implementing program.

5200:339 PRINCIPLES OF DIAGNOSTIC TEACHING OF READING*3 credits (15 clinical hours)*

Prerequisite: 337. Nature of reading problems in classroom setting. Methods and materials employed in corrective reading program by classroom teacher.

5200:340 EARLY ELEMENTARY EDUCATION I — LABORATORY*1 credit*

Corequisite: 330. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

5200:341 EARLY ELEMENTARY EDUCATION II — LABORATORY*1 credit*

Corequisite: 339. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

5200:343 SCIENCE FOR THE ELEMENTARY GRADES — LABORATORY*1 credit*

Corequisite: 333. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

5200:344 TEACHING ART IN THE ELEMENTARY SCHOOL — LABORATORY*1 credit*

Corequisite: 334. Provides an opportunity for art education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop processes for use by learner.

5200:346 TEACHING ELEMENTARY SCHOOL MATHEMATICS — LABORATORY*1 credit (2 clinical hours)*

Corequisite: 336. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in field, learner on campus or to develop materials for use by learner.

5200:347 TEACHING OF READING — LABORATORY*1 credit (2 field hours)*

Corequisite: 337. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

5200:348 TEACHING OF SOCIAL STUDIES — LABORATORY*1 credit (2 field hours)*

Corequisite: 338. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

5200:349 PRINCIPLES OF DIAGNOSTIC TEACHING OF READING — LABORATORY*1 credit (2 field hours)*

Prerequisites: 337 and 347; corequisite: 339. Provides an opportunity for teacher education student to implement techniques described in accompanying methods course with learner in the field, learner on campus or to develop materials for use by learner.

5200:350 MULTICULTURAL EDUCATION: CONCEPTS, PROGRAMS AND PRACTICES*3 credits*

Designed to provide teacher education students with knowledge, skills and attitudes which will enable them to model behavior and implement curricular programs consistent with the concept of cultural pluralism.

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 (25 clinical hours)*

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 (15 clinical hours)*

Prerequisite: senior standing. In conjunction with Student Teaching. Synthesis of contemporary problems encountered during student teaching experience. Exchange of ideas regarding role of new teacher entering profession.

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*1-6 credits*

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality 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 (322 field hours)

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.

5200:699 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 six 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.

5250: Reading**5250:341 LABORATORY PRACTICUM IN READING**

3 credits

Prerequisite: 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.

5250:440/540 DEVELOPMENTAL READING IN THE CONTENT AREAS — ELEMENTARY

3 credits

Prerequisite: 5200:337 or permission of instructor. Nature of reading skills relating to content subjects. Methods and materials needed to promote reading achievement in content subjects by the elementary classroom teacher.

5250:441/541 LANGUAGE AND ITS RELATIONSHIP TO READING IN THE ELEMENTARY SCHOOL

3 credits

Prerequisite: 5200:337 or permission of the instructor. An overview of the linguistic field in the teaching of reading in the elementary school. A discussion of major linguistic principles for classroom application in grades K-8.

5250:442/542 TEACHING READING TO CULTURALLY DIFFERENT LEARNERS

3 credits

Prerequisite: 5200:337 or by permission of the instructor. The course is designed to provide students with knowledge, skills and attitudes which will enable them to employ effective methods of teaching reading to culturally different learners, and/or learners whose language patterns are non-standard.

Graduate Courses**5250:880 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.

5250:881 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.

5250:882 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.

5250:683 READING DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS AND SUPPORT PERSONNEL

3 credits

Prerequisite: 5200:630 or permission of instructor. This course will survey developmental reading and its relationship to reading difficulties. Formal and informal procedures for diagnosing disabled readers and a discussion of prescriptive strategies will be included.

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.

5300: Secondary Education**5300:265 ORIENTATION TO SECONDARY EDUCATION**

1 credit (10 clinical hours)

Corequisite: 275. An orientation to the goals and objectives of the department's teacher preparation program. Student should gain a clear understanding of the purpose and nature of training in secondary post-secondary education.

5300:275 EXPLORATORY EXPERIENCES IN SECONDARY EDUCATION (SOPHOMORE)

1 credit (6 clinical hours, 30 field hours)

Corequisite: 265. Field work with secondary school pupils, teachers and other professional personnel.

5300:286 EXPLORATORY EXPERIENCES IN SECONDARY SCHOOLS/ MAINSTREAMING

1-2 credits

Field work for special education majors.

5300:310 PRINCIPLES OF TEACHING IN THE SECONDARY SCHOOL

3 credits (30 clinical hours)

Prerequisites: 275 and 5100:250. Designed to familiarize pre-service teachers with the nature of secondary education and teaching in secondary schools. Microteaching laboratory participation is required.

5300:316 METHODS IN TEACHING ART

2 credits

Prerequisite: completion of required course for art teachers and grade-point average of 2.00 in the field. Study of trends and procedures in teaching and supervision; relation of art to home, school and community; observation in selected schools required.

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.

5300:325 CONTENT READING IN SECONDARY SCHOOLS

3 credits (30 clinical hours)

Instructional principles and practices for helping secondary school youth and adults learn subject matter through application of reading and study skills.

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.

5300:345 HUMAN RELATIONS IN SECONDARY EDUCATION

1 credit (3 clinical hours, 7 field hours)

Prerequisite: 310. Develops competencies essential to effective teaching in a culturally pluralistic society. Includes teaching exceptional

children, and handling multi-cultural differences and socioeconomic differences in the classroom.

5300:355 MANAGING CLASSROOM BEHAVIOR AT THE SECONDARY LEVEL

1 credit (3 clinical hours, 7 field hours)

Prerequisite: 310. Helps prospective teachers cope with the variety of student behaviors they may encounter in various educational settings.

5300:374 PRINCIPLES OF SHORTHAND INSTRUCTION

2 credits

Prerequisite: 2540:173 and grade-point average 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.

5300:375 EXPLORATORY EXPERIENCE IN SECONDARY EDUCATION

1 credit (6 clinical hours, 30 field hours)

Prerequisite: 310. Field work with secondary school pupils, teachers and other school personnel.

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 (15 clinical hours, 10 field hours)

Corequisite: 495.

5300:411 INSTRUCTIONAL TECHNIQUES IN SECONDARY EDUCATION

4 credits (30 clinical hours, 20 field hours)

Prerequisites: 310, 325, 345, 355 and 5100:350. Open to students who have completed certification requirements in all content fields. Techniques of planning, instruction and evaluation in various secondary teaching fields.

5300:430 SENIOR HONORS PROJECT: SECONDARY

1-6 credits

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5300:445 MINICOMPUTER APPLICATIONS IN SECONDARY CLASSROOMS

1 credit (10 clinical hours)

Prerequisites: 310 and senior status. Provides an orientation to applications of minicomputer in secondary classrooms. A knowledge of BASIC programming is recommended.

5300:455 CAREER OPTIONS IN SECONDARY EDUCATION

1 credit (8 clinical hours, 2 field hours)

Prerequisites: 310 and senior status. Helps prospective teachers prepare themselves for searching for employment in education and to find alternative careers for which an education degree would be a suitable background.

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 (322 clinical hours)

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.

Graduate Courses

5300:619 SECONDARY SCHOOL CURRICULUM AND INSTRUCTION

2 credits

Application of findings of recent research to curriculum building and procedures in teaching.

5300:625 READING PROGRAMS IN SECONDARY SCHOOLS

3 credits

For all subject teachers both with and without previous study in the teaching of reading. Materials, class organization and procedures for developing reading improvement programs for all secondary school and college students.

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 six 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 six 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 a secondary doctoral student 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 six 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.

5300:897 INDEPENDENT STUDY

1-3 credits

(May be repeated for a total of six 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: 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 postsecondary 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.

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.

Graduate Courses

5400:610 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.

5400:661 CURRENT ISSUES IN HIGHER EDUCATION

2 credits

(May be repeated with change in topic)

Examination of many current problems and issues in institutions of higher education; adult education, technical institutes, community colleges, proprietary schools, undergraduate, graduate and professional education.

5400:690 INTERNSHIP: TEACHING VOCATIONAL EDUCATION**5400:691 INTERNSHIP: TEACHING TECHNICAL EDUCATION****5400:692 INTERNSHIP: POSTSECONDARY EDUCATION**

2 credits each

Teaching under supervision from the University and the educational institution. Includes a seminar each week.

5400:695 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.

5400:697 INDEPENDENT STUDY

1-3 credits

(May be repeated for a total of six credits)

Prerequisite: permission of adviser and supervisor of field experience. On-the-job experience related to student's program of studies.

5400:699 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 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 credit

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 FUNDAMENTALS 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 the physical education and outdoor education student.

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 effect 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 (20 clinical hours)*

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*1-6 credits*

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5550:435/536 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.

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.

5560: Outdoor Education

5560:430 SENIOR HONORS PROJECT: OUTDOOR EDUCATION

1-6 credits

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality 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 a student to gain first-hand knowledge and experience with existing outdoor education programs.

Graduate Course

5560:895 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.

5570: Health Education

5570:101 PERSONAL HEALTH

2 credits (10 clinical hours)

Application of current scientific principles and facts pertaining to healthful, effective living. Personal health problems and needs of a student.

5570:200 CURRENT TOPICS IN HEALTH EDUCATION

3 credits

Designed to give the teacher of health education the knowledge base necessary to deal factually and comfortably with selected topics in school and community health.

5570:201 CONSUMER HEALTH, WEIGHT CONTROL AND EXERCISE

3 credits

Student will investigate current consumer health problems as they relate to making decisions about the purchase and use of health products and health services available in today's society. An understanding of the maintenance of body weight and how it is affected by a person's knowledge of nutrition and exercise will be included.

5570:202 STRESS, LIFE-STYLE AND YOUR HEALTH

3 credits

Overview of the behavior associated with wellness and disease.

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 AND SCHOOL HEALTH SERVICES

4 credits

Involves various methods and techniques utilized in organization and administration of school health program. Additionally, the role of school and community personnel in detecting and managing health problems of the student will be explored. Third area of emphasis will be procedures and programs designed to protect and promote the health of school-age youth.

5570:322 METHODS AND MATERIALS OF ELEMENTARY SCHOOL HEALTH EDUCATION

2 credits

Prerequisite: 101. Emphasizes the planning and organization of subject matter for implementation in elementary school health curriculum. Emphasis will be on creative activities and teaching methods.

5570:323 METHODS AND MATERIALS OF SECONDARY SCHOOL HEALTH EDUCATION

2 credits

Prerequisite: 101. Planning and organization of subject matter for secondary school health instruction will be major emphasis. Attention will be given to development of teaching techniques, utilization of instructional media and evaluation procedures in health education.

5570:395 FIELD EXPERIENCE IN HEALTH EDUCATION

1-3 credits

Prerequisite: permission of the adviser. On-site field experience will be conducted in an area related to health education under the supervision of a faculty member. The student will work with current health education programs.

5570:400 ENVIRONMENTAL ASPECTS OF HEALTH EDUCATION

3 credits

Prerequisite: major or minor in health education or instructor's permission. Investigates many aspects of the environment and their influence upon the quality of human life. Major emphasis will be study of man's health problems paradoxically resulting from his affluence.

5570:430 SENIOR HONORS PROJECT: HEALTH EDUCATION

1-6 credits

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5570:460 PRACTICUM IN HEALTH EDUCATION

2 credits

Prerequisite: permission of the adviser. On-site participation in community health organizations, agencies or resources.

5570:497 INDEPENDENT STUDY IN HEALTH EDUCATION

1-2 credits

Prerequisite: permission of the adviser. Emphasizes analysis of a specific topic related to a current problem in health education. May include investigative procedure, research or concentrated practical experience.

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 a student 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.

5600:450/550 COUNSELING PROBLEMS RELATED TO LIFE — THREATENING ILLNESS AND DEATH*3 credits*

Prerequisite: permission. Consideration of the global issues, current research, coping behavior, support systems and family and individual needs in regard to life-threatening situations.

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.

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 the college student.

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 the secondary school student, teacher and parents.

5600:665 SEMINAR: COMMUNITY AND COLLEGE COUNSELING*3 credits*

Prerequisite: 635 or permission. Study of topics of concern to a student 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 nine 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.

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 a student assess 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 dimension 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.

5600:702 ADVANCED COUNSELING PRACTICUM

3 credits

(May be repeated for a total of nine 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 a graduate student in counseling.

5600:895 FIELD EXPERIENCE: DOCTORAL

1-6 credits

(May be repeated)

Prerequisite: doctoral candidate status. Placement in selected setting for purpose of acquiring experiences and/or developing skills related to student's doctoral program.

5600:897 INDEPENDENT STUDY

1-3 credits

(May be repeated for a total of nine 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

(May be repeated)

Prerequisite: permission of adviser and department head. Study, analysis and reporting of counseling problem.

5600:899 DISSERTATION

1-20 credits

Prerequisite: permission of major doctoral adviser and department head. Study, design and analysis of counseling problem.

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

1-6 credits

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality 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.

5610:441/541 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: 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

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.

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 six 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 four 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 four 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.

5610:601 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.

5610:602 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.

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 eight 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 nine 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.

5610:798 RESEARCH PROJECT IN SPECIAL EDUCATION*1-3 credits*

Study, analysis and reporting of special education problem.

Graduate Courses**5610:600 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.

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.

Graduate Courses**5620:800 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.

5620:830-831 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.

5620:840 FIELD SEMINAR I: ISSUES AND ASSESSMENTS (FALL)*2 credits***5620:841 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.

5620:895 FIELD EXPERIENCE: MASTER'S*1-3 credits*

Prerequisite: permission of instructor. Practical school psychology-related experience in school setting.

5620:896 FIELD EXPERIENCE: MASTER'S*1-3 credits*

Prerequisite: permission of instructor. Practical school psychology-related experience in appropriate setting other than a school.

5620:897 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.

5620:898 RESEARCH PROJECT IN SPECIAL AREAS*1-3 credits*

Prerequisite: permission of adviser. Study, analysis and reporting of school psychology problem.

5620:899 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.

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.

Graduate Course**5630:886 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.

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.

Graduate Courses**5700:801 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.

5700:804 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.

5700:805 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 United States 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 two 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 six 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*

Prerequisite: 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.

5700:746 POLITICS, POWER, AND THE SCHOOL ADMINISTRATOR*3 credits*

Impacts of formal and informal community power structures and influential persons on educational planning and decision making. Administrator as an influence on the power structure for educational benefit.

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 six 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.

5700:896 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 six 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.

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.

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.

5850:260 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

(May be repeated once)

Supervised field experience in school setting designed for educational technician enrollees only.

5900: Higher Education Administration

5900:700 INTRODUCTORY ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION

1 credit

Introductory examination of issues, trends, topics and activities in institutions of higher education.

5900:715 SEMINAR IN HIGHER EDUCATION: ADMINISTRATION IN HIGHER EDUCATION

3 credits

Prerequisite: 5700:704 or permission. In-depth study of problems, procedures and principles of administration in institutions of higher education. Emphasis is placed on the administrative process and major administrative task areas.

5900:725 SEMINAR IN HIGHER EDUCATION: STUDENT SERVICES

3 credits

Prerequisite: permission. Study of topics of concern to students specializing in student personnel services in higher education. Topics may differ each semester depending upon specific needs and interests of students.

5900:730 HIGHER EDUCATION CURRICULUM AND PROGRAM PLANNING**3 credits**

Study of strategies for implementing and monitoring the curricular change process. Broad aspects of higher education program planning shall be examined.

5900:735 INSTRUCTIONAL STRATEGIES AND TECHNIQUES FOR THE COLLEGE INSTRUCTOR**3 credits**

Selected topics in instructional theory, techniques and strategies which are appropriate to instructional planning and development of college-level courses. Criterion-referenced formating is emphasized, including student achievement testing and evaluation.

5900:745 INDEPENDENT STUDY IN HIGHER EDUCATION**1-3 credits**

(May be repeated for a total of six credits)

Prerequisite: permission. Selected area of independent investigation in an area of higher education as determined by adviser and student in relation to student's academic needs and career goals.

5900:800 ADVANCED ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION**1 credit**

(May be repeated)

Prerequisite: permission. Examination of selected perspectives and topics in higher education which pose concerns to participating students.

5900:801 INTERNSHIP IN HIGHER EDUCATION**1-3 credits**

(May be repeated for a total of six credits)

Prerequisite: permission; corequisite: 802. Intensive work experience in operations of an institution of higher education, related to student's own program of studies and professional goals.

5900:802 INTERNSHIP IN HIGHER EDUCATION SEMINAR**1 credit**

(May be repeated for a total of three credits)

Prerequisite: permission; corequisite: 801. To be taken in conjunction with internship for synthesis of problems encountered in internship experience and to provide the opportunity to share ideas and experiences from various areas of higher education internship placement.

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.

6200:316 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 student 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; 6200:355 and 6500:322 must be taken prior to or concurrently; or permission of instructor. 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.

6200:489/589 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

(May be repeated)

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.

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 six 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.

Graduate Courses
6200:601 FINANCIAL ACCOUNTING

3 credits

Introductory course for student with no accounting background. Examines accounting principles as applied to financial problems of firm.

6200:610 ACCOUNTING MANAGEMENT AND CONTROL

3 credits

Prerequisite: 601 or equivalent. Investigation of role of accounting as management tool in areas of production, marketing, internal control and capital budgeting with focus on management planning.

6200:630 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.

6200:631 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.

6200:632 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.

6200:633 ESTATE AND GIFT TAXATION

3 credits

Prerequisite: 431. Analyzes provisions of federal estate and gift tax laws and tax consequences of testamentary and lifetime transfers.

6200:637 ADVANCED ACCOUNTING THEORY

3 credits

Prerequisite: 318. Examination of accounting concepts and standards through critical analysis of articles on current trends in profession. Discussion and outside research stressed.

6200:640 ADVANCED AUDITING

3 credits

Prerequisite: 440/540. Conceptual foundations and current research on professional and internal auditing. Includes government regulation and litigation, statistics, computer systems as well as current and prospective developments in auditing.

6200:641 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.

6200:642 CORPORATE TAXATION II

3 credits

Prerequisite: 631. Continuation of 631. Concludes study of subchapter C of Internal Revenue Code with major focus on corporate reorganization.

6200:643 TAX ACCOUNTING

2 credits

Prerequisite: 431. Attention focused on timing of income and expenses for individuals and businesses and its relation to tax planning.

6200:644 INCOME TAXATION OF TRUSTS AND ESTATES

2 credits

Prerequisite: 633. Analysis of income taxation of trusts and estates and their creators, fiduciaries and beneficiaries.

6200:645 ADVANCED INDIVIDUAL TAXATION

3 credits

Prerequisite: 430. In-depth study of some of the more involved areas of individual income taxation.

6200:646 CONSOLIDATED TAX RETURNS

2 credits

Prerequisite: 431. Intensive study of tax provisions concerning use of consolidated tax returns.

6200:647 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.

6200:648 TAX PRACTICE AND PROCEDURE

2 credits

Prerequisite: 431. In-depth study of administration and procedures of Internal Revenue Service and responsibilities of tax practitioner.

6200:649 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.

6200:650 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.

6200:651 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.

6200:652 TAX-EXEMPT ORGANIZATIONS

2 credits

Prerequisite: 431. Analysis of tax aspect of tax-exempt organizations, including nature of and limitations of its exemption.

6200:653 BUSINESS PLANNING

2 credits

Prerequisite: 631. Uses cases depicting complex problems to permit student to integrate knowledge of taxation.

6200:654 INDIVIDUAL STUDIES

1-3 credits

Prerequisite: permission of instructor. Intensive study of particular topic or limited number of topics not otherwise offered in curriculum.

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.

6200:660 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 three 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 six 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.

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.

6400:338 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

(May be repeated)

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.

6400:495 INTERNSHIP IN FINANCE

1-3 credits

Prerequisite: permission of instructor. On-the-job experience with cooperating private and public sector organizations. Individual assignments made by supervising faculty member. Periodic reports and term papers required as appropriate.

6400:497 HONORS PROJECT

1-3 credits

(May be repeated for a total of six credits)

Prerequisite: senior standing in Honors Program. Individual Senior Honors Thesis 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.

Graduate Courses**6400:602 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 United States 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 United States 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.

6400:678 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.

6400:897 INDEPENDENT STUDY IN FINANCE*1-3 credits*

(May be repeated for a total of three credits)

Focus on special topics of study and research in finance on an independent basis.

6400:899 SEMINAR IN FINANCE*3 credits*

(May be repeated for a total of six credits)

Prerequisites: 674 and a total of 15 Phase II-III graduate credits. Individual research projects.

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 major. Terminal course in production for other student. 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.

6500:401/501 MANAGEMENT PROBLEMS*3 credits*

Student who has earned credit in 401 is ineligible to register for or earn credit in 402 or 403. Student applies modern management principles, practices and theory to an actual problem in industry.

6500:402 MANAGEMENT PROBLEMS — PRODUCTION*3 credits*

Prerequisite: senior standing. Student who has earned credit in 402 is ineligible to register for or earn credit in 401 or 403. Student applies modern management principles, practices and theory to an actual production problem in industry.

6500:403 MANAGEMENT PROBLEMS — PERSONNEL*3 credits*

Prerequisite: senior standing. Student who has earned credit in 403 is ineligible to register for or earn credit in 401 or 402. Student applies modern management principles, practices and theory to an actual personnel problem in industry.

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.

6500:409 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: 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.

6500:435 QUALITY CONTROL*3 credits*

Prerequisite: 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.

6500:480/580 INTRODUCTION TO HEALTH CARE MANAGEMENT*3 credits*

Prerequisites: upper college or graduate standing and permission of instructor. Introductory course for health professionals providing in-depth study of management and principles and concepts as applied to particular health care organizations and health care delivery system. Topics covered include (a) physical resource management, (b) human resource management including motivation, leadership, supervision communication practices, work group dynamics with emphasis on managing health care professional and resources of health care organization, and (c) principles and techniques of decision making, planning, organizing and controlling in health care setting. For those registered for graduate credit, a major research paper is required.

6500:485/585 SPECIAL TOPICS IN HEALTH SERVICES ADMINISTRATION*1-3 credits*

Prerequisite: permission of instructor. Special topics in health services administration (i.e., management) focusing on historical and/or contemporary managerial organizational and/or policy/strategy issues as related to health care organizations and health care systems. Separate topics may be repeated for a maximum of six credits. For those registered for graduate credit, a major research paper is required.

6500:491 WORKSHOP IN MANAGEMENT*1-2 credits*

(May be repeated with permission of instructor or department)
Group studies of special topics in management. May not be used to meet undergraduate major requirements in management. May be used for elective credits only.

6500:497 HONORS PROJECT*1-3 credits*

(May be repeated for a total of six credits)

Prerequisite: senior standing in Honors Program. Individual Senior Honors Thesis 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.

Graduate Courses

6500:600 MANAGEMENT CONCEPTS*3 credits*

Quantitative, behavioral, systems approach to introduce management process, emphasizing production function. Designed for student who has not previously had courses in business.

6500:601 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.

6500:652 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.

6500:653 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.

6500:654 INDUSTRIAL RELATIONS*3 credits*

Prerequisite: 600. Study of rights and duties of management in dealing with labor and economic consequences of union and management policies and practices.

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.

6500:689 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 six 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 two credits)

Focus on special topics of study and research in management on an independent basis.

6500:699 GRADUATE SEMINAR IN MANAGEMENT*3 credits*

(May be repeated for a total of six credits)

Prerequisite: total of 15 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.

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.

6600:310 BUYER BEHAVIOR*3 credits*

Prerequisite: two courses from 3750 or 3850 or permission. Interdisciplinary approach to analysis and interpretation of the nature and dynamics of buying motives, habits and procedures in consumer, industrial, intermediate and institutional markets. Economic, psychological and sociocultural actions and reactions of these buying units are viewed in terms of their decision-making processes as they affect and are affected by strategic and tactical decisions of the marketing organization.

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. Student concentrates 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, student is 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.

6600:460/560 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.

6600:495 INTERNSHIP IN MARKETING*1-3 credits*

Prerequisite: permission of instructor. On-the-job experience with cooperating private and public sector organizations. Individual assignments made by supervising faculty member. Periodic reports and term papers required as appropriate.

6600:497 HONORS PROJECT*1-3 credits*

(May be repeated for a total of six credits)

Prerequisite: senior standing in Honors Program. Individual Senior Honors Thesis 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.

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. Student 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. Student 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, student develops extensive marketing plans, both short- and long-run, for a wide variety of businesses, services and institutions.

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 15 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 three 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 six credits)

Prerequisite: a total of 15 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.

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.

7100:288 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

Prerequisite: 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

(May be repeated for a total of 12 credits when a different process is indicated)

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.

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 six 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

(May be repeated for a total of nine credits, but limited to a maximum of three credits in a given medium)

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.

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.

7100:366 METALSMITHING II

3 credits

(May be repeated for a total of six 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 nine credits)

Prerequisite: 268. Continuation of 268. Development of personal aesthetic values. Advanced techniques with metal foils, champleve, 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.

7100:376 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.

7100:380 GRAPHIC VIDEO

3 credits

Prerequisites, junior standing in graphic design or mass media-communication and permission of instructor. Study of applied video technologies as related to visual design principles and visual communication concepts in the design and use of graphic imagery.

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 nine 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*

(May be repeated for credit when a different subject or level of investigation is indicated)

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.

7100:405/505 HISTORY OF ART SYMPOSIUM*1-3 credits*

(May be repeated for credit when a different subject is indicated)

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.

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 nine credits)

Development of individual points of view and sculptural statements.

7100:431 DRAWING IV*3 credits*

(May be repeated for a total of nine credits)

Prerequisites: 121, 232 and 331. In-depth study of drawing for advanced art student. 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 nine 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.

7100:468 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 nine credits)

Prerequisite: 388 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 nine 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.

7100:486 PACKAGING DESIGN*3 credits*

Prerequisite: 387 or permission of instructor. Synthesis of two- and three-dimensional visual thinking. Research in materials applicable to packaging of various products. Assignment of projects stressing development of conventional and experimental package design.

7100:486 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*

(May be repeated for credit when a different subject or level of investigation is indicated)

Prerequisite: advanced standing or permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum.

7100:490/590 WORKSHOP IN ART*1-4 credits*

(May be repeated for credit when a different subject or level of investigation is indicated 490 to maximum of eight credits, or 590 to maximum of 12 credits)

Prerequisite: advanced standing in art or permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum.

7100:497 STUDIO PROBLEMS*3 credits*

(May be repeated)

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.

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 nine credits)

To be used for research in the honors program established by student and his adviser(s).

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 an educational technology student.

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.

7400:201 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.

7400:265 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.

7400:261 INTRODUCTION TO DIETETICS

1 credit

A fact-finding survey of the profession of dietetics. Explanation of the goals and entrance requirements of the American Dietetic Association. Discussion of requirements to both the Traditional and Coordinated Undergraduate Program in General Dietetics at The University of Akron.

7400:285 ORIENTATION TO THE HOSPITAL SETTING

2 credits

Prerequisite: 265, comparable course or permission of instructor. Focuses on hospital as a major social institution; introduces procedures and functions of the hospital; roles played by various hospital personnel plus cursory knowledge of medical terminology, common childhood diseases, illnesses and injuries.

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.

7400:313 INTRODUCTION TO FOOD SYSTEMS MANAGEMENT

4 credits

Prerequisite: junior standing in CUP. Corequisite: 314. Introductory course in management of dietetic food service systems which relates to achievement of nutrition care goals.

7400:314 INTRODUCTION TO FOOD SYSTEMS MANAGEMENT - CLINICAL

2 credits

Prerequisite: junior standing in CUP. Corequisite: 313. Demonstration of food preparation techniques in production area of community facilities; understanding of basic responsibilities of production supervisors; identification of resources involved in total management of base hospital's food service system.

7400:316 SCIENCE OF NUTRITION

5 credits

Prerequisites: 245, 3100:265, 3150:203. 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.

7400:328 INTRODUCTION TO NUTRITION IN MEDICAL SCIENCE

3 credits

Prerequisite: 316; CUP student 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.

7400:329 INTRODUCTION TO NUTRITION IN MEDICAL SCIENCE - CLINICAL

2 credits

Prerequisites: 316, CUP student only. Clinical experiences in area hospitals for application of principles of nutritional care learned in 328.

7400:331 APPLIED HOME FURNISHINGS

3 credits

Prerequisites: 123, 158. Laboratory course designed for the student 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.

7400:350 THE CHILD IN THE HOSPITAL

4 credits

Prerequisite: 265, comparable course or permission of instructor. Seminar dealing with special needs and problems of hospitalized/ill child and family. Literature related to effects, separation, illness and stress. Examination of strategies for coping.

7400:355 PRACTICUM: ESTABLISHING AND SUPERVISING A CHILD LIFE PROGRAM

3 credits

Prerequisite: 350. Explores procedures for implementing and setting up child life programs; critical analysis of currently functioning program.

7400:359 TAILORING FOR MEN

3 credits

Prerequisite: 123 or permission. Fundamentals of tailoring for men. Construction of a suit jacket and slacks. Emphasis on alterations, construction techniques and fabric selection. Analysis of current market trends and men's wear designers. Prior experience with clothing construction necessary.

7400:362 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.

7400:413 FOOD SYSTEMS MANAGEMENT

6 credits

Prerequisites: 313, 314. Corequisite: 414. Advanced concepts in management of dietetic service systems relating to achievement of nutritional care goals.

7400:414 FOOD SYSTEMS MANAGEMENT — CLINICAL

4 credits

Prerequisites: 313, 314. Corequisite: 413. Application of advanced food systems management concepts in community dietetic food service facilities; preparation for entry-level staff positions as administrative dietitians; clinical experience for 24 hours per week for 10 weeks of semester.

7400:415 HOUSEHOLD EQUIPMENT

2 credits

Selection, use and care of modern household equipment. Survey of commercial equipment used in home economics related professions.

7400:416 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

6 credits

Prerequisite: second year status in CUP in dietetics, 328, 329. Corequisite: 429. Overview of major areas of diet therapy not covered previously.

7400:429 NUTRITION IN MEDICAL SCIENCE - CLINICAL

4 credits

Prerequisite: CUP student only. Corequisite: 428. Clinical experience in area hospitals for application of principles of nutritional care learned in 428.

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.

7400:459 MACHINE STITCHERY**3 credits**

Prerequisites: 123, 7100:144, or permission of instructor. Understanding the utilization of the sewing machine as a creative tool. Emphasis on developing the artistic and technical skills necessary for doing embroidery, applique, drawing, quilting, patchwork, cutwork and other related textile arts by machine.

7400:460/560 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 COMMUNITY NUTRITION I**3 credits**

Prerequisite: CUP student only. Corequisite: 481. Major food and nutrition related problems in community. Emphasis on policies, legislation, program evaluation and rationales for nutrition services.

7400:481 COMMUNITY NUTRITION I - CLINICAL**1 credit**

Prerequisite: CUP student only. Corequisite: 480. Field placement in area agencies offering nutrition services. Study of agencies goals, organization and philosophy of nutritional care.

7400:482 COMMUNITY NUTRITION II**3 credits**

Prerequisite: CUP student only, 480, 481. Corequisite: 483. Food and nutrition related problems on national and international level. Emphasis on controversies, alternative solutions as well as existing programs and rationales.

7400:483 COMMUNITY NUTRITION II - CLINICAL**1 credit**

Prerequisites: CUP student only. Corequisite: 482. Field placement in area agencies offering nutrition services. Study of agencies goals, organization and philosophy of nutritional care.

7400:484 PROFESSIONAL DIETETICS**2 credits (credit/noncredit)**

Prerequisite: senior student in dietetics, 316. Study and discussion of profession of dietetics and related problems. Preparation for employment in the field. Clinical experience (individual and group presentations) in providing nutritional information to the community.

7400:485/585 SEMINAR IN HOME ECONOMICS AND FAMILY ECOLOGY**1-3 credits**

Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas of home economics and family ecology.

7400:486 STAFF RELIEF**2 credits (credit/noncredit)**

Prerequisite: graduating senior student in CUP. Opportunity to function as an entry-level dietician in area of administrative, therapeutic or community dietetics. The graduating senior CUP student spends two 40-hour weeks in a mutually agreeable agency primarily under direction of staff dietitians or coordinators.

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. May be on off-campus study tour or an on-campus full-time group meeting.

7400:495 INTERNSHIP: GUIDED EXPERIENCES IN CHILD LIFE PROGRAM**6 credits**

Prerequisite: 355. A field experience in a child life program as a child life specialist at Akron Children's Hospital Center.

7400:496 PARENTING SKILLS**3 credits**

Prerequisite: 265, comparable course or permission of instructor. Reviews and analyzes various child-rearing techniques with major emphasis on practical application.

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. A student works with agency personnel and clientele in programs designed to meet needs of children and/or families.

7400:697 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.

7400:698 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.

7500: Music

7500:100 FUNDAMENTALS OF MUSIC*2 credits*

Introduction of basic notation and development of functional music reading and keyboard skills. Conducted in electronic keyboard laboratory with PLATO computer assisted instruction available. For non-music majors only, with little or no previous musical training.

7500:101 INTRODUCTION TO MUSIC THEORY*2 credits*

Designed for prospective music majors to correct deficiencies in theory background as determined through department placement testing. Includes classroom instruction and PLATO computer assisted instruction in basic notation, scales, meter, key signatures, ear training and basic familiarity with the keyboard. Credit not applicable toward music degree.

7500:104 CLASS PIANO I*2 credits*

Prerequisite: 101 or permission of instructor. Designed for student with no previous keyboard experience to learn rudimentary keyboard skills such as playing scales, chords, arpeggios and 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 student 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. PLATO computer assisted instruction in ear training.

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.

7500:264 BEGINNING PIANO PEDAGOGY AND LITERATURE*2 credits*

Prerequisite: permission of instructor. Examination of musical content and pedagogical orientation of beginning piano material to include appropriate teaching works, methods and ensemble pieces from a variety of historical periods.

7500:285-286 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 student who expects 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. Student learns to write complete half-time show, administer marching band program, etc.

7500:306 MARCHING BAND ARRANGING*2 credits*

Prerequisite: 152 or permission of instructor. A student arranges 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 six 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 six credits)

Prerequisites: 155, 162, 252, 262. Basic techniques in teaching woodwind, brass and percussion instruments. Development of knowledges 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.

7500:356 MUSIC IN THE TEACHING OF RETARDED AND HANDICAPPED PEOPLE*2 credits*

Prerequisite: permission of instructor. Study of application of music to needs of the special person in public/private school, clinical settings.

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.

7500:361 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. Exposes student 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: INSTRUMENTAL*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.

7500:456/556 ADVANCED CONDUCTING: CHORAL*2 credits*

Prerequisite: 361 or equivalent. Adaptation of basic conducting techniques to the choral ensemble, including leadership, error detection, tonal development, stylistic accuracy and analysis.

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.

7500:471 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 student must fulfill additional requirements.

7500:497 INDEPENDENT STUDY IN MUSIC*1-2 credits*

(May be repeated for a total of four 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.

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.

7500:608 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, PLATO computer assisted instruction, etc., studied.

7500:620 COMPUTER ANALYSIS IN MUSIC*2 credits*

Prerequisite: a minimum of one course in the 615-618 series. A systematic study of analytic techniques in music which make use of the computer. Hands-on experiences with music encoding, card manipulation, interactive systems and program writing as related to music analysis.

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.

7500:630 TEACHING AND LITERATURE: BRASS INSTRUMENTS*2 credits*

Prerequisite: permission of instructor. Research in current trends and issues in brass teaching techniques and appropriate literature.

7500:631 TEACHING AND LITERATURE: WOODWIND INSTRUMENTS*2 credits*

Prerequisite: permission of instructor. To delineate and clarify contemporary techniques of woodwind pedagogy and to develop a comprehensive understanding of woodwind literature.

7500:632 TEACHING AND LITERATURE: PERCUSSION INSTRUMENTS*2 credits*

Prerequisite: permission of instructor. To prepare an experienced instrumental music educator in new trends of percussion education. Emphasis placed on research, literature, performance techniques, new instruments and problems of teaching percussion from elementary level through high school.

7500:633 REPERTOIRE AND PEDAGOGY: PIANO AND HARPSICHORD*2 credits*

Prerequisite: permission of instructor. The examination of piano and harpsichord literature in historically chronological order with special attention to its pedagogical value and stylistic differences.

7500:847 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.

7500:865 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.

7500:897 ADVANCED PROBLEMS IN MUSIC*1-3 credits*

(May be repeated for a total of eight credits)

Prerequisite: permission of graduate adviser. Studies or research projects related to problems in music.

7500:899 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.

7510: Musical Organizations

No fee is charged for enrollment of a qualified student in music organizations. Enrollment may be repeated. For specific requirements for an undergraduate student in music, consult page 6 of the *Music Department Handbook*.

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. Major conducted ensemble.

7510:102 UNIVERSITY CHORUS: SYMPHONY*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. Major conducted ensemble.

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. Major conducted ensemble.

7510:104 UNIVERSITY BAND*1 credit*

Includes Symphony Band/Wind Ensemble and Concert Band as major conducted ensembles, Marching Band (fall semester only) and Varsity Band. Membership in all bands 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. 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. Study and performance of literature for various percussion groups; develops skill in ensemble performance.

7510:110 WOODWIND ENSEMBLE*1 credit*

Membership by audition. Study and performance of woodwind literature from all periods for various combinations of woodwinds. Develops performance skills and knowledge of woodwind literature.

7510:111 CHAMBER ORCHESTRA*1 credit*

Membership by audition. Organization designed to study for performance the substantial repertoire for small orchestra. Open to student of advanced ability.

7510:112 MEN'S GLEE CLUB*1 credit*

Membership by audition. Designed to perform variety of music written for male voices in ensemble.

7510:113 WOMEN'S GLEE CLUB*1 credit*

Membership by audition. 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. Student is assumed to have knowledge of rudiments of music and some experience in jazz performance.

Graduate Courses

7510:801 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. Major conducted ensemble.

7510:802 UNIVERSITY CHORUS: SYMPHONY*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. Major conducted ensemble.

7510:803 UNIVERSITY SYMPHONY ORCHESTRA*1 credit*

Membership by audition. Organization devoted to study of orchestral literature. Full-length concerts as well as special university appearances. Major conducted ensemble.

7510:804 UNIVERSITY BAND*1 credit*

Includes Symphony Band/Wind Ensemble and Concert Band as major conducted ensembles, Marching Band (fall semester only) and Varsity

Band. Membership in all bands open to university student by audition with director of bands.

7510:805 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.

7510:806 BRASS ENSEMBLE

1 credit

Membership by audition. Study and performance of literature for brass ensemble from all periods of music history. Frequent public concerts. For advanced brass players.

7510:807 STRING ENSEMBLE

1 credit

Membership by audition. In-depth study and performance of chamber music literature with special emphasis on string quartet and piano trio.

7510:808 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.

7510:809 PERCUSSION ENSEMBLE

1 credit

Membership by audition. Study and performance of literature for various percussion groups; develops skill in ensemble performance.

7510:810 WOODWIND ENSEMBLE

1 credit

Membership by audition. Study and performance of woodwind literature from all periods for various combinations of woodwinds. Develops performance skills and knowledge of woodwind literature.

7510:811 CHAMBER ORCHESTRA

1 credit

Membership by audition. Organization designed to study for performance the substantial repertoire for small orchestra. Open to a student of advanced ability.

7510:812 MEN'S GLEE CLUB

1 credit

Membership by audition. Designed to perform variety of music written for male voices in ensemble.

7510:813 WOMEN'S GLEE CLUB

1 credit

Membership by audition. Designed to perform variety of music written for female voices in ensemble.

7510:814 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.

7510:815 JAZZ ENSEMBLE

1 credit

Membership by audition. Provides experience in jazz ensemble performance. A student is assumed to have knowledge of rudiments of music and some experience in jazz performance.

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 a student 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

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 a student 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.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight 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: Applied Music

A student must contact the Department of Music and consult with the applied music instructor before registering for applied music.

A music major must perform annually before an applied music jury on each instrument studied privately for credit. The nonmusic major studying applied music will appear before a jury at the discretion of the private teacher.

- 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 student whose major is theory-composition.

Graduate Courses

- 7520:621-641 GRADUATE STUDY IN APPLIED MUSIC
2-4 credits each
(May be repeated)
Prerequisite: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.
- 7520:621 PERCUSSION
- 7520:622 CLASSICAL GUITAR
- 7520:623 HARP
- 7520:624 VOICE
- 7520:625 PIANO
- 7520:626 ORGAN
- 7520:627 VIOLIN
- 7520:628 VIOLA
- 7520:629 CELLO
- 7520:630 STRING BASS
- 7520:631 TRUMPET OR CORNET
- 7520:632 FRENCH HORN
- 7520:633 TROMBONE
- 7520:634 BARITONE
- 7520:635 TUBA
- 7520:636 FLUTE OR PICCOLO
- 7520:637 CLARINET OR BASS CLARINET
- 7520:638 OBOE OR ENGLISH HORN
- 7520:639 BASSOON OR CONTRABASSOON
- 7520:640 SAXOPHONE
- 7520:641 HARPSICHORD
- 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 a student majoring in composition. Another student may be approved by composition faculty.

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, makeup, 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, extensive 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. A student learns 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, rotogravure, 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 trans-racial, 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 eight credits)

Prerequisite: permission. Provides student with supervised experience and on-the-job training in mass media communications related organizations on and off campus.

7600:383 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.

7600:388 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.

7600:488/588 CINEMATOGRAPHY**3 credits**

Designed to give filming experience to a selected student. 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 three credits)

Prerequisites: advanced standing and permission. Group study or group projects investigating a particular phase of media not covered by other courses in curriculum.

Graduate Courses

7600:800 INTRODUCTION TO GRADUATE STUDY IN MASS MEDIA-COMMUNICATION**3 credits**

Introduces the new graduate student to historical, critical, quantitative and production research methods as practiced in areas of mass media communication, journalism and communication-rhetoric. A student reads 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 student 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.

7600:606 COMMUNICATION PROBLEMS IN THE BASIC SPEECH COURSE**1 credit**

Designed to train a graduate student in methods and materials of introductory speech course. Required of all teaching graduate assistants.

7600:610 SEMINAR IN COMMUNICATION PROBLEMS**3 credits**

(May be repeated for a total of six credits)

Variable content seminar examines such areas of concern in communication theory and practice as organizational communication, psychology of audience and cross-cultural communication.

7600:671 SEMINAR: RHETORICAL FORMS**3 credits**

Study of various periods, forms and functions of discourse in sustaining social order and mediating social change.

7600:675 SEMINAR ON RHETORICAL CRITICISM**3 credits**

(May be repeated for a total of six credits)

Organized around special problems and methods involved in analysis of different genres, forms and topics of discourse.

7600:676 SURVEY OF RHETORICAL THEORIES**4 credits**

Concentrated study and research of ancient, modern or contemporary writers or on some specific topic in rhetorical theory.

7600:680 SPECIAL PROBLEMS IN COMMUNICATION AND MASS MEDIA**2 credits**

(May be repeated for a total of four credits)

Problem analysis, investigation and evaluation of a major interest area related to communication theory, mass media or interpersonal communication.

7600:681 THEORY OF INTERPERSONAL COMMUNICATION**3 credits**

Prerequisite: permission. Detailed analysis of complex systems in persuasion and propaganda, particularly as related to information control.

7600:683 MASS MEDIA RESEARCH SEMINAR**2 credits**

Study of experimental design in mass media, its development and use. A student studies research literature on experiments in mass media.

7600:684 SURVEY OF COMMUNICATION THEORY**3 credits**

Study of dimensions of field of communication: information analysis, social interaction and semantic analysis.

7600:685 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.

7600:686 STUDIES IN COMMUNICATION MEDIA: RADIO**7600:687 STUDIES IN COMMUNICATION MEDIA: TELEVISION****7600:688 STUDIES IN COMMUNICATION MEDIA: FILM****3 credits each**

Emphasis on production, message design and impact analysis. These courses designed to give the student an opportunity to experiment with new production and message concepts.

7600:697 GRADUATE RESEARCH IN MASS MEDIA-COMMUNICATION**1-6 credits**

(May be repeated for a total of six 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.

7600:699 RESEARCH AND THESIS**1-6 credits**

(May be repeated for a total of six credits)

Prerequisite: permission of department head.

7700: Speech Pathology and Audiology

7700:100 MANUAL COMMUNICATION I**4 credits**

Prerequisite: permission of instructor. Study of different communication systems employed by the deaf; characteristics, similarities and differences. Introduction to Ameslan as a language.

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.

7700:120 INTRODUCTION TO AUDIOLOGY/AURAL REHABILITATION**3 credits**

Introduction to field of audiology including physics of sound, anatomy and physiology of auditory system, measurement of hearing impairment, nature and causes of hearing disorders and habilitation of persons with hearing impairment. (Not open to speech pathology and audiology majors.)

7700:121 PSYCHO-SOCIAL ASPECTS OF DEAFNESS**3 credits**

Prerequisite: 120. The effects of deafness on the emotional, social, motor and intellectual development of the individual; the effects of deafness on interpersonal relationships.

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.

7700:150 MANUAL COMMUNICATION II**4 credits**

Prerequisite: 100. Further study of Ameslan as a language. Practice in modifications which influence sign formation; more meaningful units and constructions; further similarities and differences among other signing systems.

7700:200 MANUAL COMMUNICATION III**3 credits**

Prerequisite: 150. Further practice in developing expressive and receptive skills in Ameslan. Further in-depth study of linguistic components of manual communication systems of the deaf.

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.

7700:222 INTRODUCTION TO THE DEAF CULTURE AND ITS ORIGINS**2 credits**

Prerequisite: 2210:100 or permission of instructor. The treatment of deaf persons, their education and legal status in western cultures from early civilizations to modern times. Review of basic methods used in educating the deaf, the rationale behind these methods and the contributions of the use of the different methods on the deaf culture.

7700:223 SPEECH AND LANGUAGE OF THE DEAF CHILD AND ADULT**4 credits**

Prerequisite: 222. Introduction to acquisition of speech and language hearing and prelingually deaf children. Principles and techniques in language assessment and instruction will be covered. (Not open to majors in speech pathology and audiology.)

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**2 credits**

Prerequisite: to be taken concurrently with 321. Introduction to clinical procedures, analysis of preparation and structure essential to a successful therapy session and observation of therapy within several different settings.

7700:260 MANUAL COMMUNICATION IV**3 credits**

Prerequisite: 200. Further practice in developing expressive and receptive skills in Ameslan. In-depth study of expressive and receptive translation of linguistic components of manual communication systems of the deaf. Survey of current research in manual communication.

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 student 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.

7700:480 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**

(May be repeated for a total of four 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 a student 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 four 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.

Graduate Courses
7700:601 ADMINISTRATION AND SUPERVISION IN SPEECH AND HEARING PROGRAMS

4 credits

Prerequisite: permission of instructor. Organization and management of speech and hearing programs in voluntary and official agencies. Philosophy and methodology in supervision of speech and hearing services.

7700:610 INSTRUMENTATION IN SPEECH PATHOLOGY AND AUDIOLOGY

2 credits

Principles and use of clinical and research instrumentation in speech and hearing.

7700:611 RESEARCH METHODS IN COMMUNICATIVE DISORDERS I

3 credits

Introduction to experimental design in field of communicative disorders.

7700:612 RESEARCH METHODS IN COMMUNICATIVE DISORDERS II

2 credits

Prerequisite: 611. Advanced experimental methods; development of a research study.

7700:620 ARTICULATION

2 credits

Historical background, current theories and research related to etiology, diagnosis and treatment of articulatory disorders.

7700:621 COMMUNICATIVE DISORDERS IN CLEFT PALATE

2 credits

Historical background, current theories and research related to etiology, diagnosis and treatment of cleft palate.

7700:622 COMMUNICATIVE DISORDERS IN MENTAL RETARDATION

2 credits

Historical background, current theories and research related to etiology, diagnosis and treatment of mental retardation.

7700:623 COMMUNICATIVE DISORDERS IN CEREBRAL PALSY

2 credits

Historical background, current theories and research related to etiology, diagnosis and treatment of cerebral palsy.

7700:624 APHASIA

2 credits

Historical background, current theories and research related to etiology, diagnosis and treatment of adult aphasia.

7700:625 COMMUNICATIVE DISORDERS OF CHILDREN

2 credits

Oral and aural language deviations; their etiologies, pathologies and remediation.

7700:626 VOICE PATHOLOGY

3 credits

Prerequisite: permission of the instructor. Background and current research related to normal vocal function as well as the etiology, diagnosis and therapy of various disorders of voice.

7700:627 STUTTERING: THEORIES AND THERAPIES

3 credits

Reading and discussion of selected theories and therapies related to stuttering.

7700:628 TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS

2 credits

(May be repeated for a total of four credits)

Prerequisite: permission of Director of Speech and Hearing Center.

7700:629 TOPICS: SPEECH PATHOLOGY AND AUDIOLOGY

2 credits

Prerequisite: permission of instructor. Selected current topics in clinical and/or experimental areas of speech pathology, audiology or language. Emphasis on review of current and historical literature.

7700:630 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.

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: six 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 four 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 six 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 six credits)

Prerequisite: permission of department head.

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.

7750:440/540 SOCIAL WORK RESEARCH*3 credits*

Undergraduate prerequisites: 276, 3450:112, 3470:251, 252; graduate prerequisite: permission. Examines social work practitioner's role in utilization of scientific method in the conduct of practice and utilization of social work research as found in social work and social science literature for improvement and advancement of social work practice.

7750:445/545 SOCIAL POLICY ANALYSIS FOR SOCIAL WORKERS*3 credits*

Undergraduate prerequisites: 276, 444; graduate prerequisite: undergraduate social work degree or permission. Description, analysis and construction of social policy in social services; to understanding forces and processes which establish or change social policies, to predict consequences of social policies and to establish goals for social policy development; integrated into effective social work practice methodology.

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 six 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: 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 United States. 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 SOCIAL WORK PRACTICE III*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.

7750:410/510 MINORITY ISSUES IN SOCIAL WORK PRACTICE*3 credits*

Prerequisite: 276. Racial, ethnic and cultural issues in social work related to various practice and theoretical perspectives, to various types of social problems, service agencies, individual family, group, community and societal contexts integrated with the methodological processes of the social work practitioners.

7750:495 FIELD EXPERIENCE IN SOCIAL AGENCY*2-8 credits*

(Two credits minimum and eight 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 major 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 major.

Graduate Course**7750:673 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.

7800: Theatre Arts and Dance**7800:116 BALLET ANALYSIS I***2 credits*

Required of all ballet majors in their freshman year. Lecture and laboratory course designed to prepare dancer to understand the body and its function in the technique class, as student and future teacher or performer.

7800:117 BALLET ANALYSIS II*2 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 explore contemporary movement styles and techniques. Presents dance as a total body technique with emphasis on basic locomotor and axial movements.

7800:120 INTRODUCTION TO CONTEMPORARY DANCE II*2 credits*

Prerequisites: 119 and permission. Continuation and expansion of materials presented in 119, with addition of rhythmic, dynamic and spatial qualities of dance.

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.

7800:124-125 INTRODUCTION TO BALLET HI*2 credits each*

Basic exercises of classical ballet with emphasis on body placement, rhythmic and muscular awareness.

7800:126 CHOREOGRAPHY I*2 credits*

Prerequisite: permission of the instructor. Study and practical application of choreographic principles in the areas of rhythm dynamics and spatial awareness; and body and eye focus.

7800:127 CHOREOGRAPHY II*2 credits*

Prerequisites: 126 and permission of the instructor. Continuation of 126 with emphasis on established and traditional choreographic forms, including theme and variation, the suite and fugue and the narrative.

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 six 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.

7800:226 CHOREOGRAPHY III*2 credits*

Prerequisites: 127 and permission of the instructor. Continuation of 127 with emphasis on rhythmic analysis and non-traditional forms of choreography.

7800:227 CHOREOGRAPHY IV*2 credits*

Prerequisites: 226 and permission of the instructor. Continuation of 226 expanding into group choreography and counterpoint.

7800:229 CONTEMPORARY TECHNIQUE I*3 credits*

(May be repeated for a total of six credits)

Prerequisite: permission of the instructor. Study of the basic contemporary dance techniques covering the areas of contract and release, off-center work, alignment, strength, flexibility and spatial concepts.

7800:250 VOICE TRAINING FOR SPEECH AND THEATRE ARTS*1-3 credits*

Focus on safe and most effective uses of vocal instrument in its specific applications to stage. 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. Attendance at campus productions and 12 hours of practical laboratory experience required.

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*3 credits*

Prerequisite: 372 and permission of instructor. 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 TECHNIQUE II*3 credits*

(May be repeated for a total of six credits)

Prerequisites: 229 and permission of the instructor. Continuation of 229 with expansion upon vocabulary and contemporary dance techniques, in dynamics, rhythmic qualities, body counterpoint and complex direction and balance changes.

7800:330 THEATRE ARTS/DANCE PARTICIPATION*1 credit*

(May be repeated for a total of four credits)

Prerequisite: permission of instructor. Practical laboratory experience in technical theatre projects — construction of scenery and costumes, lighting, sound, box office, publicity, properties, etc. Four credits required of theatre majors; optional for dance majors.

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 laboratory hours.

7800:336 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 involving floor plans, elevations and renderings for the design of stage scenery. Laboratory hours required.

7800:365 ADVANCED STAGE DESIGN*3 credits*

Prerequisite: 364 or permission of instructor. Focuses on advanced problems involving multiset productions, unusual staging methods and specific historical periods. 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*3 credits*

Prerequisites: 271 and permission of instructor. Advanced course in principles and techniques of staging plays from past periods, as well as modern plays requiring stylized treatment.

7800:372 ACTING I*3 credits*

Prerequisites: 250 and 261. Introduction to fundamentals of improvisation, mime and basic stage movement.

7800:373 ACTING II*3 credits*

Prerequisites: 372 and permission of instructor. 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*

Prerequisites: 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*

(May be repeated as different subject areas are covered, but no more than 10 credits may be applied toward B.A. degree)

Prerequisite: junior standing. Traditional and nontraditional topics in theatre arts/dance, supplementing courses listed in *General Bulletin*.

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 the dance student 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.

7800:464 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.

7800:465 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.

7800:467/567 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.

7800:468/568 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 eight credits)

Prerequisite: advanced standing or permission. Group study or group projects investigating particular phase of theatre arts or dance not covered by other courses in curriculum.

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. The student presents an oral seminar report and written research paper to indicate competence in the several research methods.

7800:603 SPECIAL TOPICS IN THEATRE ARTS/DANCE

2 credits

(May be repeated as different subject areas are covered, but no more than 8 credits may be applied toward M.A. degree)

Traditional and experimental topics in theatre and dance, supplementing courses listed in *General Bulletin*, and generally constructed around areas of special interest to student.

7800:636 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.

7800:641 PROBLEMS IN DIRECTING

3 credits

Advanced directing course, with special emphasis on staging of complex plays from all periods of drama.

7800:642 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.

7800:658 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 AUDIENCE FOR THE ARTS: RESEARCH/ANALYSIS

2 credits

Examination of both qualitative and quantitative methods of researching today's audience and support for the arts/cultural institutions, such as arts councils, foundations, etc. 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 six credits)

Prerequisite: permission. Individual research of independent readings under supervision of member of departmental graduate faculty.

7800:691 SEMINAR: THE ROLE OF THE ARTS ADMINISTRATOR

3 credits

In-depth examination of roles of arts administrator/manager in a number of different situations, including but not limited to theatre, opera, ballet, arts organizations and performing arts halls/centers. Guest lecturers. Term paper required.

7800:692 LEGAL REGULATIONS AND THE ARTS

2 credits

Analysis of legal framework of arts regulation. Introduction to selected areas of law relevant to arts management through reading and discussion of legislation, cases and scholarly materials.

7800:696 ARTS MANAGEMENT INTERNSHIP

1-3 credits

(May be repeated for a total of three credits)

Prerequisite: permission. Faculty supervised work experience program in which student participates in an arts management situation with selected cultural organizations.

7800:699 RESEARCH AND THESIS

1-6 credits

(May be repeated for a total of six credits)

Prerequisite: permission of department head.

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.

8200:101 INTRODUCTION TO NURSING

1 credit (15 lecture hours)

Prerequisite: Registered Nurse. Emphasize role resocialization for R.N.'s seeking a baccalaureate in nursing. Explores concepts incorporated in the philosophy, conceptual framework and curriculum structure of the baccalaureate nursing program.

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.

8200:300 NURSING: 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.

8200:320 NURSING: DIMINISHED HEALTH I

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.

8200:400 NURSING: DIMINISHED HEALTH II

10 credits

Prerequisites: 100, 200, 300, 320. Assists student in applying knowledge and skills for an integrated approach to nursing process in various settings and to develop roles of leadership and change-agent utilizing teaching/learning process.

8200:420 NURSING: SYNTHESIS

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 student as necessary by preceptor.

8200:430/530 HEALTH CARE (CURRENT YEAR): ISSUES AND NURSING

2 credits

Prerequisite: acceptance in the College of Nursing. Survey and exploration of the state of health care delivery in the United States of America today and their ramifications and implications for nursing.

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.

8200:481-482 HONORS RESEARCH IN NURSING

3 credits each

Prerequisites: senior standing in Honors Program, nursing major and approval of honors preceptor. Statement of research purpose, delimit the research problem review of relevant literature, research design (481); data collection, data analysis and a written and an oral presentation of the research project in publishable thesis style (482).

8200:489/589 SPECIAL TOPICS

1-4 credits

(May be repeated as new topics are presented)

Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit.

8200:493/593 WORKSHOPS

1-3 credits

(May be repeated as new topics are presented)

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.

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

Prerequisite: 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 student 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 student 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.

8200:688 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 a student in Functional Area Practicum can synthesize role in relation to family health nursing.

8200:698 NONTHESIS PROJECT OPTION*1-4 credits*

Prerequisite: completion of first year of program. Student 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*1-4 credits*

Prerequisite: completion of first year of program. Student must register for a total of three semester hours. Thesis is a report of a faculty supervised, clinical or nonclinical research investigation suitable for publication, which meets approval of thesis committee.

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: 601. 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: 603. 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: 605. 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 FEDERAL RULES OF EVIDENCE

3 credits

Covers all of the Federal Rules of Evidence which apply to United States District Courts, United States Courts of Appeals, the Court of Claims and to United States Magistrates. These rules are widely copied by state courts.

9200:811 LEGAL PROCESS

1 credit

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.

9200:814 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: 614. 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: 616. Continuation of 616.

9200:818 LEGAL RESEARCH

2 credits

Familiarization with basic legal publications and computer assisted legal research necessary to perform legal research.

9200:819 BASIC LEGAL COMMUNICATIONS

1 credit

Development and integration of skills in legal writing and argumentation.

9200:820 IMMEDIATE LEGAL COMMUNICATIONS

1 credit (credit/noncredit)

Building of oral advocacy and argumentation abilities through appellate practice.

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.

9200:631 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*3 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 (spading). Graded Credit/Noncredit. Credit for 656, 657, 658, 696 and 698 not to exceed ten.

9200:657 LAW REVIEW STAFF*1 credit*

(May be repeated twice)

Prerequisite: 656. Preparation of comment or article of publishable quality. 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 consideration; 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, lease-hold mortgage, construction lending and syndication, with major emphasis on financing and related tax considerations.

9200:666 MOOT COURT

1 credit

(May be repeated once)

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 student. 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

Prerequisite: 634 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.

9200:665 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.

9200:688 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.

9200:693 PROBATE PRACTICE*2 credits*

Prerequisites: 685 and 686. Intestate and testamentary administration, including the probating of a will, presentment of claims, the inventory, settlement and distribution and will contests. The Ohio Probate Code will be the model.

9200:696 CLINICAL SEMINAR I*2-3 credits*

Prerequisites: successful completion of 28 credit hours and permission of clinical director. Application of legal knowledge to practical problems in supervised public law office contexts. Graded Credit/Noncredit. May be taken independently of 697. Credit for 656, 657, 658, 666, 696, 697 and 698 not to exceed ten. Credit for 9200:696 and 697 not to exceed six credits.

9200:697 CLINICAL SEMINAR II*2-3 credits*

Prerequisite: 696. Continuation of 696.

9200:698 INDIVIDUAL STUDIES AND RESEARCH*2 credits*

(May be repeated for a total of four 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.

DIRECTORY

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Board of Trustees

July 1980

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- MR. MARIO DI FEDERICO**; 2490 Brice Road, Akron, Ohio 44313 (Term expires 1986).
- MR. ROBERT J. KIDNEY**; 2993 Vincent Road, Silver Lake, Cuyahoga Falls, Ohio 44224 (Term expires 1981).
- MISS FRANCES McGOVERN**; 550 Woodside Drive, Akron, Ohio 44303 (Term expires 1982).
- MR. CHARLES J. PILLIOD, JR.**; 311 Ely Road, Akron, Ohio 44313 (Term expires 1985).
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- MR. JOHN S. STEINHAUER**; 2911 Elmbrook Drive, Cuyahoga Falls, Ohio 44224 (Term expires 1988).
- MR. GEORGE E. WILSON**; 185 North Wheaton Road, Akron, Ohio 44313 (Term expires 1989).

Administrative Officers

May 1980

Administration

- D. J. GUZZETTA**, *President of the University*, Ed.D., LL.D., D.S.Sc., L.H.D.
- NOEL L. LEATHERS**, *Senior Vice President and Provost*, Ph.D.
- R. WAYNE DUFF**, *Vice President for Business and Finance*, LL.B.
- IAN R. MacGREGOR**, *Vice President for Planning*, Ph.D.
- RICHARD L. HANSFORD**, *Vice President and Dean of Student Services*, M.A.Ed.
- GEORGE W. BALL**, *Executive Director of University Relations and Communications*, B.A.

Deans

- CLAIBOURNE E. GRIFFIN**, *Dean of the Buchtel College of Arts and Sciences*, Ph.D.
- JOSEPH EDMISTER**, *Acting Dean of the College of Engineering*, J.D., M.S.E.
- H. KENNETH BARKER**, *Dean of the College of Education*, Ph.D.
- JAMES W. DUNLAP**, *Dean of the College of Business Administration*, Ph.D.
- ALBERT S. RAKAS**, *Interim Dean of the School of Law*, J.D.
- GERARD L. KNIETER**, *Dean of the College of Fine and Applied Arts*, Ed.D.
- LILLIAN J. DeYOUNG**, *Dean of the College of Nursing*, Ph.D.
- ROBERT C. WEYRICK**, *Dean of the Community and Technical College*, M.S.
- ALAN N. GENT**, *Dean of Graduate Studies and Research*, Ph.D.
- 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 the University College*, Ph.D.
- TYRONE M. TURNING**, *Dean of Wayne General and Technical College*, Ed.D.

Other Officials

- HOWARD R. BALDWIN**, *Registrar*, M.Ed.
- JAMES P. BANKS**, *Development Officer*, B.S.
- CLARK BIGGINS**, *Director of Purchasing*, B.S.C.
- DON BIRDELL**, *Assistant Dean of the College of Education*, Ph.D.
- RICHARD K. BONNELL**, *Assistant to the Provost*, M.A.
- DONALD L. BOWLES**, *Assistant to the Vice President for Planning*, B.S.I.M., B.S.Ed.
- ALLEN M. BOYER**, *Assistant to the Executive Director of University Relations and Communications*, B.A.
- THOMAS O. BROWN**, *Director of Testing and Counseling Center*, Ph.D.
- FOSTER S. BUCHEL**, *Assistant to the President*, M.B.A.
- MARILYN J. CARRELL**, *Director of Career Planning and Placement*, M.S.Ed.
- ROBERT G. CORBETT**, *Coordinator of Research*, Ph.D.
- DAVID T. DOLAN**, *Assistant Dean of the Community and Technical College*, Ph.D.
- J. DALE FOSTER**, *Director of Staff Personnel*, B.S.
- PAULINE FRANKS**, *Interim University Librarian*, B.S.L.S.
- THOMAS E. GETZINGER**, *University Auditor and Assistant to the Vice President for Business and Finance*, M.B.A.
- RUSSEL GIERSCH**, *Director of Physical Plant*, B.M.E.
- ROBERT D. HAHN**, *Director of Student Financial Aids*, M.Ed.
- FAITH I. HELMICK**, *Director of Academic Personnel Services*, M.S.T.E.
- ALBERTA R. HENSLEY**, *Assistant Executive Director of University Relations and Communications*, B.S.
- JAY R. HERSHEY**, *Director of Residence Halls*, M.Ed.
- DUDLEY C. JOHNSON, JR.**, *Associate Dean for Academic Advising Services in the University College*, M.S.Ed.
- DAVID JOHNSTON**, *Assistant to the President — Development*, M.S.
- JOHN A. LaGUARDIA**, *Director of Alumni Relations*, M.A.
- TED A. MALLO**, *Director, University Legal Services*, J.D.
- SPENCER MARSTON**, *Director of Gardner Student Center*, M.S.
- THOMAS T. MILES**, *Director of Instructional Media*, Ph.D.
- RICHARD NEAL**, *Equal Employment Opportunity Officer*, B.S.
- HENRY NETTLING**, *Controller*, B.S.B.A.
- MARY O'NEIL**, *Director of Internal Communications*, B.A.
- JAMES O. OSWALD**, *Director of University Publications*, B.S.Ed., B.A.
- JOHN W. OWEN**, *Director of Admissions*, M.A.
- GEORGE E. RAYMER**, *Assistant Executive Director of University Relations and Communications*, M.A.Ed.
- DONALD E. SABATINO**, *Director of Auxiliary Services and Programs*, M.A.Ed.
- FREDERICK J. STURM**, *Assistant Dean of the Community and Technical College*, Ed.D.
- FRANK B. THOMAS**, *Director of Computer Services*, M.A.
- KATHRYN VEGSO**, *Associate 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

July 1980

- 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; 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; D.C.L. Union College, 1979.
- 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.
- 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 HAMLEN**, *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. HAMPEL**, *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., Case 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.
- COLEMAN J. MAJOR**, *Dean Emeritus of the College of Engineering, Professor Emeritus of Chemical Engineering* (1964) (Ret. December 1979) B.S., University of Illinois; Ph.D., Cornell University, 1941.
- 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**, *Dean Emeritus of the College of Nursing and Professor Emeritus 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; L.L.D., Kent State University, 1975; Litt. D., The University of Akron, 1978.
- 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.
- FRANK T. PHIPPS**, *Professor Emeritus of English* (1953) (Ret. 1980) B.A., M.A., Miami University; Ph.D. The Ohio State University, 1953.
- CHARLES F. POSTON**, *Professor Emeritus of Finance* (1959) (Ret. 1980) B.A., Eastern Illinois State College; M.A., University of Illinois; Ph.D., University of North Carolina, 1959.
- 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 Emeritus 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.
- 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**, *Dean Emeritus of the College of Fine and Applied Arts and Professor Emeritus of Speech* (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.
- ROBERT G. SCHMIDT**, *Associate Professor Emeritus of Sociology* (1967) (Ret. 1980) B.A., Illinois College; M.A.T., Harvard University; Ph.D., Washington University, 1955.
- 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*

May 1980

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.); LL.D., Bellevue College, 1978.

NORMAN P. AUBURN, *Consultant, President Emeritus of the University and Professor Emeritus of Political Science* (1951) (Retired as President 1971; Consultant 1971-), 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; D.C.L., Union College, 1979.

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.

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- DAVID WINKLER**, *Research Associate, Institute of Polymer Science* (October 1969) B.S., Ashland College; M.S., The University of Akron, 1972.
- 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**, *Assistant Professor of Respiratory Therapy Technology* (1976) B.A., Goshen College; M.S.Tech.Ed., The University of Akron, 1979.
- EDWARD A. ZADROZNY**, *Assistant Professor of Music* (1977) B.M.E., The Ohio State University; M.M., University of Illinois, 1975.
- INGRID E. ZADROZNY**, *CBE Liaison* (March 1980) B.S.Ed., University of Wisconsin - Madison, 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., Pennsylvania State University, 1971.
- DONALD A. ZIMMERMAN**, *Assistant Professor of Marketing and Sales Technology* (1973) B.S.B.A., Defiance College; M.B.A., University of Pennsylvania, 1968.
- LEE J. ZOOK**, *Instructor/Coordinator in Social Services Technology* (January 1978) B.A., Eastern Mennonite College; M.S.W., University of Michigan, 1973.

Full-Time Teaching Faculty

(by College, School and Department and
the University Library)

May 1980

University College

General Studies

HEAD: David C. Riede.

COURSE DIRECTORS: J. Thomas Adolph, John D. Bee, Robert H. Holland, Jim L. Jackson, Frank J. Kendrick.

Community and Technical College

Division of Allied Health Technology

CHAIRMAN: Professor Roger Keller.

ASSISTANT PROFESSOR: Laverne C. Yousey.

INSTRUCTOR: Raymond Sibberson, Genevieve H. Turlik.

Division of Engineering and Science Technology

CHAIRMAN: Associate Professor Thomas P. Herbert.

PROFESSORS: Thomas M. Brittain, Nathan F. Cardarelli, Milan F. Dubravcic, William M. Glazier, Robert C. Weyrick.

ASSOCIATE PROFESSORS: Ronnie G. Adams, Marko Brdar, Paul H. Dunham, Richard L. Henry, Sebastian V. Kanakkanatt, Fred L. Mullen, David J. Robinson

ASSISTANT PROFESSORS: Albert C. Buxton, Thomas R. Connell, Edward E. McDonald, Dennis K. Sullivan, Joseph A. Takacs, Melvin C. Vye.

INSTRUCTORS: John Arendt, Clare F. Cook, Barbara A. Gsellman, Michael S. Haddad, Minnie C. Pritchard, Neal E. Wolfe.

Division of Associate Studies

CHAIRMAN: Professor Blin B. Scatterday.

PROFESSOR: William S. Fleming.

ASSOCIATE PROFESSORS: Richard M. Fawcett, Frank J. Gruccio, Jr., John G. Hedrick, Richard B. Hoskin, Dennis A. Kleidon, Jack F. Mercer, John B. Monroe, Arthur R. Pollock, Jr., Edith K. Weinstein.

ASSISTANT PROFESSORS: Anna P. Barnum Eugene M. Benedict, Michael S. Bennett, Stanley R. Bruns, Leonard M. Calabrese, Stephen J. Chylinski, Jr., Marion R. Heise, Michael J. Jalbert, Wendell A. Johnson, Rose A. Kleidon, Michael T. Oravec, Jon R. Peske, Charles T. Salem, Frederick J. Sturm, James D. Switzer, William V. Webb.

INSTRUCTORS: Richard A. Calkins, Phillip R. Hales, Walter M. Herip, Laura J. Johnson.

Division of Business and Office Technology

CHAIRMAN: Professor George J. Makar.

PROFESSORS: Mary Jean Johnston, Aloysius E. Misko.

ASSOCIATE PROFESSORS: Gerald R. Camp, Robert E. Collins, David T. Dolan, Lawrence G. Golden, Jack D. Harpool, Linda J. Rodda, James W. Taggart, Joan E. Warner, Virginia J. Watkins, Anne H. West.

ASSISTANT PROFESSORS: John R. Cole, Russell K. Davis, Mary H. Dee, Janice L. Eley, Arthur V. George, 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, Charles W. Flagg, Christine R. Gerbig, Robin L. Heiman, Joyce E. Mirman.

Division of Public Service Technology

CHAIRMAN: Professor Joseph R. Lentini.

ASSOCIATE PROFESSOR: Kenneth L. McCormick.

ASSISTANT PROFESSORS: Harriet K. Herskowitz, Robert W. Higham, Joseph C. Mullin, John Mumper, Glenn H. Snyder.

Buchtel College of Arts and Sciences

Biology

HEAD: Professor Dale L. Jackson.

PROFESSORS: Robert E. Herron, Roger F. Keller, Nada Ledinko, Lazarus Macior, Richard A. Mostardi, John H. Olive, Warren P. Stoutamire.

ASSOCIATE PROFESSORS: Helmar H. E. Dollwet, Eugene Flaumenhaft, John L. Frola, Richard F. Nokes, Dorothy Nunn, F. Scott Orcutt, Jr., Donald W. Ott, Walter Sheppe.

ASSISTANT PROFESSORS: Daniel L. Ely, John F. Gwinn, Steven P. Schmidt.

Chemistry

HEAD: Professor Michael F. Farona.

DISTINGUISHED PROFESSOR: Joseph P. Kennedy.

PROFESSORS: Stephen Darling, Lewis J. Fetters, Paul D. Garn, Claibourne E. Griffin, H. James Harwood, William G. Kofron, Ian R. MacGregor, Donald McIntyre, Howard L. Stephens.

ASSOCIATE PROFESSORS: John E. Frederick, John J. Houser, Gerald F. Koser, Alan F. Krivis, Henry A. Kuska.

ASSISTANT PROFESSORS: William D. Lyon, David H. O'Keefe, Larry R. Sherman, Daniel J. Smith.

Classics

HEAD: Instructor Jacqueline Hegbar.

ASSISTANT PROFESSORS: Robert E. Gaebel, Gary H. Oller.

INSTRUCTOR: Constantin Dimitriu.

Economics

ACTING HEAD: Associate Professor Dennis M. Byrne.

PROFESSORS: Ali Fatemi, William S. Hendon, Manoucher Parvin, Ethimios Pourarakis.

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, D'Orsay W. Pearson, John S. Phillipson.

ASSOCIATE PROFESSORS: Robert L. Dial, James J. Egan, William A. Francis, Elton A. Glaser, Bruce Holland, Robert M. Holland, David L. Jones, Walter D. Lehrman, R. Paul Merrix, Sally K. Slocum, Gerard M. Sweeney.

ASSISTANT PROFESSORS: Joseph Ceccio, Robin R. Fast, Julia A. Hull, Lawrence T. Martin, Martin H. McKoski, Ruth L. Messenger, Kenneth J. Pakenham, Arthur L. Palacas, Robert F. Pope, David N. Ranson, Cathryn C. Taliaferro, Dawn Trovard.

INSTRUCTORS: Jutta T. Bendremer, Marlene C. Hathaway, Alice MacDonald, Arlene A. Toth.

Geography

HEAD: Allan G. Noble.

PROFESSORS: Ashok Dutt, Edward W. Hanten.

ASSOCIATE PROFESSORS: Vern R. Hamapp, Albert J. Korsok, Laurence J. C. Ma, John E. Mulhauser, Thomas L. Nash.

ASSISTANT PROFESSOR: Lathardus Goggins.

INSTRUCTOR: Jack J. Utano.

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: Lindgren L. Chyi, Laverne M. Friberg, John P. Szabo.

History

HEAD: Professor Robert H. Jones.

PROFESSORS: Vincent H. Cassidy, Don R. Gerlach, H. Roger Grant, 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, David E. Kyvig, William McGucken, Howard S. Reinmuth, Jr., Robert L. Zangrando.

ASSISTANT PROFESSOR: Guy S. Alitto.

Mathematical Sciences

HEAD: Professor William H. Beyer.

PROFESSORS: Douglas E. Cameron, Leonard Sweet.

ASSOCIATE PROFESSORS: Robert B. Beyers, David Buchthal, Robert C. Carson, Peter J. Gingo, William W. Hokman, Ernest A. Kuehls, Neal C. Raber, Phillip H. Schmidt, Ronald C. Suich, Richard J. Turek, Wilbur P. Veith.

ASSISTANT PROFESSORS: Todd Feil, Joseph C. Hintz, Martha Lierhaus, Judith Palagallo, Wolfgang Pelz, Thomas E. Price, Harold Putt, Donald P. Story, George L. Szoke.

Modern Languages

PROFESSORS: Arno K. Lepke, Hugo Lijeron, Theodore Mackiw, Eugene A. Maio, Claude Y. Meade, Herbert W. Smith, Jr., Isaac Yetiv.

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 Alan Hart.

ASSOCIATE PROFESSORS: David F. Cox, James H. Buchanan, William McMahon.

ASSISTANT PROFESSOR: James Anderson

Physics

HEAD: Professor Charles W. Wilson III.

PROFESSORS: Harry T. Chu, Roger B. Creel, Alan N. Gent, C. Frank Griffin, Ernest D. von Meerwall.

ASSOCIATE PROFESSORS: 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.

DISTINGUISHED PROFESSOR: Joseph P. Kennedy

PROFESSORS: Lewis J. Fetters, Alan N. Gent, H. James Harwood, Frank N. Kelley, 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.

ASSOCIATE PROFESSORS: Ralph Alexander, Alex Darbes, Stephen S. Fugita, Richard H. Haude, Robert G. Lord, Marion W. McPherson, Henry Rosenquist, Raymond Sanders, Harvey L. Sterns.

ASSISTANT PROFESSORS: Faye Dambrot, Robert Deitchman, Martin D. Murphy, Robert B. Slaney, Jonathan E. Smith.

Sociology

HEAD: Associate Professor Richard J. Gigliotti.

PROFESSORS: Charles M. Barresi, Irwin Deutscher, Lloyd B. Lueptow, Robert M. Terry.

ASSOCIATE PROFESSORS: Carl A. Bersani, T. Neal Garland, John P. Marwitt, McKee J. McClendon, Donald J. Metzger, Samuel A. Mueller, David J. O'Brien, Margaret Poloma.

ASSISTANT PROFESSORS: Rudy Fenwick, Elizabeth Mutran, Jon Olson, Robert N. Parker, Brian Pendleton.

Urban Studies

HEAD: Professor Yong H. Cho.

PROFESSORS: Ashok Dutt, Gary M. Gappert, Edward W. Hanten, William S. Hendon.

ASSOCIATE PROFESSORS: Frank Costa, David F. Cox, Frank J. Kendrick, Richard G. LeFevre, James L. Shanahan, Douglas V. Shaw.

ASSISTANT PROFESSORS: Deborah J. Bickford, Peter J. Leahy.

College of Engineering

Chemical Engineering

HEAD: Professor Howard L. Greene.

PROFESSORS: Glenn A. Atwood, 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 Sarikel.

ASSOCIATE PROFESSORS: Clarence B. Drennon, George P. Manos, David M. Timmerman.

ASSISTANT PROFESSOR: David A. Ross.

Electrical Engineering

ACTING HEAD: Associate Professor Milton L. Kult.

PROFESSORS: Chiou-Shiun Chen, Chu-Fu Chen, Louis E. Roemer, Donald C. Thorn.

ASSOCIATE PROFESSORS: Victor B. Burke, Robert S. Grumbach, Chaman N. Kashkari, Malcolm R. Railey, John T. Welch, Jr., Richard A. Williams.

ASSISTANT PROFESSORS: James Grover, Karen M. Mudry.

Mechanical Engineering

HEAD: Professor Rudolph Scavuzzo.

PROFESSORS: Thomas M. Brittain, Mamerto L. Chu, Jr., Eberhard A. Meinecke, Joseph Padovan.

ASSOCIATE PROFESSORS: Maurice L. Adams, Donald R. Burrowbridge, Benjamin T. F. Chung, Phillip M. Gerhart, Richard J. Gross, Azmi Kaya, Michael Savage.

ASSISTANT PROFESSORS: Paul C. Lam, Minel J. Negreanu.

College of Education

Counseling and Special Education

HEAD: Professor Kenneth C. Hoedt.

PROFESSORS: John R. Cochran, James E. Doverspike, Robert H. Myers, David M. Weis.

ASSOCIATE PROFESSORS: William J. Arn, Dale Coons, Fred W. Fanning, Theodore L. B. Gloeckler, Gary W. Kane, Janko Kovacevich, William E. Nemeč, Michael Ross, Ruth Roberts, Joseph M. Walton.

ASSISTANT PROFESSOR: 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, 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, Frederick M. Schultz, John S. Watt.

ASSOCIATE PROFESSORS: Abdul Amir Al-Rubaiy, Charles M. Dye, Edward B. Lasher, Isadore Newman.

ASSISTANT PROFESSORS: M.K. Alderman, William A. Mavrides, Rita S. Saslaw.

INSTRUCTOR: C. Robert Blankenship.

Elementary Education

HEAD: Associate Professor Bernard L. Esprite.

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, Norman L. Spencer.

ASSISTANT PROFESSORS: Mary Ellen Atwood, Susan J. Daniels, Regis Q. McKnight, Janet R. Reuter.

INSTRUCTOR: John W. Wilson.

Physical Education

HEAD: Associate Professor Andrew W. Maluke.

ASSOCIATE PROFESSORS: J. Thomas Adolph, Robert N. Gandee, Gordon Larson, Robert J. Mravetz, Wyatt M. Webb.

ASSISTANT PROFESSORS: T. Allen Campbell, James L. Dennison, Mary J. MacCracken, Judith E. Maffett, Patricia J. Taylor, Mary A. Tripodi, James L. Witherow.

INSTRUCTORS: Alexander L. Adams, William C. Chupil, Ronald J. Curtis, Robert L. Dowdy, Thomas M. Flaherty, Jr., Larry H. Kindborn, David L. Newell, Carlson Preer, James D. Robinson, Robert L. Rupert, Sr.

Secondary Education

HEAD: Professor Larry G. Bradley.

PROFESSOR: Marion A. Ruebel.

ASSOCIATE PROFESSORS: Madeline A. Cooke, Robert K. Eley, Bill J. Frye, John J. Hirschbuhl, Joy S. Lindbeck, Michael N. Sugarman, Stephen J. Thompson, Walter H. Yoder.

ASSISTANT PROFESSORS: Fred M. Carr, Harold M. Foster, Lillian M. King

College of Business Administration

Accounting

HEAD: Professor Dennis Gordon.

DISTINGUISHED PROFESSOR: Orville R. Keister

PROFESSORS: Hobart W. Adams, Richard S. Roberts, Arjan T. Sathwani.

ASSOCIATE PROFESSORS: Donald K. Berquist, Allen M. Cabral, James L. Cress, Arthur D. Karlin, Dennis L. Kimmell, Alvin H. Lieberman, E. Darlene McCardel, Charles K. Moore, Jr., David L. Nichols.

ASSISTANT PROFESSORS: James R. Emore, Vincent P. Kopy, David T. Meeting, Linda Sugarman, Barbara A. Vinson.

INSTRUCTOR: Michael F. Rolph.

Finance

HEAD: Professor Michael P. Litka.

PROFESSORS: Arpad F. Banda, Thomas J. Coyne, James W. Dunlap, Frederick W. Moyer, John D. Williams.

ASSOCIATE PROFESSORS: David R. Durst, David Hawk, James E. Inman, Robert J. Shedlarz.

ASSISTANT PROFESSORS: 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, Gary E. Meek, Jonathon S. Rakich, Karl A. Shilliff, Howard L. Taylor.

ASSOCIATE PROFESSORS: Donald E. Becker, Kenneth A. Dunning, John E. Herbert, Keith A. Klafehn, Alan G. Krigline, Richard C. Lutz.

ASSISTANT PROFESSORS: Bonita Melcher, Jayprakash G. Patankar, Paul D. Tolchinsky.

INSTRUCTOR: Dennis P. Kopper.

Marketing

ACTING HEAD: Associate Professor David Loyd.

ASSOCIATE PROFESSORS: Michael F. d'Amico, Donald M. Jackson.

ASSISTANT PROFESSORS: John W. Hummel, Kenneth E. Mast, George E. Prough, Judy B. Wilkinson.

INSTRUCTOR: Ronald Paugh.

College of Fine and Applied Arts

Art

HEAD: Professor Thomas E. Morin.

PROFESSORS: Irving A. Achorn, William A. Neumann, Ronald D. Taylor.

ASSOCIATE PROFESSORS: Bruce R. Armstrong, Earl L. Ertman, Charlotte M. Hanten, Donald E. Harvey, Dennis A. Kleidon.

ASSISTANT PROFESSORS: Gale Golembeski, Lorena M. Holshey, James V. Lenavitt, Christopher P. Meyer, Dennis A. Meyer, Mark E. Soppeland, Thomas D. Webb.

INSTRUCTORS: Walter M. Herip, Penny Rakoff, Kathleen A. Ricks.

Home Economics and Family Ecology

PROFESSORS: Barbara N. Armstrong, Virginia Tappenden.

ASSOCIATE PROFESSORS: Doris J. Aldrich, Tomasita Chandler, Virginia L. Gunn, Jean R. Williams.

ASSISTANT PROFESSORS: Carolyn Albanese, Mary Ellen Atwood, Bonny W. Chirayth, Helen K. Cleminshaw, Donna J. Gaboury, Richard J. Galligan, Barbara Heinzerling, Harriet K. Herskowitz, Kathryn E. Koch.

INSTRUCTORS: Renee Pipitone, Paulette Popovich.

Mass Media-Communication

ACTING HEAD: Associate Professor David L. Jamison.

PROFESSORS: James V. Fee, Ruth B. Lewis.

ASSOCIATE PROFESSORS: John D. Bee, Dennis Lynch.

ASSISTANT PROFESSORS: Thomas M. Ditzel, 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, Patricio Cobos, Richard Jackoboice, Marian Lott, Barbara J. MacGregor, Eugene R. Mancini, Richard N. Shirey, Sherman D. Vander Ark.

ASSISTANT PROFESSORS: Tana Alexander, Clifford Billions, J. D. Goddard, Frank C. Jacobs, Scott A. Johnston, Jerzy Kosmala, George S. Pope, Larry D. Snider, Charles F. Waddell, Edward A. Zadrozny, Jr.

INSTRUCTORS: Jan Eberle, Roland Paolucci, Judith A. Pauley, James J. Romeo.

Speech Pathology and Audiology

HEAD: Professor George D. Davis.

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 A. Lesner, Sharon L. Richert, Karen B. Turner.

INSTRUCTORS: Lowell J. Bishop, Jean L. Blosser, Winifred Watson-Florence.

Theatre Arts and Dance

HEAD: Professor Joel Friedman.

PROFESSOR: Howard K. Slaughter.

ASSOCIATE PROFESSORS: Paul A. Daum, Phyllis Hardenstein, Marc C. Ozanich, Wallace S. Sterling.

ASSISTANT PROFESSOR: Jerry J. Burr.

INSTRUCTORS: Pamela J. Bedford, Alexander N. Davis, Kathleen M. Davis.

College of Nursing

DEAN: Professor Lillian J. DeYoung.

PROFESSOR: Kathryn M. Homeier.

ASSOCIATE PROFESSORS: Marian L. Bauer, Perri 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: Pearl Adelson, Barbara S. Anandam, Joan E. Baumgardner, JoAnn Collier, Victoria J. D'Ambrocia, Shirley Doherty, Gail Frankeberger, Jean A. Haspelagh, Anna M. Huth, Ella J. Kick, Nancy C. Kilbane, Deborah D. Lumley, Margaret E. Seeno, Dolores W. Van Dervort.

INSTRUCTORS: Janet L. Chamberlain, Mary F. Dugan, Kristine M. Gill, Mary T. Goletz, Julia A. Hudson, Doreen D. Iafelice, Pamela A. Lang, Susan S. McLaughlin, Elizabeth K. Misko, Martha Roberts, Diana J. Sousa.

LECTURER: Martha R. Conrad.

School of Law

INTERIM DEAN: Professor Albert S. Rakas.

PROFESSORS: Merlin G. Briner, Hamilton DeSaussure, John P. Finan, Richard L. Grant, Donald M. Jenkins, Marvin M. Moore, Stanley A. Samad, Gerald Solk.

ASSOCIATE PROFESSORS: Ronald E. Alexander, Charles E. Kirkwood, Richard J. Kovach, Albert H. Leyerte.

ASSISTANT PROFESSORS: Richard L. Aynes, Dana F. Castle, Daniel H. Derby, C. P. Goplerud, Margery B. Koosed, Jeffrey A. Parness, Paul Richert.

Wayne General and Technical College

DEAN: Tyrone M. Turning.

BUSINESS MANAGER: Martin Kemp.

ASSOCIATE PROFESSORS: Scott D. Hagen, Warner D. Mendenhall.

ASSISTANT PROFESSORS: R. Diane Arnold, Richard M. Dienesch, Armolene J. Maxey, Robert L. McElwee, Janet L. Minc, Beverly J. Mugrage, Ellen Sue Politella, Janeane A. Reagan, Forrest J. Smith, Edwin Thall.

INSTRUCTORS: John Crum, Carl L. Huston, Kay E. Stephan.

University Library

INTERIM UNIVERSITY LIBRARIAN: Associate Professor Pauline Franks.

ASSOCIATE PROFESSORS: Ruth Clinefelter, Helen Livingston, Judith K. Mowery, Anna M. Voorhees.

ASSISTANT PROFESSORS: Virginia L. Allanson, David R. Brink, 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: Barbara L. Clark, Roger W. Durbin, Judith L. Fitzgerald, Terry S. Latour, Norma J. Pearson.

Reserve Officers' Training Corps May 1980

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; Colonel, Artillery.

- JAMES HANSEN**, *Assistant Professor of Military Science* (1980) B.S., Kent State University, 1968; Major, Artillery.
- THOMAS G. RASETA**, *Assistant Professor of Military Science* (1980) B.A., Youngstown State University, 1970; Captain, Signal Corps.
- RICHARD H. STALLINGS III**, *Assistant Professor of Military Science* (March 1978) B.A., LaSalle College; M.A., University of Oklahoma, 1976; Captain, Artillery.
- PAUL LEWIS**, *Chief Enlisted Instructor* (1976); Sergeant Major.
- RICHARD L. HENDERSON**, *Operations NCO* (1979); Sergeant First Class.
- DOCK HUGHES**, *Operations NCO* (1979); Master Sergeant.
- JACKIE NYE**, *Supply Sergeant* (July 1979); Sergeant First Class.

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; Major, 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**, *Detachment NCOIC* (1975); Technical Sergeant, USAF.
- STEVEN K. RANDLE**, *GMC NCOIC* (1979); Sergeant, USAF.
- THOMAS E. WHITMYER**, *POC NCOIC* (1977); Staff Sergeant, USAF.

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* (1967) B.A., College of Wooster; Ph.D., The University of Akron, 1962.
- EDWARD M. FIRER**, *Research Associate*, (June 1975) B.A., University of Bridgeport; M.S., University of Maryland; Ph.D., The University of Akron, 1973.
- T. HENRY FORSYTH**, *Research Associate and Associate Professor of Chemical Engineering* (1970) B.S.C.E., University of Kentucky; M.S., Ph.D., Virginia Polytechnic Institute, 1968, P.E., Ohio.
- JOHN E. FREDERICK**, *Associate Professor of Polymer Science and Associate Professor of Chemistry* (1966) B.S.Ch., 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**, *Distinguished Professor of Polymer Science and Professor of Chemistry* (1970) B.Sc., University of Budapest; M.B.A., General Business, Rutgers University; Ph.D., University of Vienna, 1961.
- DONALD MCINTYRE**, *Professor of Polymer Science and Professor of Chemistry* (1966) A.B., 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.
- JRJA 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* (June 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* (October 1969) B.S., Ashland College; M.S., The University of Akron, 1972.

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- A. B. CHURCH***, 1901-1912, D.D., LL.D.
- PARKE R. KOLBE***, 1913-1914, Ph.D., LL.D.

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* Deceased

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College of Business Administration

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*Deceased

University College (formerly General College)

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Community and Technical College

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RAY H. SANDEFUR, 1967-1978, Ph.D.
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Current Members of College and School Advisory Committees

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Directory of Student Organizations

May 1980

Athletics

Archery Club
Intramurals — Mens, Womens
Karate Club (Tae Kwon Do)
Ski Club
Tennis Club
Water Polo Club
Women's Synchronized Swimming Club
Women's Track Club

Communications and Publications

Akros (literary magazine)
Amateur Radio Club
The Buchtelite (newspaper)
Forensic Union
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
Mathematics Club
Medical Technology Club
Philosophy Club
Psychology Club
Slavic Studies Club
Social Work League
Society of Physics Students
Sociology Club
Student Art League

Evening College

Alpha Sigma Lambda
AWARE (Association of Women for Awareness, Recognition and Enterprise)
Chi Sigma Nu
Evening Student Council
Gamma Beta
Nite-Life (newspaper)
Phi Beta Sigma Fraternity, Inc.

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)
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)
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
Law Association for Women's Rights
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

Choral Ensembles
Jazz/Pops Singers
Mens Glee Club
Opera Theatre
Symphony Chorus
University Concert Choir
Womens Glee Club
Experimental Dance Ensemble
Instrumental Ensembles
Brass Choir
Chamber Orchestra

Jazz Ensemble
Jazz Sextet
Percussion Ensemble
University Marching Band
University Orchestra
University Symphony Band
University Wind Ensemble
Woodwind Choir
University Theatre Guild

Personal Interest

Advertising Club
American Congress on Surveying and Mapping
Arab Students Organization
Associated Student Government
Association for Women Students
Black United Students (BUS)
Center for Concern
Chess Club
College Republicans
Council for International Relations and United Nations Affairs
Gospel Chorus
The Hellenic Club
Indian Students Association
International Food Service Executive 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
Veterans Involved in College Enrichment
Vietnamese Student Club
Young Democrats Club

Religious Organizations

Akron Jewish Student Organization
American Friends Service Committee
Baha'i Club
Baptist Student Union (formerly Brothers and Sisters in Christ)
Bread of Life
Ecumenical Christian Association
Fellowship of Christian Athletes
Interarsity Christian Fellowship
Kappa Phi Club
Students for Christ

Social Fraternities

Alpha Phi Alpha
Delta Tau Delta
Lamda Chi Alpha
Omega Psi Phi
Phi Delta Theta
Phi Kappa Psi
Phi Kappa Tau
Phi Sigma Kappa
Pi Kappa Epsilon (Lone Star)
Sigma Pi
Tau Kappa Epsilon
Theta Chi
Intrfraternity Council

Social Sororities

Alpha Delta Pi
Alpha Gamma Delta
Alpha Kappa Alpha
Chi Omega
Delta Gamma
Delta Sigma Theta
Delta Zeta
Kappa Kappa Gamma
Theta Phi Alpha
Zeta Phi Beta
Panhellenic Council

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