
THE UNIVERSITY OF AKRON
B U L L E T I N



1981-83
General Bulletin
Edition

Calendar 1981-1982

Fall Semester 1981

Day and Evening Classes Begin Mon., Aug. 31
*Labor Day Mon., Sept. 7
Veterans Day (classes held) Wed., Nov. 11
**Thanksgiving Recess Thurs.-Sat., Nov. 26-28
Classes Resume Mon., Nov. 30
Final Examination Period Mon.-Sat., Dec. 14-19

Spring Semester 1982

Day and Evening Classes Begin Mon., Jan. 18
Founders Day (classes held) Tues., Feb. 9
Spring Recess Mon.-Sat., March 22-27
Classes Resume Mon., March 29
†May Day to be announced
Final Examination Period Mon.-Sat., May 10-15
Commencement Sun., May 23

Summer Session I 1982

First 5- and 8-Week Session Begins Mon., June 14
Independence Day Sun., July 4
*Independence Day Observed Mon., July 5
First 5-Week Session Ends Fri., July 16

Summer Session II 1982

Second 5-Week Session Begins Mon., July 19
Eight-Week Session Ends Fri., Aug. 6
Second 5-Week Session Ends Fri., Aug. 20

Fall Semester 1982

Day and Evening Classes Begin Mon., Aug. 30
*Labor Day Mon., Sept. 6
Veterans Day (classes held) Thurs., Nov. 11
††Thanksgiving Recess Thurs.-Sat., Nov. 25-27
Classes Resume Mon., Nov. 29
Final Examination Period Mon.-Sat., Dec. 13-18

Spring Semester 1983

Day and Evening Classes Begin Mon., Jan. 17
Founders Day (classes held) Tues., Feb. 8
Spring Recess Mon.-Sat., March 21-26
Classes Resume Mon., March 28
†May Day to be announced
Final Examination Period Mon.-Sat., May 9-14
Commencement Sun., May 22

Summer Session I 1983

First 5- and 8-Week Session Begins Mon., June 13
*Independence Day Mon., July 4
First 5-Week Session Ends Fri., July 15

Summer Session II 1983

Second 5-Week Session Begins Mon., July 18
Eight-Week Session Ends Fri., Aug. 5
Second 5-Week Session Ends Fri., Aug. 19

*University Closed.

**University Closed from Wednesday, November 25, 1981 at 5 p.m. until Monday, November 30, 1981 at 7 a.m.

†Classes suspended Noon to 4 p.m.

††University Closed from Wednesday, November 24, 1982 at 5 p.m. until Monday, November 29, 1982 at 7 a.m.

**AMERICA'S
ENERGY IS
MINDPOWER**

The University of Akron Bulletin
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Number 1

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July, 1981

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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 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.

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 66 modern buildings is located in a metropolitan area of 1.5 million persons. The University of Akron now enrolls more than 24,000

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 over 50,000 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 111 years of service prepared it for a widening role in the future.



Mission and Goals

The major forces influencing The University of Akron's mission are teaching and research goals, location and heritage, and service responsibilities to the local, national and international communities served.

These forces, coupled with the sharing of the national commitment to provide the highest quality educational opportunity to each person regardless of race, creed, color, sex, age, national origin or handicapping condition, form the distinctive character of this institution.

The foremost goals of The University of Akron are to foster and maintain high standards of quality in program offerings, teaching methods, research projects and public service. The validity of all existing programs, as well as the need for additional ones, is to be evaluated regularly in light of the University's goals and performance; and achievement standards are to be reviewed carefully to ensure excellence.

As an urban institution, The University of Akron strives to encourage a mutually beneficial relationship between the University and its environment by encouraging the use of the surrounding community as a labora-

tory for teaching and by structuring courses and research to meet the community's particular needs. In terms of educational needs, the University will continue to build on its long heritage of serving those seeking either career changes, professional development or self-enrichment in daytime, evening and weekend courses, through off-campus instruction, cooperative education and workshops. The University, once a small, denominational college, has evolved into an urban multi-university with an international responsibility. At The University of Akron the concept of an urban university has broadened from a demographic definition to a philosophical commitment that encompasses educational needs, social goals and community responsibilities.

These forces mold the philosophy that shape the Mission and Goals of The University of Akron.

Mission

The University of Akron is a comprehensive state-assisted urban university with national and international influence, sharing the same general mission as the other state universities to:

- Provide learning opportunities for a broad spectrum of students.
- Discover new knowledge through basic and applied research.
- Provide a forum for the examination of ideas and concepts and the generation of scholarly dialogue within the established principles of academic freedom.
- Develop necessary educational services throughout the state of Ohio.
- Plan for continued improvement of the teaching and learning environment.
- Prepare career-oriented persons for professional leadership roles in regional, national and international organizations and institutions.

In addition, The University of Akron's mission has certain distinctive characteristics determined by its location in the service areas of three major urban centers and the Northeastern Ohio regional area. The University's specific mission is to meet the educational needs and develop the cultural interests of students who work in and manage the industries, multinational firms, hospitals, businesses, government and other institutions and agencies in this area by providing:

- Academic programs leading to associate, baccalaureate, master's and doctoral degrees.
- Educational programs which may lead to the awarding of a certificate, continuing education credits or other evidence of personal and professional improvement.
- Consortia with other universities which establish programs such as educational television, the medical school and joint doctoral programs.
- Community and regional commitments and public service which expand educational opportunities.

Goals

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

Goal I

The University will plan, develop, implement, and measure all of its efforts in light of its primary goal of teaching: to provide optimum learning opportunities for students of varying ages, diverse backgrounds and different needs.

Goal II

The University will continue to develop its faculty resources by emphasizing professional growth through research, publication and creative activities; by encouraging the search for new knowledge; by providing opportunities for faculty to increase their leadership within their academic areas; by fostering faculty awareness of the influence of other disciplines on their own; and by encouraging the integration of public service and appropriate faculty activities.

Goal III

The 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, so as to develop thinking individuals capable of confronting local, national and international problems and thus making a positive contribution to society.

Goal IV

The University will provide public service to the urban community through its programs, faculty, students and graduates.

Goal V

The University will coordinate the growth and emphasis of its programs with long-range plans and needs of the community.

Goal VI

The University will contribute as much as possible within its resources to the development of quality of life for the future of the nation and the world of which the Akron community is a part and upon which its people and economy are dependent.

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 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
- The American Speech-Language-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. A student 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.

Associate Programs

In this fast-paced age of technological development, a need has grown for a person trained specifically for work in the semi-professional, technical and highly-skilled professions. Most critically needed are laboratory 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
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
Handicapped Services
Individualized Study
Labor Studies Technology

Manufacturing Technology
Industrial Supervision
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
Surgical Technologist
Surgeon's Assistant
Surveying and Construction Technology
Construction
Surveying
Transportation
Commercial Aviation

idea of the University College concept. A student seeking a baccalaureate degree and having attained less than 30 college semester credits, studies in the University College before transferring to a degree-granting college. 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

B.S./M.D.

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

College of Engineering

Chemical Engineering

Civil Engineering

Construction

Design

Construction Technology

Electrical Engineering

Interdisciplinary BSE

Mechanical Engineering

College of Education

Elementary

Dual Certification

Foreign Language

Kindergarten — Primary

Music

Nursery School

Retraining

Physical Education K-12

Athletic Trainer

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

Personnel

Production

Marketing

College of Fine and Applied Arts

Art

Art History

Ceramics

Crafts

Drawing

Graphic Design

Metalsmithing

Painting

Photography

Printmaking

Sculpture

Studio Art

Communicative

Disorders

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

History and Literature

Jazz Studies

Music Education

Performance

Theory-Composition

Mass Media-

Communication

Communication and

Rhetoric

Mass Media-

Communication

Speech (General)

Social Work

Theatre Arts and Dance

Ballet

Musical Theatre

Theatre Arts

College of Nursing

Nursing

Baccalaureate Programs

The University of Akron believes that the student should master basic courses in the humanities, social sciences and physical sciences and thus supports the

University Honors Program

The University of Akron's Honors Program has been designed to recognize and to support the highly motivated and achievement-oriented student 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:

Afro-American Study
Cartographic Specialization
Computer Science
Environmental Study
Higher Education
Interior Design
Latin American Study
Life-Span Development:
Adulthood and Aging
Life-Span Development:
Gender Identity and Roles

Linguistic Studies
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 the student who wishes to further 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
Polymer Science
Psychology
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
*Teaching 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

Communicative Disorders
Family Ecology
Child Development
Family and Child Development
Mass Media-Communication
Communication and Rhetoric
Mass Media-Communication
Speech (General)
Music
Accompanying
Composition
Music Education
Music History and Literature
Performance
Theory
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

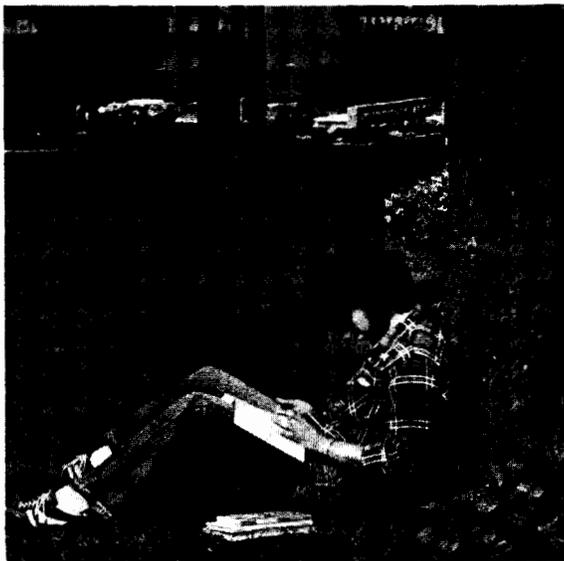
College of Engineering

Chemical Engineering
Civil Engineering

Electrical Engineering
Mechanical Engineering

College of Education

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



School of Law

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

Evening College

The Evening College is a year-long, round-the-clock educational endeavor at the University. It provides educational opportunities for the student who is employed during the day. The courses offered in this 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 the day and evening student. They 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

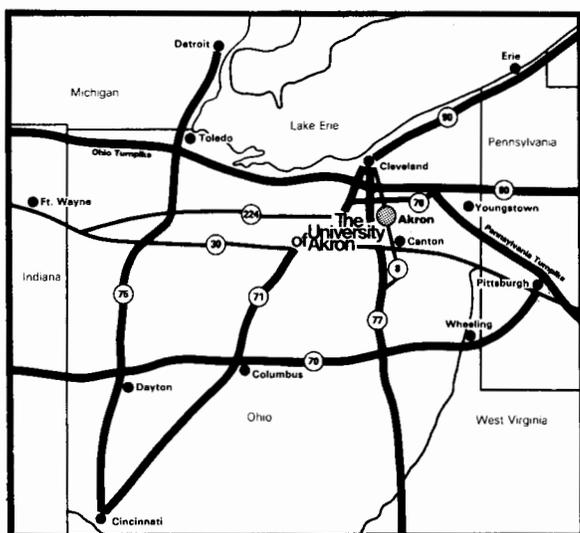
As a metropolitan institution of higher learning, the University clearly identifies and supports its public service role through a variety of off-campus programs. The University has offered special institutes, workshops and courses to professional groups through the academic departments, Institute for 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.

The Campus

The University 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 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 66 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 is ideal for travelers. 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 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 Airport, 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. Major buildings are listed below. Dormitories, service, storage or inactive buildings are not listed.

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.

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, and the Counseling and Testing Center.

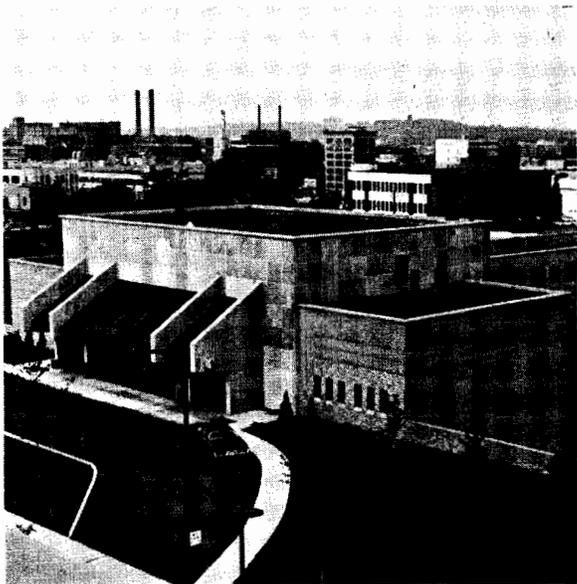
Ballet Center: (354 East Market Street) This center houses dance studios, a choreography laboratory, faculty offices, the Ohio Ballet studios and offices and the Dance Institute's offices.

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 and Special Education, Geography, 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 Lisle Buckingham center 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 on campus. It provides space for bowling alleys, music rooms, lounges, student activity and publication offices and workrooms, game and billiard room, University Bookstore and cafeteria and dining facilities.

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 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 Administration 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 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 courtroom, appellate-review office, 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, Office of Sports Information and related training and classrooms.

North Hall: Located on South Forge Street, this facility houses the following administrative service departments: duplicating, publications, purchasing, internal communications, public information and staff personnel.

Olin Hall: Named in honor of Professor Oscar E. Olin and Mr. Charles Olin. This facility was completed in May, 1975. The hall houses the 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: Named for Edwin J. Thomas, prominent industrialist and dedicated member of the University Board of Trustees from 1952 to 1975, this unique cultural center was formally opened in 1973, costing more than \$13.9 million. 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.

Physical Plant Operations Center: (146 Hill Street) This building is located on Hill Street adjacent to E.J. Thomas Hall and houses physical plant operations, as well as security, safety, custodial, building and equipment repair and heat and energy distribution.

Robertson Dining Hall: (248 James Street) This building features a cafeteria and dining room for dormitory students as well as the campus infirmary, which provides health services for the University.

Rubber Bowl: This off-campus stadium located at 800 George Washington Boulevard, just four miles from the campus, provides the University with an artificial turf playing field, seating for 35,000, locker rooms, concessions, and press box for athletic events.

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 R.O.T.C. units.

Service Building #1: (194 East Center Street) This building provides commercial art studios for the Department of Art.

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. The Institute for Life-Span Development and Gerontology and the History of American Psychology Archives also occupy a portion of the building. A student interested in employment counseling and assistance will find the Office of Career Planning and Placement conveniently located in this facility.

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, Academic Advising Services, the Office of Student Financial Aids and Employment, 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.

Student Mailroom: Located on central campus, adjacent to the Gardner Student Center, this building contains mailboxes for all students.



The University Club: (105 Fir Hill) Property of The University of Akron's Development Foundation, the 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 Office of Alumni Relations and the Department of Development 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 Communicative Disorders and the outpatient Speech and Hearing Clinic.

Whitby Hall: Named for G. Stafford Whitby, a pioneer in the development of polymer science, this addition to the Institute of Polymer Science (I.P.S.) was opened in fall, 1975. Housing the academic portion of I.P.S., the hall was purchased, renovated and equipped at a cost of \$3.2 million. The institute's research activities continue in Auburn Science and Engineering Center.

Zook Hall: Named to honor George F. Zook, president of the University from 1925 to 1933. He later became U.S. 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 a student 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 washroom. 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 include a very low power x-ray machine.

Applied Arts

The Speech and Hearing Clinic, of the Department of Communicative Disorders, 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 the fine arts student.

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 a student 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. The theatre student gains 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 a student 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 the student a taste of teaching before they enter the field. It is part of a total program in secondary education which helps ease the student into the teaching field without the abrupt change in the role from student to educator. A student is 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, a student learns to analyze water and wastewater and assess its 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, a student observes the fundamental and practical aspects of fluid mechanics with several sophisticated pieces of equipment; tilting flume enables the student to visualize water flow in streams and rivers. Models of bridges and dams can be studied; the wave tank enables a student to study the effect of waves on 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, a student 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, a student learns 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 soil and rock deposits.

In the structural materials laboratory, the student has the opportunity to observe experimental verifications of 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. A student also has the opportunity to utilize modern instruments which include multi-channel strain indicators, oscilloscopes, x-y plotters and magnetic amplifier systems.

Facilities in electrical engineering 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 the undergraduate 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. The undergraduate student 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 laboratory facilities include undergraduate and statistics laboratories and laboratories for the study of human signal detection, auto driving and other motor skills, motion sickness, attention, concept formation, perceptual style and memory. 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 the student 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 Resources Center. The Office of Instructional Media incorporates the Departments of Audio-Visual Services, Electronic Systems Engineering and the Instructional Television Center.

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

Audio-Visual Services also has a Materials Production Division which prepares original artwork and photographic materials used by instructors for reinforcement of classroom learning principles.

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

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

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

Student Services

The Office of Student Services is a major division of the University, the purpose of which is to provide the help needed for 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, this office 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 has current information about all campus organizations and the variety of their activities. It will provide assistance to a student wishing to explore the range of opportunities existing at the University which will enrich and expand the person's individual development and, in turn, University experience.

Office of Student Financial Aids and Employment

This 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. Seven professional staff members are available to provide such assistance.

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

Office of Career Planning and Placement

Career placement assistance is available to the student in business, industry, government, private agencies and education. The office is located in Simmons Hall.

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; career planning is provided.

The facilities and services of this office are for any student as well as alumni. More than 400 interviewers come to the University each fall and spring to interview degree candidates.

Student Health Services

Due to increased numbers of University students, expanded health service facilities immediately adjacent to the residence halls have developed. First aid services and limited medical care 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 longer 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 assumes no responsibility for student accidents incurred while attending or participating in classroom, gymnasium or laboratory work.

Student health and accident insurance designed specifically for a student is required of all residence hall students and all international students except those who present proof 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 are treated as confidential and are kept in the Student Health Services offices.

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 another 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 center provides psychological counseling, therapy and testing without charge to any student enrolled for credit as well as 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; 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; personality development, identity and self-esteem.
- Educational counseling relates to educational goals, motivation, attitudes, abilities and the development of effective study habits and skills.

- Group educational programs 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 non-traditional 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 C.L.E.P. tests can be substituted for certain course requirements of the University College).

In addition, individual testing is offered in conjunction with counseling. Such tests 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.

Bierce Library

Bierce Library is divided into two major segments: the main library on East Buchtel Avenue and the Science-Technology Division in Auburn Science and Engineering Center 104.

There are over one million books, pamphlets, pictures, government documents, microforms, maps, records, audio tapes, films, filmstrips, slides and archival materials in the library. In addition, the library subscribes to over 4,800 periodicals. Through the University's membership in the Center for Research Libraries, interlibrary loan activities and reciprocal borrowing arrangements with other Ohio academic libraries, Bierce Library can provide the student with access to vast resources.

A student identification card serves as the library card. Group study rooms, typing rooms and photocopying services are available.

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 to the educational, social and personal development of each resident student.

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

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

Robertson Dining Hall

A student who lives in the residence halls must participate in the board plan. A residence hall occupant receives a meal ticket entitling the holder to 20 meals per week in the dining hall. Meals are served cafeteria style with an "unlimited seconds" policy. Meals are planned under the supervision of a professional dietician.

Cost: Room and Board

The current rate for housing accommodations and food service is \$1,980 per year (\$990 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.

Residence Hall Program Board (R.H.P.B.)

R.H.P.B. provides a series of activities designed to allow development and expansion of a student's social, cultural and educational interests. It 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 (R.H.C.)

R.H.C. functions as a governing body for a residence hall student. It acts as a medium of communication and policy implementation between the director of residence halls and students living in the halls. It maintains its own radio station, WRHA (590 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 R.H.C., is the campus-wide voice of the residence hall student and is represented on campus committees by various officers.

Dormitories

	Number of Residents
Alpha Gamma Delta House (women) 464 E. Carroll Street	51
Battrick 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	470
Townhouses (men) Sherman and Grant Streets 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)	96
Buchtel Avenue Complex	
Sisler-McFawn (women)	126
Buchtel Avenue Complex	
Spanton Hall (women)	316
Buchtel Avenue Complex	
Sumner Hall (men)	43
430 Sumner Street	
Thompson Hall (women)	39
261 Spicer Street	
Torrey Hall (men)	64
282 Torrey Street	

Hourly Pre-School

The Hourly Pre-School is open to children of a student or faculty member while they are in class or studying. The curriculum covers planned, spontaneous and facilitated experiences for children and is supervised by trained teachers and aides. Opportunities are provided for youngsters to engage in arts, language arts, table toys, socio-dramatic play, rug toys, science exploration, sandbox and water play. Field trips provide real life experiences. Resource people from the community are invited to the school to share their talents and vocations. The program emphasizes positive self-image, racial awareness and anthropological differences among people. Children must be between the ages of two and one-half through six years, and tuition is \$1.10 - \$1.35 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

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

A student is invited to share in this ministry through participation in any of its programs and services. The Catholic campus ministers are available at the Newman Center, 143 South Union Street (north of Olin Hall); and the Protestant Minister is available at the AGAPE Center, 263 East Mill 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

As important as research papers, classes or experiments are, what one learns at a University is equally determined by the people one meets. So it is with some pride that the University offers over 180 different student organizations and opportunities for student involvement.

Organizational and activity offerings range from athletics to communications and publications, from recognition societies and honoraries to personal interest groups, from performing arts groups to religious organizations, and from academic department interest clubs to social fraternities and sororities. All have a common goal of providing an opportunity for new acquaintances and contacts with various people in the University and community.

But beyond that, there are other benefits. Extracurricular activities and participation in campus life provide the chance to broaden classroom learning experiences, develop skills that will be marketable in the eventual search for a career position, expand horizons into additional interests and learn leadership and human relations skills.

Listed below are some of the most popular activities. A complete listing may be found in the student handbook, the *A-book*.

Performing Arts

Opportunities abound for the interested student to develop the ability to face the public through live audience performances such as plays, debates, recitals and dance, as well as through media presentations by way of radio, television and film.

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, with its intimate proscenium stage, is the scene for many University productions.

Those interested in mass media-communication will find that Guzzetta Hall contains fully-equipped television and radio stations. A student may participate in the Radio-Television Workshop and broadcast regularly over the 3,000 watt FM station, WAUP (88.1). Also available is experience at the residence hall station, WRHA. To top off speaking and broadcasting opportunities, forensic and debate teams compete locally and nationally.

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, the outstanding Opera Theatre, the Evening Chorus, which performs regularly with the Akron Symphony Orchestra, or any number of other small or specialized musical ensembles or clubs.

A final opportunity in the area of Performing Arts is offered in ballet. The organization is the Experimental Dance Ensemble, which is intimately associated with the world-renowned Ohio Ballet.

Sports Activities

The University aims to provide a broad and diversified program in intercollegiate, club and intramural sports. The student, regardless of athletic success or experience, is urged to take part.

A wide variety of intramurals ranging from flag football to tennis, is offered. On the intercollegiate level, the University participates in 14 intercollegiate sports during the three major athletic seasons. Fall: football, soccer, men's and women's cross country and women's volleyball. Winter: men's and women's basketball, swimming and riflery. Spring: men's and women's track, baseball, golf, men's and women's tennis and women's softball.

Athletic clubs include the nationally acclaimed Karate Club and the Ski Club, among others.

Departmental Organizations

In order to enhance and expand upon classroom learning, many academic departments sponsor organizations which provide social and educational programs in a particular field of study. Speakers, career nights, association with professional societies and projects to sharpen professional skills are but a few of the activities these organizations sponsor.

Personal Interest Organizations

From political organizations to chess tournaments, the personal interest organizations cover a wide range of activities and interests.

A few of the most prominent, broad-appeal groups are: Associated Student Government — A.S.G. is the representative government for the day undergraduate, providing student input into University governance and recommending budget allocations to campus organizations. Black United Students — Enrichment for the Black

student is supplemented through Black History Month, orientation programs for the Black student, African Awareness Week and other cultural programs. Residence Hall Program Board — This group schedules entertaining activities to fill leisure time. Coffeehouses, dances, films and video entertainment are some of the areas handled for a residence hall student by R.H.P.B.

All-Campus Advisory Boards

In addition to organizations, there are opportunities for a student to hold positions on a number of all-campus advisory committees. These groups, while technically not organizations, are open to all interested students and function with the same benefits for their members as organizations.

One of these, the Major Events Board, handles concerts and other large-scale musical presentations, plays, lectures, special events and any other large-production, all-campus, student-oriented program.

For the student interested in helping others, the Orientation Board is committed to assisting the new student adjust to the new roles at the University. Social and educational programs are presented during the course of the year to maintain a continual supportive environment.

The Gardner Student Center presents another opportunity through Student Center Programming

(S.C.P.). S.C.P. is an activities board charged with the responsibility of providing social, cultural, educational and recreational activities and programs for all students who use the Student Center.

Student Publications

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

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

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

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.

Admissions

Admission is necessarily limited by the University's capacity to provide for the student's educational objectives. The University reserves the right to approve admission only to those 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

These additional subjects are recommended for a student 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. The student interested in a major in business administration should complete four units of high school mathematics.

Classification of Students

With an enrollment of approximately 24,000, 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's Counseling and Testing Center serves as a testing center for the ACT test.) 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 Academic Advising Services of the University College. The evening student 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: 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.

- **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 Counseling and Testing Center serves as a testing center for the ACT test.) 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 concerning academic counseling. All new freshmen receive academic advisement through Academic Advising Services 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, the student will receive directions concerning academic counseling. University College freshmen and some sophomore day students receive academic advisement through Academic Advising Services of the University College. A student in the Community and Technical College or a degree-granting college will be advised by a faculty member in the appropriate department.

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

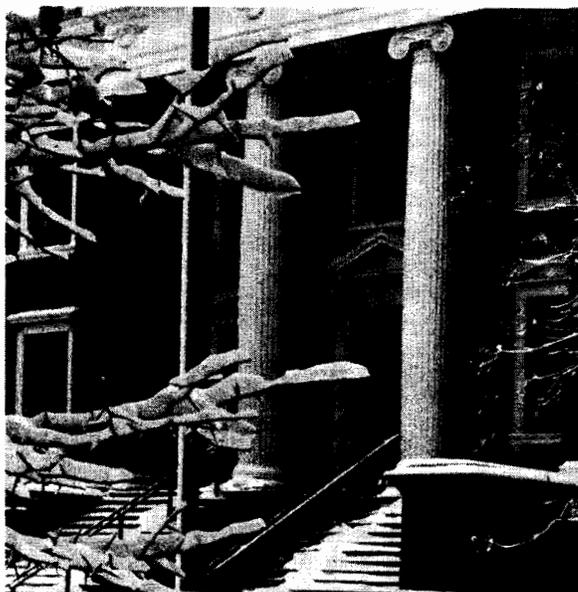
Transient Students

An undergraduate transient student must apply to the Office of Admissions. A graduate student must apply through the dean's office 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



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.

registration is set apart for transient students to register for classes.

International Student Program

The University of Akron welcomes qualified students from other countries and seeks to make their educational experiences pleasant and meaningful. During the 1980-81 academic year, approximately 500 students with citizenship other than the United States attended the University. These students represent 70 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 requires each student for whom English is not the native language to participate in the Test of English as a Foreign Language (T.O.E.F.L.). 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 T.O.E.F.L., 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 the student who has not reached the level of proficiency required for full admission. A student who has not yet taken or passed the T.O.E.F.L. 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 and that these funds will be available to the student in this country. It is estimated that an international student will need a minimum of \$5,500 per year for undergraduate and graduate study for tuition and living expenses while attending. Immigration regulations prevent a student from earning any substantial portion of this amount. There are virtually no scholarships available to an undergraduate from

abroad, although a graduate student may request and often receives 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 schedule for orientation will be mailed with the *Certificate of Eligibility* (I-20) from the international student adviser. During orientation, the international student is given an English language placement examination 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.

English Language Institute

The University offers an intensive English Language Institute for the international student whose command of the English language has not reached a level of proficiency 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 proficiency test before the student can be admitted.

Special Note

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

Special International Education Programs

The University sends students to different parts of the world as part of its continuing program — *Classrooms Around the World*. This program, offered for graduate or undergraduate credit, began 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 the student. The student will meet many of the University's administrative officers and faculty members and discuss particular problems and questions with an upper-college student. 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 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 courses, complete 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 Academic Advising Services, 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 registered. A student may be dropped from a course by the dean if absence is repeated and the instructor recommends this action; a student can gain readmission only with permission of both.

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 registered for 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 Office of Academic Advising Services, 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 the midpoint of a semester or a summer session, a student must have the written approval of both instructor and adviser to withdraw. Such approval must be dated, signed by the instructor, and processed through the Offices of the Registrar and the Cashier **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.

An approved withdrawal will be indicated on the University official academic record by a "W." A student who leaves a course without going through the withdrawal procedure will be given an "F" in the course.

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.



Coursework taken at an institution of higher education in the United States of America which is fully accredited by an appropriate regional accrediting association; or is not fully accredited by an appropriate regional accrediting association but which has a "G," "L," "P" or "I" listing in the *Transfer of Credit Practices of Selected Educational Institutions*, the American Association of Collegiate Registrars and Admissions Officers (A.A.C.R.A.O.); 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. 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 A.A.C.R.A.O. *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 with a grade-point average of 2.00 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 official academic record. Each course will reflect the course number, title, grade and credit value; no grade-point value will appear on the record and no grade-point average will be calculated for the coursework listed. The name of the institution will be listed on the University official academic record as well as the date that the coursework was taken.

Credit by Examination

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

Bypass Credit

A regularly enrolled student at The University of Akron shall receive college credit for a course when he demonstrates college-level competence by:

- Successful completion of the course ("C" or above) or its equivalent in an advanced placement program or in an accredited institution of higher learning;

- Successful completion of a special examination given by the University;
- Testing or other means approved by the college faculty and the dean concerned.

Credit for such work shall include credit for all pre-requisite college work for the course, as listed by the department or college concerned. Such credits shall be included in the total credits earned, but shall not count in the quality-point ratio or class standing. Courses awarded on a bypass credit basis must be in the same department as the actual course pursued and passed.

Bypass credit may be awarded on the basis of successful completion of a course via credit by examination. In order to graduate from the University, a student must complete at least 48 credits, excluding bypass credit. There is no limit on the number of credits which may be awarded to a student on a bypass credit basis. Such bypass credit will be placed on a student's official academic record only upon recommendation and completion of the appropriate form by the student's dean or dean's designate.

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 2.30, shall be allowed, with the consent of an adviser, to take one free elective (not in major field)* course per term on a "CR/NC" basis.

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

No more than 16 credits of 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.

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 "AUD," 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.

*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.

- 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 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 2.50 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. 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 credits 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 class standing, all grades obtained at the University shall be used in the calculations.

Discipline

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

* 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 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 Office of the Registrar 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 are usually graded with percentage or letter marks, but official academic records are maintained with a grade-point system.

This method of recording grades is as follows:

Grade	Grade Points Per Credit
A	4.00
A-	3.70
B+	3.30
B	3.00
B-	2.70
C+	2.30
C	2.00
C-	1.70
D+	1.30
D	1.00
D-	0.70
F	0.00
AUD (Audit)	0.00
CR (Credit)	0.00
NC (Noncredit)	0.00

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

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

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

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

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

NGR — No Grade Reported: Indicates that, at the time grades were processed for the 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.

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

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

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 2.00 ("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 chooses to enter and on academic performance to date.

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

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



Probation-Dismissal

A student who fails to maintain a grade-point average of 2.00 ("C") is placed on academic probation and may be subject to a change of courses, 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.

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

Graduation with Honors

For a student who is being awarded an initial baccalaureate degree and who has completed 60 or more credits at the University, 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, 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 May 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 2.00 grade-point average as computed by the Office of the Registrar for work attempted at the University 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 appropriate college faculty, University Council and Board of Trustees.
- Complete the requirements for a degree in not more than five calendar years from the date of transfer, as defined below. In the event the student fails to complete the degree requirements within five calendar years from the date of transfer, the University 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.



Requirements for Additional Baccalaureate and Associate Degrees

- Meet 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 same/or 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 senior 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	2.00
Bachelor of Science in Political Science/Criminal Justice	132	2.00
Bachelor of Arts	128	2.00
Bachelor of Science	128	2.00
Bachelor of Science in Medical Technology	128	2.00
Engineering		
Bachelor of Science in Engineering	136	2.00
Bachelor of Science in Chemical Engineering	136	2.00
Bachelor of Science in Civil Engineering	136	2.00
Bachelor of Science in Electrical Engineering	136	2.00
Bachelor of Science in Mechanical Engineering	136	2.00
Bachelor of Construction Technology	136	2.00
Education*		
Bachelor of Arts in Education	128	2.00
Bachelor of Science in Education	128	2.00
Bachelor of Science in Technical Education	128	2.00
Business Administration		
Bachelor of Science in Business Administration	128	2.00
Bachelor of Science in Business Administration/Finance	128	2.00
Bachelor of Science in Business Administration/Marketing	128	2.00
Bachelor of Science in Industrial Management	128	2.00
Bachelor of Science in Accounting	128	2.00
Fine and Applied Arts		
Bachelor of Arts	128	2.00
Bachelor of Arts in Dietetics	128	2.00

Bachelor of Arts in Foods and Nutrition	128	2.00
Bachelor of Arts in Clothing and Textiles	128	2.00
Bachelor of Arts in Family and Child Development	128	2.00
Bachelor of Arts in Communicative Disorders	128	2.00
Bachelor of Arts in General Speech	128	2.00
Bachelor of Arts in Theatre Arts	128	2.00
Bachelor of Arts in Mass Media-Communication	128	2.00
Bachelor of Arts in Communication and Rhetoric	128	2.00
Bachelor of Arts in Ballet	128	2.00
Bachelor of Music	128	2.00
Bachelor of Fine Arts	128	2.00
Bachelor of Arts/Social Work	128	2.00

Nursing*

Bachelor of Science in Nursing	131	2.00
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Community and Technical

Associate Degree in Arts	64	2.00
Associate Degree in Applied Science in:		
Business Management Technology	64	2.00
Chemical Technology	66	2.00
Commercial Art	64	2.00
Community Services Technology	64	2.00
Criminal Justice Technology	64	2.00
Data Processing	64	2.00
Educational Technology	64	2.00
Electronic Technology	68	2.00
Fire Science Technology	64	2.00
Food Service Management	64	2.00
Handicapped Services	71	2.00
Instrumentation Technology	68	2.00
Labor Studies Technology	64	2.00
Manufacturing Technology	64	2.00
Mechanical Technology	68	2.00
Medical Assisting Technology	64	2.00
Office Services Technology	64	2.00
Radiologic Technology	74	2.00
Real Estate	64	2.00
Respiratory Therapy Technology	70	2.00
Sales and Merchandising	64	2.00
Secretarial Science	64	2.00
Surgical Assisting Technology	64	2.00
Surveying and Construction Technology	68	2.00
Transportation	64	2.00

Bachelor of Mechanical Technology	135	2.00
Bachelor of Science in Electronic Technology	135	2.00

Wayne General and Technical

Associate Degree in Applied Science in:		
Business Management Technology	64	2.00
Electronic Technology	68	2.00
Mechanical Technology	68	2.00
Retail Management Technology	64	2.00
Secretarial Science	64	2.00
Social Services Technology	64	2.00

Course Numbering System

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

3300:220 English Literature

In the above example, the first four digits of the number (3300) indicate the college and department. In this case, 3000 represents the Buchtel College of Arts and Sciences; 300 refers to the Department of English. The second set of digits (220) following the colon, indicates exactly which course in the Department of English is being specified. The course number also indicates the level at which the course is being taught and the point at which the student is ready to take the course.

An explanation of that numbering system follows:

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

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

*Grade-point average of 2.50 in major field is required.

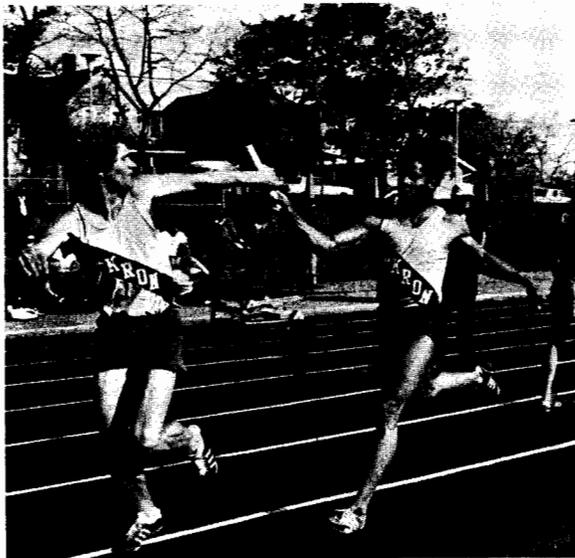
Fees and Expenses

Fees subject to change without notice.

Despite the willingness of taxpayers and generous friends of the University to help support higher education, some portion of 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	\$ 960	\$ 960	\$2,336
General Fee	230	230	230
Books (average)	200	200	200
Food and Housing in Residence Halls	—	1,980	1,980
	\$1,390	\$3,370	\$4,746

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



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

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

It is the responsibility of the registrar to assess fees and surcharges at the time of registration; information given by the student at that time is used in the assess-

ment. 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	
1-15 credits	\$32 per credit
15½-16 credits	\$480 per semester
Over 16 credits	\$480 + \$32 per credit
Graduate and Professional (Law)	
1 or more credits	\$46.50 per credit

• Tuition Surcharge**

(Non-residents of Ohio pay the surcharge in addition to the instructional fee)	
Undergraduate	
1 or more credits	\$43 per credit
Graduate and Professional (Law)	
1 or more credits	\$29 per credit

• General Fee

Undergraduate	\$10.50 per credit to a maximum of \$115 per semester
(Maximum general fee for two combined summer sessions is \$115)	
Graduate and Professional (Law)	
1 - 10 credits	\$3.50 per credit
11 credits and over	\$37.50 per semester

• Admission Application Fee†

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

• Special Fees

Late Registration Fee	
Charged to student who has not completed registration and paid fees before close of registration or by final date of payment	
	25
Music Fees**	
Private lessons in band instrument, organ, piano, violin and voice (in addition to normal instructional fees):	
One-hour lesson per week (undergraduate and graduate)	100
One 45-minute lesson per week (undergraduate or graduate)	75
One ½-hour lesson per week (undergraduate and graduate)	50
Thesis and Binding Fees	
Binding (per volume)	8
Microfilming (for Ph.D. degrees only)	40
Graduation Fees	
Each degree	15
In Absentia, per degree (add'l)	3

* 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.

† \$25 effective spring 1982.

Department of Special Programs and I.C.E.	
Course charge based on number of Continuing Education Units	
One C.E.U. (13.5 contact hours)	\$28.50

• **Miscellaneous Fees**

ACT Test	11
Education Administration Battery	6
Miller Analogies Test	10
Transcripts	
(if more than one copy is ordered at the same time, the fee is \$3 for the first transcript and \$1 for each additional one)	3
I.D., late or lost	5
Credit by Examination	
(undergraduate and postbaccalaureate) per credit	16
Student teaching fee	30
Locker fee (\$2 refundable fall-spring semesters)	6
Locker fee, physical education and Schrank Hall (\$2 refundable) per semester	5
Change of course registration	
(for each schedule change form processed)	6
Laboratory breakage and late service deposit (refundable)	15
"Insufficient Funds" or returned check charge	5
Co-op course fee	30
Day and Evening Care	
(per hour according to student's ability to pay) (Maximum billing at 35 hour rate)	1.10-1.35
Registration, per semester	7.50
Registration, per Summer Session	5
Registration, per combined Summer Sessions	7.50
Nursery School	
per term (for 3 mornings)	TBA
per term (for 4 afternoons)	TBA
Registration, per semester	5
Dance Institute	
per 1.5 class period	4.50
per 1.0 hour (preschoolers)	3
English Language Institute	
tuition fee	1,100
(Summer Sessions I and II)	780
Application Fee (effective spring semester 1982)	25
Kvam's Kinder Camp	
Enrolled Camper (total 5 week fee) (half-day session, 5 days per week)	75
Hower House	
Group Rental (nonmembers)	25
House Guided Tours, adults (students, half-price)	1

• **Parking Fees**

Student enrolled for 9 or more credits per semester	30
Student enrolled for 8½ or fewer credits per semester	15
Summer session student, per session	10
Workshop participant	up to 8
Department of Special Programs	
7 weeks	5 per course
15 weeks	10 per course
Off-Campus Instruction Student	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 \$990 per semester or \$1,980 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 \$450 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 payee.

Auditors

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

Student Health and Accident Insurance

Student health and accident insurance designed specifically for a student of The University of Akron is required of all residence hall students and all international students except those who present proof that they already have similar coverage. Other 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 Student 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, Authority and Definitions

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.

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 shall be classified as residents of the state of Ohio for subsidy and tuition surcharge:

- Dependent students, at least one of whose parents or legal guardian has been a resident 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- 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 temporary visa shall be eligible for Ohio 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.

resident. The committee 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 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

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 each individual student with a fair and adequate opportunity to present proof of 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 is 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 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

Regulations Regarding Refunds— Credit/Noncredit

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

Fees Subject to Refund—Credit

Certain fees are subject to refund:

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

Amount of Refund—Credit

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

- In full
 - if the University cancels the course;
 - if the University does not permit the student to enroll or continue;
 - if the student dies before or during the term or is drafted into military service by the United States; or if the student enlisted in the National Guard or Reserves prior to the beginning of the term called to active duty, presents notice of induction or or-

ders to Active Duty. A student who enlists voluntarily for active duty should see "in part" below.

- In part
 - less \$5 per enrolled credit to a maximum of \$50 if the student requests in writing to the dean or designate official withdrawal from all credit courses on or before the second day of the enrolled term.
 - if the student requests in writing to the dean or designate official withdrawal after the second day of the fall or spring semesters, the following refund percentages apply:

3 through 12 calendar days*	70%
13 through 24 calendar days*	50%
25 through 33 calendar days*	30%
Thereafter	0%

- if the student requests in writing to the dean or designate official withdrawal after the second day of any Summer Session the following refund percentages apply:

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



- Refunds for course sections which have not been scheduled consistent with either the standard 15-week fall/spring semester or the five-week summer term scheduling pattern will be handled on a pro rata basis according to the number of days the section (class, institute or workshop) has been attended compared to the number of days said section has been scheduled to meet.
- Refunds will be determined as of the date of formal withdrawal unless proof is submitted that circumstances beyond control of the student prevented the filing of the formal withdrawal earlier, in which case

the refund will be determined as of the last day of attendance. The student assumes responsibility for filing for a refund.

- Refunds will be mailed as soon as possible. Refund checks are subject to deduction for any amount owed to The University of Akron by the student.
- No refund will be granted to a student dismissed or suspended for disciplinary reasons.

Amount of Refund—Noncredit

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

- In part

Courses of 6 to 11 weeks:

After the first class meeting	60%
After the second class meeting	30%
After the third class meeting	0%

Courses of 12 weeks or more:

After the first class meeting	60%
After the second class meeting	45%
After the third class meeting	30%
After the fourth class meeting	0%

- No refund on courses of less than six weeks.

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

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

Residence Hall Refunds

Refund/Release and Forfeiture Policy

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

A full refund of any prepaid fees (including the advance \$100 rental payment**) and release of other financial liability therefore under the following circumstances: graduation of the student from the

*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.

** Advance rental payment NOT refundable to freshmen.

University; academic dismissal of the student from the University; non-attendance or complete withdrawal by the student from the University prior to the start of the contract term; in the event mandatory or recommended participation in academic programs of the University 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 (including 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 (including 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 disciplinary reasons in accordance with law or rules and regulations of the Board of Trustees; or, if the student is placed on terms of disciplinary probation in accordance with law or rules and regulations of the Board of Trustees, whereby such terms of probation prohibit the student from residing in University housing accommodations.

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

Refund Schedule

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

<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.

* Advance rental payment NOT refundable to freshmen.

Financial Aid

Financial aid programs were developed by the federal and state governments as well as by institutions of post-secondary education to assist a student from a family with limited resources to meet 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 Office of Student Financial Aids and Employment 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 aid, loans and work. It is not unusual for a student to have all three forms of aid. This is called a "financial aids 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 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 Office of Student Financial Aids and Employment.

Federal Programs

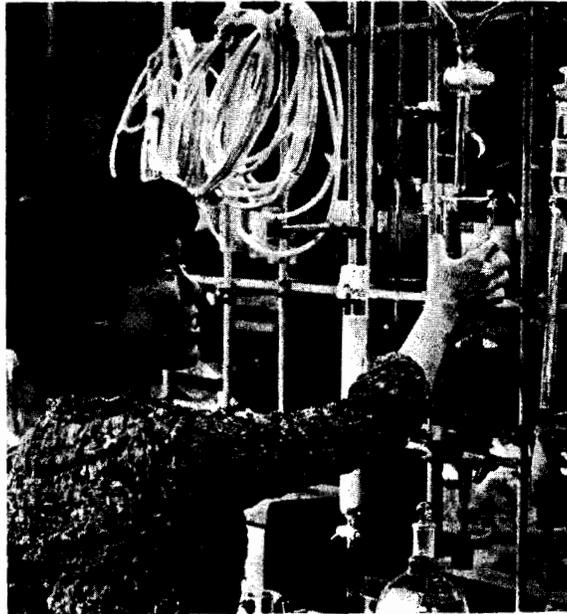
Pell Grant*

The Pell Grant 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 office will then calculate the amount of the grant that will be received. The grant amount is based on the costs of the school the student attends.

*Formerly Basic Educational Opportunity Grant (B.E.O.G.).

Supplemental Educational Opportunity Grant

The Supplemental Grant (S.E.O.G.) is a federal grant that is awarded by the school the student attends. 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 a 1.75 grade-point average to be eligible for the S.E.O.G. The following minimum grade-point averages must be maintained in order to be eligible for the S.E.O.G. as a continuing student: 1.75 at the end of the first year and 2.00 at the end of the second and third years.



College Work-Study Program

The College Work-Study Program (C.W.S.P.) is a jobs program that provides an eligible student with a job on the campus or in a non-profit off-campus agency. Eligibility for C.W.S.P. is determined on the basis of need. The 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 (N.D.S.L.) Program offers low interest, long-term loans to an eligible student. Eligibility and loan amounts are determined by the office on the basis of need. This loan must be repaid, beginning six months after ceasing to be at least a half-time student. Interest at four 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 a 1.75 grade-point average to be eligible for the N.D.S.L. The following minimum grade-point averages must be maintained in order to be eligible for the N.D.S.L. as a continuing student: 1.75 at the end of the first year and 2.00 at the end of the second and third years.

Guaranteed Student Loan/Federally Insured Student Loan

This program offers low-interest, long-term loans to an eligible student. 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 six months after ceasing to be at least a half-time student. The interest on the loan is nine 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 in Nursing. These are based on need, and the amounts are determined by the Office of Student Financial Aids. These programs are generally reserved for a student who has been accepted by the College of Nursing.

State Programs

Ohio Instructional Grant (O.I.G.)

The O.I.G. 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 offers scholarships to the student with high academic achievement. Academic scholarships are awarded to the continuing student as well as the outstanding high school student who plans to enroll. These academic scholarships are renewable each year based on continued high academic performance. A University scholarship/financial aids application must be submitted,

but a need analysis form is not required. The majority of awards for the 1981/82 academic year ranged from \$200 to \$400.

The **Presidential Scholarship Program** was initiated for the 1975/76 academic year. At the present time, approximately 20 scholarships are awarded each year to new freshmen. For the 1981/82 school year, the scholarship amount was \$900. This scholarship is considered to be most prestigious.

The **Honors Program** at the University awards a number of scholarships each year to new freshmen. In 1981/82, the scholarships ranged from \$500-\$800. This combination scholarship/academic program is also considered to be a most prestigious program.

Loans

The University offers short-term loans to the student who needs temporary help in paying 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 Student Loan Office (Spicer 105).

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

Application for Financial Aid

- To apply for the Pell Grant, National Direct Student Loan, Nursing Student Loan and the College Work-Study Program, the student must complete and submit the Financial Aids Form (F.A.F.) to the College Scholarship Service. In addition, the student must complete a financial aid/scholarship application.
- To apply for the Ohio Instructional Grant, a student must complete and submit the Ohio Instructional Grant application to the Board of Regents.
- 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 Aids Form is used to determine eligibility for: Pell Grant, National Direct Student Loan, Nursing Student Loan, Supplemental Educational Opportunity Grant, Nursing Scholarship Grant and College Work-Study Program.

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 Office of Student Financial Aids attempts to cover through various financial aid programs to assist a student in meeting 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 parent(s) or adoptive parent(s) for the school year in which aid is received as well as the prior calendar year.
- Has not or will not live with one or both 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 support of more than \$1000 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 requires that the independent student (and spouse) complete the student's section of the *Financial Aids Form (F.A.F.)*. In addition to completing the F.A.F., if the independent student is 25 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 25 years, the student may complete this form. *Non-Support Statements* may be obtained through the Office of Student Financial Aids. This form must be completed each year for which aid is desired.

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 Office of Student Financial Aids 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 Office of Student Financial Aids 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 office after mid-November. 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 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 semester. The expense check is picked up in the 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 alter, contact the Office of Financial Aids 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 must have the previous college complete a financial aid transcript and send it to the Office of Student Financial Aids and Employment.

If a student is transferring to the University during the academic year and has received a Pell Grant and/or O.I.G. the previous session, the student must:

- Have a duplicate Student Eligibility Report for the Pell Grant mailed to the office. This Student Eligibility Report must be received before any funds can be disbursed to the student. Instructions for receiving a duplicate Student Eligibility Report can be obtained from the office.
- Have the former Financial Aid Office provide a transfer of remaining funds request to have the remaining O.I.G. transferred to The University of Akron.

National Direct Student Loans, College Work-Study Programs, Supplemental Educational Opportunity Grants and scholarships do not automatically transfer. The student must reapply for these programs at The University of Akron.

Graduate Students, Law Students and Postbaccalaureate Students

A student who has already received a bachelor's degree is eligible for National Direct Student Loans and/or College Work-Study Programs. The Pell Grant, Ohio Instructional Grant and Supplemental Educational Opportunity Grant may not be received.

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

Transient Students

A transient student is not pursuing a degree at The University of Akron, and is not eligible for financial aid through the University.

International Students

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

Veterans

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

Student Rights and Responsibilities

A financial aid recipient has various rights and responsibilities. He has the right to expect confidentiality regarding his financial aid as well as a response in a reasonable amount of time after submitting applications. Outside scholarships received must be reported.

A National Direct Student Loan and Nursing Student Loan recipient has the responsibility of informing the Office of Student Financial Aids 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 progress toward a degree. To make 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 less than full-time status, the student must maintain at least half-time status to meet the "standards of progress."

Inquiries

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

Office of Student Financial Aids and Employment
Spicer Hall 115
The University of Akron
Akron, OH 44325
Phone: (216) 375-7032

Community and Technical College

Robert C. Weyrick, M.S., *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- 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 a graduate will find employment in manufacturing, technical sales and service, application engineering, inspection and testing and the more standardized aspects of engineering design.

The requirements for the Bachelor of Science in 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 2860: electronic 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:—	Eastern Civilizations	2
1100:—	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
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

Prior to enrolling in the program and to taking 2860:350 *Advanced Circuits*, a student must have completed at least 45 credits of a two-year Electronic Technology Associate degree program; maintained a grade-point ratio of 2.00 or higher in major courses (*Mathematical Analysis* or equivalent, *Basic Physics* or equivalent), and technical courses in the 2860 or 2900 series or equivalent); and maintained a minimum overall grade-point ratio of 2.00.

Bachelor of Mechanical Technology

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

Third- and fourth-year requirements:		Credits
1100:112	English Composition	4
1100:320	Western Cultural Traditions	4
1100:321	Western Cultural Traditions	4
1100:—	Eastern Civilizations	2
1100:—	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 the program, a student must have completed at least 45 credits of the two-year program with a grade-point ratio of 2.00 or higher in *Mathematics Analysis*, *Basic Physics* and technical courses (2920 and 2980 series) in the two-year program; and a minimum overall grade-point ratio of 2.00.

Associate Degrees

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

- 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 2.00 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 other University requirements as in "Requirements for Graduation," **Section 3** in this *Bulletin*.

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

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:—	Science Requirement*	6
1100:—	Eastern Civilizations	2
1100:—	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

2100: Associate of Individualized Study Program

The Associate of Individualized Study (A.I.S.) degree at the Community and Technical College of the University 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 A.I.S. degree only if personal

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

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

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 A.I.S. program.

7400:265	Child Development	Credits	3
7400:275	Play and Creative Expression		4
7400:290	Administration of Child Care Centers		3
7400:485	Seminar: Parent-Child Relations		2

2200: Educational Technology

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

Core Program

1100:—	Physical Education	Credits	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 Electives	3
		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 Electives	3
		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

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

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	4
2210:104	Sign Language Gesture and Mime	3
2210:110	Specialized Interpreting I	3
2210:140	Practicum I	4
2210:200	Reverse Interpreting	3
2210:230	Specialized Interpreting II	3
2210:241	Practicum II	2
2210:242	Practicum III	2
2420:170	Business Mathematics	3
7700:100	Ameslan I	4
7700:120	Introduction to Audiology/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
7700:271	Language of Signs I	3
	General Electives	2
	Technical Electives	2
	Total	71

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.

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

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

		Credits
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

A student with a particular interest in corrections may vary the 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). A student electing this pattern of courses will need three more elective credits since the total program will still require a total of 64 credits.

		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	Introduction to Drawing	3
7100:231	Drawing II	3
7100:232	Instrument Drawing	3
7100:233	Life Drawing	2
7100:275	Introduction to Photography	3
	Art Electives	10
	General Electives	7
	Total	64

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.

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
7750:276	Introduction to Social Welfare	4
	Electives	12
	Total	64

Optional 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)

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

Technical Electives (suggested)

		<i>Credits</i>
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

2540:263	Business Communications	3
7400:133	Nutrition Fundamentals Electives	3
	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

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
1100:105	Introduction to Public Speaking or Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2280:121	Fundamentals of Food Preparation	4
2280:135	Food Purchasing	3
2280:233	Quantity Food Service	4
2280:236	Menu Planning and Cost Control	3
2280:237	Food Service Internship	2
2280:240	Food Service Management	3
2280:243	Food Equipment and Plant Operation	3
2420:170	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

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
1100:105	Introduction to Public Speaking or Effective Oral Communication	3
2020:121	English	4
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:101	Elements of Distribution	3
2420:103	Role of Supervision in Management	3
2420:104	Introduction to Business	3
2420:170	Business Mathematics	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:212	Basic Accounting II	3
2420:221	Administrative Office Supervision	2
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	4
	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	Introduction to Psychology	3
2020:247	Survey of Basic Economics	3
2420:101	Elements of Distribution	3
2420:103	Role of Supervision in Management	3
2420:104	Introduction to Business	3
2420:113	Introduction to Banking	2
2420:123	Federal Regulation of Banking	2
2420:170	Business Mathematics	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:212	Basic Accounting II	3
2420:233	Installment Credit	2
2420:243	Survey in Finance	3
2420:253	Elements of Bank Management	2
2420:273	Monetary Systems and the Payments Mechanism	3
2420:280	Essentials of Law	3
2430:105	Real Estate Principles	2
2430:245	Real Estate Finance	2

		Credits
2440:120	Introduction to Information Processing	2
2540:119	Business English	3
2540:263	Business Communications	3
	Total	64

		Credits
2440:120	Introduction to Information Processing	2
2440:131	Introduction to Programming	2
2440:132	Assembler Programming and JCL	4
2440:133	Cobol Programming	2
2440:234	Advanced Cobol Programming	3
2440:235	Current Programming Topics	2
2440:239	RPG II Programming	1
2440:241	Data Processing Systems	3
2440:251	Data Processing Projects	5
2540:119	Business English	3
	or	
2020:222	Technical Report Writing	3
	General Elective	4
	Total	64

2430: Real Estate

The purpose of this program is to prepare the graduate 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	3
	Electives	6
	Total	64

Certificate Program in Real Estate

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

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

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. Substitute courses must be selected in the associate 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
2420:211	Basic Accounting	3
2420:280	Essentials of Law	3
2520:103	Principles of Advertising	3
2520:106	Visual Promotion	4
2520:202	Retailing Fundamentals	4
2520:210	Consumer Service Fundamentals	2
2520:211	Mathematics of Retail Distribution	3
2520:212	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

7400:121	Textiles	3
7400:317	History of Costumes	3

		<i>Credits</i>
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 and includes courses that prepare the graduate for work as an executive or legal secretary or as a medical assistant. The international option provides 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

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

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

		<i>Credits</i>
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
2420:280	Essentials of Law	3
2540:119	Business English	3
2540:263	Business Communications	3
2560:110	Transportation Economic Policy	3
2560:115	Transportation Commercial Motor	3
2560:116	Transportation Commercial Air	2
2560:117	Transportation Commercial Water	2
2560:118	Transportation Freight Rates	3
2560:220	Transportation Terminal Management and Safety	2
2560:221	Transportation Traffic Principles and Practices	3
2560:225	Transportation Interstate Regulations I	3
2560:226	Transportation Interstate Regulations II Elective	2
	Total	64

		<i>Credits</i>
2540:263	Business Communications	3
2740:120	Medical Terminology	3
2740:130	Medical Assisting Techniques I	3
2740:230	Pharmacology in Medical Assisting	3
2740:231	Medical Assisting Techniques II	2
2740:232	Medical Assisting Techniques III	2
2740:240	Medical Machine Transcription	2
2740:241	Medical Records	3
2740:250	Medical Assisting Specialties	3
2840:100	Basic Chemistry	3
3100:206	Anatomy and Physiology	3
5550:211	First Aid	2
	General Electives	3
	Total	64

2760: Radiologic Technology

The University 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 the student are:

1100:—	Physical Education	1
1100:105	Introduction to Public Speaking or	
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	
3100:206	Anatomy and Physiology	3
2760:107	Anatomy for Radiologic Technology II or	
3100:207	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	Introduction to 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:

- 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.

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

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.

		Credits
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
2020:242	American Urban Society	3
2740:120	Medical Terminology	3
2740:230	Pharmacology in Medical Assisting	3
2770:100	Introduction to Surgical Assisting Technology	4
2770:121	Surgical Assisting Procedures I	2
2770:131	Clinical Application I	1
2770:222	Surgical Assisting Procedures II	4
2770:232	Clinical Application II	3
2770:233	Clinical Application III	3
2770:241	Surgical Anatomy	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	6
	Total	64

Surgeon's Assistant Option:

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
2020:242	American Urban Society	3
2740:120	Medical Terminology	3
2740:230	Pharmacology in Medical Assisting	3
2770:100	Introduction to Surgical Assisting Technology	4
2770:121	Surgical Assisting Procedures	2
2770:131	Clinical Application I	1
2770:222	Surgical Assisting Procedures II	4
2770:232	Clinical Application II	3
2770:234	Clinical Application IV	2
2770:235	Clinical Application V	3
2770:236	Clinical Application VI	3
2770:241	Surgical Anatomy	3
2770:242	Surgical Laboratory Procedures	2
2770:243	Introduction to Medicine	2
2770:244	Medical History and Physical Evaluation	2
2770:245	Roentgenogram Assessment	1
2770:246	Medical Laboratory Procedures	1
2770:247	Pulmonary Assessment and Electrocardiography	2
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	2
	Total	72

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.

		Credits
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

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

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

*Deadline for application to the program is March 15.

Options

Industrial

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

Rubber and Plastics

2020:132	Mathematical Analysis II	3	
	Technical Electives	10	
	(3940:401 <i>Introduction to Elastomers</i> and 3940:402 <i>Introduction to Plastics</i> 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 <i>Applied Aquatic Ecology</i> recommended)		
	Total		13

Forensic

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

2860:260	Electronics Project	Credits	
2900:231	Control Principles	2	
	General Electives	3	
		4	
	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	Technology of Machine Tools	3
	Electives	13
	Total	64

Industrial Supervision Option

1100:—	Physical Education	1
1100:106	Effective Oral Communication	3
2020:121	English	4
2020:131	Mathematical Analysis I	4
2020:222	Technical Report Writing	3
2020:240	Human Relations	3
2020:247	Survey of Basic Economics	3
2420:103	Role of Supervision in Management	3
2420:202	Personnel Practices	3
2420:211	Basic Accounting I	3
2420:212	Basic Accounting II	3
2420:280	Essentials of Law	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
2880:232	Labor Management Relations	3
2880:235	Work Measurement Procedures II	2
2880:241	Quality Control Procedures	3
2920:247	Technology of Machine Tools	3
	General Elective	2
	Technical Elective	2
	Total	64

2900: Instrumentation Technology*

This career area offers training with instruments and control devices used in automatic manufacturing and

* This program will not be offered beginning the 1982 school year.

2860: Electronic Technology

(A.B.E.T. 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.

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

processing, power generation, space exploration and communications. 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
2860:227	Measurements	2
2860:237	Digital Circuits I	4
2860:242	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	2
	Technical Electives	2
	Total	68

2920: Mechanical Technology

(A.B.E.T. 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
2920:247	Technology of Machine Tools	3
2920:249	Applied Thermal Energy	2
2920:251	Fluid Power	2
2920:252	Thermo-Fluids Laboratory	1
2980:125	Statics	3
2980:241	Strength of Materials	3
	Technical Elective	2
	Total	68

2940: Drafting Technology

		<i>Credits</i>
1100:—	Physical Education	1
1100:106	Effective Oral Communication	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	Technology of Machine Tools	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 Drafting	2
3350:340	Cartography	3

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

(A.B.E.T. accredited engineering technology curriculum)

This program trains students 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:—	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
2980:231	Building Construction	2
2980:232	Construction	3
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

*Faculty may select substitute course for student.

Surveying

		<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
2840:—	Basic Physics (elective)	2
2840:151	Basic Physics: Mechanics	3
2920:121	Technical Drawing I	3
2980:122	Basic Surveying	3
2980:123	Surveying Field Practice*	2
2980:125	Statics	3
2980:222	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

Diploma Nursing Program

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

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

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

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

The following courses are offered:

		<i>Credits</i>
3100:130	Microbiology	3
3100:206	Anatomy and Physiology	3
3100:207	Anatomy and Physiology	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

*Faculty may select substitute course for student.

Wayne General and Technical College

Tyrone M. Turning, Ed.D., *Dean*
Robert M. McElwee, *Assistant 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 selected technical programs. The college has the following purposes:

- To provide the first and second years of instruction integral to a variety of pre-professional and professional programs in the arts and sciences, education, business administration, fine and applied arts and nursing.
- To provide collegiate technical education programs enabling the student to develop skills which will lead to employment and advancement in specific fields.
- To provide programs of community service, adult education and cultural enrichment designed in cooperation 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 the main campus of The University of Akron or at Wayne College in Orrville (375-7356).

Programs of Instruction

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

The college transfer program is a replication of the first two years of most college programs. It is designed for the student who chooses to take the first-two years of college study near home.

The two-year technical program is designed to provide an individual with the skills and specialized knowledge to meet the needs of employers in Wayne, Holmes and Medina counties.

These programs lead to the following degrees: Associate of Arts or the Associate in Applied Science in business management technology, retail management technology, secretarial science or social services technology. Additional information regarding Wayne College may be secured from the Wayne General and Technical College bulletin, *Wayne College, 1981-83*.

The student enrolled at Wayne College may also take courses at the main campus of The University of Akron while attending Wayne. A student enrolled on the main campus 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.

University College

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

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

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

David C. Riede, Ph.D., *Head, Department of General Studies*

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

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 2.00 ("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.

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.

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
1100:120-81	Physical Education	1
1100:320,1	Western Cultural Traditions	8
1100:330-5	Eastern Civilizations**	4
	Mathematics	3
	Natural Science†	6
	Total	39

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.

*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*, four 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 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 R.O.T.C.

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

Both the four- and two-year 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 R.O.T.C., known as the general military course (G.M.C.), are the same as for any other university courses. The G.M.C. 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 G.M.C. may be given for completion of two or more years of high school junior R.O.T.C., participation in Civil Air Patrol, military school training or prior service in any branch of the United States Armed Forces.

Upon completion of the G.M.C. requirements, the cadet who wishes to compete for the last two years of the program, the Professional Officer Course (P.O.C.), 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 P.O.C. is competitive in nature. A two-year program applicant must meet the qualifications described below. A student in the P.O.C. 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 P.O.C. 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 P.O.C., all four-year program A.F.R.O.T.C. 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 (G.M.C.). Uniforms, lodging and meals are provided without charge, and travel pay is authorized to and from the individual's home or school. The cadet and applicant receive pay at approximately half the rate of a second lieutenant.

Flight Training

As a pilot-qualified student enrolled in the Air Force R.O.T.C. Flight Instruction Program (F.I.P.) the student can get an important start on an Air Force flying career.

When enrolled in F.I.P., the student will receive up to 25 hours of flight instruction at an F.A.A. 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 R.O.T.C. 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:
 - A.F.R.O.T.C. 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 R.O.T.C., 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 (A.F.O.-Q.T.).
- 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 P.O.C. 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 R.O.T.C. college scholarships are available to a qualified applicant in both the two- and four-year A.F.R.O.T.C. programs covering periods of four, three and two years. Each scholarship provides full tuition, laboratory and incidental fees and full reimbursement for curriculum-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:

- C.E.E.B., 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.

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

Financial Allowances

A cadet enrolled in the P.O.C. will receive a non-taxable subsistence allowance of \$100 per month.

Uniforms and Textbooks

All A.F.R.O.T.C. 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 (R.O.T.C.) was established in 1919, making it one of the oldest in the country. The main goal of the Army program is to provide both the active Army and Army Reserve and National Guard with commissioned male and female officers whose civilian education and attitudes contribute to the development of a military defense structure which reflects as well as defends our society. The graduate perpetuates and strengthens the tradition of our nation's citizen soldier concept.

A student enrolled in Army R.O.T.C. has an unusual opportunity to study and participate in leadership and management experiences which are unique to the college curriculum. Leadership, self discipline, responsibility and physical stamina are stressed as the student learns to plan, organize, motivate and lead others. Program goals are to develop decision-making capabilities through detailed examination of leadership factors; expand oral and written communication arts; provide some technical training in basic military skills; and develop an understanding of the relationship between the student's basic degree field and its application in one of 47 management fields in the United States Army.

Programs

Four-Year Program

A full-time student enrolled in The University of Akron or Wayne General and Technical College may enroll in the Army four-year program. Freshmen and sophomores enroll in the basic military course *Military Science I and II (MS I, MS II)* of the four-year program for 1.5 credits per semester. *MS I and II* are held two hours each week and include studies in: national security affairs, marksmanship, leadership fundamentals, backpacking, rappelling, cross-country skiing, small unit operations and Army organization. Enrollment in *MS I* or *MS II* constitutes no obligation to military service or continuance into the advanced course; there is no requirement to wear a uniform, and the credits received can be applied toward elective requirements. A student who completes the basic course, (*MS I* and *MS II*) is qualified and may apply for enrollment in the advanced course which is described below.

Two-Year Program

A student can enter the advanced course by completing *MS I* and *MS II*, by attending a basic military skills summer camp at Ft. Knox, KY or by having prior military service or training. Course studies are held four hours per week for three semester credits. The material includes: advanced leadership, application of tactics, methods of instruction, resource management, military history and the responsibilities of an officer. The advanced course includes a six-week paid summer camp attended usually between the junior and senior year. A student in the advanced course is paid \$100 per month or approximately \$1000 per school year. Upon graduation, the student will serve either with the Reserves, National Guard or on active duty.

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 (at least one per year).
- Adventure training: marksmanship, rappelling, backpacking, cross-country skiing and survival training.
- Social organizations.
- Fraternal organizations.

Requirements for Admission

Qualifications for Enrollment

- United States citizenship (an alien student may be enrolled under special circumstances).
- Full-time student (an advanced course student 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 30 years of age by the time of commissioning (may be waived);
 - a scholarship student 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

- Completion of a baccalaureate or advanced degree.
- Completion of the advanced R.O.T.C. course (*MS III* and *IV*).
- Completion of advanced summer camp.
- Agree to fulfill a service obligation as follows:

R.O.T.C.	<i>Active Duty Service</i>
Advanced Course	4 years
	3 years active or 6 years
	Reserve/National Guard
Basic Course	no obligation

Scholarships

The Army R.O.T.C. has four-year scholarships available to high school seniors. Additionally, there are three, two and one year scholarships available on a competitive basis to men and women enrolled in the R.O.T.C. program. Additionally, some scholarships are available to a student interested in enrolling in R.O.T.C. These scholarships provide tuition, fees, text materials and a \$100 per month allowance to the student for the period of the scholarship. All scholarship students must agree to spend four years on active duty.

Uniform and Textbooks

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

Financial Allowances

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

Simultaneous Membership Program (S.M.P.)

A member of the Reserves or National Guard, who is enrolled full time in the University, may enroll in advanced R.O.T.C. if he applies for S.M.P. membership through his unit, is accepted by the Professor of Military Science, and meets all other admission requirements for the advanced course (*MS III* and *MS IV*). Commissioning may occur upon completion of the advanced R.O.T.C. course, and the member will serve as an officer in the Reserves or National Guard. An S.M.P. member receives \$100 tax free per month while in R.O.T.C., is promoted to an E-5 officer trainee in the reserve/guard unit and gets paid as such.

Special Reserve and National Guard Programs

Reserve and National Guard Early Commissioning Program

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

Aviation

A qualified student pursuing a degree in aviation-related areas or other technical fields which can be related to aviation may apply for the Guaranteed Aviation Specialty Program. Upon graduation and commissioning the student will attend flight school and serve on active duty as an Army aviator. To be accepted, a student must pass a flight physical and the Flight Aptitude Selection Test.

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, which exist that learning may be procured, preserved and enlarged. More particularly, the college seeks to foster:

- The commitment to humanity — that loyal devotion to the heritage contained in those disciplines growing out of the ancient, liberal arts which teach man both his limitations and 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 the level of accomplishment.

Buchtel College is one of eight degree-granting colleges at the University. 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 College of Liberal Arts which was subsequently renamed the Buchtel College of Arts and Sciences. Then, and

now, the liberal arts goal has been to offer broad training to the college student so that the student can prosper in life and sustain a creative appreciation of the arts and sciences.

The college is composed of the following three administrative divisions.

Humanities Division

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

Natural Sciences Division

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

Social Sciences Division

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

College Requirements

Requirements for Admission

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

Degrees Awarded

Humanities Division: Bachelor of Arts

Natural Sciences Division: Bachelor of Arts, Bachelor of Science, Bachelor of Science in 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 college 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.

Requirements for the bachelor's degree include:

- Completion of the General Studies program.
- A minimum of 47 credits consisting of either:
 - 300/400-level courses both in and outside the student's major;
 - any courses outside major department as specified in and approved by the student's major adviser and the department or division head (permission should be obtained prior to enrollment).
- 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 2.00 in all work in the major field.
- Fulfilling the University requirements for a baccalaureate degree set forth in **Section 3** of this *Bulletin*.

Any student who wishes to receive a second baccalaureate degree must complete 32 credits of coursework in addition to the 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 major chosen. The longer and more professionally-oriented majors should be started during the first year when the student is still under the guidance of the Office of Academic Advising Services.

Ordinarily a student will select a department in which to major. The exact requirements for each 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 trans-

ferred to the college, the head of the student's major department becomes the academic adviser.

A student who desires a broader education than the departmental major offers may elect a divisional major and qualify in the general area of the humanities 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

A student 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 can be determined by referring to "Teaching Fields," College of Education, **Section 4** of this *Bulletin*.

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

		<i>Credits</i>
5100:150	Introduction to Professional Education	3
5100:250	Human Development and Learning	3
5100:350	Educational Measurement and Evaluation	2
5100:450	Problems in Education	2
5300:265	Introduction to Secondary Education	1
5300:275	Exploratory Experience	1
5300:310	Principles of Teaching in the Secondary School	3
5300:325	Content Reading in Secondary School	3
5300:345	Human Relations in Secondary Education	1
5300:355	Managing Classroom Behavior at the Secondary Level	1
5300:375	Exploratory Experience	1
5300:411	Instructional Techniques Secondary Education	4
5300:445	Minicomputer Applications in Secondary Classroom	1
	or	
5300:455	Career Options in Secondary Education	1
5300:403	Student Teaching Seminar	1
5300:495	Student Teaching	8

Programs of Instruction

3100: Biology

Bachelor of Science

Bachelor of Science in Cytotechnology

Bachelor of Science in Medical Technology

- The General Studies and the second year of a foreign language.*
- Core requirements:

		Credits
3100:111,2	Principles of Biology	8
3100:211	General Genetics	3
3100:218	Ecology-Evolution	4
3100:311	Cell Biology**	3
3100:384	Techniques and Instrumentation Laboratory†	1
3150:132,3	Principles of Chemistry††	7
3150:134	Qualitative Analysis††	2
3150:201,2	Organic Chemistry and Biochemistry I and II	8
3150:263,4,5,6	Organic Chemistry	10
3450:147,8	Elementary Functions I and II	4
3450:111,2,3	Modern University Mathematics	3
3450:121,2,3	Mathematics	3
3470:251,2,3	Statistics	3

- 300/400-level courses: the student is required to complete one course in anatomy/physiology and two courses in organismal biology which has been approved by the department.
- A student majoring in biology or medical technology should consult a member of the biology faculty during the first year.

Areas of Specialization

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

Botany

3100:440	Mycology	4
	or	
3100:443	Phycology	4
3100:445	Plant Morphology	4
3100:447	Plant Physiology	3
3100:449	Plant Biosystematics	2
Electives:		
3100:341,2	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

*Second year of foreign language and *Eastern Civilizations* not required for Bachelor of Science in Medical Technology.

**Not required in B.S. in Medical Technology degree.

†Not required in B.S. degree.

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

3350:495	Soil and Water Field Studies	3
3370:101	Introductory Physical Geology	4
3450:221,2	Analytic Geometry-Calculus I and II	8
3470:251-6	Statistics	6
4450:206	Fortran Programming and/either	

3100:331	Microbiology	4
3100:426	Applied Aquatic Ecology	3
3100:440	Mycology	4
	or	
3100:443	Phycology	4
3150:423,4	Analytical Chemistry or one course from each group below	6
3100:351	Invertebrate Zoology and	4
3100:353	General Entomology	4
3100:358	Ornithology	3
	and	
3100:458	Vertebrate Zoology	4
3100:341	Flora and Taxonomy I and	3
	and	
3100:342	Flora and Taxonomy II	3

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

Microbiology

3100:331,2	Microbiology	8
3100:431	Bacterial Physiology	3
	or	
3100:435	Virology	4
3100:437	Immunology	4
Electives:		
3100:355	Parasitology	4
3100:433	Pathogenic Bacteriology	4
3100:440	Mycology	4
	or	
3100:443	Phycology	4
3100:461,2	Human Physiology	8
3150:401,2	Biochemistry	6

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

Physiology and Pre-Professional

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

3100:461,2	Human Physiology	8
3100:466,7	Developmental Anatomy	8
3650:261,2	Physics for Life Sciences I and II	8
Electives:		
3100:365	Histology I	3
3100:480	Radiation Biology	3
3450:221,2,3	Analytical Geometry-Calculus I, II and III	12
3650:267,8	Life Sciences Physics Computations I and II	2
3150:423,4	Analytical Chemistry	6
3150:425,6	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
3100:464	General and Comparative Physiology	4
3100:466,7	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
3100:440	Mycology	4
	or	
3100:443	Phycology	4
3100:445	Plant Morphology	4

		Credits
Electives:		
3100:353	General Entomology	4
3100:355	Parasitology	4
3100:358	Ornithology	3
3100:365,6	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	Laboratory 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
3100:440	Mycology	4
	or	
3100:443	Phycology	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.

3100:206,7	Anatomy and Physiology	6
3100:331,2	Microbiology	8
3100:355	Parasitology	4
3100:383	Laboratory Techniques and Instrumentation	2
3100:437	Immunology	4
3150:335,6	Analytical Chemistry for Laboratory Technicians	8

The first three years of instruction are given in the University. The senior year consists of a minimum of 32 credits of coursework in the 3120 series. These courses will be available only to the student selected for the clinical experience portion of the B.S.M.T. program in a C.A.H.E.A. 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 Medical Center 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. A student may train at other approved schools after obtaining special permission from the head of the Department of Biology.

The University grants the B.S. in Medical Technology after receipt of evidence of satisfactory completion of the hospital instructional program. See advisers listed below for detailed 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, a student intending to major in biology should consult a member of the biology faculty.

Bachelor of Science in Cytotechnology

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 the student selected for the clinical experience portion of the B.S.C.T. program in a C.A.H.E.A. 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:

		Credits
3100:111,2	Principles of Biology	8
3100:206,7	Anatomy and Physiology	6
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
3100:365,6	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
3150:134	Qualitative Analysis	2
3150:201,2	Organic Chemistry and Biochemistry	8
3450:111,2,3	Modern University Mathematics	3
3450:121,2,3	Modern University Mathematics	3
3450:251,2,3	Statistics Modules	3

Bachelor of Arts

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

- At least 17 credits in the humanities or social sciences, including at least two of the following:

3400:477	Western Science 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:

3100:111,2	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 (3150:129,30 *General Chemistry* is suggested).

Adviser: D. Jackson

3150: Chemistry

Bachelor of Science (A.C.S. certified)

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

• At least 45 departmental credits including:

		<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
3150:313	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
3150:472	Advanced Inorganic Chemistry	3

• At least two advanced courses:

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
3150:463	Advanced Organic Chemistry	3
3150:499	Research Problems	2
3650:481	Methods of Mathematical Physics I	3
3940:407	Polymer Science	4

• Mathematics:

3450:235	Differential Equations	3
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• Physics:

3650:291,2	Elementary Classical Physics I and II	8
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• Recommended:

4450:206	Fortran (Science and Engineering)	2
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Bachelor of Arts

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

• Chemistry:

3150:132	Principles of Chemistry I	4
3150:133	Principles of Chemistry II	3
3150:134	Qualitative Analysis	2
3150:263	Organic Chemistry Lecture I	3
3150:264	Organic Chemistry Lecture II	3
3150:265	Organic Chemistry Laboratory I	2
3150:266	Organic Chemistry Laboratory II	2
3150:304	Elementary Physical Chemistry II	3
3150:313	Physical Chemistry Lecture I	3
3150:314	Physical Chemistry Lecture II	3
	or	
3150:303	Elementary Physical Chemistry I	3
3150:423	Analytical Chemistry Lecture I	3
3150:424	Analytical Chemistry Lecture II	3
3150:425	Analytical Chemistry Laboratory	2

• 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	8
	or	
3650:261,2	Physics for the Life Sciences I and II	8
	or	
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 (Science and Engineering)	2

Cooperative Education Program — Chemistry Qualifications

Arrangements for student entry into the program are on an individual basis, and are initiated by the student during the second year of undergraduate study. The cooperative education program is an optional program available to all full-time B.S. chemistry majors at the University who have met the following requirements:

- satisfactory completion of 60 credits with a grade-point average of at least 2.00 ("C") in the major requirements;
- be on schedule in the student's curriculum;
- received acceptance by a cooperative education coordinator or director following a series of interviews.

A transfer student may also be considered for the cooperative education program if his background is equivalent to the minimum requirements for a University of Akron student. At least one semester of full-time study at The University of Akron is required before a transfer student can be eligible for the Cooperative Education Program.

A part-time student, having completed 60 credits with a "C" average and on schedule in the curriculum, is also eligible for the program. However, once having entered, the student is expected to be a full-time student while not on his co-op job.

It should be noted that placement in an industrial or other position is not guaranteed, and that the foreign student should recognize that many companies require United States citizenship or possession of a permanent visa. In any case, final acceptance for any position is, of course, the decision of the employer.

Mechanics of Operation

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

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

Admission to the Program

A *Personal Data* form must be filled out and submitted 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 Education 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. A student will be expected to remain with the employer for all co-op 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 course. The courses are:

3150:300	Cooperative Education Work Period
3150:301	Cooperative Education Work Period
3150:302	Cooperative Education Work Period
3150:403	Cooperative Education Work Period

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

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

- Work performance as evaluated by the employer.
- A written work report and its approval by the department head and the cooperative education staff.
- *Cooperative Work Period Summary* form.

3200: Classics

3200: Classics; 3210: Greek; 3220: Latin

Bachelor of Arts

- The General Studies.
- At least 24 departmental credits including:

		Credits
3200:313	Archaeology of Greece	3
3200:314	Archaeology of Rome	3
3200:361	Literature of Greece	3
3200:362	Literature of Rome	3
	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.

- The student wishing to be certified for public school teaching with Latin as the principal teaching field must complete 26 credits in that language. In addition, he must complete the required credits in a second academic teaching field. See "Teaching Fields," 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 departmental credits including:

		Credits
3250:201,2	Principles of Economics	6
3250:400	Macroeconomic Theory	3
3250:410	Microeconomic Theory	3
	Economics Electives	18

- Mathematics:

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

6500:321,2	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 departmental credits including:

3250:201,2	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):

6500:321,2	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 35 credits in the department including the following course and distribution requirements:

Required courses:		Credits
3300:301	English Literature I	4
3300:302	English Literature II	4
3300:316	Shakespeare: The Mature Plays	3
3300:341	American Literature I	3
3300:342	American Literature II	3

Distribution requirements:*

One linguistics or English language course.
A minimum of four 400-level courses, including: one author of literary circle course; one genre course.

Recommended:

3300:280	Poetry Appreciation (An advanced course in composition)	3
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- Electives — 40 credits.

Certificate Program in Linguistic Studies

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

3350: Geography

Bachelor of Arts

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

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	Geographic Research Methods	3
3350:483	Spatial Analysis	3
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.

*3300:301, 302, 316, 341 and 342 may not be used to meet this requirement. See departmental Course Bulletin for specific offerings in these distribution areas.

3370: Geology

Bachelor of Science

Geology

- The General Studies and the second year of a foreign language.
- At least 47 departmental credits including:

		Credits
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
3370:233	Petrology	2
3370:324	Sedimentation and Stratigraphy	3
3370:350	Structural Geology	4
3370:360	Introductory Invertebrate Paleontology	4
3370:395	Field Methods in Geology	2
3370:432	Optical Mineralogy	3
3370:496	Geology Field Camp	6
	400-level courses	6

- Non-geology courses required for majors:

3150:132,3	Principles of Chemistry I and II	7
3450:221,2	Analytic Geometry-Calculus I and II	8
3650:231,2	Concepts of Physics I and II or equivalent	8

- Electives:

Additional work in a supporting science, mathematics or engineering is strongly recommended. During the first year, a student intending to major in geology should consult a member of the geology faculty.

Geophysics

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

- At least 30 departmental credits including:

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:

3150:132,3	Principles of Chemistry I and II	7
3450:221,2,3	Analytic Geometry-Calculus I, II and III	12
3450:235	Differential Equations	3
3650:291,2	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 departmental credits including:

3370:101	Introductory Physical Geology	4
3370:102	Introductory Historical Geology	4
3370:230	Mineralogy: Minerals	3
3370:233	Petrology	2
3370:350	Structural Geology	4
3370:360	Introductory Invertebrate Paleontology	4
3370:496	Geology Field Camp	6
	Elective geology courses (minimum eight credits at the 300/400-level)	17

- Non-geology courses required for majors:

		Credits
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

Applied Mathematics

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

- At least 40 departmental credits 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
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.

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 departmental credits including:

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: 3400:201,2 *United States Survey* (eight credits); 3400:207,8 *Modern Europe* (eight credits).

3450: Mathematics

Bachelor of Science

Bachelor of Arts

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

- At least 40 departmental credits including: **

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 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 General Studies. The 18 credits are to be from more than one department.

- Electives — 17 credits.

3460: Computer Science

Bachelor of Science

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

- At least 37 credits in computer science.

- Core curriculum:

3460:201	Introduction to Fortran Programming	2
	or	
4450:206	Fortran (Science and Engineering)	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

At least 21 credits to include:

3450:221	Analytic Geometry — Calculus I	4
3450:222	Analytic Geometry — Calculus II	4

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

**The courses 3450:101-39 *Modern University Mathematics*, 3450:147,8 *Elementary Functions*, 3450:149 *Pre-Calculus Mathematics*, 3450:301 *History of Mathematics* do not meet major requirements.

†The courses 3450:101-39 *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.

††8200:355 may be substituted.

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

3450:221,2,3	Analytic Geometry-Calculus I, II and III	Credits 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.)	

Systems and Information Science Option

At least 23 credits to include:

3450:111	Algebra	1
3450:112	Algebraic Functions and Graphing	1
3450:114	Matrices	1
3450:115	Linear Programming	1
3450:121	Analytic Geometry	1
3450:122	Differential Calculus	1
3450:123	Integral Calculus	1
3450:327	Introduction to Numerical Methods	3
3460:125	Descriptive Computer Science	1
3460:126	Introduction to Basic Programming	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
	Operations Research	3
	Mathematics/Statistics/Computer Science electives at 300/400 level*	3

Business Option**

A total of 29 credits to include:

3250:201,2	Principles of Economics	6
3450:111	Algebra	1
3450:112	Algebraic Functions and Graphing	1
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 the qualified student. 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 a foreign language.
- At least 40 departmental credits including:†

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

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

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

- 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 a student 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 satisfactorily met the following requirements:

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

A student who desires to participate in the program will fill out a *Personal Data* form and submit it to the department head. The student will then meet with a member of the cooperative education staff to discuss the availability of prospective employers. During this interview, the student will be asked to sign a

Cooperative Educational Agreement and a grade release form which will become effective upon employment. Employment must be coordinated or have approval of the department and the cooperative education director. The University does not guarantee employment for the student. The student will be expected to remain with the employer for all cooperative work periods in order to provide a progression of experience and responsibility.

Registration

While no academic credits are assigned, each student must register for 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:

- Work performance as evaluated by the employer.
- Written work report as approved by department head and cooperative education staff.
- *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. If 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.

3600: Philosophy

Bachelor of Arts

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

- A minimum of 30 departmental credits including:

		Credits
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 (selected concentration) — 12-16 credits.
- Electives — 29-33 credits.

3650: Physics

Bachelor of Science

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

3650:291,2	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
3650:411,2	Intermediate Laboratory I and II	4
3650:430	Statistical Physics	3
3650:431	Mechanics	3
3650:436	Electricity and Magnetism	3
3650:451,2	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:

3150:132,3	Principles of Chemistry I and II	7
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- Computer Science:

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

Bachelor of Arts

This degree is primarily for the student desiring a useful background in physics, but whose professional objectives may not require graduate study in physics or a related physical science.

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

• At least 24 departmental credits including:

		Credits
3650:291,2	Elementary Classical Physics I and II	8
3650:410	Electronics	3
3650:411,2	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
4400:231,2	Circuits I and II	6
4400:333,4	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:

3100:111,2	Principles of Biology	8
3100:211	General Genetics	3
3100:214	Organic Evolution	3
3100:311	Cell Biology	2
3100:480	Radiation Biology	3
3150:263,4	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:

3150:263,4	Organic Chemistry	6
3150:313,4	Physical Chemistry Lecture I and II	6
3150:315,6	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:

4400:231,2	Circuits I and II	6
4400:333,4	Circuits III and IV	6
4450:306	Assembler Programming	3
4450:407	Systems Programming	3
4450:410	Computer Methods	3

Geophysics

(Bachelor of Science or Bachelor of Arts degree)

A suggested program of 18 credits to include the following:

3370:101	Introduction to Physical Geology	4
3370:102	Introductory Historical Geology	4
3370:350	Structural Geology	4
3370:441	Fundamentals of Geophysics	3
3370:446	Exploration Geophysics	3

Polymer Physics

(Bachelor of Science degree recommended)

A suggested program of 24 credits to include the following:

3150:263,4	Organic Chemistry	6
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		Credits
3150:313,4	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
3650:331,2	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
3650:481,2	Methods of Mathematical Physics I and II	6
3650:399	Undergraduate Research	1-6

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

The physics student may consider it important in the bachelor's degree programs to prepare in greater depth in other science areas (besides physics and mathematics) than may usually be possible within the traditional four-year departmental degree curricula. This student may therefore prefer to work toward the Bachelor of Science in natural science degree 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 Sciences Division Major," **Section 4** of this *Bulletin*, or contact the Department of Physics.

Cooperative Industrial Employment Plan

For the academically qualified undergraduate student majoring in physics, an optional cooperative plan is available which provides a scheduled sequence of professionally-oriented industrial employment (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 entry into the plan are on an individual basis and must be initiated by the student during the second year of undergraduate study. For further information, contact the department.

3700: Political Science

Bachelor of Arts

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

		<i>Credits</i>
3700:100	Government and Politics in the United States	4
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 and the General Studies requirement.
- At least six credits of coursework which will introduce the student 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 any of the following departments: Classics, Modern Languages, History, Political Science, Anthropology and Geography.
- At least 30 departmental credits including:

3700:100	Government and Politics in the United States	4
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
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 as a result of problems in scheduling, the head of the department may permit the substitution of appropriate departmental courses.

Special Curricular Tracks in Political Science

The department offers three special tracks for the student interested in pre-law, the international service or national, state or local government service. In addition to the requirements for the major, each of these tracks includes electives appropriate for preparation for careers in law, government service or international service.

Information about these curricular tracks may be obtained from the head of the department.

3750: Psychology

Bachelor of Arts

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

		<i>Credits</i>
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 <i>Cultural Anthropology</i> 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.

Sociology/Anthropology

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

3850:100	Introduction to Sociology	4
3850:301,2	Methods of Social Research I 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:

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. The divisional major must include the following:

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

By field, the 18-credit requirement must include:

- **Classics:**

		<i>Credits</i>
3200:161,2	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
Literature	6
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
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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, Mathematical Sciences, Computer Science, 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 or computer science 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 must include:

- **Economics:**

	<i>Credits</i>
Any except 3250:100 Introduction to Economics* (must include 3250:201,2 Principles of Economics)	15

- **Geography:**

Any credits	15
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- **History:**

Minimum of seven credits at the 300/400 level	15
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- **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

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

		<i>Credits</i>
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. For further information, please contact the Office of the Dean, Buchtel College of Arts and Sciences.

Bachelor of Science/Doctor of Medicine Degree (B.S./M.D. Program)*

Introduction

The Northeastern Ohio Universities College of Medicine 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 B.S./M.D. degree program.

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

At The University of Akron, a student pursues a B.S. in the natural sciences division in the Buchtel College of Arts and Sciences.

Requirements

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

		<i>Credits</i>
3100:111,2	Principles of Biology	8
3100:381	Human Genetics	2
3100:466,7	Developmental Anatomy	8
3150:132,3	Principles of Chemistry I and II	7
3150:134	Qualitative Analysis	2
3150:263,4	Organic Chemistry I and II	6
3150:265	Organic Chemistry Laboratory	2
3150:266	Organic Chemistry Laboratory (Optional)	2
3150:401,2	Biochemistry 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: 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 B.S./M.D. Six-Year Program, see "Northeastern Ohio Universities College of Medicine," Section 4 of this *Bulletin*.

College of Engineering

Louis A. Hill, Jr., PE., Ph.D., *Dean*

Joseph A. Edminister, M.S.E., J.D., *Assistant to the 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 by providing a quality program of engineering education with the following aims:

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

The 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 a 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 classroom and for their application in industrial practice. The

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

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

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

Requirements for Admission

In addition to the general requirements for admission to the University, a student must present the following secondary school credits:

Algebra 1½ units	Solid Geometry
Plane Geometry 1 unit	or
Chemistry or Physics 1 unit	Trigonometry ½ 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 unless: the student has been admitted into the College of Engineering; or the student has the permission of the head of the department offering the course; or the course has been exempted from this rule.

Degrees

The college offers curricula leading to the degrees of Bachelor of Science in Chemical, Civil, Electrical and Mechanical Engineering; Bachelor of Science in Engineering; and Bachelor of Construction Technology.

Requirements for Graduation

- Compliance with University requirements, **Section 3**, of this *Bulletin*.

- Completion of the requirements in the appropriate list of courses.
- Recommendation of the student's department.
- Any junior or senior engineering student with a 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.

		<i>Credits</i>
3150:265	Organic Chemistry Laboratory	2
3150:313,4	Physical Chemistry I, II	6
		<u>14</u>
• Engineering core:		
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
		<u>14</u>

• Chemical engineering:

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
		<u>37</u>

• Electives:

Advanced Chemistry or Polymer Science	3
Chemical Engineering Design	3
Free Elective, adviser approved	3
	<u>9</u>
Total	136

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.

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 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.

• General Studies—28 credits.	<i>Credits</i>	
• 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:—	Advanced Mathematics Elective	2
3650:291,2	Elementary Classical Physics I, II	8
		<u>34</u>
• Advanced chemistry:		
3150:263,4	Organic Chemistry I, II	6

4300: Civil Engineering

The civil engineer is dedicated to planning, designing and building to make our environment more attractive. Civil engineers help 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 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 credits.			
• 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 or		
3470:—	Statistics Elective	3	3
3650:291,2	Elementary Classical Physics I, II	8	8
		<u>40</u>	<u>40</u>
• Engineering core:			
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:			
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:			
6200:201,2	Accounting I, II	—	8
6200:321	Business Law I	—	3
6400:371	Business Finance	—	3
			<u>14</u>
• Construction technology:			
2980:231	Building Construction	—	2
2980:241	Cost Analysis and Estimating	—	3
			<u>5</u>
• Electives:			
	Technical Electives	9	4
	Total	136	136

search, development, manufacture and operation of electrical and electronic products; and systems for instrumentation, automation, tracking and telemetry.

The growth of electronic research and manufacturing has been accelerated by the space age. There is hardly a segment of the economy which has not been influenced by electronics. The high speed digital computer has found its way into virtually all aspects of modern life. A student wishing to specialize in computer engineering will find appropriate electives available.

The wide use of electrical means for measurement, control and computation has resulted in the need for electrical engineers in all types of industries. Varied employment opportunities are available.

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.

• **General Studies—28 credits.**

• **Natural science:**

		Credits
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:**

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:**

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>

• **Electives:**

Technical Electives	15
Free Electives	2
Total	<u>136</u>

4400: Electrical Engineering

The many branches of electrical engineering include: production and distribution of electrical energy; re-

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, formally or informally, or to begin a career in government or industry.

• **General Studies—28 credits.**

• **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 I, II	8
3650:293,4	Physics Computations I, II	2
		<u>34</u>

• **Engineering core:**

4300:201	Statics	3
4300:202	Introduction to Mechanics of Solids	3
4300:380	Engineering Materials Laboratory	1
4400:320	Basic Electrical Engineering	4
4600:125	Engineering Graphics	2
4600:160	Engineering Design-Mechanical Engineering	1
		<u>14</u>

• **Mechanical engineering:**

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
4600:484	Mechanical Engineering Laboratory	2
4600:493	Measurements Laboratory	2
		<u>50</u>

• **Electives:**

Technical Electives (includes three credits design)	7
Free Electives, adviser approval	3
Total	136

4980: Construction Technology

The curriculum in construction technology is designed to produce a graduate with a strong fundamental knowledge of technology, combined with management ability and a familiarity with business, economics and personnel management. The program is designed to provide graduates for 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.

• **General Studies*—21 credits.**

• **Required courses, technical:**

4980:352	Field Management	2
4980:354	Foundation Construction Methods	3
4980:361	Construction Formwork	3
4980:453	Legal Aspects of Construction	2
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, elective business and management:**

3250:330	Labor Problems	3
3250:432	Economics and Practice of Collective Bargaining	3
6200:301	Cost Accounting	3
6400:316	Risk Management and Insurance	2
6400:321	Business Law I	3
	Group Minimum	<u>6</u>

• **Group 2, statistics:**

3470:251	Descriptive Statistics and Probability	1
3470:252	Distributions	1
3470:253	Hypothesis Testing Parameters	1
6500:321	Quantitative Business Analysis I	3
	Group Minimum	<u>3</u>

• **Group 3, economics:**

2920:310	Economics of Technology	3
3250:202	Principles of Economics	3
4400:421	Engineering Economy	2
	Group Minimum	<u>2</u>

• **Technical electives*:**

3370:101	Introductory Physical Geology	4
3370:210	Geomorphology	3
4300:206	Fortran	2
4300:311	Geotechnical Engineering	5
4300:361	Transportation Engineering	3

*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.

4300:414	Design of Earth Structures	<i>Credits</i>	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.

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 by providing quality programs for the student of education and by helping the student attain the following:

- Special experiences, knowledge and skills particularly useful for teaching in urban and inner-city educational institutions, in keeping with the urban mission of the University.
- A knowledge of a major field and related fields of inquiry and the ability to use this knowledge in explaining the realities of life today.
- A knowledge of instructional materials and new technology and skill in recognizing and utilizing instructional tools most suitable for specific purposes.
- A knowledge of the social issues relevant to education and living in a pluralistic society and the competence to translate implications of changes in society into instructive action as teacher-citizens as well as teacher-scholars.
- An understanding of the learner and the learning processes and the ability to translate these into appropriate teaching behaviors in acting and reacting with students.
- Skill in the acquisition of inquiry techniques appropriate to generalizing knowledge and choices, and practice in using them to inquire into educational problems in rational, defensible ways.
- Human relations skills, including an appreciation of the values and feelings essential for working with young people and with adults, and the ability to develop relationships in a wide variety of professional and social roles in an educational or community setting.

To accomplish these objectives, this college offers programs for the preparation of elementary and secondary teachers, counselors, school administrators and other educational personnel. The Bachelor of Arts in Education, Bachelor of Science in Education, Bachelor of Science in Technical Education, Master of Arts in Education, Master of Science in Education, Master of Science in Technical Education and Ph.D. and Ed.D. degrees are offered.

Programs include a balanced offering of a foundation in general education, 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.

Educators in surrounding school districts cooperate in advisory capacities with the college. 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 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 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.
- 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.

* The secondary education student also must have eight credits in teaching field with a 2.50 average.

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
Communicative Disorders	Mr. Davis
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
Graduate	Mr. Adolph, Mr. Bradley, Mr. Esporite, Mr. Blough, Mr. Hoedt, Mr. Rich
Home Economics and Family Ecology	Mrs. Tappenden
Mass Media-Communication	Miss Lewis
Music	Mr. Nolin
Physical Education	Mr. Maluke
Secondary	Mr. Bradley, Miss Cook, Mr. Eley, Mr. Foster, Mrs. King, Mrs. Lindbeck
Special Education	Mr. Arn, Mr. Kovacevich
Technical Education	Mr. Sugarman
Theatre Arts and Dance	Mr. Slaughter

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 and field-based experiences for a minimum of 600 hours prior to recommendation for certification for teaching in Ohio. The total hours will be accounted on the EDATA-I system.

Through clinical experiences under the direction,

evaluation and supervision of faculty, the 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.

Clinical and field-based hours are listed under the College of Education in "Courses of Instruction," **Section 7** of this *Bulletin*.

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. 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.

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.

* 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.

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 who wishes to teach should register with the dean 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.

		Credits
5200:333	Science Elementary Grades†	2
5200:335	Teaching of Language Arts	5
5200:336	Teaching Elementary School Mathematics†	3
5200:337	Teaching of Reading†	3
5200:338	Teaching of Social Studies†	3
5200:339	Principles of Diagnostic Teaching of Reading†	3
5200:350	Multicultural Education: Concepts, Programs and Practices	3
5200:365	Comprehensive Musicianship for the Elementary Classroom Teacher	4
5550:334	Games and Rhythms — Elementary Grades	2
5570:101	Personal Health	2
Laboratory Experience:		
5200:100	Student Participation††	1
5200:200	Student Participation	1
5200:300	Student Participation	1
5200:343	Science for Elementary Grades—Laboratory	1
5200:346	Teaching Elementary School Mathematics—Laboratory	1
5200:347	Teaching of Reading—Laboratory	1
5200:348	Teaching of Social Studies—Laboratory	1
5200:349	Principles of Diagnostic Teaching of Reading—Laboratory	1
5200:403	Seminar in Student Teaching	1
5200:495	Student Teaching	8

• Area of specialization — 9-20 credits.

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 (9-20) is above and beyond the number of credits required in any other part of the program.

Kindergarten—Primary

With the addition of certain courses, the student in the elementary program electing this specialization can receive additional certification.

• Required:

5200:330	Early Elementary Education I	3
5200:331	Early Elementary Education II	3
5200:340	Early Elementary Education I—Laboratory	1
5200:341	Early Elementary Education II—Laboratory	1
7400:265	Child Development	3

• Electives—5 credits.

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

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	4

• Professional education:

		Credits
Basic:		
5100:150	Introduction to Professional Education	3
5100:250	Human Development and Learning	3
5100:350	Educational Measurement and Evaluation	2
5100:450	Problems in Education	2
Elementary Education: **		
5200:141	Handicrafts	2
5200:286	Children's Literature	3
5200:321	Art for the Grades	2

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

**The elementary education major is responsible for completing 300 field and clinical hours in addition to student teaching. It will be the responsibility of the department to assign these credits to the appropriate courses.

†Most methods courses are accompanied by a laboratory. The student must enroll for methods course and laboratory concurrently.

††Optional.

		Credits
5200:312	Introduction to Early Childhood Education—Laboratory	1
5200:313	Curriculum for Preschool Learning Centers—Laboratory	1
5200:360	Nursery School—Laboratory	3
7400:265	Child Development	3

- Electives—4 credits.

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 the 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:		
5100:150	Introduction to Professional Education	3
5100:250	Human Development and Learning	3
5100:350	Educational Measurement and Evaluation	2
5100:450	Problems in Education	2
Elementary Education:*		
5200:141	Handicrafts	2
5200:286	Children's Literature	3
5200:300	Student Participation	1
5200:321	Art for the Grades	2
5200:333	Science for Elementary Grades	3
5200:335	Teaching of Language Arts	5
5200:336	Teaching Elementary School Mathematics**	3
5200:337	Teaching of Reading	3
5200:338	Teaching of Social Studies	3
5200:339	Principles of Diagnostic Teaching of Reading	3
5200:343	Science for Elementary Grades—Laboratory	1

*An elementary education major is responsible for completing 300 field and clinical hours in addition to student teaching. It will be the responsibility of the department to assign these hours to the appropriate professional education course.

**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.

		Credits
5200:346	Teaching Elementary School Mathematics—Laboratory	1
5200:347	Teaching of Reading—Laboratory	1
5200:348	Teaching of Social Studies—Laboratory	1
5200:349	Principles of Diagnostic Teaching of Reading—Laboratory	1
5200:350	Multicultural Education: Concepts, Programs and Practices	3
5200:365	Comprehensive Musicianship for the Elementary Classroom Teacher	4
5200:403	Seminar in Student Teaching	1
5200:495	Student Teaching	8
5550:334	Games and Rhythms — Elementary Grades	2
5570:101	Personal Health	2

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

5200:330	Early Elementary Education I	3
5200:331	Early Elementary Education II	3
5200:340	Early Elementary Education I—Laboratory	1
5200:341	Early Elementary Education II—Laboratory	1

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:

Basic:		
5100:250	Human Development and Learning	3
5200:336	Teaching Elementary School Mathematics	3
5200:337	Teaching of Reading	3
5200:346	Teaching Elementary School Mathematics—Laboratory	1
5200:347	Teaching of Reading—Laboratory	1

- Such a certificate shall be designated as a "retraining" certificate and shall be made standard upon evidence of the completion of the following coursework in elementary education:

5200:141	Handicrafts	2
5200:286	Children's Literature	3
5200:300	Student Participation	1
5200:321	Art for the Grades	2
5200:333	Science for Elementary Grades	3
5200:335	Teaching of Language Arts	5
5200:338	Teaching of Social Studies	3
5200:339	Principles of Diagnostic Teaching of Reading	3
5200:343	Science for Elementary Grades—Laboratory	1
5200:348	Teaching of Social Studies—Laboratory	1
5200:349	Principles of Diagnostic Teaching of Reading—Laboratory	1
5200:350	Multicultural Education: Concepts, Programs and Practices	3
5200:365	Comprehensive Musicianship for the Elementary Classroom Teacher	4
5550:334	Games and Rhythms — Elementary Grades	2
5570:101	Personal Health	2

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

3350:100	Introduction to Geography (if no previous geography credits are recorded)	3
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		<i>Credits</i>
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	4
• If the student desires certification for teaching kindergarten, the following eight credits must be scheduled:		
5200:330	Early Elementary Education I	3
5200:331	Early Elementary Education II	3
5200:340	Early Elementary Education I— Laboratory	1
5200:341	Early Elementary Education II— Laboratory	1

- 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, 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.
- 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:

5200:365	Comprehensive Musicianship for the Elementary Classroom Teacher	4
5200:395	Field Experience	2
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	2
7500:358	Functional: Class Guitar	2
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. **

A combination elementary and special education program is offered; see "5610: Special Education."

5300: Secondary Education

The secondary program is for the student 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 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 — 39 credits.
- General professional and pre-professional courses:

		<i>Credits</i>
5100:150	Introduction to Professional Education	3
5100:250	Human Development and Learning	3
5100:350	Educational Measurement and Evaluation	2
5100:450	Problems in Education	2
5300:265	Introduction to Secondary Education	1
5300:275	Exploratory Experience	1
5300:310	Principles of Teaching in the Secondary School	3
5300:325	Content Reading in Secondary School	3
5300:345	Human Relations in Secondary Education	1
5300:355	Managing Classroom Behavior at the Secondary Level	1
5300:375	Exploratory Experience	1
5300:411	Instructional Techniques Secondary Education	4
5300:445	Minicomputer Applications in Secondary Classroom or	1
5300:455	Career Options in Secondary Education	1
5300:403	Student Teaching Seminar	1
5300:495	Student Teaching	8

- Courses in teaching field(s) and electives — 58 credits.

Teaching Fields

Each student preparing for secondary school teaching must have at least two academic teaching fields. One field shall be at least six credits more than the minimum required by the Ohio State Department of Education, except where the state requirement in the teaching field is 30 credits or more. However, if a student chooses one of the special teaching fields, as listed below, preparation in a second field will not be required.

For selection of required courses and the recom-

*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.

mended 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)	57-60
Business Education (without shorthand)	49-52
Communications	60
Consumer Homemaking and Multi-area Vocational	55
Data Processing	55
Family Life Education	60
Science	71-72
Selling and Merchandising	52-55
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)		23
History	31	30
Home Economics		31
Home Economics — Non-Vocational	47	
Foreign Languages	30	30
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		49

Special Fields K-12

- Art — as determined by Department of Art — 50 credits.
- Health Education — as determined by Department of Health and Physical Education — 30 credits.
- Music — as determined by Department of Music — 50 credits.
- Physical Education (Men and Women) — as determined by Department of Health and Physical Education — 47 credits.
- Speech and Hearing Therapy — as determined by Department of Communicative Disorders.
- Special Education — as determined by Department of Counseling and Special Education — 31-36 credits.

Alternative Curriculum in Athletic Training

The Department of Health and Physical Education offers an alternative curriculum in athletic training for a student choosing not to do student teaching and receive a teaching certificate. A student interested in this alternative should contact the department.

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

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.

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:

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:

- General Studies — 39 credits.
- Professional education:

	<i>Credits</i>
5100:150 Introduction to Professional Education	3
5100:250 Human Development and Learning	3
5100:350 Educational Measurements and Evaluation	2
5100:450 Problems in Education	2
5300:310 Principles of Secondary Education	3
5610:403 Student Teaching Seminar	1
5610:495 Student Teaching EMR	8

- Related competency studies:

3750:100 Introduction to Psychology	3
5200:335 Teaching the Language Arts	5
5200:336 Teaching of Elementary School Mathematics	3
5200:337 Teaching of Reading	3
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
5570:101 Personal Health	2

Choose two of the following:

5200:321 Art for the Grades	2
5200:365 Comprehensive Musicianship for the Elementary Classroom Teacher	4
5550:334 Games and Rhythms — Elementary Grades	2

- Special education studies:

5610:440 Developmental Characteristics of Exceptional Individuals	3
5610:441 Developmental Characteristics of Mentally Retarded Individuals	4
5610:443 Developmental Characteristics of Learning Disabled Individuals	3
5610:450 Educational Adjustment for Preschool and Primary Level Exceptional Individuals	3
5610:451 Educational Adjustment for Intermediate Level Exceptional Individuals	3
5610:452 Educational Adjustment for Secondary Level Exceptional Children	3
5610:456 Classroom Behavior Management for Exceptional Children	2
5610:457 Clinical Teaching Practicum: Children with Learning Problems*	3

In addition, the student must complete the following:

Plan A

5610:201 Student Participation: EMR/LD	1
5610:446 Developmental Characteristics of Behaviorally Disordered Individuals	3

*Final course before student teaching, advanced permission required.

5610:495 Student Teaching Electives**	4-8 5
Plan B	
5610:203 Student Participation: EMR/TMR	1
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 Student Participation: EMR/OH	1
5610:495 Student Teaching	8
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 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 Communicative Disorders.

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

At The University of Akron there has been a long and eventful history of education relating to the field of commerce and industry. Beginning in 1919, courses were offered in the Department of Commerce. Eventually the

department became the nucleus of the College of Business Administration, which was established in 1953.

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

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

College Requirements

Requirements for Admission

The college will accept the student who has completed sufficient 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 2.00 overall grade-point average and at least a 2.00 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 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.

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

Degrees

The College of Business Administration, organized on a departmental basis, offers programs of study in accounting, finance, management, marketing and international business. Five baccalaureate degrees are offered; the Bachelor of Science in Accounting, Bachelor of Science in Business Administration, Bachelor of Science in Industrial Management, Bachelor of Science in Business Administration/Finance and the Bachelor of Science in Business Administration/Marketing.

Requirements for Graduation

To receive a baccalaureate degree from the College of Business Administration, a student must meet the following requirements:

- Complete a minimum of 128 semester credits with a minimum 2.00 grade-point average. Not more than one credit of physical education may be included.
- Obtain at least a 2.00 grade-point average in all courses in the major as well as in all courses in business administration and economics.
- Obtain the recommendation of the department head.
- Complete other University requirements listed in **Section 3** of this *Bulletin*.
- General Studies—36 credits.*
- Complete the following courses:

		<i>Credits</i>
3250:201,2	Principles of Economics	6
6200:201,2	Accounting	8
One of the following three options:		
3450:111,2,3,4	Modern University Mathematics	4
3450:121,2,3,	Modern University Mathematics	3
3450:138	Mathematics of Finance	1
	or	
3450:138	Mathematics of Finance	1
3450:149	Pre-Calculus Mathematics	3
3450:221	Analytic Geometry-Calculus I	4
	or	
3450:138	Mathematics of Finance	1
3450:149	Pre-Calculus Mathematics	3
3450:211,2	Calculus for Life Sciences I and II	8
	Two sequential courses in psychology or sociology; or two courses chosen from psychology, sociology and/or cultural anthropology (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
6500:321,2	Quantitative Business Analysis I and II	6
6500:323	Computer Applications for Business**	3
6500:409	Business Policy	4
6600:300	Marketing Principles	3

*These are pre-business administration requirements.

**An accounting major 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 other professional accounting examinations and to prepare the student to undertake advanced study. To receive the Bachelor of Science in Accounting degree, a student must complete the college requirements and the following departmental requirements:

		<i>Credits</i>
6200:301	Cost Accounting	3
6200:317	Intermediate Accounting I	4
6200:318	Intermediate Accounting II	4
6200:355	Electronic Data Processing†	3
6200:420	Advanced Accounting	3
6200:430	Taxation I	3
6200:431	Taxation II	3
6200:440	Auditing	3
6200:454	Accounting Systems	3
	or	
6200:460	Controllership Problems	3
6400:322	Business Law II††	3
3250:380	Money and Banking††	3
	or	
6400:338	Financial Intermediaries††	3

Communication skills are vital, so a major is urged to take 3300:275, *Specialized Writing in Business*, and to participate in the Student Toastmasters organization.

†Required for the accounting major as well as in the college core program. Grade is not included in the major grade-point average.

††Grade not included in major grade-point average.

Because of the increasing demand for accountants with a knowledge of computer usage, additional courses in mathematics and computer science are strongly recommended. A major preparing for an industrial accounting career should take electives in management.

6400: Finance

Courses in the Department of Finance are designed to develop a student's ability to gather, organize, analyze and utilize financial data. This requires that the student be familiar with the institutional setting in which firms operate, and, within this framework, they must understand the present state of financial theory, its uses and limitations. When a student majors in finance, the goal is not a specific entry job but rather a state of readiness to provide flexible response to new areas of opportunities in the financial area.

Career opportunities exist in three major fields. The financial management of non-financial institutions area offers employment in profit as well as 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/Finance, the college and the following departmental requirements must be completed:

	<i>Credits</i>
Finance core courses:	
6400:338 Financial Intermediaries	3
6400:343 Investments	3
6400:479 Problems in Finance	3
	9
Four finance electives from the following:	
6200:317 Intermediate Accounting I*	4
6200:318 Intermediate Accounting II*	4
6400:318 Risk Management and Insurance	3
6400:373 Financial Statement Analysis	3
6400:400 Real Estate: A Value Approach	3
6400:419 Property and Liability Insurance	3
6400:424 Legal Concepts in Real Estate: A Managerial Approach	3
6400:426 Commercial Bank Management	3
6400:447 Security Analysis	3
	12

* Completion of both (eight credits) will be counted as one three-hour elective in finance.

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.

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
6500:331	Production and Systems Management	3
6500:332	Production and Operations Management	3
6500:341	Personnel 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 the basic understanding and insight required for the successful performance and management of the marketing activities of either profit-making or non-profit organizations. It is also organized to provide the student who has an interest in a specific area of marketing study with alternative approaches to marketing knowledge by means of five specific marketing tracks and one general marketing studies option. The marketing tracks are:

Industrial Marketing	Marketing Communication
Retail Marketing	Physical Distribution
International Marketing	

The general marketing studies option allows the student to tailor-make the curriculum to individual needs, to engage in an exploratory study which will provide the basis for future studies, to facilitate access to a wider range of entry-level employment opportunities or to enable the student to relate the curriculum to the needs of a small or family business.

To receive a Bachelor of Science in Business Administration/Marketing the student must successfully complete 18 credits in one of the five marketing tracks or the general marketing option as follows:

Industrial Marketing Track

Required:		<i>Credits</i>
6600:360	Industrial Marketing	3
6600:370	Purchasing	3
6600:380	Sales Management	3
6600:460	Marketing Research	3
		<u>12</u>

Electives:		
6600:320	Physical Distribution	3
6600:390	Management of Marketing Channels	3
6600:440	Product Planning	3
6600:465	Forecasting and Quantitative Methods in Marketing	3
		<u>6</u>

Retail Marketing Track

Required:		
6600:310	Buyer Behavior	3
6600:340	Merchandising	3
6600:460	Marketing Research	3
		<u>9</u>

Electives:		
6200:301	Cost Accounting	3
6600:350	Advertising and Marketing Communications	3
6600:380	Sales Management	3
6600:390	Management of Marketing Channels	3
6600:465	Forecasting and Quantitative Methods in Marketing	3
		<u>9</u>

International Marketing Track

Required:		
6600:330	International Marketing	3
6600:429	International Business Enterprise	3
6600:460	Marketing Research	3
		<u>9</u>

Electives:		
3250:450	Comparative Economic Systems	3
3250:461	Principles of International Economics	3
6600:310	Buyer Behavior	3
6600:465	Forecasting and Quantitative Methods in Marketing	3
		<u>9</u>

Not more than one course to be selected from this group:

6600:320	Physical Distribution	3
6600:390	Management of Marketing Channels	3
6600:440	Product Planning	3

A moderate fluency in a foreign language is strongly recommended.

Marketing Communications Track

Required:		
6600:310	Buyer Behavior	3
6600:350	Advertising and Marketing Communications	3

6600:430	Promotional Campaigns	Credits	3
6600:460	Marketing Research		3
			<u>12</u>
Electives:			
6600:340	Merchandising		3
6600:380	Sales Management		3
6600:440	Product Planning		3
6600:465	Forecasting and Quantitative Methods in Marketing		3
			<u>6</u>

Physical Distribution Track

Required:			
6600:320	Physical Distribution		3
6600:420	Logistics Systems Analysis		3
6600:460	Marketing Research		3
			<u>9</u>
Electives:			
6200:301	Cost Accounting		3

6600:360	Industrial Marketing	Credits	3
6600:370	Purchasing		3
6600:390	Management of Marketing Channels		3
6600:465	Forecasting and Quantitative Methods in Marketing		3
			<u>9</u>

General Marketing Studies Option

Any 18 credits from the 6600 listings, including one departmental requirement of 6600:460 *Marketing Research* will complete the general marketing studies option.

To further guide the student, the department has available a brochure detailing the program, career opportunities and electives from other colleges and departments recommended for and tailored to each of the tracks.

College of Fine and Applied Arts

Gerard L. Knieter, Ed.D., *Dean*
Kelvie Comer, Ed.D., *Assistant Dean*

Objectives

The purpose of the College of Fine and Applied Arts is to further the objectives of the University by providing a quality program of undergraduate and graduate education 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 a student for graduate study and career opportunities on a professional competence level.
- To provide instruction designed to meet specific curricular needs of all the colleges of the University.
- To serve the elective interests of the student seeking diversity; enrichment in academic programs.
- To encourage the development of technical knowledge and professional skills which underlie the communicative functions of human expression.
- To nurture and expand, through this congregation of the arts, not only a knowledge of man's creative and cultural heritage but also a perceptual and aesthetic awareness of direct sensory experience through creation and performance.

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

College Requirements

Requirements for Admission

To be admitted to the College of Fine and Applied Arts, the student must have completed at least 30 credits of work with 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 institution 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 in the section on "Requirements for Graduation," **Section 3** of this *Bulletin*.
- Departmental requirements listed below.
- 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, application toward graduation will depend upon the nature of the student's program of study.
- The recommendation of the head of the student's major department.
- Demonstrated ability to use English. One other language 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 Communicative Disorders
Bachelor of Arts in General Speech
Bachelor of Arts in Theatre Arts
Bachelor of Arts in Mass Media-Communication
Bachelor of Arts in Communication and Rhetoric
Bachelor of Arts in Ballet
Bachelor of Arts/Social Work
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.

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.

Credits

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. 7100:100,1 *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.

Ceramics

Prerequisites before first major course:		Credits
7100:100	Survey of History of Art I	4
7100:121	Three-Dimensional Design	3
7100:131	Introduction to Drawing	3
Major courses:		
7100:254	Ceramics I	3
7100:354	Ceramics II	3
7100:454	Advanced Ceramics (to be repeated)	15

Additional required courses:		Credits
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:		Credits
7100:100	Survey of History of Art I	4
7100:131	Introduction to Drawing	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:		Credits
7100:101	Survey of History of Art II	4
7100:121	Three-Dimensional Design	3
7100:144	Two-Dimensional Design	3

Drawing

Prerequisites before first major course:		Credits
7100:100	Survey of History of Art I	4
7100:131	Introduction to Drawing	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

Graphic Design

Prerequisite before first major course:		Credits
7100:131	Introduction to Drawing	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	3
	(may be repeated to 12 credits)	
7100:484	Illustration	3
7100:485	Advanced Illustration	3
	(may be repeated to nine credits)	
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	3
	or	
7100:233	Life Drawing	2
7100:275	Introduction to Photography	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 *Introduction to Photography* or 7100:231 *Drawing II*.

Metalsmithing

Prerequisites before first major course:		Credits
7100:100	Survey of History of Art I	4
7100:101	Survey of History of Art II	4
7100:121	Three-Dimensional Design	3

	<i>Credits</i>
7100:131 Introduction to Drawing	3
7100:144 Two-Dimensional Design	3
Major courses:	
7100:266 Introduction to Metalsmithing	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 Technology of Machine Tools	3
7100:232 Instrument Drawing	3
7100:283 Drawing Techniques	3
Painting	
Prerequisites before first major course:	
7100:100 Survey of History of Art I	4
7100:131 Introduction to Drawing	3
7100:144 Two-Dimensional Design	3
Major courses:	
7100:245 Introduction to Polymer Acrylic Painting	3
7100:246 Introduction to Watercolor Painting	3
7100:247 Introduction to 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
Photography	
Prerequisites before first major course:	
7100:100 Survey of History of Art I	4
7100:131 Introduction to Drawing	3
7100:144 Two-Dimensional Design	3
Major courses:	
7100:275 Introduction to Photography	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 Introduction to Lithography or	3
7100:214 Introduction to Screen Printing	3
7100:231 Drawing II	3
7100:233 Life Drawing	2
7100:300 Art since 1945	3
7100:317 Printmaking II	3
Printmaking	
Prerequisites before first major course:	
7100:100 Survey of History of Art I	4
7100:101 Survey of History of Art II	4
7100:131 Introduction to Drawing	3
7100:144 Two-Dimensional Design	3
7100:231 Drawing II	3
A minimum of two of these four major courses:	
7100:213 Introduction to Lithography	3
7100:214 Introduction to Screen Printing	3
7100:215 Introduction to Relief Printing	3
7100:216 Introduction to 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 Introduction to Photography	3
7100:375 Photography II	3

	<i>Credits</i>
A choice of one of these painting courses is required:	
7100:245 Introduction to Acrylic Painting	3
7100:246 Introduction to Watercolor Painting	3
7100:247 Introduction to Oil Painting	3

Sculpture

Prerequisites before first major course:	
7100:100 Survey of History of Art I	4
7100:121 Three-Dimensional Design	3
Major courses:	
7100:222 Introduction to Sculpture	3
7100:322 Sculpture: Molding 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 Introduction to Drawing	3
7100:144 Two-Dimensional Design	3
7100:231 Drawing II	3
7100:232 Instrument Drawing	3
7100:275 Introduction to Photography	3

Honors Program

As a participant in the 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:

7400:121 Textiles	3
7400:123 Clothing Construction	3
7400:133 Nutrition Fundamentals	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.

		Credits
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 and/or	3
	Elective in Textiles and Clothing	5
7400:419	Clothing Communication	3
7400:439	Fashion	3
7400:449	Design and Draping	3

• Completion of one of the following options:

Business Option

6200:201	Accounting I	4
	or	
2420:211	Basic Accounting I	3
6600:300	Marketing Principles	3
	or	
2420:101	Elements of Distribution	3
6600:340	Merchandising	3
	or	
2520:202	Retailing Fundamentals	4
6600:350	Advertising	3
	or	
2520:103	Principles of Advertising	3
7100:144	Two-Dimensional Design	3

Communication Option

7100:144	Two-Dimensional Design	3
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
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	1-3
7750:276	Introduction to Social Welfare	4

- Workshops or seminars: drug education, family life and sex education.
- Emphasis on appropriate education courses meets requirements for family life education certification.

• For emphasis in child development and child care programming add:

		Credits
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 of Exceptional Individuals	3
5610:453	Recreational Programs for Exceptional Individuals	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 (C.U.P.) 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 (A.D.A.) and for the registration examination. C.U.P. integrates clinical experiences within the junior and senior years, allowing A.D.A. membership and registration after graduation from the four-year program. Information regarding applying to the C.U.P. in dietetics is provided in 7400:281 *Introduction to Dietetics*.

- General Studies — 42 credits. **
- Departmental requirements:

Core:		
7400:147	Home Economics Survey	1
7400:447	Critical Issues in Home Economics	1
• One course to be chosen from each division:		
Clothing, textiles and interiors:		
7400:121	Textiles	3
7400:159	Housing	3
7400:419	Clothing Communication	3
Family and child:		
7400:201	Relational Patterns in Marriage and Family	3
7400:265	Child Development	3

**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.

		Credits
Foods and nutrition:		
7400:133	Nutrition Fundamentals	3
7400:141	Food for the Family	3
7400:245	Basic Nutrition and Foods	3
Management:		
7400:362	Home Management Theory	3
	Total	14-16

• **A.D.A. requirements for C.U.P. 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

• **C.U.P. 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

• **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
3750:100	Introduction to Psychology	3
6500:341	Personnel Management	3
6600:300	Marketing Principles	3
6600:340	Merchandising	3

		Credits
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 a major 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; curriculum outlines for all options are available in the College of Education and in the Department of Home Economics and Family Ecology.

Certificate Program in Interior Design

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

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 the student who intends to follow a music degree program. A student must contact the office of the Department of Music to arrange for the examination.

Bachelor of Arts

• **General Studies and the second year of a foreign language — 53 credits.**

• **Core curriculum in music:**

7500:151	Theory I	3
7500:152	Theory II	3
7500:154	Music Literature I	2
7500:155	Music Literature II	2
7500:161	Aural/Oral Music Reading Skills	4
7500:251	Theory III	3
7500:252	Theory IV	3
7500:281	Keyboard Harmony I	2
7500:282	Keyboard Harmony II	2
7500:351	Music History I	3
7500:352	Music History II	3

• Performance courses:		Credits
7500:157	Student Recital (four semesters)	0
7510:—	Music Organization (four semesters)	4
7520:—	Applied Music	8
• Electives — 33 credits.		
Total		128

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

History and Literature

• General Studies — 39 credits.		
• Core curriculum in music (see B.A.) — 30 credits.		
• Performance courses:		
7500:157	Student Recital (eight semesters)	0
7510:—	Music Organization	8
7520:—	Applied Music — primary instrument (passage to 300 level)	16
• Additional music courses:		
7500:361	Conducting	2
7500:371	Analytical Technique	2
7500:451	Introduction to Musicology	2
7500:452	Composition	2
7500:453	Music Bibliography and Research	2
7500:454	Orchestration	2
7500:455	Advanced Conducting	2
• Electives:		
7500:497	Independent Study (in topics specifically related to history and literature of music)	8
	Cognate area such as history, language or other arts	8
	Electives	7
Total		130

Performance

• General Studies — 39 credits.		
• Core curriculum in music (see B.A.) — 30 credits.		
• Additional performance courses:		
7500:157	Student Recital (eight semesters)	0
7510:—	Music Organization (eight semesters)	8
7520:—	Applied Music-primary instrument*	32
• Additional music courses:		
7500:361	Conducting	2
7500:371	Analytical Techniques	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 (full recital required). **		
Total		129

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

** A junior recital is recommended but not required.

Theory-Composition

• General Studies — 39 credits.		
• Core curriculum in music (see B.A.).		
• Additional performance courses:		Credits
7500:157	Student Recital (eight semesters)	0
7510:—	Music Organization (eight semesters)	8
7520:—	Applied Music-primary instrument†	
7520:—	Applied Music-composition	
• Additional music courses:		
7500:361	Conducting	2
7500:362	Choral Arranging	2
7500:371	Analytical Techniques	2
7500:372	Techniques for Analysis: Twentieth Century Music	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: Instrumental	2
7500:471	Counterpoint	2
7500:472	Advanced Orchestration	2
• Senior recital of original composition.		
• Electives — 7 credits.		
Total		130

Jazz Studies††

• General Studies — 39 credits.		
• Core curriculum in music (see B.A.).		
• Additional music courses:		
7500:361	Conducting	2
7500:371	Analytical Techniques	2
7500:454	Orchestration	2
• Additional jazz courses:		
7500:307	Techniques of Stage Band Performance and Direction	2
7500:308	Jazz History and Literature	3
7500:309	Jazz Keyboard Techniques	2
7500:407	Jazz Arranging and Scoring	2
7500:408,9	Jazz Improvisation I and II	4
7500:497	Independent Study (Practicum in Jazz Studies)	2
• Performance courses:		
7500:157	Student Recital (eight semesters)	0
7510:—	Music Organization Major Conducted Jazz Ensembles	8
7520:—	Applied Music-primary instrument (passage to 300 level) Saxophone major must pass flute and clarinet proficiency (promotion to 200 level)	16
• Electives — 10 credits.		
• Senior recital.		
Total		129

Music Education

• General Studies — 39 credits.		
• Core curriculum in music (see B.A.).		
• Performance courses:		
7500:157	Student Recital (eight semesters)	0
7510:—	Music Organization (eight semesters)	8
7520:—	Applied Music-primary instrument†	16

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

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

• Additional music courses:		
7500:254	String Instruments I	Credits 2
7500:340	General Music	3
7500:342	Wind/Percussion Techniques	3
7500:361	Conducting	2

• Additional music courses by major:		
Vocal and Keyboard major must take:		
7500:340	General Music (second semester)	3
7500:362	Choral Arranging	2
7500:456	Advanced Conducting: Choral	2
	Approved electives	4
Instrumental (non-keyboard) major must take:		
7500:342	Wind/Percussion Techniques (second semester)	3
7500:454	Orchestration	2
7500:455	Advanced Conducting: Instrumental	2
	Approved electives	4
String major must take:		
7500:255	String Instruments II	2
7500:454	Orchestration	2
7500:455	Advanced Conducting: Instrumental	2
	Approved electives	5

- 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 (effective 1981-1982 only)

Bachelor of Arts

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

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 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:

		Credits
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:

		Credits
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 major courses recommended include:		
7600:310	Intercultural Communication	2
7600:384	Speech-Communication Research I	2
7600:385	American Film History: The Beginning to 1945	3
7600:386	American Film History: 1945 to the Present	3
7600:410	Organizational Communication	2
7600:445	Theories of Argument and Forensics	3
7600:454	Theory of Group Processes	3
7600:470	Analysis of Public Discourse	3
7600:484	Regulations in Mass Media	3

Electives selected in consultation with the adviser.

7600: Mass Media-Communication (effective fall 1982)

Bachelor of Arts

- General Studies and second year of a foreign language — 53 credits.
- Departmental core curriculum — 18 credits.

7600:102	Survey of Mass Communication	3
7600:115	Introduction to Communication Theory	3
7600:201	Newswriting	
	or	
7600:206	Feature Writing	3
7600:245	Argumentation	3
7600:280	Media Production Techniques	3
7600:384	Communication Research	3

- Concentration in business and organization communication, communication and rhetoric or mass media-communication — 15-18 credits.
- Elective mass media-communication courses — 12-15 credits.
- University electives — 27 credits.

Bachelor of Arts in Business and Organizational Communication

Bachelor of Arts in Communication and Rhetoric

Bachelor of Arts in Mass Media-Communication

- General Studies and the second year of a foreign language — 53 credits.*
- Departmental core curriculum — 18 credits.
- Area of specialization (see below) — 15-18 credits.
- Elective mass media-communication courses — 12-15 credits.
- University electives — 27 credits.

Business and Organizational Communication

7600:235	Interpersonal Communication	3
7600:309	Publications Production	3
7600:335	Organizational Communication	3
7600:344	Public Decision Making	3
7600:345	Business and Professional Speaking	3
7600:403	Communication in Public Relations	3

		Credits
7600:225	Module: Listening	1
7600:226	Module: Interviewing	1
7600:227	Module: Nonverbal Communication	1
7600:235	Interpersonal Communication	3
7600:252	Persuasion	3
7600:335	Organizational Communication	3
	or	
7600:454/554	Group Processes	3
	or	
7600:471/571	Theories of Rhetoric	3
7600:344	Public Decision Making	3
7600:357	Speech in America	3
	or	
7600:470/570	Analysis of Public Discourse	3

Management

7600:282	Radio Production	3
	or	
7600:283	TV Production	3
7600:388	History and Structure of Broadcasting	3
7600:395	Radio Station Operations	3
7600:396	TV Station Programming and Operations	3
7600:484	Regulations	3
7600:486	Broadcast Sales and Management	3
	Optional: other mass media-communication courses	12

News

7600:201	News Writing	3
	or	
7600:206	Feature Writing	3
7600:204	Editing	3
7600:282	Radio Production	3
7600:283	TV Production	3
7600:301	Advanced News Writing	3
7600:484	Regulations	3
	Additional journalism courses	6
	Other mass media-communication courses	6

Production

7600:282	Radio Production	3
7600:283	Television Production	3
7600:288	Film Production	3
7600:387	Radio and TV Writing	3
7600:388	History and Structure of Broadcasting	3
	Additional production courses	9
	Non-production mass media-communication courses	6

7700: Communicative Disorders

Bachelor of Arts

Bachelor of Arts in Communicative Disorders

- Completion of the General Studies and the second year of a foreign language — 54 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

** Courses in the Department of Biology are required to fulfill the natural sciences requirement (3100:284 and 3100:285) — B.A. and B.A. in Communicative Disorders. A B.A. in Communicative Disorders student substitutes for the language requirement a core of courses in psychology and related disciplines (see adviser for specific courses).

* B.A. tag degree programs substitute 14 credits of "tag" courses for the foreign language requirement.

		Credits
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 — 22 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/Social Work

- General Studies — 40 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
7750:425	Social Work Ethics or	
7750:470	Law for Social Workers	3
7750:430	Human Behavior and Social Environment	3
7750:440	Social Work Research	3
7750:445	Social Policy Analysis for Social Workers	3
	Total	34

- Field experience:

7750:421	Field Experience Seminar (two semesters required concurrent with 7750:495)	2
7750:495	Field Experience in a Social Agency (two required)	8
	Total	10

- Electives: †

7750:—	Social Work Electives	6
	Social Sciences Electives	6
	Total	12

- Other electives — 32 credits.

*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.

**3750:100 is a prerequisite. 3750:130 is recommended as the second course fulfilling the seven credit psychology course prerequisite for enrollment in *Abnormal Psychology*.

†Six credits only required of student with community services, social service or criminal justice technology degrees.

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:

		Credits
7800:124	Introduction to Ballet	2
7800:175	Oral Interpretation I	3
7800:261	Introduction to Theatre	3
7800:372	Acting I	3

Areas of Concentration

Ballet

The ballet major is designed for the student who wishes to continue professional training in dance with the Bachelor of Arts degree. It is expected that the student will be able to work as a performer or teacher on a professional level upon completion of the degree.

Admission to the program is by audition only. Every student must pass a sophomore jury in ballet technique at the end of two years' study in order to be admitted to upper-division standing in the ballet area. All students are required to study ballet technique every semester they are enrolled and to complete two semesters of *Ballet Technique IV* for graduation.

Upon entering the program, the student is placed at that level of ballet technique the faculty feels will ensure progress. In some cases, a student may be required to audit the level below the one in which he is placed in order to do remedial work on those aspects of basic technique that need attention.

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 minimum of 63 credits should be earned 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:

7800:115	Dance as an Art Form	2
7800:116,7	Ballet Analysis I and II	4
7800:122,2	Ballet Technique I and II	20
7800:229,329	Contemporary Technique I and II	4
7800:316	Choreography I	2
7800:317	Choreography II	2
7800:416,7	Choreography: Sound and Movement I and II	4

††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.

- Sophomore jury taken by all majors at the end of two years' study.

Must be completed during the last two years:

- General Studies (upper division) — 12 credits.
- Major field:

	<i>Credits</i>
7800:261 Introduction to Theatre	3
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

Musical Theatre

- General Studies — 39 credits.

- Required theatre courses:

7800:250 Voice Training	3
7800:261 Introduction to Theatre	2
7800:262 Stage Makeup	3
7800:265 Basic Stagecraft	3
7800:330 Theatre Arts/Dance Participation	4
7800:372,3,4 Acting I, II and III	9
7800:421 Musical Theatre Production	3
7800:466 Acting for the Musical Stage	3

- Required dance courses:

7800:119 Introduction to Contemporary Dance I or	2
7800:229 Contemporary Technique I	5
7800:122 Ballet Technique I or	5
7800:222 Ballet Technique II	5
7800:124 Introduction to Ballet or	2
7800:224 Fundamental Ballet Technique	3
7800:323 Jazz Dance Technique I	2
7800:324 Tap Technique I	2
7800:329 Contemporary Technique II	5
7800:377 Jazz Dance Technique II	2
7800:378 Tap Technique II	2

- Required music courses: *Credits*

7500:101 Introduction to Music Theory*	2
7500:107,8 Class Voice I, II** or	6 or 8
7500:024(124) Applied Voice**	4
7500:161 Aural/Oral Music Reading Skills	4
7510:— Choral Organizations	4
Electives in Music (in consultation with academic advisers)	10-12

- General electives (in consultation with academic advisers) from such areas as music, dance, art, theatre, English — 11-13 credits.

Theatre Arts

The concentration is designed to prepare the student 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 postbaccalaureate work hoping to enter 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/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.

* *Introduction to Music Theory* is not counted towards credits in a degree program for course majors. However, a student has the option of taking an entrance test to be exempted from it.

** A student with no voice training or background should take voice credit in the class voice. Those with some training or background should take applied voice (check department for audition for placement in either 024 or 124).

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 knowl-

edge and to improve health care services to clients. The professional nurse is accountable to clients and colleagues 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 a student 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.

*The basic collegiate program is approved by the State of Ohio Board of Nursing Education and Nurse Registration and is accredited by the National League for Nursing.

- 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 (R.N.) who receives preparation in hospital or associate degree programs is evaluated individually. An R.N. 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 2.50 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 (G.P.A.) to 2.50. Therefore, it cannot be assured that having a G.P.A. of 2.50 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 al-

ternate 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 2.50 or higher on a 4.00 scale in the nursing major. A student who fails to maintain the 2.50 average will be placed on probation. Failure to raise the average to 2.50 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 2.50 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 as listed in **Section 3** of this *Bulletin*.
- Complete a minimum of 131 semester credits toward the degree and earn a minimum of 2.50 grade-point average in the nursing major and a 2.00 grade-point average for all collegiate work attempted at The University of Akron.
- Complete all courses required in the *Program of Study for Nursing Students*.

Program of Studies

Generic Student

Freshman Year

Semester I		Credits
1100:111	English Composition	4
1100:115	Institutions in the United States*	3
3150:129	General Chemistry I	4
3450:111,2	Mathematics Modules	2
3470:251,2	Descriptive Statistics	2
8200:100	Introduction to Nursing	
	or	
8200:101	Introduction to Nursing for R.N.	1
		16

Semester II

1100:—	Physical Education	1
1100:112	English Composition	4
1100:116	Institutions in the United States*	3
3150:130	General Chemistry II	4
3850:100	Introduction to Sociology*	4
		16

Sophomore Year

Semester I

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

Semester II

3100:105	Ecology and Biological Resources	2
3100:207	Anatomy and Physiology	3
3100:381	Human Genetics	2

3750:130	Developmental Psychology	Credits 4
3850:340	The Family	
	or	
7400:201	Relational Patterns in Marriage and Family	3
		14

Summer Session

8200:200	Nursing Theories and Concepts	5
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Junior Year

Semester I

1100:320	Western Cultural Traditions	4
8200:300	Nursing: Health	12
		16

Semester II

1100:321	Western Cultural Traditions	4
8200:320	Nursing: Diminished Health I	12
		16

Senior Year

Semester I

1100:—	Eastern Civilizations	2
8200:400	Nursing: Diminished Health II	10
	Elective	5
		17

Semester II

1100:—	Eastern Civilizations	2
8200:420	Nursing: Synthesis	10
		12
	Total	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.

Registered Nurse

Freshman Year

Semester I

1100:111	English Composition	4
1100:115	Institutions in the United States**	3
3150:129	General Chemistry I	4
3450:111,2	Mathematics Modules	2
3470:251	Descriptive Statistics	2
8200:101	Introduction to Nursing for R.N.	1
		16

*The six-credit requirement in the social sciences area usually designated by 1100:115,6 *Institutions in the United States* can be met through several options as listed in the University College requirements. A nursing student who elects to use 3850:100 *Introduction to Sociology* as one part of the social sciences requirement for University College MUST complete an additional four-credit sociology requirement to meet the prerequisites for the College of Nursing. This must be completed prior to application to the college.

**The six-credit requirement in the social sciences area usually designated by 1100:115,6 *Institutions in the United States* can be met through several options as listed in the University College requirements. A nursing student who elects to use 3850:100 *Introduction to Sociology* as one part of the social sciences requirement for University College MUST complete an additional four-credit sociology requirement to meet the prerequisites for the College of Nursing. This must be completed prior to application to the college.

Semester II		<i>Credits</i>
11:00:—	Physical Education (or for student over the age of 21, any other general studies course equalling one credit)	1
1100:112	English Composition	4
1100:115	Institutions in the United States*	3
3150:130	General Chemistry II	4
3850:100	Introduction to Sociology	4
		16

Sophomore Year

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

Semester II		
3100:105	Ecology and Biological Resources	2
3100:207	Anatomy and Physiology	3
3100:381	Human Genetics	2
3750:130	Developmental Psychology	4
3850:340	The Family	
	or	
7400:201	Relational Patterns in Marriage and Family	3
		14

Summer Session		
1100:—	Eastern Civilizations	2
8200:305	Nursing Theories, Concepts and Research	6
		8

*The six-credit requirement in the social sciences area usually designated by 1100:115,6 *Institutions in the United States* can be met through several options as listed in the University College requirements. A nursing student who elects to use 3850:100 *Introduction to Sociology* as one part of the social sciences requirement for University College MUST complete an additional four-credit sociology requirement to meet the prerequisites for the College of Nursing. This *must be completed* prior to application to the college.

Junior Year

Semester I		<i>Credits</i>
	(Transfer in or take) Elective	5
		5

Senior Year

Semester I		
1100:—	Eastern Civilizations	2
1100:320	Western Cultural Traditions	4
8200:405	Health Maintenance Nursing	6
8200:415	Diminished Health Nursing	5
		17
Semester II		
1100:321	Western Cultural Traditions	4
8200:420	Nursing: Synthesis**	10
	Elective	4
		18
	Total	131

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 of Akron
City of Akron, Department of Public Health
Visiting Nurse Service of Summit County

**Bypass credit will be granted for the following courses upon successful completion of 8200:420 *Nursing: Synthesis*:

8200:320	Nursing: Diminished Health I	12
8200:400	Nursing: Diminished Health II	10
		22

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, B.S./M.D. 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 M.C.A.T. test by May.

Program

The curriculum* requires that the student be enrolled for 11 months in each of six academic years. The first two years (Phase I) are spent on one of the university campuses. The 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 the Phase I student for promotion and formal admission to Phase II, or the third year of the program.

The third year of study is devoted primarily to the basic medical sciences, e.g., anatomy, physiology, microbiology, etc., and will be conducted at the 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 B.S./M.D. 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 3.50 or better.
- Scores on the Scholastic Aptitude Test (SAT) or American College Test (ACT) which place the applicant in the 90th percentile or higher of freshman college norms in the field of interest.
- An interview with a member of the University Honors Council.
- Enrollment in a baccalaureate degree program.

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

Program

General Studies

An honors student is not required to complete the General Studies except for physical education. Instead, each student completes an individualized distribution requirement which includes a balanced amount of diversified 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

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

The citation "University Scholar" will appear on the diplomas and the transcripts of the 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 (A.P.), the College Level Examination Program (C.L.E.P.) and/or other approved placement procedures — including bypass credits — to a maximum of 20 credits. Credits may also be earned through “credit by examination” when approved by the department in which the examination is to be administered.

Open Classroom

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

Access to Graduate Courses

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

Credit/Noncredit Option

Upon completion of one-half of all degree requirements, an honors student may enroll in one course per semester on a credit/noncredit basis. All elective credits thus earned are not considered in calculating grade-point average, but 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 17 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, public policy, interior design, linguistic studies or life-span development: gender identity and roles.

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.

All programs are open to undergraduates except those so noted. Further information may be obtained from the following:

- Afro-American Studies, Mr. Neal Holmes, Assistant Director of Afro-American Studies
- Cartographic Specialization, Dr. Allen Noble, Head, Department of Geography
- Computer Science, Dr. William Beyer, Head, Department of Mathematical Sciences
- Environmental Studies, Dr. James Jackson, Director of Environmental Studies
- Interior Design, Mrs. Carolyn Albanese, Assistant Professor of Home Economics
- Latin American Studies, Dr. Hugo Lijeron, Program Coordinator of Latin American Studies
- Linguistic Studies, Dr. Arthur Palacas, Assistant Professor of English
- Peace Studies, Dr. Warren Kuehl, Director, Center for Peace Studies
- Planning City or Regional Resource Studies, Dr. Allen Noble, Head, Department of Geography
- Real Estate, Mr. James Nolte, Coordinator of Real Estate Program
- Secretarial Science, Mrs. Anne West, Coordinator of Secretarial Science
- Soviet Area Studies, Dr. Theodore Mackiw, Program Coordinator of Soviet Area Studies
- Life-Span Development: Adulthood and Aging, Dr. Harvey Sterns, Director*
- Life-Span Development: Gender Identity and Roles, Dr. Harvey Sterns, Director and Mrs. Faye Dambrot, Assistant Professor of Psychology and Administrative Assistant
- Public Policy, Dr. Carl Lieberman, Chairman, Coordinating Committee, Public Policy**

* Undergraduate and graduate.

** Graduate only.

- Mid-Careers Program in Urban Studies, Dr. Edward W. Hanten, Coordinator†
- Higher Education, Dr. William Frye, Director, Center for Higher Education†

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 2.00 grade-point average or better from the list of acceptable courses and from other courses identified by the director of Afro-American studies as appropriate to the subject. Among these four courses must be the following:

		<i>Credits</i>
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
3300:389	United States Dialects: Black and White	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
7750:410	Minority Issues in Social Work	3

Research Paper

The research paper will be written under the direction of a faculty member most suitable to the area of concern of the student's research interest; shall be one semester in duration; and shall be approved by that faculty member. The director of Afro-American Studies, in consultation with the faculty member, will approve the topic for the research paper.

A student undertaking the Afro-American Studies Certificate Program must have prior consultation with the director of Afro-American Studies.

† Graduate only.

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 the student in a wide spectrum of disciplines offered through the laboratory for cartographic and spatial analysis housed in the Department of Geography. These training opportunities provide for specialized study in the rapidly changing and significant area of cartography as a method of graphic communication. The program is flexible 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
3350:448	Automatic Computer Mapping	3
3350:449	Advanced Remote Sensing	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 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 (Science and Engineering)	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
3460:416 Introduction to Data Structures	3
4450:306 Assembler Programming	3
Computer Science Elective	3
Total	19

	<i>Credits</i>
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

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 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
3250:385 Economics: Natural Resources and Environment	3
3350:314 Climatology	3
3350:335 Recreational Resource Planning	3
3350:436/536 Urban Land Use Analysis	3

Interior Design

This certificate program represents a concentration of study in interior design emphasizing an interdisciplinary approach between the Department of Home Economics and Family Ecology and the Department of Art. The program is designed to add another dimension to the four-year baccalaureate degree in clothing and textiles and the four-year baccalaureate degree in graphic design. The certificate program is open to undergraduates in other disciplines as well as persons with baccalaureate degrees from the University or other accredited institutions. The certificate must be issued simultaneously with a baccalaureate degree or to those already holding a baccalaureate degree. The following requirements must be met:*

7100:121 Three-Dimensional Design	3
7100:244 Color Concepts	3
7100:282 Architectural Presentations	3
7400:331 Applied Home Furnishings	3
7400:333 Interior Design I	3
7400:334 Interior Design II	3
7400:335 Fundamentals of Buying Home Furnishings	3
Total	21

Latin American Studies

Requirements

The student in the Latin American Studies Certificate Program will major in the respective disciplines (eco-

*Some prerequisites to these courses are core courses that are sequenced. The other courses that are prerequisites are presently part of the clothing and textiles and graphic design curricula. The student opting to take the certificate program who is from other disciplines is required to take the prerequisite to raise the level of competency to that of a major in clothing and textile and/or graphic design.

nomics, 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.

Electives

	<i>Credits</i>	
3300:389	Special Topics (any linguistically-oriented course offered under this number, e.g., <i>United States Dialects: Black and White</i>)	3
3300:400	Anglo Saxon	3
3300:470	History of the English Language	3
3460:460	Artificial Intelligence and Heuristics Programming	3
3460:470	Automata, Computability and Formal Language	3
3580:409	Linguistics (Spanish)	3
3580:410	Linguistics (Spanish)	3
3600:170	Introduction to Logic	3
3600:374	Symbolic Logic	3
3600:418	Analytic Philosophy	3
3600:471	Introduction to Metaphysics	3
5200:335	Teaching of Language Arts	5
5630:481	Multicultural Education in the United States	3
7600:310	Intercultural Communication	2
7600:351	Survey of Speech Communication	3
7700:111	Introduction to Phonetics	2
7700:271	Language of Signs I	3

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

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

Linguistic Studies

Requirements

Completion of six linguistically-oriented courses as follows: the foundation course, two core courses and at least three elective courses. Three or more of the courses must be at the 300/400 level. (Subject to approval by the program director, other theoretically-oriented linguistics courses may substitute for core courses.)

To obtain the certificate, the student must have at least two semesters of language. A student entering the program should discuss plans with the director.

Foundation*

3300:270	Introduction to Linguistics	3
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Core courses**

3300:370	Intermediate Linguistics	3
3600:481	Philosophy of Language	3
3870:461	Language and Culture	3
7700:230	Speech and Language Development	
	or	
7700:430	Aspects of Normal Language Development	3

* Required.

** At least two required.

		<i>Credits</i>
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

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 the person preparing for work in, or who is currently engaged in city, urban, regional, environmental and resource planning. The program is open to the undergraduate, as well as a person with a baccalaureate degree, employed in local agencies doing related work, e.g. urban renewal, community redevelopment, community action, environmental protection and private industry. The person with a degree can enroll as a postbaccalaureate or special student.

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

Electives

Each student's program (subject to the program

director's approval) is to include six elective courses distributed between professional, technical and research offerings. Three courses will be from the professional listing and three from the technical-research listing. In consultation with the program director, elective courses will be selected from University offerings either in the city planning or regional resource planning emphasis areas. Similar courses completed at other universities, up to five years prior to admission to candidacy, may be approved by the director.

The intent of the elective requirements is to facilitate the development of a diverse perspective which is significant for a person who will be or is already engaged in planning for present and changing future urban, regional, environmental, resource, energy and societal needs. The truly comprehensive planner must have academic acquaintance with a variety of professional and technical approaches 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. The certificate program is open to the person actively engaged in the real estate profession as well as to the graduate and undergraduate 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 must complete the following requirements:

		Credits
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
2430:290	Special Topics: Real Estate (may be repeated for a total of four credits)	2

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 program. This certificate does not require the completion of a baccalaureate degree.

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 this 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 typewritten 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 this 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.

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

• Electives: **		<i>Credits</i>
3100:686	Research in the Biology of Aging	3
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
5400:541	Educational Gerontology Seminar	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
8200:589	A Survey: Health Care and the Aged	3

Life-Span Development: Adulthood and Aging

This certificate represents a concentration of study involving current knowledge and research in adulthood and aging. It adds 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 training, research and service to the needs of adults and older adults. This program coordinates the training of personnel in adult development and aging and helps to meet the critical shortage of trained manpower in the field of gerontology.

Admission

To participate in the 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*

- Required courses:

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

Undergraduate**

- 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
5400:541	Educational Gerontology Seminar	3
7750:450	Social Needs and Services in Later Adulthood and Aging	3
8200:489	A Survey: Health Care and the Aged	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 will oversee this certificate program and certify through the director of the institute that all requirements for the certificate have been completed.

**Seventeen credit minimum.

†Select a minimum of three courses. A student is required to take two of the three electives outside their major or degree department.

*Twelve credit minimum.

Life-Span Development: Gender Identity and Roles

This program centers on investigating the origins and functions of gender — the designations male and female — in human life. The primary objective is to provide the student with the opportunity to do multi-disciplinary and interdisciplinary investigations of this fundamental aspect of human development. The student examines gender as a biological, psychological, political, sociological, historical and intellectual phenomenon; the biological roots of sexual and gender differences; the ways societies mold these differences into the division between male and female; and the historical changes gender definitions have undergone and their functioning in the contemporary world. By looking at gender, the student looks at human society in a new way. This specialized area of study enriches the student's major and aids those preparing for human service careers.

Admission

To participate in the program, the student must:

- Be formally admitted to The University of Akron as an undergraduate seeking a baccalaureate degree or as a postbaccalaureate student.
- Make written application to the program after consulting a representative of the major department.
- Receive notification of admission from the director of the institute.
- Have an interview with a faculty member to formulate program. The faculty member thus designated will continue to act as the student's certificate program adviser until the student has completed the program.

Program

Requirements

- Minimum credits: 18 semester credits.
- Required courses:

		<i>Credits</i>
1850:300	Perspectives on Gender Identity and Roles	3
1850:493	Independent Study in Gender Identity and Roles	3

- Electives: 12 semester credits.

No more than one course can come from courses offered by a single department including the student's major department. Only one course of 200-level work will be permitted for elective credit toward the certificate. A course not included in the suggested list may be used for elective credit if the course is appropriate and if the student obtains prior approval from the faculty

adviser and the Curriculum Committee of the Institute for Life-Span Development and Gerontology.

		<i>Credits</i>
200-level electives:		
3300:275	Specialized Writing: Essential Self	3
7400:201	Relational Patterns in Marriage and Family	3
7400:255	Fatherhood: The Parent Role	2
300/400-level electives:		
1860:378	Introduction to Human Rights Concepts	3
3100:428	Biology of Behavior	2
3100:495	Special Topics in Biology: Hormones and Behavior	3
3250:431	Labor and the Government	3
3250:440	Women in Labor Force	3
3300:389	Special Topics in Literature and Languages: Women in Modern Novels	3
3300:389	Special Topics in Literature and Languages: Women Writers	3
3400:338	Women in the United States	3
3400:350	Selected Topics in History: Women in Modern Europe	3
3400:350	Selected Topics in History: Soviet and United States Women in the Twentieth Century	3
3400:437	American Family History	3
3750:480	Special Topics: Psychology of Sex Differences and Similarities	4
3850:340	The Family	3
3850:344	Sociology of Sex Roles	3
3850:412	A Socialization: Child to Adult	3
3870:455	Culture and Personality	3
3870:463	Types of Kinship and Social Organization	3
5100:490	Workshop: Men and Women, Equality of Educational Opportunities	3
5400:405	Vocational Education for Youth and Adults	2
5400:440	Life-Span and Community Education	2
5600:490	Workshop: Sex Role Stereotyping and Its Relation to Career Choice	3
7400:485	Seminar: Human Sexuality	3
7600:310	Intercultural Communication	2
7750:480	Special Topics: Women's Issues in Social Work	3

Certificate

The undergraduate certificate in Life-Span Development: Gender Identity and Roles will be awarded by the University when a student has completed the certificate program requirements and has also completed the requirements for a baccalaureate degree.

Public Policy

This program will assist the person in understanding, formulating and implementing decisions in the public realm. A person who is interested in government service, administration of publicly-supported institutions and the teaching of government at the college level should find such an interdisciplinary program to be of great value.

Admission

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:

		<i>Credits</i>
3700:541	The Policy Process or	3
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" (3.00) 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 M.A. program in urban studies.

Program

The Mid-Careers Certificate Program in Urban Studies will require the successful completion of a plan of study which must include a minimum of 16 credits of work in existing courses offered by the Department of Urban Studies. The core program and areas of study are listed below. Electives will be chosen in consultation with the 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		Credits
3980:600	Basic Analytical Research*	3
	or	
3980:601	Advanced Research and Statistical Methods*	

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

*Both required in urban research methods option.

Urban Planning		Credits
3980:630	Planning Concepts and Methods	3
3980:681	Urban Planning Design	3
3980:681	Planning Theory and Innovation	3
	Elective(s)	4
Urban Service Systems		
3980:620	Social Services Planning	4
3980:621	Urban Society and Service Systems	3
3980:681	Program Evaluation	3
	Elective(s)	3
Urban Studies		
3980:602	Seminar in American Urban Development	
	or	
3980:681	Urban Theory and Value	3
	Elective(s)	10

Higher Education

This certificate program in higher education requires a minimum of 15 credits. The program of studies has been designed to serve the practicing or prospective college or university administrator or instructor.

Admission

All applicants to the program must have previously earned a master's degree. The person wishing to pursue a doctorate in an academic department and concurrently undertaking the certificate program as a cognate or minor must apply to the Graduate School for admission to the academic department and also apply directly to the Center for the Study of Higher Education and must be admitted to both programs. Applicants wishing to pursue only the certificate program must apply to the Graduate School for admission to the Higher Education Certificate Program as a Special Non-Degree student.

Program

Courses and internships in Higher Education are directed toward the study of administrative and academic operations of colleges and universities. Specific program options include: administration, student services, curriculum and instruction. Each of the options requires an internship. In the case of the curriculum and instruction option, a higher education teaching internship developed in conjunction with the student's major academic adviser and the center staff may be anticipated. Internships may be completed at the University or at one of several cooperating institutions.

Required

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 Independent Study or coursework to support concentration and bring total hours to a minimum of 15.	2
	Total	8
		15

5900:715	Seminar in Higher Education: Administration in Higher Education (B)	3
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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

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
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**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*

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

Evening College

The University of Akron has a rich and historic tradition of service to the student who attends 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 the student 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 student — some 7,500 strong.

Evening Student Council coordinates the extracurri-

cular 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 the Evening College student 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 publication of the Evening Student Council.

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: the regular full-time student accelerating a program, a recent high school graduate, a transfer student from other institutions of higher learning, an older person with life-long learning interests, the part-time student 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.

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 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

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

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

History of the Graduate School

Graduate study began a few years after Buchtel College opened its doors, and the first earned master's degree was conferred in 1882. The College of Education awarded its first master's degree in 1924, the Colleges of Engineering and Business Administration in 1959, the College of Fine and Applied Arts in 1967 and the College of Nursing in 1979. The Department of Communicative Disorders (previously the Department of

Speech), now housed in the College of Fine and Applied Arts, was formerly a part of the Buchtel College and conferred a master's degree in 1963. The first earned doctoral degrees were conferred in 1959. Professor Charles Bulger was appointed 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 approval of graduation requirements for advanced degrees.

Graduate Program

A qualified student who has completed the baccalaureate program with sufficiently high grades may continue studies through the University's Graduate School in a program leading to the master's degree as well as to the 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 first be admitted to the Graduate School.

The Graduate School offers programs of advanced study leading to the degree of Doctor of Philosophy in chemistry, history, polymer science, psychology, sociology, 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 school also offers programs of study leading to the master's degree with majors in the following areas: accounting, biology, business administration (accounting, finance, international business, management, marketing and taxation), chemical engineering, chemistry, civil engineering, communicative disorders, earth science, economics, education (educational foundations, elementary, secondary, multicultural education, physical education, elementary or secondary school principal, school supervisor, local superintendent, counseling, special education, visiting teacher, reading specialist and school psychology) electrical engineering, engineering, English, French, geography, history, home economics and family ecology, management, mass media-communication, mathematics, mechanical engineering, music, nursing, philosophy, physics, politi-

cal science, polymer science, psychology, sociology, Spanish, speech, statistics, technical education, theatre arts and urban studies. In addition, the College of Education provides a year of study beyond the master's degree in the area of school superintendent.

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

Graduate Faculty and the Graduate Council

The graduate faculty is comprised of those members of the faculty who hold appointments at the rank of assistant professor or above and teach graduate courses, supervise theses and dissertations and are generally responsible for the graduate program in the University. They are appointed by the dean of Graduate Studies and Research after recommendation by the department, college dean and Graduate Council. Guidelines for recommendation and appointment include:

- 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 (except for applications to the nursing and school psychologist programs, which must be submitted at earlier dates. These two programs have restricted admission; the department heads should be consulted for further information). Each application must be accompanied by an application fee of \$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.

*\$25 effective spring 1982.

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. Full admission may also be granted to applicants to the College of Business Administration who meet the college's admission requirements.
- *Special Non-Degree Admission* may be granted to a person who has not met all of the requirements for *full admission*, or to a person who wishes to take particular courses but who is not working toward a graduate degree. This admission status permits a student to take up to 15 semester credits of graduate coursework. In some cases, it is limited to one semester. Graduate courses taken under this admission status may be applied later to a graduate degree program but only when the requirements for *full admission* have been met.
- *Special Workshop* status is for a person permitted to take workshops for graduate credit *without being admitted to Graduate School*. Such permission is granted by the workshop director upon receipt of a signed statement of possession of a baccalaureate degree by the applicant, and terminates upon completion of this workshop. A student admitted to special workshop status must apply through regular channels for any other category. A maximum of six workshop credits may be applied to degree work at a later date

if the applicant is given *full admission* to the Graduate School.

- *Transient* status may be given to a person who is a regularly enrolled graduate student in good standing in a degree program at another accredited university and has written permission to enroll at The University of Akron. Such permission is valid only for the courses and semester specified, with a maximum of 10 semester credits allowable, and is subject to the approval of the instructor, department head and Graduate School. A transient student is subject to the same rules and regulations as a regularly enrolled student of the University.
- *Undergraduate* status is for an undergraduate student at the University who may be granted permission to take one or more graduate-level courses if all the following conditions are met:
 - Senior standing;
 - overall grade-point average of 2.75 or better through preceding term (if a student does not have a 3.00 or better in the major field, special justification will be required);
 - written approval is given by the instructor of the course and the student's adviser.These courses may later be applied to a degree program if not used to satisfy baccalaureate degree requirements. The maximum number of graduate credits that may be taken by an undergraduate and applied later toward a graduate degree is 12.
- *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 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 re-

quests with the appropriate college dean and department head.

dent should consult with the department head in the major field to develop a postbaccalaureate program.

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 not 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 T.O.E.F.L. (the Test of English as a Foreign Language) and submitting it by June 1 for September admission. Because the T.O.E.F.L. 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. (T.O.E.F.L. is administered by Educational Testing Service, Box 899, Princeton, NJ 08540, U.S.A.). If the T.O.E.F.L. 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.

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 postbaccalaureate work at a 3.00 level before being considered for admission to the Graduate School. The accreditation status of the school at the time of the student's graduation shall apply. A stu-

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 six semester credits of "C" or below. The accumulation of six semester credits of "F" will result in mandatory dismissal. A student dismissed from the Graduate School for academic reasons may not be readmitted for one calendar year, and then only if evidence for 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 "I" must be completed during the next semester a student is enrolled or it is converted to an "F" grade.

The grade "IP" (In Progress) is given in research, thesis, master's problems and other courses where work is on a continuing basis. At the time work is completed the "IP" is changed to a letter grade. An "I" or "IP" may, upon application by the student or the instructor, be changed to a "PI" (Permanent Incomplete) when the instructor is satisfied that for reasons beyond the student's control the course cannot be completed. The change from "I" or "IP" to "PI" must be approved by the department head and the dean of the college.

Transfer Students

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

Course Load

A full load of coursework at the graduate level is normally 9-15 semester credits including audit. A student who is employed should reduce the 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 level of 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	46.50
Non-resident student per credit	75.50
(auditors pay same fees)	

General Fee

1-10 credits per semester	3.50 per credit
11 credits and over per semester	37.50 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	15
In absentia (additional)	3
Thesis and binding	
(payable at time of application for degree)	
binding per volume	8
Microfilming (Ph.D. only)	
(payable at time of application for degree)	40
Course schedule change fee (for each schedule change form processed)	6
Transcripts (if more than one transcript of a student's academic record is ordered by a student at one time, the fee shall be \$3. for the first transcript and \$1. for each additional one.)	3
Late Registration Fee	25

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. Assistantships are normally awarded for up to two years of master's study and up to four years of doctoral degree study. These assistantships provide a stipend of \$3,600 — \$5,600, 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 \$10,000. For information contact the head of the department.

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

Master's Degree Requirements

Admission

When a student is admitted to graduate study, an adviser is appointed by the head of the major department. A student who is academically qualified in general but deficient in course preparation may be required to make up the deficiencies at the postbaccalaureate level. This may be recommended prior to beginning graduate work, or in some cases, can be done simultaneously.

Residence Requirements

There are no formal residence requirements for the master's degree. A student may meet the degree re-

*25 effective spring semester 1982.

quirements of the Graduate School and the department through either full- or part-time study.

Time Limit

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

Credits

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

It should be noted that the requirements listed by department elsewhere in this section refer to the minimum necessary for a degree. It is entirely within the prerogative of the department to assign additional credits of coursework or other requirements in the interest of graduating a fully-qualified student.

No graduate credit may be received for courses taken by examination or for 500-numbered courses previously taken at the 400-number course level as an undergraduate without advance approval from the dean of Graduate Studies and Research.

Transfer

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

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

Optional Department Requirements

Each department may set special requirements with regard to entrance examinations, qualifying examinations, foreign language, required courses and thesis. Details are available from the head of the major department.

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 3.00; 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 study. Departments offering doctoral degree programs review each candidate carefully before recommending admission.

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

Residence Requirements

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

The minimum residence requirement for a doctoral candidate in all programs is at least two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 9-15 semester credits, except for graduate teaching and research assistants for whom full-time study is specified by the assistantship agreements. No student holding a full-time job is considered as fulfilling the residence requirement. The summer sessions may count as one semester, provided that the candidate is enrolled for a minimum of *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 residence requirement will be met. Any special conditions must be detailed and will require the approval of the student's committee, the departmental faculty members approved to direct doctoral dissertations, the collegiate dean and the dean of Graduate Studies and Research.

Time Limit

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

Credits

A doctorate is conferred in recognition of high attainment and productive scholarship in some special field of

learning as evidenced by the satisfactory completion of a prescribed program of study and research; the preparation of a dissertation based on independent research; and the successful passing of examinations covering the special field of study and the general field of which this subject is a part. Consequently, the emphasis is on mastery of the subject rather than a set number of credits. Doctoral programs generally encompass the equivalent of at least three years of full-time study at the graduate level. A minimum of 50 percent of the total credits above the baccalaureate required in each student's doctoral program must be completed at The University of Akron. A maximum of six workshop credits may be applied to a doctoral degree. Such credits must be relevant to the degree program, recommended by the student's adviser and approved by the dean of Graduate Studies and Research.

No graduate credit may be received for courses taken by examination or for 500-numbered courses previously taken at the 400-number course level as an undergraduate without advance approval from the dean of Graduate Studies and Research.

Transfer Credits

Up to 50 percent of the total graduate credits above the baccalaureate required in a doctoral program may be transferred from an accredited college or university. All transfer credit must be at the "A" or "B" level in graduate courses. The course must be relevant to the student's program and fall within the 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 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

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

- Plan A: Reading knowledge, with the aid of a dictionary, of two approved foreign languages. At the discretion of the major department an average of "B"

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

- Plan B: Comprehensive knowledge of one approved foreign language, including reading without the aid of a dictionary and such additional requirements as the department may impose.
- Plan C: In certain doctoral programs (counseling and guidance, elementary education, engineering, psychology, secondary education) 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 *Guidelines for Preparing a Thesis or Dissertation* is available in the Graduate School and all copies of the dissertation must conform to these instructions.

Graduation

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

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 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.
- 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 admission requirements of the School.

Admission will not usually be considered unless the applicant has a master's degree, or the equivalent, with a grade-point average of "B" from an accredited institution. Those holding master's degrees from The University of Akron or other accredited institutions should not assume automatic permission to pursue doctoral studies. Prior to admission to the doctoral program, the applicant must present evidence of the likelihood of success in advanced study. A personal letter from the applicant and three letters of recommendation from former professors are required to support an application for admission to the doctoral program. Special admissions examinations may also be required.

Prior to admission to doctoral study, the applicant must present evidence of a reading knowledge of one relevant foreign language, or knowledge of another research skill such as statistics or computer techniques. Those whose native tongue is not English must demonstrate proficiency in English.

After a student has completed at least 12 credits beyond the master's degree at the University, he must apply to the Department of History for qualified status provided that his grade-point average in all graduate work is better than "B." If any doubt exists about the student's ability at this time, the department may require an examination.

After advancement to qualified status, the student, in consultation with the director of Doctoral Studies in history, will reach a final decision upon the fields the student wishes to offer for the comprehensive examinations and any additional research skills needed. At this point assignment of a major professor who shall direct the student's dissertation shall be made. The student's doctoral committee, to be chaired by the major professor, will also be appointed.

- Complete studies selected by the student in consultation with an advisory committee, including:
 - completion of 60 credits beyond master's degree requirements, including dissertation credit;
 - demonstration of competency in four fields of study selected from the following areas: ancient, medieval, modern Europe to 1815, modern Europe since 1789, England and the Empire, United States to 1865, United States since 1865, Latin America, Far East, (one of the four fields may be in the cognate area outside of history);
 - satisfactory performance in written and oral comprehensive examinations;

- classroom teaching experience;
- defense of the dissertation in an oral examination.
- A reading knowledge of two languages will be required, normally French and German. At the discretion of the student's doctoral committee, another language or computer techniques and statistics may be substituted for either language as outlined in the Graduate School requirements. An instructor may require specific language proficiencies before permitting a graduate student to enroll in any course for which credit is to be granted. An instructor may require additional languages before permitting a candidate to write a dissertation under the instructor's supervision.
- Complete all general requirements for the Doctor of Philosophy degree.
- Each Ph.D. candidate will have classroom teaching experience as a part of the program.

Doctor of Philosophy in Psychology

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

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

- Fulfill admission requirements of the Graduate School and department requirements.
 - completion of master's degree including 30 graduate credits;
 - completion of master's core courses or equivalent;
 - attainment of a graduate grade-point average (G.P.A.) of 3.25;
 - completion of Graduate Record Examination Aptitude and Advanced Psychology Test;
 - completion of Miller Analogies Test (M.A.T.);
 - 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, developmental, 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 G.P.A. 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, industrial gerontological or counseling 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 the department's 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's Graduate Student Manual for other requirements or guidelines;
 - complete and fulfill general doctoral degree requirements of Graduate School.

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 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 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.
- 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.

Doctoral language requirements or appropriate alternative research skills and techniques may be prescribed by the student's advisory committee, depending upon the career plans of the student and upon the academic and/or scientific requirements of the dissertation.

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

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

Degree Requirements (for a student admitted with the master's degree or equivalent)

In addition to meeting the general requirements of the Graduate School, a student working toward the Doctor of Philosophy degree in sociology must meet the following requirements:

- Take 3850:656 *Seminar in Urban Processes*.
- Take two doctoral-level courses in theory. These courses are to be selected from the predetermined group of courses (see *Department of Sociology Graduate Student Handbook*).
- Complete two doctoral-level courses in methods/statistics. These courses are to be selected from the predetermined group of courses (see the department's *Graduate Student Handbook*).
- Complete a specialty of at least 15 credits.
- Complete a minimum total of 30 credits (semester) in 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's *Graduate Student Handbook*:
 - foreign language;

- computer science;
 - statistics;
 - philosophy.
- Register for a minimum of 30 credits of dissertation credit, complete a dissertation and successfully defend it in an oral examination.

Degree Requirements (for a student admitted without the master's degree)

In addition to meeting the requirements for a student admitted with the master's degree, the student must meet the following requirements:

- Completion of the 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 Biological Sciences, 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.

Biological Sciences

Master of Science

Thesis Option

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

- 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 — 2 credits.
- The student's advisory committee may require the demonstration of reading proficiency in a foreign language appropriate to the field of study.

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

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 is required.

Non-thesis Option

A minimum of 30 credits of coursework is required. In addition to a specialization (a list of which is available from the department), at least 21 credits under each option must be at the 600 level in economics. The following courses are required:

		<i>Credits</i>
3250:602	Macroeconomic Analysis I	3
3250:611	Microeconomic Theory I	3
3250:620	Applications of Mathematical Models to Economics*	3
3250:626	Statistics for Econometrics*	3

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

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:		<i>Credits</i>
3250:530	Human Resource Policy	3
3250:610	Framework of Economics Analysis	2
3250:626	Statistics for Econometrics	3
3250:633	Theory of Wages and Employment	3
3250:634	Collective Bargaining I	3
3250:635	Labor Law I	3

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

3250:636	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

A minimum of 32 credits is required, of which 17 (exclusive of thesis) must be at the 600 level. Of these 17 credits, 12 must be in literature or literary theory.

3300:506	Chaucer†	3
3300:570	History of the English Language†	3
	or	
3300:670	Modern Linguistics†	3
3300:615	Shakespearean Drama†	3
3300:691	Bibliography and Literary Research	2
3300:699	Thesis	1-6

Before enrolling in the final semester, a student must demonstrate reading proficiency in a foreign language appropriate to English studies. However, the completion of one junior- or senior-level course in a foreign language will exempt the student from examination, provided that course was taken no more than five years before the student began graduate work.

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

3250:201.2	Principles of Economics	6
3250:330	Labor Problems	3
3470:251-7	Introductory Statistics	7

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

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 in 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	Geographic Research Methods	3
3350:583	Spatial Analysis	3
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 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 twice.
- Oral presentation and defense of thesis.
- General areas of courses:

Solid Earth: 510, 532, 533, 537, 550, 570, 631, 632, 633, 634.
Earth History: 511, 525, 563, 623, 639, 660.
Applied Geology: 535, 574, 610, 636, 638, 674, 675, 678.
Geophysics: 504, 541, 546, 608, 645, 656.

Degree Specialization

Geology

Equivalents of the geology, cognate science and mathematics requirements for the University's B.S. 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's B.A. 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 geology, cognate science and mathematics requirements for the University's B.S. 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. The entering student who has some deficiencies in either engineering or geology may have to satisfy one or more of the following requirements while proceeding with graduate studies.

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

*In Master of Arts degree, at least 24 credits must be in coursework.

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 programs beyond the stated requirements will be designed in consultation and 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 should be part of the entering student's preparation. If it is not, this course must be taken at the earliest opportunity but will not be counted toward fulfillment of the graduate credit requirement.
- 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. A reading knowledge of a foreign language is desirable and may be necessary for admission to a doctoral program.

- At least 16 hours of 600-level work, exclusive of historiography and individual reading. May be fulfilled in one of the following ways:*

Option I

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

Option II

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

Option III

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

Special Summer Program

The department offers a special three-summer M.A. program. Designed primarily for public school teachers, this program makes it possible to schedule the requirement for an M.A. (Option I or Option II) over three summers and the two intervening years.

Mathematical Sciences

Master of Science — Mathematics

- Thirty credits of graduate work.

- Core requirements:

		Credits
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 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, 10 credits in 500/600-level mathematics or statistics courses must be completed.

* 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.

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
3470:655	Linear Models	3
3470:685	Regression and Correlation	3
		22

Thesis Option

In addition, 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, eight credits in 500/600-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 either	3
3450:625	Analytic Function Theory	3
3450:633,4	Continuous Systems I and II or	6
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, 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, 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 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:

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.
- A student preparing for further graduate work in a physical science or for academic or industrial

employment, should ordinarily include the following courses in the graduate programs:

		Credits
3650:581,2	Methods of Mathematical Physics I, II	6
3650:681,2	Quantum Mechanics I, II	6

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

3650:500	History of Physics	3
3650:510	Electronics	3
3650:511,2	Intermediate Laboratory I, II	4
3650:590	Workshops (maximum credit)	6

Note: the 3650:590 courses are intended for secondary school science teachers, being specifically designed for in-depth analysis of general physics.

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
3700:670	Seminar in the Administrative Process	3
3700:680	Seminar in Urban and Regional Politics	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 six thesis credits) must be at the 600 level in political science. 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;
 - G.P.A. 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's Graduate Student Manual;
 - a student is 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: first year 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;
 - complete and fulfill general master's degree requirements of the Graduate School.

Thesis Option

Completion of a minimum of 30 credits of graduate work including thesis in industrial/organizational or developmental psychology.

Non-thesis Option

Completion of a minimum of 30 credits of graduate work with no thesis required. Completion of course-work, practicum and examinations in either personnel, counseling or developmental psychology.

Sociology

Master of Arts

- Complete three required core courses with at least a 3.00 grade-point average:

		<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 oral defense.

Non-thesis Option

This 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 an oral examination on the specialty area.

Anthropology

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

Spanish

Master of Arts

- 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.

- 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.

		<i>Credits</i>
• Core requirements:		
3980:600	Basic Analytical Research	3
3980:601	Advanced Research and Statistical Methods	3
3980:602	American Urban Development	3
3980:690	Urban Studies Seminar	3

Basic Program

Complete 34 credits of coursework as follows:

- Core requirements — 12 credits.
- Selection 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 of recommended courses — 13 credits.
- Internship for the student 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 of recommended courses — 19 credits.
- Internship for the student without professional planning experience — 1-3 credits.

College of Engineering

Louis A. Hill, Jr., P.E., Ph.D., *Dean*
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
4200:600	Transport Phenomena	3
4200:605	Chemical Reaction Engineering	3
4200:610	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 series of comprehensive examinations and the student is expected to attend and participate in the Department of Chemical Engineering seminars.

Non-thesis Option		
4200:600	Transport Phenomena	3
4200:605	Chemical Reaction Engineering	3
4200:610	Classical Thermodynamics	3
	Chemical Engineering Electives**	6
	Approved Electives	18
	Approved Mathematics	3

The student must pass a series of comprehensive examinations 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.

* 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.

Non-thesis Option

	Credits
Civil Engineering Coursework	15
Approved Mathematics or Science	3
Approved Electives	12
Special Problem	2

is the purpose of this course to develop some breadth in his graduate education.

The basic requirements are as follows:

Thesis Option

	Credits
Mechanical Engineering Coursework**	15
Approved Mathematics	3
Approved Electives**	6
Thesis	6

The thesis must be 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 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

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 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

A student must pass a graduate-level oral comprehensive examination which may be taken after 24 credits have been completed.

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

Engineering Coursework	12
Approved Mathematics or Science	3
Approved Electives	9
Thesis	6

The thesis must be 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.

Master of Science in Mechanical Engineering

There are three main areas of graduate study in mechanical engineering: systems and controls, engineering mechanics and thermal-fluid sciences. Every student in the Department of Mechanical Engineering will be encouraged to take at least one mechanical engineering course outside the main area of interest. It

** 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 a student in systems and controls.

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

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.
- Completion of a foundation studies program designed to prepare the student before specialization.
- Completion of preliminary examinations on foundation studies and the major field of concentration.
- Successful completion of a test in a language judged not to be the student's native tongue:
 - a student in the Department of Counseling and Special Education may elect to develop appropriate research skills prescribed by the adviser in lieu of the foreign language requirements;
 - a student in the Department of Elementary Education may elect to develop appropriate 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.
- Completion of at least eight credits in cognate area.
- Completion of final written and oral examinations in the student's major field of concentration.
- Completion of a dissertation comprising not more than 20 credits. The oral examining committee must be constituted of at least five full-time staff members, one of whom must be from outside the College.
- 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 meet the academic requirement for admission to the examination for a psychologist license.

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 or	
5100:604	Seminar in Cultural Foundations of Education	3
5100:705	Seminar in Social-Philosophical Foundations	3
Research		
5100:640	Techniques of Research	3
5100:741	Statistics in Education	3
5—:899	Dissertation	10-20

Higher Education Administration Option

This option addresses such major institutional functions as: administration, academic, student services, finance, planning, development and public relations. A student undertaking the higher education

option within the Ed.D. will have the opportunity to direct aspects of the student's studies toward courses which directly support a particular career goal.

In addition to foundation studies 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	2
5900:802	Internship Seminar in Higher Education	1
Curriculum, Instruction and Student Services		
5600:649	Counseling and Personnel Services in Higher Education	2
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
5700:897	Independent Study	1
	General Electives *	20
	Cognate Area Electives *	12

Master's Degree

Programs 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.

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

		<i>Credits</i>
5100:600	Philosophies of Education or	
5100:602	Comparative and International 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 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 all;
 - ability to accept those that are different.

Program

Those students seeking a master's degree in elementary education can follow a 30 semester credit program which includes a master's problem (two credits) or follow a new option, which calls for the completion of 36 semester credits with a field experience, but no master's problem. For additional information about the option, an interested student should contact the department head.

- 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 primarily for the student who expects to progress as a teacher in elementary schools.

* Planned with the student's committee.

** Two seminars are required.

Secondary Education

Objectives

This program is intended to prepare the teacher of grades seven through 12 for: master teacher, department head, supervisor and resource teacher. The student planning to major in physical education should consult an 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 Based Education	
	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 an adviser. This program is primarily for the student who expects to progress as a principal or administrator in the elementary schools — 3 credits.

	Total	30
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Secondary School Principal

Objectives

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

Program

- Foundation Studies courses — 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
5700:620	Secondary School Administration	3
5700:696	Field Experience for the Secondary School Administrator	3

	Total	33-34
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Supervisor

Program

- Foundation Studies courses — 9 credits.

- Major field:

	<i>Credits</i>
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
• With the approval of the adviser, the student will select at least one of the following courses and others which may include up to six pertinent electives from course offerings outside the College of Education:	
5100:701 History of Education in American Society	3
5100:741 Statistics in Education	3
5700:699 Master's Problem or Thesis	2
5700:740 Theories of Supervision	3
Total	30

Local School Superintendent

Objectives

The elements of the local superintendent program will enable the student to:

- Communicate effectively.
- Organize and operate a curricular program.
- Supervise and evaluate a teaching and support staff.
- Prepare, coordinate and carry out a budget and appropriation plan.
- Analyze, evaluate and articulate legalities of education.
- Design and coordinate a school facilities plan.

Program

- Foundation Studies courses — 9 credits.

- Major field:

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

* Required only of an elementary student.

** Required only of a secondary student.

† Required only of a special education student.

5700:699	Master's Problem or Thesis	2
5700:710	Principles of Curriculum Development	3
5700:695	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.

Elementary School Counseling Certification Program

Program

- Foundation Studies courses — 9 credits.

- Major field:

5600:600 Seminar in Counseling	1
5600:631 Elementary School Guidance	3
5600:643 Counseling: Theory and Philosophy	3
5600:645 Group Testing in Counseling	3
5600:647 Career Counseling: Theory and Practice	3
5600:651 Techniques in Counseling	3
5600:653 Group Counseling	3
5600:657 Consultant: Counseling	3
5600:659 Organization and Administration of Guidance Services	3
5600:661 Seminar in Elementary School Counseling	2
5600:675 Practicum in Counseling	4
5610:540 Developmental Characteristics of Exceptional Individuals	3
Total	43

Secondary School Counseling Certification Program

Program

- Foundation Studies courses — 9 credits.

- Major field:

5600:600 Seminar in Counseling	1
5600:633 Secondary School Guidance	3
5600:643 Counseling: Theory and Philosophy	3
5600:645 Group Testing in Counseling	3
5600:647 Career Counseling: Theory and Practice	3
5600:651 Techniques in Counseling	3
5600:653 Group Counseling	3

		Credits
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

		Credits
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 Exceptional Individuals	2
5610:603	Assessment and Educational Programs 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

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

Options

The student elects one of the following:

Supervision — Certification Program

Requires completion of the following, 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
		23

Clinical Practice — Special Education

5610:557	Clinical Teaching Practicum: Children with Learning Problems	3
5610:695	Field Experience — Master's Electives to complete program	3

Early Childhood — Special Education

5610:450	Educational Adjustment: Preschool and Primary Level Exceptional Children	3
5610:695	Field Experience — Master's Electives to complete program	3

Developmental Disabilities

5610:554	Educational Adjustment: Moderately-Severely and Profoundly Retarded	3
5610:695	Field Experience — Master's Electives to complete program	3

School Educational Consultant — Special Education

5610:605	Program Development and Service Delivery Systems — Special Education	3
5610:695	Field Experience — Master's Electives to complete program	3

- Other programs can be developed to meet 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
Multicultural Education	Educational Administration
Family Ecology	Communicative Disorders

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 depending on program selection. Certification as a special education supervisor may also be pursued in combination with other departments.

At least one-half of the master's degree program must be 600-level courses and at least 20 credits must be within special education. The minimum program requirement is 35 credits.

Program

- Foundation Studies courses — 9 credits.
- Departmental core (required of all candidates):

* A part of foundation core courses.

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 show ability to:
 - determine appropriate motivational, instructional and management techniques;
 - 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:		Credits
5100:640	Techniques of Research	3
5300:780	Seminar in Secondary Education	2
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 — 17 credits.		
Total		35

Physical Education

Program

• Foundation Studies courses — 9 credits.		
• Required courses:		
5550:536	Adapted Physical Education for the Learning Disabled Child	2
5550:601	Administration of Health, Physical Education, Recreation and Athletics	3

		Credits
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
5550:699	Research in Education	1-3
	or	
5550:695	Field Experience — Master's	1-6

- Electives agreed on by the adviser to meet special student needs.

Total 30

Outdoor Education

Options

Elementary Education*

5560:550	Application of Outdoor Education to the School Curriculum	4
5560:552	Methods, Materials and Resources for Teaching Outdoor Education	3
5560:695	Practicum in Outdoor Education	3
Total		10

Secondary Education*

5560:550	Application of Outdoor Education to the School Curriculum	4
5560:552	Methods, Materials and Resources for Teaching Outdoor Education	3
5560:695	Practicum in Outdoor Education	3
Total		10

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:		
5400:510	The Two-Year College	3
5400:521	Instructional Techniques in Technical Education	4
5400:530	Course Construction in Technical Education**	2

*In addition to other requirements peculiar to elementary and secondary programs.

**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.

• **Teaching internship:**

The student entering the program without teaching experience is required to take a teaching internship at a cooperating two-year institution. Credits

5400:690	Internship: Teaching Vocational Education or	
5400:691	Internship: Teaching Technical Education or	
5400:692	Internship: 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 field of specialization, add to 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 Graduate School offerings. Course selections will be determined by 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

5700:610	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
		8-9

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
		8-9

School Psychologist*

• **College requirements:**

5100:600	Philosophies of Education	3
5100:640	Techniques of Research	3
5100:721	Learning Processes	3
	or	
3750:550	Learning and Cognition	4
5620:698	Research Program in Special Area	4
	or	
5620:699	School Psychology—Problem or Thesis	2

• **Departmental requirements:**

5610:540	Developmental Characteristics of Exceptional Individuals	3
	or	
5610:543	Developmental Characteristics of Learning Disabled Individuals	3
5600:643	Counseling: Theory and Philosophy	3
	or	
3750:703	Theories of Psychotherapy	3

• **Program requirements:**

3750:500	Personality	3
	or	
3750:704	Theories of Personality	3
3750:620	Methods and Theories of Human Development	4
	or	
5620:601	Cognitive Function Models for Prescriptive Educational Planning	3
3750:700	Survey of Projective Techniques	2
3750:702	Principles and Practice of Individual Intelligence Testing	4
5100:741	Statistics in Education	3
5600:645	Group Testing in Counseling	3
	or	
3750:510	Psychological Tests and Measurements	4
5620:600	Seminar: Role and Function of School Psychology	3
5620:610	Educational Diagnosis for the School Psychologist	4
		42-45

*Program admission is competitive. Admission is open during the fall semester. Selection procedures and criteria are available upon request by calling the school psychology program director in the Department of Counseling and Special Education. For recommendation for certification as a school psychologist in Ohio, the master's student must additionally complete the program prescribed under "Certification."

• **Sixth Year School Psychology Certification Program**

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

		<i>Credits</i>
3750:520	Abnormal Psychology*	3
5250:683	Reading Diagnosis for School Psychologists and Support Personnel**	3
5600:659	Organization and Administration of Guidance Services	3
5620:602	Behavioral Assessment	3
5620:603	Consultation Strategies in School Psychology	3
5620:611	Practicum in School Psychology	4
5620:695,6	Field Experience**	2-3

The nine months full-time internship and the associated seminars entail the following registrations:

5620:630	Internship: School Psychology	3
5620:630	Internship: School Psychology	3
5620:640	Field Seminar I: Issues and Assessment	2
5620:641	Field Seminar II: Classroom Environment	2

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

5100:600	Philosophies of Education†	3
5200:630	Elementary School Curriculum and Instruction	2
5250:683	Reading Diagnosis: School Psychologist and Personnel	3
5620:695,6	Field Experience: Master's	3
5700:631	Elementary School Administration	2

The student completing the before listed program will be recommended for Ohio certification if credit pattern numbers 60 graduate credits, counting no more than 15 credits at the 500 level and excluding the six credits for the internship.

experience. The student seeking a master's degree in the field can follow a 30 credit program which includes a master's problem (2 credits) or follow a new option, which calls for the completion of 36 credits with a field experience, but no master's problem. For additional information about the option, an interested student should contact the department head.

- 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 and Correction 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 a Reading Specialist

Objectives

- The student will develop an understanding of reading 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 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 specialist, the student must have a minimum of three years of successful teaching

Certification as Administrative Specialist: School and Community Relations

Program

- Foundation Studies courses — 9 credits.
- Required courses:

5700:601	Principles of Educational 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

*Credit will be given for undergraduate completion.

**The field experience and reading course requirements are subject to modification depending upon the student's past experience.

†A master degree requirement.

††This course previously listed as a master's degree requirement. A student 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

This program requires 60 credits.

Program

• Required courses:		<i>Credits</i>
5100:600	Philosophies of Education or	
5100:604	Topical Seminar in Cultural Foundations of Education	3
5100:620	Behavioral Bases in Education or	
5100:624	Seminar: Educational Psychology	3
5100:640	Techniques of Research	3
5100:701	History of Education in American Society or	
5100:703	Seminar: History and Philosophy of Higher Education	3
5100:721	Learning Processes or	
5100:723	Teacher Behavior and Instruction	3
5100:741	Statistics in Education	3
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
5700:701	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

• 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.

*Required of those completing the master's degree.

**Electives should be selected with adviser's approval.

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

†After accumulating 20 credits, the student will take a written qualifying examination. The student and program committee will then determine the remainder of the program.

College of Business Administration

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

Master's Degree

The College of Business Administration (C.B.A.) 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 (A.A.C.S.B.).

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 (A.A.C.S.B.):

- 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 (G.P.A.) (A=4.0) times 200 plus the Graduate Management Admissions Test (G.M.A.T.) 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) G.P.A. (A=4.0) times 200 plus the G.M.A.T. 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., T.O.E.F.L. score of 550 or above) and a score of at least 450 on the G.M.A.T.
- Take the G.M.A.T. 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 G.M.A.T. 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. G.M.A.T. 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 G.M.A.T. (formerly called the A.T.G.S.B.) 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 C.B.A. 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 G.M.A.T. Applicants are expected to score at least in the 55th percentile on the G.M.A.T. — 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 C.B.A. 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 G.P.A. upon the completion of 12 graduate credits will be dismissed from the program.

In rare instances, the applicant who has taken the G.M.A.T. 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 C.B.A. 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 (G.A.C.). The G.A.C. meets only four times approximately four weeks after each G.M.A.T. date. The applicant will be informed in writing of the G.A.C.'s decision after approximately one week.

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 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*

		Credits
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
6400:674	Financial Management and Policy (6200:610)	3
6500:652	Organizational Behavior (6500:600 or equivalent)	3
6500:655	Business Strategy and Policy (this course is restricted exclusively to the student who will complete the master's program within two semesters)	3

		Credits
6500:662	Quantitative Methods in Operations Management (6500:601 or equivalent)	3
6600:660	Marketing Management and Policy (6600:600 or equivalent)	3
	Elective** (any graduate credits offered by the College of Business but not in the area of concentration chosen)	3
	Total	27

Phase III: Area of Concentration Courses

There are five areas of concentration in the 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 Any six graduate credits of accounting (department 6200)	6
	Phase II and III Total Credits	36

Finance — Paper Option

6400:699	Seminar in Finance (3+3) (15 post M.B.A. Phase I credits)	6
	Electives Any three graduate credits of finance (department 6400)	3
	Phase II and III Total Credits	36

Finance — Non-paper Option

	Electives Any nine graduate credits of finance (department 6400)	9
	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.

Management — Paper Option		<i>Credits</i>			<i>Credits</i>
6500:653	Organizational Theory and Policy Formulation (6500:652)	3	6500:600	Management Concepts, Practices and Theory	3
6500:699	Seminar in Management (3+3) (15 post M.B.A. Phase I credits)		6500:601	Quantitative Decision Making	3
	Phase II and III Total Credits	36	6600:600	Managerial Marketing	3
					18

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, conversational proficiency in a 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, conversational proficiency in a 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 postbaccalaureate 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:		
3250:600	Foundation of Economic Analysis	3
6200:601	Financial Accounting	3
6400:602	Managerial Finance (6200:601 or equivalent)	3

Postbaccalaureate 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
	M.S. Phase II Total Credits	15

Phase III: Area of Concentration

Paper or non-paper option is required. Before selection the student is to consult with the head of the Department of Accounting. Those who elect the paper option are required to register for the seminar course twice (non-concurrently). Phase I graduate credits and graduate workshop course credits cannot be used for Phase III electives. Also, 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)	
	Total Credits Required	30

Non-paper Option

	Electives	15
	Any 12 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 B)	
	Total Credits Required	30

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 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

Credits

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: foundation courses; Phase II: selected electives; and Phase III: 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
6500:652	Organizational Behavior (6500:600 or equivalent)	3
6500:653	Organizational Theory and Policy Formulation (6500:652)	3
6500:654	Industrial Relations (6500:600 and equivalent)	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

The School of Law and the College of Business Administration offer a joint program in legal and administrative studies (J.D./M.B.A.) and a joint program in legal and taxation studies (J.D./M.Tax.). These combinations are open to the student preparing for a career in such areas as corporate law, tax accounting or legal practice in government. The amount of time required to complete a joint degree program is shorter than the time required to complete both programs independently. In order to pursue either cooperative program, the student must apply to and be accepted by both the School of Law and the Graduate School of the College of Business Administration. The student should contact each school independently for information covering admission, criteria and procedures. (For further information on School of Law admissions, write: Director of Admissions, School of Law, The University of Akron, Akron, OH 44325). A baccalaureate degree is required.

Degree Requirements

A student is required to fulfill the requirements of the School of Law (74 credits plus 10 credits transferred

from the College of Business Administration). The requirements of the College of Business Administration may be met by fulfilling the requirements previously listed which include the common body of knowledge (Phase I) courses (18-27 credits unless waived because of prior undergraduate credits earned) and 24 credits for M.Tax. or 30 credits for M.B.A. of advanced courses in the College of Business Administration plus six hours transferred from the School of Law. The reciprocal acceptance of course credits by each school is the essence of the joint programs. All law courses used to fulfill C.B.A. requirements must be approved by the director of Graduate Business Programs prior to completion of the courses. To earn both degrees, a total of 98 (J.D./M.Tax.) or 104 (J.D./M.B.A.) credits is required, depending on the master's program pursued. More credits may be required for the master's degree if courses (Phase I) are required.

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

College of Fine and Applied Arts

Gerald L. Knieter, Ed.D., *Dean*
Kelvie Comer, Ed.D., *Assistant 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 two options: child development or family development with a minimum of 40 credits.
- These credits will include:
 - foundation courses to prepare student for research and home economics and family ecology as a discipline;
 - core courses in the area of specialty;
 - electives selected from within the department or from another discipline to strengthen student's professional goals. These courses will be selected in consultation and with approval from the student's graduate faculty adviser.
- Complete a thesis or an internship. The thesis option involves the design and evaluation of original research in an appropriately related area commensurate with the student's background and area of pursuit. The research may involve 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.

- Pass a written comprehensive examination over major and minor areas after the completion of at least 24 credits of graduate work.
- Apply for Advancement to Candidacy upon successful completion of 25 credits of graduate study, the written comprehensive examination and an approval prospectus for a thesis or internship.
- Pass an oral examination covering the thesis or internship report.

Foundation Courses

		Credits
7400:600	Evaluation of Home Economics Literature	3
7400:675	Conceptual Frameworks in Family Ecology	3

- One graduate-level research course to be approved by the adviser.

Suggested courses include:

3850:604	Social Research Design	3
3980:600	Basic Analytical Research	3
5100:640	Techniques of Research	3
		9

- Internship or Thesis (select one):

7400:695	Internship-student must have 7400:395 <i>Community Involvement</i> or equivalent	5
7400:699	Thesis	5

Child Development Option

- Core courses:

Select 16 credits from the following courses:*

7400:504	Adolescence in the Family Context	3
7400:560	Organization and Supervision of Child Care Centers	2
7400:596	Parenting Skills	3
7400:605	Developmental Parent-Child Interactions	3
7400:616	Infant and Child Nutrition	2
7400:660	Programming for Child Care Centers	2
7400:665	Development In Infancy and Early Childhood	3
		16

- Electives—10 credits. **

Family Development Option

- Core courses:

7400:602	Family: Life-Span Perspective	2
7400:605	Developmental Parent-Child Relations	3
7400:607	Family Dynamics	3
7400:651	Family and Consumer Law	3
		11

- Electives—15 credits. **

Music

The degree Master of Music is offered by the Department of Music with options in music education, per-

* The student who has completed some of these courses as an undergraduate should consult an adviser for substitutions.

** Select from courses within the Department of Home Economics and Family Ecology or from a cognate area outside the department or a combination of the above approved by the student's adviser.

formance, composition, theory, music history and literature, and accompanying. 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.
- The Graduate School's requirements for admission.
- The performance and accompanying options require an audition on the student's major instrument/voice. Please contact the coordinator of graduate studies for an audition time.

For the performance option in voice, Italian and German are required. If the student lacks background in any of these language requirements, auditing of undergraduate courses is required.

- For the composition option, compositions representing the applicant's techniques are required.
- The options in music education, music theory, and music history and literature require an interview with the coordinator of Graduate Studies and faculty in the appropriate area.

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

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

Music Education Option

• Core courses — 9 credits.		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 — 13-17 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
7500:698	Graduate Recital	2
	or	
7500:699	Thesis Research/Recital Document	4-6
• Music electives* — 5-6 credits.		
7500:542	Applied Composition	4

		Credits
7500:551	Introduction to Musicology	2
7500:553	Bibliography and Research	2
7500:555	Advanced Conducting	2
7500:560-4	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

- 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)	
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
7500:698	Graduate Recital	2
	or	
7500:699	Thesis Research/Recital Document	4-6
• Music electives — 4 credits.		
7500:551	Introduction to Musicology	2
7500:553	Bibliography and Research	2
7500:560-4	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
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

* Elective credits are determined by the student and adviser.

** Elective credits are determined by the student and adviser.

		Credits
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
7510:6—	Ensemble (participation in two, one-hour ensembles required)	
7520:5—	Applied Music	8
• Required courses — 7 credits.		
7500:560-4	Repertoire and Pedagogy	3
7500:618	Musical Styles and Analysis IV (Twentieth Century)	2
7500:698	Graduate Recital or	2
7500:699	Thesis Research/Recital Document	4-6
• 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
7500:642	Applied Composition	2
7500:697	Advanced Problems in Music	8
7510:—	Ensemble (participation in two, one-hour ensembles required)	
• Required courses — 8 credits.		
7500:553	Bibliography and Research	2
7500:555	Advanced Conducting	2
7500:621-4	Music History Survey Seminars (select one of these)	2
7500:699	Thesis Research/Recital Document	4-6
• Music electives* — 4 credits.		
5900:640	Techniques of Research	4
7500:551	Introduction to Musicology	2
7500:560-3	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
7500:621-4	Music History Survey Seminars (select one of these)	2
7520:5—	Applied Music	2-4
• Cognate electives** — 4 credits.		
	Total	32

Music History and Literature Option

• Core courses — 16 credits.		
7500:555	Advanced Conducting	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	Thesis Research/Recital Document	4-6
• Music electives** — 5 credits.		
7500:5—	Applied Music	1-4
7500:561-4	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.		
	Total	32

Accompanying 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

* Elective credits are determined by the student and adviser.

** 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
7500:624	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
7500:698	Graduate Recital	2
	or	
7500:699	Thesis Research/Recital Document	4-6
• 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
	Total	32

- 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. Requirements are as follows:

- 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	3
7600:683	Mass Media Research Seminar	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	3
7600:676	Rhetorical Theory: Seminar	4

Track IV — Communication Theory

7600:554	Theory of Group Discussion	3
7600:681	Theory: Interpersonal Communication	3
7600:684	Survey Communication Theory	3

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 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.

* 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.

- 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 approved courses in the cognate field.

		Credits
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	6
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
3980:680,1	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.

See the director of Graduate Studies of the Department of Theatre Arts and Dance regarding this program.

Communicative Disorders

The program of study leading to the Master of Arts in Communicative Disorders may also lead to certification

by the American Speech-Hearing-Language 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 A.S.H.L.A. 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:

		Credits
7700:611	Research Methods in Communicative Disorders I	3
7700:612	Research Methods in Communicative Disorders II	2
	or	
7700:699	Research and Thesis	4-6
7700:650	Advanced Clinical Practicum: Differential Diagnosis	1

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 7700:697);
 - no more than six credits taken in disciplines other than communicative disorders.

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 Communicative Disorders. 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 Department of Social Work.

College of Nursing

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

Master of Science in Nursing

Philosophy

The philosophy of graduate education in nursing evolves from the undergraduate philosophy. Undergraduate education has as its primary focus, man, the individual within the family. The undergraduate program prepares a nurse generalist who provides health care to individuals, families and groups in any setting. The focus of graduate education is the family unit comprised of individuals viewed as enfamilyed selves. In undergraduate education health is viewed on a continuum of health/diminished health and as a purposeful interaction with ecological variables which seeks to maintain a state of well-being. In graduate education health is viewed as an evolving process which occurs throughout the lifespan of enfamilyed selves in interrelationship with the ecosystem. Family health is perceived as expansion of consciousness of enfamilyed selves.

Undergraduate education prepares a generalist who is capable of practicing in any environment and provides a foundation for research, continued study and leadership. Graduate education prepares a family health nurse specialist who implements the role of family health nurse by assisting families to experience health in any environment and who generates family health nursing knowledge through research. This educational process provides the foundation for doctoral study in nursing. Graduate education prepares this specialist for leadership in administration, education and/or direct care with families. Undergraduate education focuses on man's interaction with ecological variables whereas graduate education focuses on the family as a unit within an ecological-phenomenological perspective.

Assumptions from theories of ecology and phenomenology provide an ecological-phenomenological perspective. The ecological-phenomenological perspective provides the framework for graduate education to prepare family health nurses to assist families in sustaining that quality of life which enables them to survive and prevail. From an ecological-phenomenological perspective the faculty views families macro-ecosystem, a meta-ecosystem and a micro-ecosystem; and perceives the phenomena of the family ecosystem in terms of the intentionality of consciousness of enfamilyed selves as reported by family members.

The faculty believes that family health nurses, using an ecological-phenomenological perspective, evolve a

dialectical process of family health. Using an ecological-phenomenological perspective the faculty perceives family health as an expansion of consciousness. Consciousness is viewed as five domains of living: valuing, thinking, feeling, acting and intuiting. Expansion of consciousness is viewed as a dialectical process which encompasses thesis of being, antithesis of doing and synthesis of becoming. Intentionality is viewed as those motives and goals that lead to expansions of consciousness. Intentionality signifies that enfamilyed selves encounter a world that is meaningfully structured. Forms of intentionality include the "we" relationship, a reciprocity of perspectives, and a dynamic of time, space and motion. The faculty believes the family unit is a single entity regarded as a whole and is comprised of kinship ties which act as support system for one or more enfamilyed selves. The enfamilyed self is viewed as an individual family member who is given personal identity and validation within the family ecosystem. The family unit is perceived as a finite province of meaning.

The faculty believes that family health nursing is a process whereby the nurse and the family co-create a climate for experiencing a dialectical process of health. Family health nurses, using an ecological-phenomenological perspective and evolving a dialectical process of health, view families as a unit and components of families as enfamilyed selves. Family health nurses, with families and enfamilyed selves, experience the dialectical process of health, through health appraisal, anticipatory dynamics, stress management, health learning and enfamilyed self-care. Leadership in education and direct care with families is a process whereby the family health nurse in interrelationship with others co-constitutes an ecosystem to enable others to sustain a sense of self.

Purposes and Characteristics

The purpose of the Graduate Program in Family Health Nursing is to prepare career-oriented family health nurse specialists for leadership roles in administration, education and direct care with families and to provide a foundation for doctoral study. Within this framework, graduates of the program shall be able to:

- Value the ecological-phenomenological perspective, the dialectical process and the concepts health, family, family health, enfamilyed self and leadership.
- Evaluate health with families and enfamilyed selves through health appraisal, anticipatory dynamics, stress management, health learning and enfamilyed self care.
- Actualize the leadership role in administration, education and/or direct care with families.
- Generate family health nursing knowledge through research.
- Pursue doctoral study.

Admission

General Admission Policies

The applicant for admission to the graduate program must:

- Hold a current Ohio state license as a registered nurse.
- 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, an elementary course in research methodology or equivalent and a basic physical assessment course.
- 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.
- Write a 300-word essay describing professional goals and reasons for seeking graduate education.

A registered nurse who has a baccalaureate degree prior to September 1, 1981 in a discipline other than nursing; and a registered nurse with a baccalaureate degree in nursing from a non-accredited baccalaureate program; as well as other persons who do not meet the above criteria will be considered for admission on an individual basis.

Grade-Point Average

- An applicant with a grade-point average of 3.00 or better from the undergraduate program will be granted *Full Admission*.
- An applicant with an undergraduate grade-point average of 2.75-2.99 will be admitted as *Special Non-Degree* as defined in the *Graduate Bulletin*.
- An applicant with an undergraduate grade-point average of 2.50-2.74 will be assigned to *Deferred Status* and will be advised by the College of Nursing to take postbaccalaureate courses. The number of course credits 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.

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 October 1. The student will be notified of status by April 1 or November 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 Family Health Nursing 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 and one statistics course (cognate) provided by other selected University departments.

Functional Area of Nursing

Options are provided for study in a leadership role of either education, administration or direct care of family. There are seven credits allocated to the lead role

option which includes the equivalent of two courses and one colloquium in the second year.

Cognates

A student selects courses (nine 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 Family Health Nursing I	3
8200:601	Theoretical Basis for Family Health Nursing II	3
8200:612	Nursing Inquiry	4

		<i>Credits</i>
8200:618	Health Appraisal	5
8200:620	Family Health Nursing I	6
8200:621	Family Health Nursing II	6
8200:689	Colloquium	1
8200:699	Thesis Research	4
	Statistics	4
	Total Foundations	36
	Electives	9
	A student will also select a leadership role of either <i>Administration, Education or Direct Care of Families</i> 6	
	Total minimum credits for a degree	51

Cooperative Statement

This program is in cooperation with Kent State University, School of Nursing, where a student has the option to take cognate or nursing electives and utilize library facilities.

School of Law

Donald M. Jenkins, B.A.J.D., *Dean*
Albert S. Rakas, J.D., *Associate Dean*
Robert C. Sullivan, M.Ed., *Assistant to the Dean*

History

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, housed in the C. Blake McDowell Law Center on the University campus, has access to countless resources through its proximity to state and federal courts, local law enforcement agencies and corporate headquarters. An integral part of a distinguished University founded in 1870, the School of Law benefits from the nine major divisions of the University, the Graduate School and the more than 24,000 students.

Enrollment in the School of Law is approximately 640. Thus, the opportunity for active student participation in the classroom, consultation with faculty members and extracurricular participation is facilitated.

In addition to being a member of the Association of American Law Schools, The University of Akron School of Law is fully accredited by the American Bar Association, the State of New York Court of Appeals, the Council of the North Carolina State Bar and holds a charter membership in the League of Ohio Law Schools.

The School of Law offers a day program for the study of law with classes scheduled during the hours of 8:30 a.m. and 4:30 p.m.; an evening plan of the study of law for the working student with classes scheduled primarily between 6:30 p.m. and 9:30 p.m.

The schedule of courses for the day division is designed so that the degree of Juris Doctor may be earned in three academic years consisting of six semesters. Attendance at Summer Sessions is optional.

The schedule of courses for the evening division is designed so that the degree of Juris Doctor may be earned in four academic years consisting of eight semesters and three summer sessions.

Each student is recommended for the degree of Juris Doctor upon satisfactory completion of the requirements.

Objectives

The purpose of the School of Law is to further the goals of The University of Akron by providing a quality program of university education for law and to pursue the following aims:

- To prepare the student for a career in the profession of law by imparting information concerning legal institutions, basic principles of the substantive and procedural law and jurisprudential thought concerning the role of law in society.
- To help to develop in the student an active and critical attitude rather than a passive approach toward the rules of law and their social implications.
- To develop in the student a high sense of professional responsibility in terms of technical competency, appreciation of professional standards and the responsibility of the lawyer to achieve a more nearly perfect system of civil and criminal justice.

The primary purpose of the student enrolling in the School of Law is to obtain a fundamental knowledge of law and the role of law in society, interlaced with a grasp of the public responsibilities of the lawyer. This course of study will enable them to become attorneys- and counselors-at-law and leaders in governmental affairs. The ultimate aim of the school is the development of graduates who will serve society not only through the representation of their individual, corporate or governmental clients, but who will also serve as architects of society's future.

The student is trained to develop powers of legal analysis and synthesis, to develop the technical skills of legal advocacy and legal draftsmanship and to learn practical skills of research and management of litigation.

C. Blake McDowell Law Center

The C. Blake McDowell Law Center is a modern, attractive law school building located on the University campus. The law center is designed to facilitate the study of law both academically and clinically by its proximity to state and federal courts, law enforcement agencies and corporate headquarters.

The law center is named in recognition of Mr. C. Blake McDowell, a practicing attorney and 1911 alumnus of the University. Through his great leadership and interest, Mr. McDowell worked unflaggingly toward the creation of a law school at the University which resulted in the merger of the Akron Law School with the University in 1959.

Admissions Information

Pre-legal Education

A student expecting to enter the School of Law must hold a baccalaureate degree granted by an accredited

institution of higher learning. Requirements are flexible for undergraduate study preceding legal education. However, your college record and Law School Admission Test score must demonstrate that you are highly qualified for law study.

A student entering law school must have completed a course of study encompassing a broad cultural background also including intensive work in a selected field of study. The pre-law student must demonstrate the ability to communicate easily, to understand people and institutions; to gather and weigh facts; and to solve problems and think creatively. A mastery of the English language is essential and the entering student should be able to read with comprehension and be able to express clearly and concisely in both oral and in written fashion.

Requirements for Admission

An applicant for admission desiring to become a candidate for the degree of Juris Doctor must be of good moral character. A baccalaureate degree from a regionally accredited college or university in a field of study deemed appropriate by the faculty of the School of Law, with an academic average substantially better than the minimum average required for such a degree, must have been earned prior to the time the applicant begins work in the law school.

The school, through an Admissions Committee, is seeking law students of demonstrated academic ability as evidenced in part by L.S.A.T. scores and the undergraduate grade-point average (G.P.A.). The school will be looking beyond the L.S.A.T. and G.P.A. for special qualities in its applicants for 100 day-division openings and 100 evening-division openings.

The law school seeks law students with diverse backgrounds. In this regard, consideration is given to ethnic and economic factors, advanced degrees, significant work experience and extracurricular and community activities during and after the college years. The growth and maturity of the applicants and their commitment to law study are significant concerns.

Admission Procedures

Applicants for both day and evening should apply and complete applications as soon as possible after October 1 in the year preceding the start of fall classes. Review of completed files will begin in January and students will be admitted until the classes are filled. After that time, acceptable applicants will be placed on a waiting list. The school estimates 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 the classes will be closed before or after the above dates. The best policy is to complete one's application as early as possible.

Admission from the waiting list will begin in late July, should vacancies occur.

In cases where specific questions on an application arise, a personal interview with the associate dean may be necessary or may be requested by the applicant.

Letters of recommendation are not necessary. However, if points relevant to academic or personal background are not addressed in the application material, they may be added to the applicant's file for review.

Application Procedures

Submit to the School of Law:

- Application for Admission form (available upon request from the Law School).
- A non-refundable application fee of \$20* if never previously enrolled for credit courses at The University of Akron (check or money order payable to The University of Akron).
- A Law School Application Matching form obtained with L.S.A.T./L.S.D.A.S. material.

Submit to Law School Admission Services, Newtown, PA:

- Application to take the Law School Admission Test (L.S.A.T.).
- Application for the Law School Data Assembly Services (L.S.D.A.S.). The application for L.S.A.T./L.S.D.A.S. is available upon request from L.S.A.S., Box 2000, Newtown, PA 18940.
- Applicants are urged to take the L.S.A.T. as early as possible and preferably October or December for day applicants; October, December or February for evening applicants.

If accepted for admission a student must file with the School of Law: a final, official transcript, mailed 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 after the beginning of the fall term. Such *certificate* must be executed 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 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.

*\$25 effective spring 1982.

A student admitted to the Juris Doctor degree program is requested to file the official transcript only after receiving written notice of admission to Juris Doctor degree candidacy of the School of Law.

The unofficial copy of transcript forwarded to the School of Law by the L.S.D.A.S. does **not** constitute filing of transcript with the School of Law.

All inquiries and correspondence pertaining to admission should be sent to:

Associate Dean
School of Law
The University of Akron
Akron, OH 44325
Phone: (216) 375-7331

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.

Transient Students

A law student who is currently enrolled at a School of Law on the approved list of the Section of Legal Education and Admissions to the Bar, American Bar Association, may enroll for specified courses in the School of Law upon receipt of a completed Transient Application form (which requires written permission of the applicant's dean) and application fee (if applicable) subject to availability of space in specified classes.

Reapplication

Applicants who have previously applied for law school and have not attended must comply with all the above procedures. The L.S.A.T. does not need to be repeated but depending on the test results, you may want to retake the test. In addition to the application and the \$20* non-refundable fee, a current L.S.D.A.S. report must be sent to the School of Law.

Joint Degree Programs

In order to pursue the J.D./M.B.A. or the J.D./M.Tax programs, the student must apply to and be accepted by both the School of Law and the Graduate School of the College of Business Administration. The applicant is also required to take both the L.S.A.T. and the G.M.A.T. Individuals with baccalaureate degrees in any field of study are eligible to apply for a joint program.

A brochure describing the program in more detail and an application form are available from the School of Law or from the College of Business Administration. A more detailed description of the program can be found in the College of Business Administration, Graduate School in this *Bulletin*.

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 of the American Bar Association, and who is eligible for readmission to the former law school, may be admitted to advanced standing. A student desiring admission to advanced standing shall: (1) obtain from the dean of the former law school a letter setting forth the fact that the student is eligible for further instruction, and consent to the transfer; (2) submit evidence of meeting the admission requirements (including L.S.A.T./L.S.D.A.S.) of The University of Akron School of Law; (3) present an official transcript of all work completed at the previous law school; (4) submit a non-refundable fee if never previously enrolled for credit courses at The University of Akron. Credit to be given for the prior law school work shall be determined by the dean of the School of Law.

Academic Information

Requirements

Requirements for the Degree Juris Doctor

The School of Law offers two programs leading to the degree Juris Doctor. The curriculum for a day student is designed so that the degree may be earned in three academic years consisting of six semesters. Attendance at the Summer Sessions is optional.

The curriculum for the evening student is designed so that the degree of Juris Doctor may be earned in four academic years consisting of eight semesters and three summer sessions. The Summer Sessions are an integral part of the evening program.

Except in certain exceptional cases, the day student is not permitted to take evening class, likewise an evening student is not permitted to enroll in day class without the permission of the dean.

Auditing

Members of the bar and graduates of law schools who are not yet members of the Bar may, with the permission of the dean of the School of Law, enroll for a course without credit. The auditor is required to do all

*\$25 effective spring 1982.

In addition, in exceptional cases the dean may authorize a student to take a reduced courseload under either curriculum and stretch studies over the time prescribed for each program.

A new student is admitted at the beginning of the fall semester only.

Joint Degree Programs

The School of Law and the College of Business Administration offer a joint degree program in legal and administrative studies (J.D./M.B.A.) and a joint program in legal and taxation studies (J.D./M.Tax). These combinations are of interest to a student preparing for a career in such areas as private practice, corporate law, tax accounting and government. The total amount of time required to complete a joint degree program is less than the time required to complete both programs independently since certain courses in one college fill course requirements in the other college.

Degree Requirements

The degree of Juris Doctor is conferred upon a student of good moral character who has been recommended by the dean and faculty of the School of Law and who has:

- Completed satisfactorily all required courses, seminars and electives to earn at least 84 credits.
- Completion of a program involving extensive research and legal writing.
- Met the residency requirement of 96 weeks for the day division or 144 weeks for the evening division.
- Attained at least a 2.00 average for all courses taken and additionally, at least a 2.00 average for the senior year.
- Spent their last year at the University unless excused by a dean.

Library

The primary tool of the attorney is the written word. Thus, books take on an added importance when one undertakes a study of the law. The incoming student will soon discover that an essential portion of time and energy will be expended within the law school library.

The library has a fine collection of over 142,000 volumes in an attractive and pleasant reading room. The library has all the basic legal materials for conducting legal research in all fifty states and in federal practice. Extensive materials are available for research in many subject areas of the law. The library subscribes to the series of records and briefs of the Ohio Supreme Court and the United States Supreme Court. Audio tapes, video tapes and microforms are also available for use in many related areas of study.

The library is a federal government depository giving the student access to law-related publications of the federal government. The latest addition to the library is an online computer terminal for accessing legal data

bases. This tool of the law office of the future is available now.

Five professional librarians (two with both a law degree and a master's degree in library science) five staff and a dozen assistants are available.

To supplement the collection are the University libraries with over one million volumes freely available to all law students and a computer terminal linking the law library to 2,300 other libraries with more than seven million titles which may be borrowed.

Curriculum

The curriculum* includes foundation courses of common law origin, public law and those of a procedural nature, as well as perspective and planning courses. Law is studied by the case, problem, seminar and clinical methods. Clinical training is achieved through basic and advanced seminars which involve student participation in the work of the various legal aid, public defender, prosecutor's offices, as well as other agencies. The aim of this program of study, in addition to developing social awareness, is to train the student for technical competency, professional responsibility and for the practice of law in any common law jurisdiction.

The Law School faculty, to assist the student in planning a course selection that may be used to meet individual professional objectives while attending Law School here, adopted a suggested track system. In addition, the primary purpose of the suggested tracks is to identify when courses will be offered in the future. Tracks have been developed for the following: required and bar courses, business, litigation and tax.

Day Program

First Year, Required Fall Semester

	Credits
Civil Procedure I	3
Contracts I	3
Legal Process	1
Property I	3
Torts I	3
Legal Research	2
Basic Legal Communications	1
Intermediate Legal Communication	1

Spring Semester

Civil Procedure II	3
Contracts II	3
Criminal Law	3
Property II	3
Torts II	3

*The coursework for the first year is prescribed and provides the essential framework for subsequent legal study.

Evening Program

First Year, Required

Fall Semester

	Credits
Contracts I	3
Legal Process	1
Torts I	3
Legal Research	2
Basic Legal Communications	1
Intermediate Legal Communication	1

Spring Semester

Contracts II	3
Criminal Law	3
Legal Profession	1
Torts II	3

Standards of Academic Work

Grades

The following system of grading is used in recording the quality of a student's academic work:

Grade	Grade Points Per Credit
A	4.00
A-	3.70
B+	3.30
B	3.00
B-	2.70
C+	2.30
C	2.00
C-	1.70
D+	1.30
D	1.00
D-	0.70
F	Failed 0.00
I	Incomplete 0.00
IP	In Progress 0.00
PI	Permanent Incomplete 0.00
AUD	Audit 0.00
CR*	Credit 0.00
NCR	Noncredit 0.00
W	Withdrawal 0.00

Academic averages are computed by dividing the grade points achieved by the credits attempted. When a course is failed and repeated, the credits and the grade points involved each time are included in the computation as if the repeated course were an independent course.

A grade-point ratio of less than 2.00 is unsatisfactory. After the first year, a law student whose scholarship is unsatisfactory will be either placed on probation, suspended for a definite period of time or dropped from the school at any time by the dean. Reinstatement is determined by the dean of the School of Law with advice of the Faculty Academic Committee. Written petition for reinstatement should be addressed to the dean.

If a student withdraws from a course with the permission of the 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.

Writing Program

The tools of the practicing lawyer are oral and writing skills. As an incoming law student, experience will be gained in using and improving these skills. All first-year students take a course in legal research and advocacy. During the year the student learns to use the specialized research materials of the law, gains experience using the latest computerized legal data bases, is supervised in a writing experience and has a chance to present written and oral arguments before a mock court.

A second year student is enrolled in the appellate advocacy course. There, a student reads a transcript, identifies and briefs the issues and presents oral argument. This exercise closely simulates a true appellate experience. In the final year, the student takes an intensive, advanced legal writing course which concentrates on drafting of statutes, pleadings and other legal documents.

Subsequent experiences in writing are met through seminar, paper assignments for courses, individual studies, moot court briefs, law review or clinical experience. Opportunities are provided to exercise verbal skills thus enabling the student to become a successful advocate.

The Akron Law Review

A board of student editors prepares and edits, with the advice of the dean and faculty, *The Akron Law Review*, a quarterly legal periodical devoted to legal research and commentary on the law. Membership on the board is limited to the student of superior academic achievement or of demonstrated writing skill who desires to engage in legal research, analysis, writing and editorship. Membership on the board of student editors is indicative not only of scholarship, but of valuable training in skills important to the profession of law.

Withdrawal From A Course

A student may withdraw from a course for any reason up to the mid-point of a semester or summer session with the signature of a dean.

After the mid-point of a semester or a summer session, but prior to the last week of classes, a student must have the written approval of both instructor and

*Not calculated in cumulative average.

dean. Should either refuse to sign the withdrawal form, the student may appeal to the dean of the School of Law who shall make the final decision. For complete withdrawal from the law school, a student must have written permission from a dean.

An approved withdrawal will be indicated on The University of Akron official academic record by a "W". A student who leaves a course without going through the withdrawal procedure will be given an "F" in the course.

The Honor System

Consistent with the aim of training professionally responsible lawyers, and in recognition of the importance of honor and integrity of the individual lawyer, the faculty has placed the responsibility of honorable conduct on the individual student and the administration of the honor system on a council of students composed of Student Bar Association officers and class representatives. The entering students will receive a copy of the Honor Code.

Faculty Research Assistance

The student showing scholarship is given the opportunity to work with faculty members who are conducting research. This experience improves writing and research skills, gives the student the opportunity to be involved in research on the leading edge of legal knowledge and fosters learning in a non-classroom environment.

Enrollment in Courses in Other Colleges of the University

A student interested in taking courses in other colleges of the University may do so upon written consent of the dean. The study of law is considered a full-time pursuit, so each request is considered on an individual basis and in no case may a student use more than six credits earned outside of the law school for Juris Doctorate degree requirements.

Bar Admission

Each student entering the School of Law is encouraged to read the rules for bar admission for the state in which the student intends to practice law. This information is available from the various state supreme courts. In addition, the information is on file in the library.

For the student interested in practicing in the state of Ohio, the Supreme Court of Ohio requires that each student entering a law school who intends to practice

law in Ohio file within 120 days from the beginning day of the fall term after initiating studies:

- An application for registration as a law student.
- Evidence of his meeting the pre-legal educational requirements established by the Rule.
- A legible set of fingerprints on a prescribed form.
- A filing fee of \$30.

As a condition for taking the bar examination, the applicant must:

- File an application not less than 90 days prior to the date of the bar examination.
- Present a certificate from the School of Law stating that the student has completed or will complete all courses required by the Rule.
- A filing fee of \$60.

The appropriate Ohio forms may be obtained from the School of Law on request.

It is the responsibility of the student to initiate a request for, execute properly and file timely, the requisite forms to the state in which the student intends to practice law.

Clinical Training and Public Services

The University of Akron School of Law, in recognition of the need to adequately prepare the student for future roles as an attorney, has created an urban clinical program, as described below.

Appellate Review Office

The vast bulk of the student-oriented, public service activities offered by the School of Law emanate from the Appellate Review Office. It is staffed by attorneys and six to eight student staff members. The student becomes eligible to work in the office after completion of the first year and receives either an hourly wage or academic credit.

As the office name implies, most of the work done involves postconviction representation. The office staff has perfected appeals in the State Courts of Appeal, the Supreme Court of Ohio, all of the Ohio Federal Courts and the United States Supreme Court.

One unique characteristic of the office is the substantial responsibility each student has for assigned cases. The student is responsible for doing the research, preparing drafts, compiling the final briefs and corresponding with the courts and other attorneys. The school has established this program with the goal of giving the conscientious student the opportunity to experience the practice of law in a supervised environment.

In addition to the Appellate Review Office, there are other associated activities where a student may experience the full gamut of legal problems.

Domestic Relations

Under supervision of a staff attorney, the law student with a legal intern certificate represents indigent persons with domestic relation problems (e.g., dissolutions, divorces, child custody and support). The student has primary responsibility for the gathering of information, drafting of pleadings and court representation of the client.

Landlord-Tenant

Many people are becoming enlightened about their rights as tenants, and the need for quick and effective legal representation in this field affords the student the opportunity to represent clients at the inception of the case. The student has primary responsibility for fact gathering, which may entail on-site investigation, counseling and strategy planning.

Inmate Assistance Project

This is a unique student-run program in the state of Ohio; participants travel to and conduct interviews with prison inmates attempting to resolve their criminal and civil law problems. The student is encouraged to participate in this program from the very beginning of law school. Participation involves travel to either the reformatory for men or women, interviewing of inmates and follow-up on legal problems.

Clinical Seminar

The student interested in experiencing the operations of public agencies may sign up to work in outside agencies, for credit. The student is assigned to various agencies, such as the County and City Prosecutor's Offices, County Public Defender's Office and the County Legal Aid Office. At placement, the student is able to see the inner workings of these offices while gaining a rich variety of knowledge. In coordination with this clinic, a course is taught which emphasizes the learning of interviewing and client-counseling techniques.

Moot Court Programs

To develop the dual skills of advocacy; oral prowess and brief writing, the student is encouraged to participate in the several moot court programs within and without the school. These programs enable the student to learn and polish the skills of legal writing and oral advocacy through the vehicle of "moot" or academic problems. The student is encouraged to participate in any of the following programs.

National Moot Court

During the first year of studies, the student is given bids to try out for the law school's National Moot Court Team, based on that person's performance in the legal

writing and research courses. A student is selected to represent the school in the national and regional competitions during the second and third academic year on the basis of a presentation in an intramural competition.

Voluntary Moot Court

For the student who does not participate in the National Moot Court Program, Voluntary Moot Court is available in the spring of each year. In this activity the student is given a "moot" problem, asked to prepare briefs and present oral argument against fellow students. The highlight comes in the final round when the competitors are evaluated by judges from the State Court of Appeals.

Jessup International Law Moot Court Competition

The student interested in exploring international law on an appellate level competes on a national scale in this competition. Problems are always relevant and timely.

Enrichment Programs

The school is firmly committed to the belief that the quality of legal education, both within the school and in the legal community as a whole, is enhanced by the free exchange of ideas on matters of contemporary importance.

Law Day Speaker Program

The law school has sought to facilitate visits by individuals who may have particular insight into issues facing the legal community.

The longest running program is the Law Day Speaker, in which the Student Bar Association and the Akron Bar Association, jointly bring to campus a speaker of national stature to present a public address on an issue of concern to those involved in the study and practice of law.

Annual International Law Symposium

Each year since 1972 the school and the International Law Society have sponsored a two-day International Law Symposium. Participants in the program are internationally known experts within the field. The proceedings are published each year in a subsequent edition of the *Akron Law Review*.

Special Seminars

In addition, the Student Bar Association has conducted special seminar programs throughout the year. These programs have included:

- American Civil Liberties Union's involvement in Skokie, Illinois' march by the American Nazi Party — its first amendment implications and other topics.
- Prisoners' Rights Seminar.
- Evidence Seminar — hearsay rule, and the art of cross-examination.
- Proposed revisions of the Federal Criminal Code.

The Student Bar Association has also sponsored visits by distinguished lecturers on various political, social and legal aspects of our society.

The BFGoodrich Company Chair of Law

The BFGoodrich Company endowed a Professorial Chair of Law in International Transactions and Relations.

Its aim is to assist in the training of a law student as a counselor in business, government and private practice in international business transactions, and education in a global awareness of the economic and political problems of other nations, as reflected in their legal systems. With the cooperation of other academic units of the University, a unique opportunity is provided for an interdisciplinary study of subject matter areas such as in business, economics and government vital to counseling in international transactions and relations. Professor Hamilton DeSaussure is the holder of the BFGoodrich Company Chair of Law.

Honors and Awards

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 Law Publishing Company** awards annually a two-volume work entitled *Jacoby'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 **Bureau of National Affairs, Inc.** awards a one year complimentary subscription of *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 United States 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 **Dennis and Company Incorporated Law Book** publishers award is presented annually in recognition of superior performance in the Law School's Moot Court program.

The **Lawyers Co-operative Publishing Company and Bancroft-Whitney Company**, joint publishers of *American Jurisprudence*, award to top ranking students in about twenty-four courses a specially bound copy of the equivalent title from their multi-volume publication, as determined by the instructor(s) in charge.

The **Judge W. E. Pardee Memorial Award** of \$300 (established 1963-64) is presented annually to a participant (or team of participants) in Bracton's Inn (the Case Club of the School of Law) who best displays (display) advocacy skill and professional decorum, as determined by intramural competition.

The **Phi Alpha Delta Law Fraternity, International, Grant Chapter**, awards annually the Judge Florence E. Allen Memorial Award of a \$50 United States 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.

Prentice-Hall, Inc. provides annually a complimentary subscription to its *Federal Tax Guide*, edition "A," to the graduate who has excelled in the study of taxation, as determined by the dean, School of Law.

The **West Publishing Company** annually awards four titles of *Corpus Juris Secundum* to students of all classes who have made the most significant contribution to overall legal scholarship, and four titles from the Hornbook Series to students with the highest academic average in each of the classes, as determined by the dean, School of Law.

Scholarships

The **Akron Bar Association Auxiliary Scholarship**, established by the Akron Bar Association Auxiliary, provides an annual scholarship not to exceed \$1,000 to a student in the full-time program of law study. The Akron Bar Association University Scholarship Committee, on the basis of scholarship, legal aptitude, character and need and with the advice of the dean, School of Law, shall make the selection, giving first preference to a resident of Summit County, Ohio. A recipient may apply for an annual renewal of the scholarship.

The **Professor Hollis P. Allan Memorial Book Fund** was established in 1980 in memory of a beloved law professor and is awarded as determined by the dean, School of Law.

The **Evan B. 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 finance or accounting department, 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 **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 Development Foundation.

The **Howland Memorial Fund** provides Frank C. Howland Scholarships to deserving law students of demonstrated scholastic attainment, as nominated by the dean, School of Law.

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 **Judge James G. France Scholarship** is a fund established in 1979 by Mrs. France in memory of her husband James France, who gave the School of Law 22 years of distinguished service. The scholarship is awarded to a deserving law student demonstrating scholastic attainment as determined by the dean, School of Law.

The **Lee Ferbstein Scholarship Fund** established by the Akron Education Association (A.E.A.) in 1979 as a tribute to Lee Ferbstein, for more than 30 years A.E.A. legal counsel and a former member of the University's Board of Directors. The scholarship covers tuition, books, fees, room and board, all or in part, for a student enrolled in the School of Law, with primary interest in the field of labor law. The student should be a resident of Akron, Ohio, and a third year law student; otherwise there are no restrictions as to race, creed, color, sex or national origin. Selection of the recipient is determined by the dean of the School of Law, with assistance by the University Relations Committee of the A.E.A.

The **Herman Muehlstein Foundation of New York** established a fund to provide scholarships to qualified students from the New York City area, as nominated by the dean, School of Law.

The **Matthew 25:31-46 Scholarship Fund** is an endowed scholarship fund established in 1981 to provide tuition assistance for nuns enrolled in the School of Law preparing for service as poverty lawyers. Selection of the recipient and the amount of financial assistance is determined by the School of Law.

The **Ohio Law Opportunity Fund** is provided by members of the Bench and Bar in Ohio to assist Ohio residents from disadvantaged backgrounds as nominated by the dean, School of Law.

The **Phi Alpha Delta Law Fraternity, International**, annually makes available nationally twenty-one \$50 awards, and loans up to \$1,000, to senior students who are members of the fraternity. Application should be made through the faculty adviser of the Grant Chapter, School of Law.

The **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 **Fully R. Spain, Jr., Memorial Fund** was established in 1980 by family and friends in loving memory of Fully R. Spain, Jr., a 1973 School of Law graduate. This scholarship provides \$1,000 annually for a student enrolled in the School of Law, as determined by the dean.

The **Joseph Thomas Memorial Law Scholarship Fund** is a fund established in 1976 by the Firestone Foundation in memory of Joseph Thomas, Esquire, the income from which is used to assist a financially deserving student or students of high academic potential and achievement residing in Summit County, on the recommendation of the dean, School of Law. The award may be renewed.

The **University Board of Trustees Tuition Remission Scholarships** are available for entering and continuing law students on the basis of scholarship and/or need as determined by the dean, School of Law.

For additional information and application forms for the above scholarships, contact the associate dean at the School of Law (216) 375-7331.

Activities and Organizations

ARETE, a student-managed publication, publishes a monthly newsletter intended to serve as a forum for law students, faculty and outside opinions on a wide range of contemporary issues related to law and the School of Law. ARETE is open to students after the first year.

The **Black American Law Student Association (B.A.L.S.A.)** was accredited as a law student organization in 1974 and is an affiliate of National B.A.L.S.A., Inc. Dedicated to the twin objectives of increasing minority enrollment and retention, B.A.L.S.A. sponsors

seminars on subjects such as legal rights of blacks, poor and oppressed people.

Bracton's Inn, styled after the old English Inns at Court, is a student-run group having primary responsibility for developing student brief writing and oral advocacy programs. A student may become a member of the inn by engaging in any of the various oral advocacy programs offered during the school year. Among the activities sponsored by the inn are: client counseling competition, high school mock trial, voluntary mock trial, and Order of Barristers.

The **Delta Theta Phi Law Fraternity**, Seiberling Senate, was chartered in 1973, in honor of Congressman John F. Seiberling. The objective of Delta Theta Phi is to bring together congenial men and women of good will and common purpose who regard the study and practice of law as activities worthy of the highest human endeavor. A law student in good standing is eligible for membership after the first semester.

The **Law School Alumni Association** was formed in 1974 and has since supported activities and programs which enhance the quality of education at the School of Law. The association operates in conjunction with the Law Placement Office and assists students and graduates in their placement efforts. Members in the association provide support for various school activities and receive a newsletter, alumni directory and other benefits.

Founded in 1971, the **International Law Society** emphasizes the study of and active participation in, international law. Interested students are encouraged to join to work towards the development of programming, panel discussions and competitive events highlighting

this growing and exciting field of law. The International Law Society co-sponsors the annual International Law Symposium.

The **Phi Alpha Delta Law Fraternity, International**, Grant Chapter, was established in 1962. Through service to the student, the school and the legal profession, Phi Alpha Delta strives to advance not only the attainment of a high standard of scholarship, but also the development of a spirit of good fellowship among its men and women members. Speakers, workshops, parties, luncheons and the annual used-book sale are among some of the activities sponsored by Grant Chapter. The fraternity welcomes all students in good standing after the first semester.

The **Student Bar Association** develops innovative educational programming, maintains ties with the legal community through joint ventures and plans the various student social and legal activities throughout the school year. Membership is open to all law school students. The student desiring an opportunity to actively direct the course of student law school involvement is encouraged to seek election to this body.

Law Association for Women's Rights is concerned with the evolving role of the woman attorney within our legal system, as well as the changing rights of women in the community. This association is of local origin, non-aligned with any national organization. Its membership is comprised of male and female law students and members of the local bar. The group has a multi-faceted approach to achieving its goals, which include providing undergraduate women with law school information, heightening community awareness of women's rights and problems and providing topical discussion groups.

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.

Sponsored research activities on campus are coordinated by the Research Council founded in 1962; it also serves as the policy-making body for research. The council consists of the dean of graduate studies and research, the coordinator of research and the directors of the various research institutes.

Institute for Biomedical Engineering Research (I.B.E.R.)

Robert E. Herron, Ph.D., *Director*

This institute was established in 1979 to promote interdisciplinary studies in the rapidly growing areas of knowledge which overlap the fields of biology and medicine, on the one hand, and engineering and the physical sciences, on the other. It conducts seminars, courses and degree programs in biomedical engineering in association with the College of Engineering and individual departments.

In addition to its research and educational functions, the institute provides a research service to local hospitals and industry, as well as to private and govern-

ment agencies. The premise for this program is that the combined resources of the University, Northeastern Ohio Universities College of Medicine and affiliated organizations will often permit more cost-effective solutions than would be possible by an individual or group doing the research independently.

The work of the institute is carried out by "members" selected from the faculties of The University of Akron and Northeastern Ohio Universities College of Medicine, as well as from the ranks of area physicians, engineers and scientists. A director appointed by the president of the University coordinates the activities of the institute through the senior vice president and provost.

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.

Center for Economic Education

Fred M. Carr, Ph.D., *Director*

The center exists to improve the economic literacy of individuals in order to help them function competently as citizens, producers and consumers.

The center conducts workshops, seminars and economic programs for teachers, students and interested groups. It provides consulting services in the area of economic education and acts as a clearinghouse for the gathering and dissemination of economic education materials and programs. It also fosters an understanding and appreciation of the American economic system.

Center for Environmental Studies

Jim L. Jackson, Ph.D., *Director*

The Center for Environmental Studies matches the expertise of 95 affiliates in 33 disciplines with the needs of a student seeking study and research opportunities 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 (C.V.N.R.A.). These programs are operated through the University's Oak Hill Center for Environmental Studies. Located in the C.V.N.R.A., 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.

Institute for Futures Studies and Research

Gary Gappert, Ph.D., *Director*

The Institute for Futures Studies and Research was established in 1978 to provide a focal point, 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 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 the student an awareness of the global nature of knowledge. There are numerous courses in non-western studies, area concentrations,

programs in international business and various opportunities for students and alumni to travel overseas.

Through its advisory committee, composed of faculty and students of the various colleges, the Center for International Programs attempts to find ways of committing the University to programs that produce a student 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.

Learning Resources Center

William Mavrides, M.A., *Director*

In order to provide opportunities for self-paced learning, the University created the Learning Resources Center (L.R.C.) in 1974. Located in Carroll Hall 200, the L.R.C. is equipped with thirty-six active learning carrels and twenty-four table study stations.

The center is under supervised operations for an average of sixty hours weekly for the student to meet the natural sciences requirement.

Equipment available includes a wide assortment of slide, film and film-strip projectors; audio-cassette-headphone equipped playback units; two- and three-dimensional biological and geological models; maps, charts, etc.; and mineralogical specimens available for "hands-on" experiences. The student choosing this approach is provided with notes and other types of study guides to assist in academic pursuits.

The courses are presented in modularized fashion enabling the student to complete and be tested over one module or unit at a time before proceeding to the next step. Graduate students and teaching assistants from the natural sciences departments are periodically available for personal counseling and advising as are the course instructors when their schedules permit.

Study units are also available in elementary statistics for mathematics, phonetics for speech pathology; financial management for the Community and Technical College student; and calculus of functions of a single variable and partial derivatives.

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 in other community agencies and facilities.

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.

Center for Peace Studies

Warren F. Kuehl, Ph.D., *Director*

The Center for Peace Studies at the University 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.

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, in 1964, broadened its original 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. The 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.

Institute for Technological Assistance

Andrew L. Simon, Ph.D., *Executive Director*

This institute 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.

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 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 all 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 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.

Continuing Education and Public Services

William A. Rogers, Ed.D., *Executive Dean*
Kathryn Vegso, M.S.Ed., *Associate Dean*

Background

Since 1956, the University 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.

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 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 continuing education personnel to become sensitive to individual and group, implicit and explicit, needs within the community.

Therefore, 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 conference and seminar programming center for the University. 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:

- Conference and seminar planning for organizations both on and off campus.
- Organizing the College Ambassador program.
- Publishing the monthly *Civic Educalendar* listing events and programs.
- Initiating the weekly Current Issues Forum.
- Coordinating University and community groups in the weekly Akron Area Film Society.

Programs are described in special announcements that are distributed through specialized and general mailing lists.

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

Richard R. Teaff, Ph.D., *Director*

Sandra B. Edwards, M.A., *Assistant Director*

Continuing education 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, 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 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 communication, 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.

Courses can be developed to meet special needs of business and industry and may be offered on-site for the convenience of employees.

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."

Course Numbering System*

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Army R.O.T.C.

1600 Military Science

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1850 Institute for Life-Span Development and Gerontology

1860 Peace Studies

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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

2860 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

3110 Biology/N.E.O.U.C.O.M.

3120 Medical Technology

3130 Cytotechnology

3150 Chemistry

3200 Classics

3210 Greek

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3350 Geography

3370 Geology

3400 History

3450 Mathematics

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3600 Philosophy

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3750 Psychology

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4200 Chemical Engineering

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4400 Electrical Engineering

4450 Engineering Computer Science

4600 Mechanical Engineering

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6200 Accounting

6400 Finance

6500 Management

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7100 Art

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7500 Music

7510 Musical Organizations

7520 Applied Music

7600 Mass Media-Communication

7700 Communicative Disorders

7750 Social Work

7800 Theatre Arts and Dance

College of Nursing

8200 Nursing

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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

1020:040 BASIC WRITING I

4 credits*

Provides basic instruction in composition skills: grammar, sentence structure, sentence combining and punctuation. Develops skills necessary to write expository paragraphs.

1020:042 BASIC WRITING II

Reviews essential areas of sentence structure, sentence combining and punctuation necessary for composition writing, but concentrates on writing expository paragraphs.

1020:050 BASIC MATHEMATICS I

4 credits*

Introduces the basic concepts of elementary algebra and provides an extensive review of arithmetic operations.

1020:052 BASIC MATHEMATICS II

Designed to review and strengthen skills needed for credit mathematics courses.

1020:060 COLLEGE READING

4 credits*

Designed to improve general reading ability and develop effective study strategies with emphasis on vocabulary development, basic comprehension, textbook reading, study and test-taking techniques.

1020:071,2 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: DEVELOPMENTAL PROGRAMS

Selected topics and subject areas of interest in developmental education.

1030: English Language Institute

1030:091 ENGLISH LANGUAGE INSTITUTE: WRITING

Provides intensive instruction in English writing for native speakers of languages other than English who are planning to seek admission to a United States university.

1030:092 ENGLISH LANGUAGE INSTITUTE: READING

Provides intensive instruction in vocabulary and reading skills designed to develop the English reading ability of native speakers of languages other than English who are planning to seek admission to a United States university.

1030:093 ENGLISH LANGUAGE INSTITUTE: SPEAKING/GRAMMAR

Provides intensive instruction in English grammar, with an emphasis on oral skills, for native speakers of languages other than English who are planning to seek admission to a United States university.

1030:094 ENGLISH LANGUAGE INSTITUTE: LISTENING

Provides intensive laboratory and class instruction designed to improve the English listening skills of native speakers of languages other than English who are planning to seek admission to a United States university.

1030:095 ENGLISH LANGUAGE INSTITUTE: COMPREHENSIVE

Provides intensive instruction in English writing, reading, listening and speaking for speakers of languages other than English who are planning to seek admission to a United States university. Offered *only* during the summer.

*Institutional credit only.

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.

1100:111,2 ENGLISH COMPOSITION

4 credits each

Sequential. Proficiency in reading and writing of English is obtained. Reading materials used are literary works of our Western tradition.

1100:115,6 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.

1100:120-81 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 (1100:170-181).*

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

1100:221 NATURAL SCIENCE: BIOLOGY

3 credits

Designed for nonscience majors to illustrate fundamental concepts of living organisms with emphasis on man's position in, and influence on, the environment.

1100:222 NATURAL SCIENCE: CHEMISTRY

3 credits

Designed for nonscience majors. Introduction to chemical principles at work in man and in his environment.

1100:223 NATURAL SCIENCE: GEOLOGY

3 credits

Study of basic principles and investigative techniques in various fields of geology with emphasis on relationship of geological processes to society.

1100:224 NATURAL SCIENCE: PHYSICS

3 credits

Introduction to, and commentary upon, some of the most significant principles, perspectives and developments in contemporary physics. Intended for nonscience majors.

1100:320,1 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

*Varsity sports are one credit each.

**One credit each. Two periods each week.

visual arts of Western Civilization, the Greeks to the present. Two lectures/two discussions per week.

Courses 1100:330-5 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.

Air Force R.O.T.C.

1500: Aerospace Studies

1500:113,4 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.

1500:253,4 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.

1500:303,4 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.

1500:453,4 FOURTH YEAR AEROSPACE STUDIES

3 credits each

(AS400), Professional Officer Course.

Focuses attention on the military profession, military justice systems, civil-military interactions, and the framework and formulation of defense policy. 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 R.O.T.C. program and career opportunities for R.O.T.C. 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 R.O.T.C. or two years of college R.O.T.C. (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

2 credits
(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 life span. 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

1850:300 PERSPECTIVES ON GENDER IDENTITY AND ROLES

3 credits
An examination of biological, historical, political, legal, economic, educational, intellectual and social influences which have shaped gender identity and roles in society.

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.

1850:493 INDEPENDENT STUDY IN GENDER IDENTITY AND ROLES

3 credits
Prerequisites: enrollment in the certificate program in Life-Span Development: Gender Identity and Roles, plus the completion of three certificate courses in addition to 1850:300 and permission. Supervised participation in research and/or community-agency work.

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.

1880:390 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.

1870:260-360-460 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.

1880: Medical Studies**1880:201 MEDICAL SEMINAR AND PRACTICUM I***3 credits*

Prerequisite: 3100:191 and permission. Provides field experiences in health care delivery in geographic area served by Northeastern Ohio Universities College of Medicine and The University of Akron. 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 B.S./M.D. program, others by permission.

1880:301 MEDICAL SEMINAR AND PRACTICUM II*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 B.S./M.D. program, others by permission.

1880:310 SEMINAR ON HUMANITIES IN MEDICAL EDUCATION*3 credits*

Prerequisite: junior standing in B.S./M.D. 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.

1880:401/501 SPECIAL TOPICS: MEDICAL EDUCATION*1-3 credits*

(May be repeated with a change of topic — maximum of three credits count toward graduation)

Prerequisite: upper college student status and permission. Selected topics on medical education offered by professionals. Intended to provide advanced undergraduate education and continuing education for student and practitioners in the health sciences.

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 oral presentations.

2020:224 WRITING FOR ADVERTISING*3 credits*

Prerequisite: 121 or 1100:111. Study of language used in advertising; practice in writing advertisements for various media.

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 systems, exchange, money and banking, national income, employment, fiscal policy and current domestic economic problems.

2020:251 WORK RELATIONSHIPS*2 credits*

Examination of relationship between man and the work organization. Emphasis on involvement, sense of job satisfaction, supervision and goals of the organization.

2020:254 THE BLACK AMERICAN*2 credits*

Examination of the Black American including origins, historical achievements and present striving to achieve first-class citizenship in American society. Emphasis on analysis of forces in American society that create racial separation.

2020:290 SPECIAL TOPICS: ASSOCIATE STUDIES*1-4 credits**(May be repeated with a change in topic)*

Prerequisite: permission. Selected topics on subject areas of interest in associate studies.

2020:334 MATHEMATICS FOR TECHNICAL APPLICATIONS*3 credits*

Prerequisite: 233. Applications of integration, methods of integration, series (including Fourier), numerical methods of approximation, introduction to differential equations, second-order differential equations, Laplace transforms.

2200:203 MATERIALS SELECTION*2 credits*

Prerequisite: 100. Introduction to tools used in selecting print and non-print materials for libraries/media centers. Problems of censorship, intellectual freedom and academic freedom discussed as they relate to evaluation selection process.

2200:204 REFERENCE PROCEDURES*3 credits*

Prerequisite: 100. Introduction to study and use of basic information tools including almanacs, encyclopedias, dictionaries, bibliographies, yearbooks and specialized reference tools. Actual reference practices and procedures used.

2200:205 INFORMATION RETRIEVAL SYSTEMS IN LIBRARY TECHNOLOGY*3 credits*

Prerequisites: 201, 202 and 204; or permission. Practical introduction to information retrieval systems and their application. Emphasis on Ohio College Library Center network and its impact on library technical and public services. Hands-on experience with OCLC and other on-line terminal operations.

2200:245 INFANT/TODDLER DAY CARE PROGRAMS*3 credits*

Survey of infant/toddler development. Principles of infant/toddler 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: 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.

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.

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, practice in 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.

2210: Handicapped Services**2210:100 INTRODUCTION TO INTERPRETING FOR THE DEAF***4 credits*

Prerequisites: 104 and 7700:271. Introduction to basic theories, principles and practice of interpreting for the deaf in general and in specialized settings. A survey course intended to familiarize the student with ethics and guidelines appropriate in situational settings. Will also emphasize interpreting/translating processes and skill building.

2210:104 SIGN LANGUAGE, GESTURE AND MIME*3 credits*

Non-language aspects of communication which form base for communication in American Sign Language and international sign language. Emphasis on eye training use of gestures, pantomime, body language.

2210:110 SPECIALIZED INTERPRETING*3 credits*

Prerequisites: 104, 7700:110. 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 (eff. until Summer I 1982)
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.

2210:140 PRACTICUM I (eff. until Summer I 1982)
4 credits

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 three practicums are required.

2210:141 PRACTICUM II (eff. until Summer I 1982)
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: 104, 7700:100. 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

Prerequisite: 7700:150. Introduction to interpreting in the vocational/technical, legal, educational and religious settings with an overview and development of specific translations in these areas.

2210:241 PRACTICUM II (eff. until Summer I 1982)
2 credits

Prerequisite: 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 practicums required.

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 three practicums are required.

2210:243 PRACTICUM IV (eff. until Summer I, 1982)
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.

2210:290 SPECIAL TOPICS: HANDICAPPED SERVICES
1-3 credits

Selected topics or subject areas of interest in handicapped services.

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, cor-

rections. 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. Examination of criminal justice administrative problems in 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: 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 internships.

2220:295 CRIMINAL JUSTICE INTERNSHIP
3 credits

Prerequisites: 100, 30 credits and permission. Supervised work experience in criminal justice agency for purpose of increasing student understanding of criminal justice process.

2230: Fire Science Technology

2230:100 INTRODUCTION TO FIRE SCIENCE

2 credits

History and philosophy of fire protection; introduction to agencies involved; 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.

2230:104 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 automatic detection and signaling systems.

2230:202 FIRE-FIGHTING TACTICS AND STRATEGY

2 credits

Efficient and effective utilization of manpower, equipment and apparatus. Emphasis on preplanning, fireground organization problem solving related to fireground decision making and attack tactics and strategy.

2230:204 FIRE PREVENTION PRACTICES

2 credits

Inspection techniques and procedures; setting up a fire prevention bureau. Recognition and correction of fire hazards. Public relations and code enforcement.

2230:240 FIRE DEPARTMENT ADMINISTRATION AND SUPERVISION

2 credits

Study of methods and principles of fire department organization, both formal and informal, line and staff. Emphasis on supervisory responsibilities and functions.

2230:250 HAZARDOUS MATERIALS

2 credits

Prerequisite: 2840:100. Study of chemical characteristics and reactions related to storage, transportation and handling of hazardous materials. Emphasis on emergency situations, fire fighting and control.

2230:252 FIRE HYDRAULICS AND EQUIPMENT

2 credits

Basic hydraulics as used in fire service.

2230:254 LEGAL ASPECTS OF FIRE PROTECTION

2 credits

Prerequisite: 104. Study of legal rights and duties, liabilities and responsibilities of fire department organizations.

2230:256 FIRE SAFETY CODES (O.S.H.A.)

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: 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.

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: 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.

2260:263 GROUP PRINCIPLES IN ALCOHOLISM*4 credits*

Prerequisite: 260 or permission. Introduces student to group dynamics; provides opportunity to examine their role as group members; and explores unique factors in alcoholism that influence group treatment. Practical group dynamics sessions.

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 person 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: COMMUNITY SERVICES TECHNOLOGY*1-3 credits*

Prerequisite: permission. Selected topics or subject areas of interest in community services technology.

2260:297 INDEPENDENT STUDY*1-3 credits*

Prerequisite: permission. Selected topics and special areas of study under the supervision and evaluation of a selected faculty member with whom specific arrangements have been made.

2270: Labor Studies**2270:101 INTRODUCTION TO LABOR STUDIES***3 credits*

Overview of Trade Unionism in America from Eighteenth 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*

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*

Legal framework within which collective bargaining process takes place. Rights of employees, union, employer under federal and state laws discussed in context of organizing, election and bargaining.

2270:123 LABOR LEGISLATION AND ECONOMIC SECURITY*3 credits*

Prerequisite: 122 or permission. 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*

Prerequisite: 122. 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: 271. 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*

Prerequisite: 101. 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 E.E.O.C.

2270:241 UNION LEADERSHIP*2 credits*

Prerequisite: 101. Specific skills related to administration of local unions structure 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*

Prerequisites: 101, 111 or 122. 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: LABOR STUDIES*1-2 credits*

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics or workshops in labor studies.

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.

2280:236 MENU PLANNING AND COST CONTROLS*3 credits*

Menu planning for various types of commercial, industrial, school and institutional food services; basic factors influencing planning; merchandising techniques. Special emphasis on catering and vending services. Food cost control.

2280:237 FOOD SERVICE INTERNSHIP*2 credits*

Prerequisite: 233. Food service experience under commercial operating conditions.

2280:240 FOOD SERVICE MANAGEMENT*3 credits*

Introduction to management principles pertinent to organization and administration of food service systems: supervisory development, personnel selection and training, labor relations, cost control structures and evaluation of current procedures.

2280:243 FOOD EQUIPMENT AND PLANT OPERATIONS*3 credits*

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: 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.

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 as-

pects, 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: 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: 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.

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. Learning and applying step-by-step processes needed by professional developer in producing real estate for consumption.

2430:185 REAL ESTATE LAW

2 credits

Prerequisite: 105. 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. 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. 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.

2430:290 SPECIAL TOPICS: REAL ESTATE

1-2 credits

Prerequisite: permission. Selected topics or subject areas of interest in real estate.

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. 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.

2520:201 PRINCIPLES OF WHOLESALING

2 credits

Examination of wholesaler and wholesaling function. Attention given to buying process and relationship of ultimate consumer to wholesaler.

2520:202 RETAILING FUNDAMENTALS

4 credits

Presents basic principles and practices of retailing operations, including site selection, buying, pricing and promotion practices. Use is made of extensive projects and investigations and actual retail operations.

2520:210 CONSUMER SERVICE FUNDAMENTALS

2 credits

Prerequisite: 2420:101. Discussion of problems facing business today created by social issues in society. Emphasis on understanding viewpoints of all groups involved.

2520:211 MATHEMATICS OF RETAIL DISTRIBUTION

3 credits

Prerequisite: 2420:170. Basic course dealing with merchandising mathematics. Includes understanding markup types, 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: 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, pro-rata, expense reports, percentages, inventories and basic statistics.

2540:140 TYPEWRITING FOR NON-SECRETARIAL MAJORS

2 credits

Beginning typewriting for the non-secretarial student. Fundamentals in the operation of the typewriter; application emphasis on individual student needs such as resumes, application letters and forms, term papers, abstracting, etc. Video display terminal instruction. Credit not applicable toward Associate degree in Secretarial Science.

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. Further development of typewriting. Advanced letter styles, forms, reports and shortcuts. Minimum requirement: 40 wam with a maximum of 5 errors for 5 minutes.

2540:171 SHORTHAND PRINCIPLES

4 credits

Gregg shorthand theory is taught. Minimum attainments: reading from notes at 100 wam and taking dictation from new material at 50 wam for 3 minutes. Credit not allowed if taken after 172.

2540:172 SHORTHAND REFRESHER AND TRANSCRIPTION

4 credits

Accelerated review of Gregg shorthand theory. Minimum attainments: reading from notes at 100 wam and taking dictation from new material at 60 wam for 3 minutes. Credit allowed if taken after 171.

2540:173 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 wam for 5 minutes on new material required.

2540:241 INFORMATION MANAGEMENT

3 credits

Prerequisite: 150 or equivalent. Study of creation, classification, encoding, transmission, storage, retention, transfer and disposition of in-

formation. Emphasis on written, oral and machine language communication media used in business information systems.

2540:253 ADVANCED TYPEWRITING

3 credits

Prerequisite: 151 or equivalent. To increase student's ability to do office-style production typewriting with minimal supervision. Minimum requirement: 50 wam with a maximum of 5 errors for 5 minutes.

2540:254 LEGAL TYPEWRITING

2 credits

Prerequisite: 151. Develops skill in typing legal documents and printed legal forms from rough draft materials; 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 wam for 5 minutes.

2540:276 EXECUTIVE DICTATION AND TRANSCRIPTION

4 credits

Prerequisite: 274. Final shorthand course in Executive Secretarial program. Development of skills to level of employability in business office. Emphasis on vocabulary building in specialized areas of modern business and technology. Speed range 100-140 wam.

2540:277 LEGAL DICTATION AND TRANSCRIPTION

4 credits

Prerequisite: 274. Develops shorthand and transcription skills of legal correspondence, basic pleadings, legal papers, reports and rules of practice. Minimum speed at end of course is 100 wam.

2540:279 LEGAL OFFICE PROCEDURES

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: 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

Theories, practices, 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

Management problems, practices, 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: TRANSPORTATION

1-2 credits

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics, subject areas in transportation.

2740: Medical Assisting

2740:120 MEDICAL TERMINOLOGY

3 credits

Prerequisites: 3100:206, 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. 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 precise knowledge in medical specialties.

2740:290 SPECIAL TOPICS: MEDICAL ASSISTING*1-2 credits*

Prerequisite: permission. Selected topics or workshops of interest in medical assisting technology.

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.

2760:106,7 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. Fundamental principles of disease processes, 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.

2760:165,6 RADIOGRAPHIC PRINCIPLES I, II*3 credits, 2 credits*

Sequential. Prerequisite: 161. Elementary principles of ionizing radiation and their application in medical setting. Radiographic accessories and chemical processing of exposed x-ray film.

2760:170 RADIOGRAPHIC POSITIONING I*3 credits*

Corequisite: 101. Introductory course in instructing student in basic positioning nomenclature and radiologic positions. Positioning laboratory experience included.

2760:171 RADIOGRAPHIC POSITIONING II*3 credits*

Prerequisite: 170. Continuation of 170. Includes additional positioning and refinement of positioning strategies. Laboratory.

2760:164 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.

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.

2760:266 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.

2760:267 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.

2760:268 CLINICAL APPLICATION V*4 credits*

Prerequisite: 287. Clinical experience and minimally supervised clinical procedures of diagnostic radiography.

2760:269 CLINICAL APPLICATION VI*5 credits*

Prerequisite: 288. Continuation of 288; final internship. Terminal course including review, lecture on correlation and interpretation of radiologic technology. Prepares student for certification examination.

2760:290 SPECIAL TOPICS: 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

2 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

1 credit

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.

2770:234 CLINICAL APPLICATION IV

2 credits

Prerequisites: 232 and 242. A student is assigned to surgical services of affiliated hospitals. Assists in surgery and carries out preoperative and postoperative care procedures as assigned by, and under the supervision of, the surgeon or the resident surgical staff.

2770:235 CLINICAL APPLICATION V

3 credits

Prerequisite: 234. A student is assigned to surgical services of affiliated hospitals. Assists in surgery and carries out preoperative and postoperative procedures as assigned by, and under the supervision of, the surgeon or the resident surgical staff.

2770:236 CLINICAL APPLICATION VI

3 credits

Prerequisite: 235. A student is assigned to surgical services of affiliated hospitals. Assists in surgery and carries out preoperative and postoperative care procedures as assigned by, and under the supervision of, the surgeon or the resident surgical staff.

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.

2770:242 SURGICAL LABORATORY PROCEDURES

2 credits

Prerequisites: 121 and admission to program option; corequisite: 241. Classroom, laboratory instruction in surgical techniques, procedures.

2770:243 INTRODUCTION TO MEDICINE

2 credits

Prerequisites: 241, 242. Pathophysiology, clinical manifestations, therapeutic management of surgically related disorders.

2770:244 MEDICAL HISTORY AND PHYSICAL EVALUATION

2 credits

Prerequisites: 241, 242. Introduction to techniques of obtaining medical histories and physical evaluations. Techniques of interviewing and physical diagnosis.

2770:245 ROENTGENOGRAM ASSESSMENT

1 credit

Prerequisite: 242. Roentgenogram assessment and its use as a diagnostic tool. Recognition of gross abnormalities in roentgenograms of the head, neck, chest, abdomen, pelvis and extremities.

2770:246 MEDICAL LABORATORY PROCEDURES

1 credit

Prerequisite: 242. Introduction of collection, preparation, and analysis of biological fluids and other substances through standard procedures utilized in medical laboratories to aid the physician in diagnosis, treatment and prevention of disease.

2770:247 PULMONARY ASSESSMENT AND ELECTROCARDIOGRAPHY

2 credits

Prerequisite: 242. Oxygen administration, humidity control, breathing exercises, postural drainage, percussion techniques, intermittent positive pressure breathing, management of ventilators and bedside ventilation measurements. Electrocardiogram recording techniques, interpretation of electrocardiographic abnormalities-arrhythmias.

2770:290 SPECIAL TOPICS: 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, survey of treatment procedures. Role and rationale for physical therapist assistant. Legal, ethical responsibilities.

2780:290 SPECIAL TOPICS: 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 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 effect, route of action in the body. Lecture.

2790:142 PATHOLOGY FOR RESPIRATORY THERAPY*2 credits*

Prerequisites: 201 and 3100:103. Discussion of disease processes, diseases of lung and heart, their effect on respiratory therapy.

2790:201 ANATOMY AND PHYSIOLOGY OF CARDIOPULMONARY SYSTEMS*3 credits*

Prerequisite: 3100:206; corequisite: 3100:207. Study of normal anatomy and physiology of heart and lungs. Lecture/Laboratory.

2790:223 ADVANCED RESPIRATORY THERAPY*3 credits*

Prerequisites: 123, 141. Covers blood gas analysis, and machines, drawing arterial gases, pulmonary functions research studies and radioactive pulmonary function studies. Lecture/Laboratory.

2790:224 PULMONARY REHABILITATION AND THE RESPIRATORY THERAPY DEPARTMENT*2 credits*

Prerequisites: 141, 142, 223. Covers area of pulmonary rehabilitation of chronic lung. Includes essentials of establishing a respiratory therapy department. Lecture/Laboratory.

2790:290 SPECIAL TOPICS: RESPIRATORY THERAPY*1-3 credits*

(May be repeated for a maximum of three credits)

Prerequisite: permission. Selected topics or subject areas of interest in respiratory therapy technology.

clude 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. Electrostatics, basic direct current circuits, magnetism and electromagnetism, alternating currents, basic AC circuits. Laboratory.

2840:153 BASIC PHYSICS: HEAT, LIGHT AND SOUND*2 credits*

Prerequisites: 151 and 2020:131. Principles of heat, light and sound. Topics include thermal behavior of matter, wave motion, sound waves, light and illumination, reflection and refraction, mirrors and lenses, interference and diffraction. Laboratory.

2840:201 QUANTITATIVE ANALYSIS*4 credits*

Prerequisite: 102. Theory of quantitative analytical chemistry including gravimetric, volumetric and electrochemical procedures. Laboratory.

2840:202 INSTRUMENTAL METHODS*4 credits*

Prerequisites: 201 and one year of physics; or permission. Instrumentation employed in qualitative and quantitative analysis. Theory and practice in chromatographic, spectrophotometric and other instrumental methods. Laboratory.

2840:210 SCIENTIFIC GLASS BLOWING*1 credit*

Laboratory instruction in art of glass blowing. Fabrication and blowing of scientific glassware and chemical apparatus.

2840:250 ELEMENTS OF PHYSICAL CHEMISTRY*3 credits*

Prerequisites: 102, 153, 2020:132. Physical principles governing behavior of chemical systems. Introductory thermodynamics, solution properties, chemical equilibrium, phase rule, chemical kinetics and structure of matter. Laboratory.

2840:255 LITERATURE OF SCIENCE AND TECHNOLOGY*1 credit*

Prerequisite: permission. Literature of science and technology as used to gather technical information. Techniques of abstracting and the computer search.

2840:260 COMPOUNDING METHODS*2 credits*

Prerequisite: 102, 121 or permission. Principles and methods of selecting and compounding rubber for specific end uses. The compounder's art. Processing and testing of basic elastomers and products. Laboratory.

2840:270 NATURAL AND SYNTHETIC ORGANIC POLYMERS*4 credits*

Prerequisite: 121 or permission. Structure and properties of macromolecules with particular reference to carbohydrates, proteins, nucleic acids, rubber. Synthetic thermoplastic, thermosetting and elastomeric polymers.

2840:290 SPECIAL TOPICS: 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.

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 in-

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

3 credits

Corequisite: 122. Physical theory, characteristics, operational parameters and incircuit consideration of solid-state electronic devices.

2860:225 ELECTRONICS II

3 credits

Prerequisite: 123. Linear devices and/or pertinent applications widely used in electronics. Topics include amplifier fundamentals, frequency response, operational amplifiers, special linear integrated circuits and power 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 I

4 credits

Prerequisite: 123. 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 circuit and its application in combinational solutions such as data selection, bridging, symmetrical functions and ROM synthesis.

2860:238 DIGITAL CIRCUITS II

4 credits

Prerequisite: 237. Continuation of combinational logic design plus introduction to sequential logic design and microcomputer. Integrated circuit information extended into MOS and CMOS devices. Microprocessors application.

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.

2860:255 ELECTRONIC DESIGN AND CONSTRUCTION

2 credits

Prerequisite: 123. General and electronic drafting fundamentals and techniques with emphasis on printed circuit boards. General shop safety practices. Care and use of hand tools and power tools. Chassis and sheet metal layout and fabrication; printed circuit board fabrication; metal finishing and packaging techniques. Performance testing and troubleshooting.

2860:260 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.

2860:270 SURVEY OF ELECTRONICS I

3 credits

Corequisite: 2020:31. Fundamentals of electrical circuits. Surveys of electromechanical devices emphasizing electrical/mechanical interface. For non-electronic technology majors.

2860:271 SURVEY OF ELECTRONICS II

3 credits

Prerequisite: 270; corequisite: 2020:132. Survey of most commonly used solid-state circuit components including typical applications. For non-electronic technology majors.

2860:290 SPECIAL TOPICS: ELECTRONIC TECHNOLOGY

1-2 credits

(May be repeated for a total of four credits)

Prerequisite: permission. Selected topics or subject areas of interest in electronic technology.

2860:350 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.

2860:351 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.

2860:352 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.

2860:353 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.

2860:400 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.

2860:402 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.

2860:406 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.

2860:410 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.

2860:497 SENIOR HONORS PROJECT: 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

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

Prerequisite: 2020:131. 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: 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: 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 TECHNOLOGY OF MACHINE TOOLS*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: 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: 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. 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.

2940:210 COMPUTER DRAFTING*3 credits*

(One hour lecture/six hours laboratory)

Prerequisites: 2920:122 and 2020:131. Provides basic understanding of equipment used in computerized drafting and of numerical control (N/C) concept. Included are definitions of most important terminology and drawing standards relating to N/C.

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 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 construction details, interior space use, traffic patterns, exterior materials.

2940:260 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: 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, baseline measurements, triangulation, trilateration and bearings from celestial observation. Photogrammetry. Field practice.

2980:228 SUBDIVISION DESIGN*2 credits*

Prerequisite: 222; corequisite: 224. Site analysis, land use controls and plotting procedures. Laboratory includes preparation of various types of projects leading to a complete subdivision.

2980:231 BUILDING CONSTRUCTION*2 credits*

Materials and types of construction used in heavy construction. Encompasses buildings constructed with heavy timber, steel, concrete or a combination of these materials.

2980:232 CONSTRUCTION*3 credits*

Prerequisite: 222 or permission. Planning of construction operations. Construction equipment and selection for typical jobs. Emphasis on heavy construction.

2980:233 CONSTRUCTION ADMINISTRATION*2 credits*

Construction specifications. Office organization, preparation of construction documents. Bidding, bonds. Construction management and supervision. Agreements and contracts.

2980:234 ELEMENTS OF STRUCTURES*3 credits*

Prerequisite: 241. Principles of stress and structural analysis. members in steel, timber and concrete connections.

2980:237 MATERIALS TESTING I*2 credits*

Laboratory testing of soils with emphasis on physical properties of soil. Laboratory and field procedures used for quality control. Testing of concrete mixes.

2980:238 MATERIALS TESTING II*2 credits*

Corequisite: 241. Mix design of concrete. Laboratory testing of ferrous and nonferrous metals, woods and concrete. Experiments demonstrate physical properties as related to design.

2980:241 STRENGTH OF MATERIALS*3 credits*

Prerequisite: 125. Stress, strain and stress-strain relationships. Tension, compression, torsion, beams. Shear and moment diagrams.

2980:245 COST ANALYSIS AND ESTIMATING*3 credits*

Quantity surveys in construction. Elements of cost in construction, determination of unit costs, analysis of cost records.

2980:250 STRUCTURAL DRAFTING*2 credits*

Prerequisite: 2920:121. Duties of structural draftsman in preparation of detailed working drawings for steel, concrete and wood members. Emphasis on portrayal, dimensions and notes on a working drawing.

2980:290 SPECIAL TOPICS: 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, cellular basis of life; energy transformations, metabolism; nutrient procurement, gas exchange, internal transport, homeostatic mechanisms, control systems in plants and animals. Laboratory.

3100:112 PRINCIPLES OF BIOLOGY

4 credits

Cell reproduction, genetics, development, evolution, classification, behavior, ecology of plants and animals. (111-112 are an integrated course 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.

3100:190,1 HEALTH CARE DELIVERY SYSTEMS*

1 credit each

Health care principles and practices. Restricted to the student in N.E.O.U.C.O.M., six-year B.S./M.D. 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.

3100:208,7 ANATOMY AND PHYSIOLOGY

3 credits each

Sequential. Structure, function of human body with emphasis on phys-

iological processes. Background of high school chemistry or equivalent strongly recommended. No biology or B.S.M.T. majors. Laboratory.

3100:211 GENERAL GENETICS

3 credits

Prerequisite: 112. Principles of heredity, 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: 218. 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.

3100:290,1 HEALTH CARE DELIVERY SYSTEMS

1 credit each

Health Care principles and practices. A continuation of 190,1 for a second year student in N.E.O.U.C.O.M. six-year B.S./M.D. 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). 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. Plant collection. 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.

3100:361,2 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. Cellular structure of organs in relation to their functional activity, life history, 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: 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: 218 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: 218. Field, laboratory study of lake ecosystems. Species composition of selected biotic communities, community energetics, nutrient cycling. Limnological survey of a local lake. Laboratory.

3100:428/526 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.

3100:428/526 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.

3100:440/540 MYCOLOGY*4 credits*

Prerequisite: 112. Structure, life history, classification of representative fungi with emphasis on the importance of fungi to man. 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.

3100:443/543 PHYCOLOGY*4 credits*

Prerequisite: 112. Examination of the major groups of algae with emphasis on life histories and their relationship to algal form and structure. Laboratory.

3100:445/545 PLANT MORPHOLOGY**4 credits*

Prerequisite: 112. Structure, reproduction, life cycles, ecology, evolution, economic significance of land plants-bryophytes, club-mosses, whisk ferns, horsetails, ferns, 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: four 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.

*Field trips involved; minor transportation costs.

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3100:458/558 VERTEBRATE ZOOLOGY*4 credits*

Prerequisite: 218 or permission. Biology of vertebrates, except birds — evolution, ecology, behavior, systematics and anatomy. Laboratory with field trips.

3100:481,2/581,2 HUMAN PHYSIOLOGY*4 credits each*

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

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.

3100:485/585 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.

3100:466,7/566,7 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: 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.

3100:497,8/597,8 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: 561,2. 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.

3100:685 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.

3100:686,7 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. Modern cytological methods using transmission electron microscope. Portfolio required to demonstrate proficiency in fixation techniques, use of ultramicrotome, light and electron microscopes and darkroom techniques.

3100:689 PRINCIPLES OF SCANNING ELECTRON MICROSCOPY*3 credits*

Prerequisites: 311, 681 or equivalent. An introduction of modern cytological methods using the scanning electron microscope. A portfolio is required to demonstrate proficiency in fixation techniques, the use of supplemental equipment such as the critical point drying apparatus and the sputter-coating apparatus and the efficient use of the scanning electron microscope.

3100:695 SPECIAL TOPICS: BIOLOGY*1-3 credits**(May be repeated)*

Prerequisite: permission. Special courses offered once or only occasionally in areas where no formal course exists.

3100:697,8 SEMINAR IN BIOLOGY*1 credit each**(May be repeated)*

Prerequisite: permission. Attendance at all departmental seminars and presentation of seminar based on original research. Required of all thesis option students who shall present their thesis research.

*Field trips involved; minor transportation costs.

3100:809 MASTER'S RESEARCH

1-6 credits

(May be repeated)

A minimum of six credits is required for thesis option student.

3110: Biology/N.E.O.U.C.O.M.**3110:620 MICROSCOPIC ANATOMY**

4 credits

Prerequisite: graduate standing, permission and cell biology: histology suggested. Morphological basis for normal and disturbed functions; structure-function relationships in human microscopic anatomy. Lectures, special laboratory, learning techniques using human tissues.

3110:630 HUMAN GROSS ANATOMY AND EMBRYOLOGY

3 credits

Prerequisite: graduate standing and permission. An intensive survey of human macromorphology.

3110:631 HUMAN GROSS ANATOMY AND EMBRYOLOGY LABORATORY

3 credits

Corequisite: 630. An intensive survey of human macromorphology.

3110:641 FUNCTIONAL NEUROANATOMY

4 credits

Prerequisite: permission or graduate standing. Study of structure and function of mammalian nervous system with emphasis on human brain and human behavior. Laboratory.

3110:643 NEUROPHYSIOLOGY

4 credits

Prerequisite: 641. The relation of aspects of the neurosciences to the fundamental properties of nervous tissue, establishing a firm base in experimental neurobiology. Laboratory.

3110:680 RADIOISOTOPES IN MEDICINE

1 credit

Prerequisite: permission or graduate standing. A survey of the use of radioisotopes in medicine and research. Successful completion of this course qualifies the student for approval by the Nuclear Regulatory Commission for use of radioisotopes in research. Laboratory.

3120: Medical Technology**3120:401 SPECIAL TOPICS LABORATORY MANAGEMENT, EDUCATION AND SAFETY**

1-4 credits

Seminars, lectures, workshops in medical technology not included in formal clinical courses. Minimum one credit required for graduation.

3120:410 CLINICAL ANALYSIS OF URINE AND OTHER BODY FLUIDS I

1 credit

Prerequisite: 3100:361, 362 or equivalent. Physiology of renal system; theory of renal functions in health and disease states. Theory of other fluid systems in diagnosis of disease.

3120:411 CLINICAL ANALYSIS OF URINE AND OTHER BODY FLUIDS II PRACTICUM

1 credit

Prerequisite: 3100:361, 362 or equivalent. Renal function tests to include chemical and microscopic examination of urine. Methods of detection of chemical and cellular elements of other body fluids.

3120:420 CLINICAL CHEMISTRY AND BIOCHEMISTRY I

4 credits

Prerequisites: 3100:383, 384 or equivalent; 3150:201, 202, 335, 336 or equivalent. Concepts of clinical biochemistry; identification and quantification of specific chemical substances in body fluids in normal and disease states; principles of instrumentation and quality control.

3120:421 CLINICAL CHEMISTRY AND BIOCHEMISTRY II**PRACTICUM**

4 credits

Prerequisites: 3100:383, 384 or equivalent; 3150:201, 202, 335, 336 or equivalent. Clinical application by various analytical techniques; clinical correlation of results with disease states.

3120:430 CLINICAL HEMATOLOGY I

2 credits

Prerequisites: 3100:311 and 3100:361, 362 or equivalent. Theory of blood cell formation; identification of blood and bone marrow cells; differentiation of erythrocytes, leukocytes, morphology.

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 applied to blood grouping, cross matching; blood components; transfusion; 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 extruterine 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**

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 emphasized.

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, a student formulates opinions on each case. Each case presented is discussed in depth by student with faculty moderator. A term paper on an independently selected topic in cytology is to be submitted and presented to the class and faculty.

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**3150:121,2 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.

3150:129,30 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.

3150:201,2 ORGANIC CHEMISTRY AND BIOCHEMISTRY I, II**4 credits each**

Sequential. Prerequisite: 122. Designed especially for student in medical technology. Principles of organic chemistry with emphasis on biological systems. Laboratory.

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.

3150:263,4 ORGANIC CHEMISTRY LECTURE I, II**3 credits each**

Sequential. Prerequisite: 134 or permission. Structure and reactions of organic compounds, mechanism of reactions.

3150:265,6 ORGANIC CHEMISTRY LABORATORY I, II**2 credits each**

Sequential. Corequisites: 263, 264. Laboratory experiments to develop techniques in organic chemistry and illustrate principles.

3150:300,1,2 COOPERATIVE EDUCATION WORK PERIOD**0 credits each**

For cooperative education student. Work experience in industry and business. Written reports of the work experience required.

3150:303,4 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.

3150:313,4 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.

3150:315,6 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.

3150:335,6 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, role as biocatalysts; structure, biochemistry of nucleotides, nucleic acids, carbohydrates and lipids; energy storage, 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.

3150:403 COOPERATIVE EDUCATION WORK PERIOD

0 credits

For the cooperative education student only. Work experience in industry and business. Comprehensive written reports of the work experience are required.

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.

3150:406/508 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.

3150:416/516 INSTRUMENTAL METHODS OF ANALYSIS

3 credits

Prerequisite: 415/515. Principles and applications of analytical chemical techniques based on physical measurements. Laboratory.

3150:421/521 QUALITATIVE ORGANIC ANALYSIS

4 credits

Prerequisite: 266. Identification and characterization of organic substances, separation and identification of components of organic mixtures. Laboratory.

3150:423 ANALYTICAL CHEMISTRY LECTURE I

3 credits

Prerequisite: 134. Theoretical principles of quantitative analysis. Techniques and calculations, gravimetric and volumetric methods.

3150:424 ANALYTICAL CHEMISTRY LECTURE II

3 credits

Prerequisite: 304 or 314, 316 or permission. Instrumental analysis with emphasis on newer analytical tools and methods.

3150:425 ANALYTICAL CHEMISTRY LABORATORY I

2 credits

Corequisite: 423. Laboratory techniques employed in gravimetric, volumetric and instrumental analysis.

3150:426 ANALYTICAL CHEMISTRY LABORATORY II

2 credits

Corequisite: 424. Laboratory techniques employed in gravimetric, volumetric, instrumental analysis; emphasizes instrumental analysis.

3150:463/563 ADVANCED ORGANIC CHEMISTRY

3 credits

Prerequisite: 264, 304 or 314 or permission. Introduction to study of mechanisms of organic reactions.

3150:472/572 ADVANCED INORGANIC CHEMISTRY

3 credits

Prerequisite: 304 or 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: CHEMISTRY

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.

Graduate Courses

3150:601,2 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.

3150:604,5 CHEMISTRY OF POLYMERS LABORATORY I, II

2 credits each

Sequential. Prerequisites: 264, 266. Preparation, identification of polymers to illustrate polymerization methods in 601, 602, 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. Quantum mechanics with applications to molecular systems. Include angular momentum, molecular hamiltonians, variation and perturbation methods and molecular orbital theories.

3150:611 CHEMICAL BONDING AND SPECTROSCOPY

2 credits

Prerequisite: 610. Application of quantum chemistry to elucidation of chemical bonding, structure and interpretation of molecular spectra.

3150:613 SYNTHETIC METHODS OF ORGANIC CHEMISTRY

2 credits

Prerequisite: 264. Discussion of synthetic organic chemistry. Standard synthesis of organic compounds as well as newer techniques.

3150:621,2 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.

3150:629,30 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.

3150:636,9 ADVANCED PHYSICAL CHEMISTRY LABORATORY I, II

1 credit each

Prerequisite: permission. Laboratory, 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.

3150:651,2 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. Bio-organic mechanisms, including nucleophilic displacements on carbonyl and phosphorus; hydration and redox reactions; chemistry of cofactors; enzyme catalysis and models.

3150:666 BIOENERGETICS

2 credits

Prerequisites: 313, 314, 402 or permission. Energy production, utilization in living systems: 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 D.N.A., R.N.A. and chromatin; study of metabolic pathways in bacteria using advanced biochemistry techniques.

3150:670 CHEMICAL MICROSCOPY AND MICROCHEMICAL ANALYSIS

2 credits

Prerequisite: 462 and permission. Microscale titrations, 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

(One lecture, one laboratory period)

Prerequisite: 426 or equivalent. Advanced techniques for separation, determination and identification; classical as well as recent techniques.

3150:673 STEREOCHEMISTRY OF ORGANIC COMPOUNDS

2 credits

Prerequisite: 264. Stereochemistry and its application to reactions of organic chemistry.

3150:674,5 PHYSICAL CHEMISTRY OF POLYMERS I, II

2 credits each

Sequential. Prerequisite: 314 or permission of instructor. Basic statistical ideas. Molecular weights, distributions, sizes and shapes. Kinetics and mechanism of polymerization. Copolymerization. Degradation. Thermodynamics of polymer solutions.

3150:665,6 EXPERIMENTAL PHYSICAL CHEMISTRY OF POLYMERS I, II

2 credits for 685; 2-3 credits for 686

Sequential. Prerequisite or corequisite: 674, 675, respectively. Laboratory 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: 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: 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: 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: PHYSICAL CHEMISTRY

1-2 credits

(May be repeated)

Prerequisite: permission. Subject from modern physical chemistry.

3150:714 SPECIAL TOPICS: 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: 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.

3150:783,4 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 qualified student accepted as a candidate for degree of Doctor of Philosophy in chemistry. Supervised original research 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.

3200:361 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.

3200:401,2/501,2 EGYPTOLOGY

3 credits each

(May be repeated with change of subject)

Prerequisite: permission of instructor. Classical Egyptian (standard hieroglyphic of Eighteenth Dynasty); history and antiquities of Egypt as far as Roman occupation.

3200:404,5/504,5 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.

3200:407,8/507,8 ANCIENT NEAR EASTERN ARCHAEOLOGY

3 credits each

(May be repeated for credit with change of subject)

Prerequisite: permission of instructor. Palestine, Mesopotamia, Asia Minor, adjacent lands; Old Testament in light of material evidence.

3200:450/550 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.

3210: Greek**3210:121,2 ELEMENTARY GREEK**

4 credits each

Sequential. Standard language of Hellenistic times with some attention to Modern Greek.

3210:223,4 INTERMEDIATE GREEK

3 credits each

Prerequisite: 121,2. A survey of readings of the less difficult authors such as Homer, certain dialogues of Plato, Herodotus, Xenophon, New Testament or the like.

3210:303,4 ADVANCED GREEK

3 credits each

(May be repeated with a change of subject)

Tragedy, comedy, philosophy, history, lyric poetry, prose composition or epigraphy.

3210:497,8/597,8 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**3220:121,2 ELEMENTARY LATIN**

4 credits each

Sequential. Some attention to development of Romance languages, especially Italian.

3220:223,4 INTERMEDIATE LATIN

3 credits each

Prerequisite: 121,2. A survey of readings of the less difficult authors such as Pliny, Caesar, Plautus, Cicero's Letters or equivalent material.

3220:303,4 ADVANCED LATIN

3 credits each

(May be repeated for credit with change of subject)

Prerequisite: 223,4 or equivalent. Satirists, dramatists, philosophical, religious writers, lyric and elegiac poets, medieval writers.

3220:497,8/597,8 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 201,2, 244. Economics primarily considered in a broad social science context. Adequate amount of basic theory introduced.

3250:201,2 PRINCIPLES OF ECONOMICS

3 credits each

Sequential. Economic activity in modern industrial society, preparation for responsible participation in process of shaping public policy. No credit to 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 201,2.

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: 201,2. 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.

3250:360 INDUSTRIAL ORGANIZATION AND PUBLIC POLICY*3 credits*

Prerequisite: 201,2. 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.

3250:360 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: 201,2 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: 201,2. 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: 201,2. Tax systems and other sources of revenue of federal, state and local governments; changing patterns of public expenditures; fiscal policy and debt management; economic effects of public policy.

3250:406/506 STATE AND LOCAL PUBLIC FINANCE*3 credits*

Prerequisite: 410; recommended: 405. Examines economic rationale and problems for provision of goods and services by different governmental units. Considers alternative revenue sources and special topics.

3250:410 MICROECONOMICS*3 credits*

Prerequisite: 201,2. Advanced analysis of consumer demand, production costs, market structures, determinants of factor income.

3250:420 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 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 STATISTICAL APPLICATIONS IN ECONOMICS*3 credits*

Prerequisites: 201,2, 6500:321,2, 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: 201,2, 330. Development of public policy for control of industrial relations, from judicial control of Nineteenth 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: 201,2, 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 Nineteenth Century to present. Explains and analyzes changing dimensions of corporate structure and response of government. Case studies analyzed.

3250:440/540 SPECIAL TOPICS: ECONOMICS*3 credits*

Prerequisite: permission. Opportunity to study special topics and current issues in economics.

3250:450 COMPARATIVE ECONOMIC SYSTEMS*3 credits*

Prerequisites: 201,2. 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: 201,2. 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: 201,2. International trade and foreign exchange, policies of free and controlled trade, international monetary problems.

3250:475/575 DEVELOPMENT OF ECONOMIC THOUGHT*3 credits*

Prerequisite: 201,2. Evolution of theory and method, relation of ideas of economists to contemporary conditions.

3250:481/581 MONETARY AND BANKING POLICY*3 credits*

Prerequisites: 380, 400. Control over currency and credit, policies of control by central banks and governments, United States Treasury and Federal Reserve System.

3250:486 GHETTO ECONOMIC DEVELOPMENT*3 credits*

Prerequisite: 201,2. 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.

3250:815 INDUSTRIAL ORGANIZATION

3 credits

Prerequisite: 611 or permission. Examines link between market structure, firm conduct and economic performance. Measurement and effects of monopoly power, industrial concentration and changes.

3250:816 ANTITRUST ECONOMICS

3 credits

Prerequisite: 615 or permission of instructor. Economic rationale behind legislative and judicial decisions affecting mergers, vertical, horizontal restraints, monopolization, collusion, price discrimination.

3250:817 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.

3250:820 APPLICATIONS OF MATHEMATICAL MODELS TO ECONOMICS

3 credits

Prerequisites: calculus, intermediate microeconomics or permission of the instructor. Review of selected topics of differential and integral calculus and their application to economic analysis. Theory of optimization in production and consumption; static macroeconomic models. Analysis of growth and stability.

3250:821 APPLICATION OF LINEAR MODELS IN ECONOMIC ANALYSIS

3 credits

Prerequisite: intermediate microeconomics. Review of selected topics of linear algebra, application to economic theory. Static open and closed input-output tables, dynamic models, consumption technology and theory of demands, linear programming, general equilibrium analysis.

3250:826 STATISTICS FOR ECONOMETRICS

3 credits

Prerequisites: elementary differential and integral calculus, 820 or permission. A review of statistical theory and its application to research in economics. Emphasis is on estimation and hypothesis testing as a prelude to econometrics.

3250:827 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.

3250:828 SEMINAR IN RESEARCH METHODS

3 credits

Prerequisite: permission of instructor. A seminar in the research use of applied mathematical economics or econometrics. Emphasis is on individual development of a theoretical proposition or research statement, its empirical examination and policy implications.

3250:833 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.

3250:834 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.

3250:835 LABOR LAW

3 credits

Evaluation of labor relations laws. Public policy affecting public, private worker organizations; collective bargaining; strikes; picketing.

3250:836 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.

Graduate Courses**3250:800 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, 811, or applied toward the 30 graduate credits required for M.A. in economics.

3250:802 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.

3250:803 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.

3250:806 PUBLIC FINANCE

3 credits

Examination of public sector economies emphasizes public revenues, public expenditures. Develops objectives of taxation, welfare aspects of the public sector, theory of public goods. Considers specific taxes, cost-benefit analysis, expenditures analysis, fiscal federalism.

3250:810 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.

3250:811 MICROECONOMIC THEORY I

3 credits

Modern theory of consumer behavior and of the firm. Determination of market prices. Optimization models, establishment of criteria for production, allocative and distributive efficiency.

3250:812 MICROECONOMIC THEORY II

3 credits

Prerequisite: 811. Continuation of 811. Covers multimarket equilibrium, general equilibrium and welfare economic theory, and applications in public choice and applied welfare theory.

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 macromodels 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, policy implications in trade relations among developed and developing economies.

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.

3250:697,8 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)

tems, 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 techniques in poetry, using contemporary poems as models. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

3300:278 INTRODUCTION TO FICTION WRITING**3 credits**

Practice in writing short stories. Study of various techniques in fiction, using contemporary stories as models. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

3300:279 INTRODUCTION TO SCRIPT WRITING**3 credits**

Practice in writing scripts. Study of various techniques in script writing, using contemporary models for study. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

3300:280 POETRY APPRECIATION**3 credits**

Close reading of wide selection of British and American poems with emphasis on dramatic situation, description, tone, analogical language, theme and meaning.

3300:281 FICTION APPRECIATION**3 credits**

Focus on some modern masters of short story and novel: Conrad, Faulkner, Joyce, Lawrence, Malamud, Bellow and Barth, approaching fiction as experience and as art.

3300:282 DRAMA APPRECIATION**3 credits**

(May be repeated for credit as a text or a film appreciation course) 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: English**3300:150-5 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, 1100:111,2.

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 sys-

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: 1660-1600**3 credits**

Study of major dramatic works from reopening of English theatre in 1660 to end of Eighteenth 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, minor American writers from 1865 to present.

3300:350 BLACK AMERICAN LITERATURE**3 credits**

Survey of representative Black American writers from Nineteenth 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, Spanish works from Middle Ages, Renaissance, Enlightenment, romantic period, translated.

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, emphasis on shaping publishable works. Survey of 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, emphasis on shaping publishable works. Survey of market. Class discussion of student stories; individual conference with instructor.

3300:389 SPECIAL TOPICS: 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 Twelfth to Fifteenth Century. Readings in Middle English.

3300:410/510 SIXTEENTH 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 SEVENTEENTH CENTURY LITERATURE**3 credits**

Overview of major authors of earlier Seventeenth 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 EIGHTEENTH 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, prose of later Nineteenth Century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers.

3300:435/535 TWENTIETH 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 1865*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: 1865-1918*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, Seventeenth, Eighteenth and Nineteenth Centuries, beginning with Anne Bradstreet and ending with Stephen Crane.

3300:452/552 AMERICAN POETRY FROM 1900 TO PRESENT*3 credits*

Survey of Twentieth Century American poetry beginning with Edwin Arlington Robinson and ending with contemporary poets.

3300:454/554 TWENTIETH 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*

(May be repeated with different topics.)

Special studies, and methods of literary research, in selected areas of English and American literature and language.

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

3300:600 TEACHING COLLEGE COMPOSITION PRACTICUM*1 credit*

Prerequisite: teaching assistantship. Orientation and weekly analysis of teaching rationale and practice, limited to teaching assistants in the Department of English.

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.

3300:618 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.

3300:889 SEMINAR IN ENGLISH

2-3 credits

(May be repeated with change of topics)

Special topics within the general field of literature and language, usually focusing on major figures or themes.

3300:891 BIBLIOGRAPHY AND LITERARY RESEARCH

2 credits

Choosing research topics, typical problems in literary scholarship, abstracting of scholarly material and bibliographic sources for literary research. Bibliographic exercises done, models of literary scholarship read.

3300:898 INDIVIDUAL READING IN ENGLISH

1-3 credits

Individual study under guidance of professor who directs and coordinates student's reading and research.

3300:899 THESIS

1-6 credits

Original work in the field of literature and language and completion of graduate student's required thesis.

3350: Geography

3350:100 INTRODUCTION TO GEOGRAPHY

3 credits

Analysis of world patterns of population characteristics, economic activities, settlement features, landforms, climate as interrelated.

3350:102 FOOD, ENERGY AND PEOPLE

3 credits

Present and future significance of interrelationships of population growth, food and energy availability at a worldwide scale will be studied by both forecasting methods and scenario considerations.

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, consumption of goods. Effect of economic patterns on man's culture and politics.

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.

3350:328 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.

3350:358 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.

3350:383 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 student 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.

3350:428/526 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.

3350:438/538 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 student 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 metropolitan regions. 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 student.

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 GEOGRAPHIC RESEARCH METHODS**3 credits**

Prerequisite: 12 credits in geography. Techniques in geographic research. Library resources, techniques of professional writing.

3350:483/583 SPATIAL ANALYSIS**3 credits**

Prerequisite: 481/581 or permission. Analysis of mapped statistical surfaces. Principles for use of map as model for statistical evidence, prediction, 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.

3350:496/596 FIELD RESEARCH METHODS**3 credits**

Prerequisite: 481/581 or permission. Field work enabling student to become competent in collecting, organizing and analysis of data while carrying out field research projects.

3350:498 HONORS RESEARCH IN GEOGRAPHY**1-3 credits**

(May be repeated for a total of six credits)

Prerequisite: permission of department honors preceptor, honors student 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**3350:600,1,2 SEMINAR****3 credits each**

(Each may be repeated for a maximum of six credits)

Prerequisite: permission. Investigation and analysis of selected topics in particular fields of geography. Specialization indicated by second portion of title.

3350:680 ADVANCED SPATIAL ANALYSIS**3 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.

3350:685 PLANNING: FIELD EXPERIENCE**2 credits**

Prerequisite: permission. Individual experience in selected planning agencies for supervised performance in professional planning work.

3350:687 HISTORY OF GEOGRAPHIC THOUGHT**3 credits**

Prerequisite: 481/581 or permission. Critical review of major developments in geographic concepts from ancient times to present.

3350:698 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**

(May be repeated twice)

Prerequisite: permission of department head. Supervised original research.

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, succession of major groups of plants and animals interpreted from rocks, 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, evaluation of environmental problems related to geology through field, laboratory exercises and demonstrations which apply concepts from 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, origin concepts of igneous, sedimentary, 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. 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**(May be repeated)*

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.

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. Student 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. Inde-

pendent 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

3370:606 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 the science teacher and graduate student 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, genesis of clay minerals, clay rocks; use, exploitation. Laboratory stresses methods of identification of clay minerals, analysis, 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, study of ore minerals, their textures using reflected-light microscope. Discussion of diagnostic physical, 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.

3370:676 URBAN GEOLOGY

3 credits

Prerequisites: 210, 230 or permission. Problems of urbanization related to our finite resources and creation of wastes. Geologic hazards. Case histories. Application of geologic data to urban development.

3370:680 SEMINAR IN GEOLOGY

2 credits

(May be repeated for a total of six credits)

Selected topics with reference material from original sources.

3370:664 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.

3370:696 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

Independent and original investigation. Must be successfully completed, report written and defended before a committee.

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 EIGHTEENTH CENTURY

4 credits

Survey from Renaissance, Reformation; development of nation states, religious wars, Age of Louis XIV and Enlightenment.

3400:208 EUROPE: NINETEENTH AND TWENTIETH CENTURIES

4 credits

Survey of European history from French Revolution and Napoleon; Nineteenth 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 Seventeenth Century to present.

3400:304 THE ANCIENT NEAR EAST

3 credits

Mesopotamia, Egypt; Israel, her neighbors to Persian Empire.

3400:305 GREECE

3 credits

Minoans and Mycenaeans; classical Greece to triumph of Macedon.

3400:306 ROME

3 credits

Rome and Hellenistic East to end of classical times.

3400:307 THE EASTERN ROMAN EMPIRE (324-1453)

3 credits

Byzantine culture and history from 324 to the fall of 1453.

3400:337 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 on nation's development.

3400:338 WOMEN IN THE UNITED STATES

3 credits

Changing roles, status, self-images and activities of women in context of American social, economic, political and intellectual movements.

3400:339 AMERICAN IMMIGRATION

3 credits

Examination of European migrants to American colonies and United States, their reasons for leaving Europe and coming to America, and their experience after arrival.

3400:340 PEACE, WAR AND MANKIND

3 credits

Historical examination of theories of war and peace, including study of leaders, groups and ideas for peace.

3400:350 SELECTED TOPICS IN HISTORY

3 credits

Includes experimental offerings such as those crossing subject or chronological lines, and subjects not listed in this *Bulletin*. See departmental office for current subject.

3400:397 INDIVIDUAL STUDY OR RESEARCH IN HISTORY

1-3 credits

(May be repeated for a total of 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.

3400:415/515 LATIN AMERICA: ORIGINS OF NATIONALITY

3 credits

Pre-Columbian civilizations, discovery and conquests; colonialism, struggle for independence and formation of new societies.

3400:418/518 LATIN AMERICA: THE TWENTIETH 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 Twentieth 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; including agriculture, commerce, labor. Special emphasis on business, 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, conservation of natural resources from beginnings of American society to present; combination of economic, technological history of extensive treatment of public policy, 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.

3400:438/538 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 Seventeenth Century Europe.

3400:444/544 EUROPE IN THE FRENCH REVOLUTIONARY ERA

3 credits

Development of Revolution; Napoleon's regime and satellites.

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 Sixteenth Century; its religious, cultural, political and diplomatic development, with special emphasis on Protestant, Anglican and Catholic reformations.

3400:451/551 NINETEENTH 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 NINETEENTH CENTURY EUROPE, 1871-1914

3 credits

Socialism, imperialism, nationalism and the great war. The *belle époque* and contemporary artistic and intellectual currents.

3400:454/554 TWENTIETH CENTURY EUROPE, 1914-1939

3 credits

Europe between world wars; Russian revolution, fascism and national socialism; plight of democracies.

3400:455/555 TWENTIETH 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 Nineteenth and Twentieth Centuries. Special emphasis on problems of modernization, the revolution and development of communism.

3400:460/560 WAR AND WESTERN CIVILIZATION

3 credits

War and society in Europe, America and beyond from ancient world to present with special emphasis on period since 1740.

3400:470/570 ANGLO-SAXON AND MEDIEVAL ENGLAND

3 credits

Anglo-Saxon life, thought and institutions; the Norman Conquest; medieval life, thought and institutions to 1471.

3400:471/571 EARLY MODERN ENGLAND TO 1640

3 credits

Yorkists and Tudors, transition from medieval to early modern times; Elizabeth and early Stuarts.

3400:472/572 EARLY MODERN ENGLAND, 1640-1783

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 Eighteenth Century. Emphasis on general features of traditional Chinese culture.

3400:481/581 MODERN CHINA**3 credits**

Survey of China since Eighteenth 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 Department of History, culminating in an undergraduate thesis.

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 Nineteenth 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.

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.

3400:690 HISTORY TEACHING PRACTICUM**3 credits**

Prerequisite: graduate assistantship. Required of all graduate assistants each fall semester. Training and experience in college teaching of history under the supervision of an experienced faculty member. Credits may not be used to meet degree requirements.

3400:694 THESIS RESEARCH**3 credits**

Research for Master of Arts degree thesis.

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.

3400:823 WRITING SEMINAR IN ANCIENT HISTORY**4 credits**

Prerequisite: 622. Research and writing in selected topics of ancient history, particularly Greek and Roman eras.

3400:825 READING SEMINAR IN MEDIEVAL HISTORY**4 credits**

Study of historical literature, sources of materials and major interpretations of medieval European history.

3400:826 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.

3400:831 READING SEMINAR IN MODERN EUROPEAN HISTORY TO 1815**4 credits**

Study of historical literature, sources of materials, major interpretations of early modern European history to Napoleonic era.

3400:832 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.

3400:697,8 INDIVIDUAL READING FOR M.A. STUDENT*1-4 credits each*

(May be repeated for a total of 12 credits)

Directed reading to fit individual student programs. May be repeated, but no more than six credits may count toward the M.A. degree in history. Written permission of the instructor required.

3400:699 THESIS WRITING*3 credits*

Prerequisite: 694. Writing of Master of Arts degree thesis.

3400:797,8 INDIVIDUAL READING FOR PH.D. STUDENT*1-6 credits each*

Directed reading to fit individual student programs. May be repeated, but no more than 12 credits may apply toward the Ph.D. in history. Written permission of the 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: Mathematics**3450:101-39 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, arithmetic operations, symbolism, word problems, linear, 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 n linear equations in n variables using elementary row operations.**3450:115 LINEAR PROGRAMMING***1 credit*

Prerequisite: 114. Minimizing and/or maximizing a linear function subject to a system of linear inequalities (geometrically and simplex method); introduction to game theory.

3450:117 INTRODUCTION TO TRIGONOMETRY*1 credit*

Prerequisite: 112. Definitions of trigonometric functions, identities, solving right triangles, applications.

3450:118 TRIGONOMETRIC FUNCTIONS AND GRAPHING*1 credit*

Prerequisite: 117. Graphing, identities, solving triangles, applications.

3450:121 ANALYTIC GEOMETRY*1 credit*

Prerequisite: 112. Cartesian coordinate system; rational, logarithmic, exponential functions; sequences, series, limits, definition of series.

3450:122 DIFFERENTIAL CALCULUS*1 credit*

Prerequisite: 121. Differentiation of algebraic, logarithmic and exponential functions, higher derivatives, partial derivatives, applications.

3450:123 INTEGRAL CALCULUS*1 credit*

Prerequisite: 122. Indefinite and definite integral differentials, change of variable, numerical integration, improper integrals, double integral.

3450:124 CALCULUS WITH TRIGONOMETRY*1 credit*

Prerequisites: 118, 123. Differentiation and integration of trigonometric functions, trigonometric substitution, applications.

3450:127 COMPUTER SCIENCE TOPICS I*1 credit*

Prerequisite: permission. Selected topics or subject areas of interest in computer science.

3450:128 COMPUTER SCIENCE TOPICS II*1 credit*

Prerequisite: permission. Selected topics or subject areas of interest in computer science.

3450:131 NUMBER SYSTEMS*1 credit*

Prerequisite: 112. Ancient number systems, number bases, Euclidean algorithm, modular arithmetic.

3450:132 ELEMENTARY GEOMETRY*1 credit*

Prerequisite: 112. Definitions and measure of line segments, angles and triangles in Euclidean plane geometry; Hilbert's axioms.

3450:136 SYSTEMS OF MEASUREMENT*1 credit*

English and metric systems of weights and measures. Troy, avoirdupois and apothecaries' systems.

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.

3450:149 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, inequalities; trigonometric functions, identities; exponential, logarithmic functions; complex numbers; infinite sequences; binomial theorem; mathematical induction.

3450:211,2 CALCULUS FOR THE LIFE SCIENCES*4 credits each*

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 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: natural, integer, rational, real, 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, 123 and 3460:201. Introduction to numerical methods with applications to business, behavioral, social sciences. Topics: 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, vector-vector functions; integral theorems; coordinate transformations; cartesian, contravariant, covariant vectors, 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.

3450:421,2/521,2 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*

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*

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, solution of systems of equations, linear, nonlinear. Topics: stability theory, perturbation methods, asymptotic methods, applications from physical, social sciences.

3450:436/536 MATHEMATICAL MODELS*3 credits*

Prerequisite: 235. Formulation and analysis of mathematical models in social and physical sciences. Analysis of deterministic and stochastic models. Topics may include stochastic processes, linear programming, graph theory, theory of measurement.

3450:441/541 CONCEPTS IN GEOMETRY*4 credits*

Prerequisite: 222 or permission of instructor. Axiomatic treatment of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, constructions and inversions.

3450:442/542 PROJECTIVE GEOMETRY*3 credits*

Prerequisite: 222 or permission. Complex projective planes, duality, homogeneous coordinates, 1-1 correspondence, cross ratios, harmonic ranges, conics, quadrilaterals, quadrangles, applications to Euclidean geometry, quadric surfaces.

3450:445/545 INTRODUCTION TO TOPOLOGY*3 credits*

Prerequisite: 312 or permission. Introduction to topological spaces and topologies, mappings, cardinality, homeomorphisms, connected spaces, metric spaces.

3450:481/581 NUMERICAL METHODS FOR SCIENTIFIC COMPUTATIONS*3 credits*

Prerequisites: 232 and either 3460:201 or 4450:206. Techniques for representing functions, approximating integrals and solving ordinary differential equations presented and implemented for the computer.

3450:489/589 TOPICS IN MATHEMATICS*1-3 credits*

(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 Honors Program who has completed 3450:489 (honors). An introduction to research problems in mathematical sciences under the guidance of selected faculty.

Methods for solving these classes introduced, emphasizing both analytical and numerical techniques.

3450:833,4 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, surfaces; intrinsic geometry of surface; geometry of surfaces in 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**3450:801 INTRODUCTION TO ANALYSIS***4 credits*

Prerequisite: permission. An introduction to analysis to include differentiation and integration, maxima and minima, Lagrangian multipliers, transformations, infinite series, line and surface integrals, improper integrals. May not be used to meet degree requirements for mathematical sciences majors.

3450:810 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.

3450:811,2 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.

3450:821 FUNCTIONS OF A REAL VARIABLE I AND II*3 credits each*

Sequential. Prerequisite: 422/522. Real number system, sets, limit theorems, semi and continuous functions, derivatives of functions, Borel sets and Baire functions, measure; measurable sets, measurable functions. Riemann, Lebesgue integration, multiple integration.

3450:825 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.

3450:827,8 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.

3450:831 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.

3450:832 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS*3 credits*

Prerequisite: 432/532 or permission. Existence, uniqueness and stability of solutions to general classes of partial differential equations.

3460: Computer Science**3460:125 DESCRIPTIVE COMPUTER SCIENCE***1 credit*

Computer literacy: terminology; methods, media for data representation, storage; elements of a computing system; 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.

3460:201-5 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/1 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. 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, 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.

3460:418/516 INTRODUCTION TO DATA STRUCTURES*3 credits*

Prerequisite: 201. Standard data structures: stacks, queues, deques, trees, graphs, vectors, arrays, files; searching, sorting.

3460:416/518 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 and 4450:316. 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, teleprocessing networks: 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.

3460:469/589 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.

3460:496 SENIOR HONORS PROJECT*1-3 credits*

Prerequisite: 3450:489 (honors). Directed study for senior student in the 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**3470:251-7 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.

3470:451,2/551,2 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: analysis of variance; crossed, 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.

3470:651,2 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.

3470:661,2 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: least squares — matrix notation, 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: General Mathematical Sciences**3480:300-2, 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.

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 (Counseling and Testing, Ayer Hall 305). For placement in third-year courses or higher, department permission is required.

3500:101,2 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.

3500:201,2 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**3520:101,2 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.

3520:201,2 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.

3520:207,8 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.

3520:301,2 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.

3520:305,6 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.

3520:309,10 FRENCH CULTURE AND CIVILIZATION

3 credits each

Prerequisite: 302 or 306 or permission. Audio-visual 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.

3520:351,2 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.

3520:403,4 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 SEVENTEENTH 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 EIGHTEENTH CENTURY FRENCH LITERATURE

4 credits

Prerequisite: 302 or 306 or permission. Reading and discussion of selected authors: emphasis on the *Philosophes*. Conducted in French.

3520:419/519 NINETEENTH 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 TWENTIETH 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.

3520:497,8 INDIVIDUAL READING IN FRENCH**1-3 credits each**

Graduate Courses**3520:601 ADVANCED FRENCH GRAMMAR****4 credits**

Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.

3520:603,4 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.

3520:607,6 SELECTED TOPICS IN THE MOVEMENT OF IDEAS IN FRENCH LITERATURE**4 credits each**

Study of ideas instrumental in shaping French thought and culture.

3520:619,20 FRENCH CULTURE EXPRESSED IN LITERATURE**4 credits each**

Anthropological approach 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.

3520:697,8 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**3530:101,2 BEGINNING GERMAN I AND II****4 credits each**

Sequential. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation; short stories, outside reading and supplementary work in language laboratory.

3530:201,2 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.

3530:207,8 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. Not open to majors.

3530:250 TWENTIETH 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 NINETEENTH 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.

3530:301,2 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.

3530:305,8 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.

3530:351,2 TRANSLATION: GERMAN**3 credits each****3530:403,4 ADVANCED GERMAN CONVERSATION AND COMPOSITION****3 credits each**

Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

3530:406,7 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 TWENTIETH 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 TWENTIETH 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.

3530:497,8 INDIVIDUAL READING IN GERMAN*1-3 credits each*

Prerequisite: permission.

3570:201,2 INTERMEDIATE RUSSIAN I AND II*3 credits each*

Prerequisite: 102 or equivalent. Grammar review, practice in reading, writing, speaking; short stories, novels on intermediate level; outside reading and supplementary work in language laboratory.

3570:207,8 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.

3570:301,2 RUSSIAN COMPOSITION AND CONVERSATION*3 credits each*

Prerequisite: 202 or equivalent. Advanced composition using Russian models, special attention to words and idioms; development of oral expression and conversational ability.

3570:305,6 INTRODUCTION TO RUSSIAN LITERATURE*3 credits each*

Prerequisite: 202 or equivalent. Reading and class discussion in Russian of representative works.

3570:309,10 RUSSIAN CIVILIZATION AND CULTURE*3 credits each*

Prerequisite: 202 or equivalent. Reading and discussion of Russian texts relating to developments in Russian civilization and culture.

3570:351,2 TRANSLATION: RUSSIAN*3 credits each***3570:403,4 ADVANCED RUSSIAN COMPOSITION AND CONVERSATION***3 credits each*

Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

3570:411,2 SCIENTIFIC RUSSIAN*3 credits each*

Prerequisite: 202 or equivalent. Intensive reading of scientific articles in chemistry, physics, mathematics, biology and medicine.

3570:420,1 RUSSIAN LITERATURE OF THE NINETEENTH 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.

3570:427,8 RUSSIAN LITERATURE OF THE TWENTIETH 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.

3570:497,8 INDIVIDUAL READING IN RUSSIAN*1-3 credits each*

Prerequisite: permission

3550: Italian**3550:101,2 BEGINNING ITALIAN I AND II***4 credits each*

Sequential. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation; short stories, outside reading and supplementary work in language laboratory.

3550:201,2 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.

3550:207,6 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.

3530:301,2 ITALIAN COMPOSITION AND CONVERSATION*3 credits each*

Prerequisite: 202 or equivalent. Italian composition using Italian models, special attention to words and idioms and development of oral expression and conversational ability.

3550:305,6 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**3570:101,2 BEGINNING RUSSIAN I AND II***4 credits each*

Reading, speaking, writing, and understanding; intensive drill in pronunciation and supplementary work in language laboratory.

3580: Spanish**3580:101,2 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.

3580:201,2 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.

3580:207,8 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.

3580:301,2 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.

3580:305,8 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.

3580:351,2 TRANSLATION: SPANISH

3 credits each

3580:403,4 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.

3580:409,10 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 Sixteenth and Seventeenth Centuries studied. Conducted in Spanish.

3580:415/515 EIGHTEENTH AND NINETEENTH CENTURIES SPANISH LITERATURE

4 credits

Prerequisite: 302 or 306 or permission. Reading, discussion and lectures. Study of Neoclassicismo, Romanticismo, Realismo, Naturalismo, le generacion of 1898. Conducted in Spanish.

3580:419/519 TWENTIETH CENTURY SPANISH LITERATURE

4 credits

Prerequisite: 302 or 306 or permission. Reading and discussion of the most representative writers of Twentieth Century Spain. Representative poetry, drama, novels and short stories studied. Conducted in Spanish.

3580:422/522 SPECIAL TOPICS IN HISPANIC CULTURE

4 credits

(May be repeated)

Reading and discussion of significant works in literature or culture in Spain and Latin America not studied in other courses.

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.

3580:427,8/527,8 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.

3580:805,6 SEMINAR IN HISPANIC LINGUISTICS

4 credits each

Advanced topics in comparative, historical and descriptive Hispanic linguistics studied from contemporary theoretical perspectives; includes practical applications.

3580:809,10 SEMINAR ON SPANISH LITERATURE OF THE GOLDEN AGE; SEMINAR ON EIGHTEENTH AND NINETEENTH CENTURIES SPANISH LITERATURE

4 credits each

Reading and discussion of representative writers from Renaissance to late baroque period. Studies in essay, novel, theatre, poetry and philosophical 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 TWENTIETH CENTURY SPANISH-AMERICAN LITERATURE

4 credits

Reading and discussion of contemporary writers with emphasis on theatre, novel and short story. Conducted in Spanish.

3580:821 SEMINAR ON TWENTIETH CENTURY SPANISH LITERATURE

4 credits

Studies in representative present-day writers with analyses and discussions of novel, theatre, 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.

3580:897,8 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: WESTERN

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.

3600:216 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 philosophy courses. Discussion, analysis of problems of theology, nature of religious experience; God's nature, existence; immortality, sin, faith, reason; holy revelation, 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.

3600:312 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.

3600:313 HISTORY OF MODERN PHILOSOPHY

3 credits

Analysis of major philosophical issues of Seventeenth and Eighteenth Centuries from Descartes through Kant. Readings of primary sources in translation.

3600:314 NINETEENTH 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 Hegelian and other origins as well as its development in writings of Marx, Engels, Lenin and contemporary writers. Focus on metaphysics, social philosophy, philosophy of history, nature of man, ethics, aesthetics.

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 dialogues in translation, commencing with Theatetus 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 Twentieth 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 philosophical works.

3600:444/544 PROBLEMS IN PHILOSOPHY*3 credits*

Prerequisites: two courses in philosophy or permission of instructor. Thorough, critical examination of one major philosophical problem.

3600:462/562 THEORY OF KNOWLEDGE*3 credits*

Prerequisite: three courses in philosophy. Examination of nature of knowledge; theories of perception, conception and truth, problem of induction and relation of language to knowledge.

3600:464/564 PHILOSOPHY OF SCIENCE*3 credits*

Prerequisites: 101, 170 or permission of instructor. Nature of scientific inquiry, types of explanation, laws and causality, theoretical concepts and reality. Also considers critics of hypothetical-deductive view of science, e.g., Hanson and Kuhn.

3600:471/571 METAPHYSICS*3 credits*

Prerequisites: 211, 212 and 313 or permission of instructor. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.

3600:480/580 SEMINAR*3 credits**(May be repeated)*

Prerequisite: permission of instructor.

3600:481/581 PHILOSOPHY OF LANGUAGE*3 credits*

Prerequisites: 101 and 170 or permission of instructor. Contemporary philosophies about nature of language and its relation to reality and human thinking. Includes discussion of views of linguists such as Chomsky.

3600:490 SENIOR HONORS PROJECT IN PHILOSOPHY*1-6 credits**(May be repeated for a total of six credits)*

Prerequisite: 390 or senior standing in Honors Program or senior honors standing as philosophy major or permission of instructor or nomination by department faculty member. Research leading to completion of senior honors thesis involving original work under faculty supervision.

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 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 student, as logic of normative systems is treated. It is suggested that a graduate student 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 student 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, trigonometry or 3450:149 as corequisite or permission. Introductory course for professional work in biology and health professions and services. Emphasizes life science applications. Mechanics: laws of motion, force, 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.

3650:267,8 LIFE SCIENCE PHYSICS COMPUTATIONS I AND II

1 credit each

Corequisites: 261 (with 267); 262 (with 268). Optional companion courses to 261,2 provides additional computational experience in applications of physics to life sciences, emphasizing use of algebra and trigonometry. Particularly recommended for student with modest mathematical preparation.

3650:291 ELEMENTARY CLASSICAL PHYSICS I

4 credits

Corequisite: 3450:221. Introductory physics for student 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.

3650:293,4 PHYSICS COMPUTATIONS I AND II

1 credit each

Corequisites: 291 (with 293); 292 (with 294). Optional companion courses to 291,2 provides experience in problem solving, and elaborates application of calculus to simple physical phenomena. Particularly recommended for a freshman, and for student with modest preparation in mathematics or physical sciences.

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.

3650:331,2 ASTROPHYSICS I AND II

3 credits each

Prerequisite: 232, 262 or 292. One-year comprehensive, qualitative course recommended for student 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

(May be repeated)

Prerequisite: permission of instructor. Participation in current research project in department under supervision of faculty member.

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 use; emphasizes: thermodynamic efficiencies, storage, transport, side effects, 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, their utilization in circuits. Introduction to mathematical analysis of same.

3650:411,2/511,2 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: design, performance, interpretation, reporting of physical measurements: the scientific method, measurements, 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.

3650:451,2/551,2 ADVANCED LABORATORY I AND II

2 credits each

Prerequisite: 412 or permission of instructor. Applications of electronic, solid-state devices, 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.

3650:471,2/571,2 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.

3650:481,2/581,2 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***(May be repeated)*

Prerequisite: permission. Design of laboratory apparatus experiments, techniques or demonstrations.

3650:488/588 SELECTED TOPICS: PHYSICS**1-4 credits***(May be repeated)*

Prerequisite: permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics.

3650:490/590 WORKSHOP**1-4 credits***(May be repeated)*

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.

3650:497/597 INDEPENDENT STUDY**1-4 credits***(May be repeated)*

Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member.

3650:608 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS II**3 credits**

Prerequisite: 605 or permission. Data reduction, Calcomp plotting, comparison of theoretical models with data, linear and non-linear least squares curve-fitting. 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.

3650:835,6 PHYSICS OF POLYMERS LABORATORY I AND II**2 credits each**

Prerequisite: 291, corequisites: 631,2. Selected laboratory experiments illustrating principles and methods discussed in 631,2.

3650:851 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.

3650:852 THEORETICAL CLASSICAL PHYSICS II**3 credits**

Prerequisite: 651. Maxwell's equations; space-time symmetry of field equations; field vectors in moving systems; field energy, momentum; electrodynamics; electromagnetic forces on charges, currents.

3650:861 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.

3650:862 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.

3650:881 QUANTUM MECHANICS I**3 credits**

Prerequisites: 3450:235 and permission of instructor; recommended:

Graduate Courses**3650:801 ATOMIC AND NUCLEAR PHYSICS I****3 credits**

Prerequisites: 301 or 407 and 3450:235 or permission of instructor. Expository, analytical treatment of fundamental principles which operate to yield observed complex behavior of matter. Introductory quantum mechanics, free particle quantum mechanics, one-electron atom.

3650:802 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.

3650:805 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS I**3 credits**

Prerequisite: permission. Review of FORTRAN and basic topics in computer science. Numerical solutions to Physics problems, including Newton's and Schrodinger's equations. Treatment and reduction of experimental data, plotting, simulation.

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

(May be repeated)

Prerequisite: permission. Intended to facilitate expansion of particular areas of interest in theoretical physics, by consultation with faculty member and independent study beyond available coursework.

3650:690 SPECIAL PROBLEMS IN EXPERIMENTAL PHYSICS

1-4 credits

(May be repeated)

Prerequisite: permission. Intended to encourage development of experimental techniques in selected areas, under faculty supervision.

3650:691 SEMINAR IN THEORETICAL PHYSICS

1-3 credits

(May be repeated)

Prerequisite: permission.

3650:692 SEMINAR IN NMR SPECTROSCOPY

1-3 credits

(May be repeated)

Prerequisite: permission.

3650:693 SEMINAR IN SOLID-STATE PHYSICS

1-3 credits

(May be repeated)

Prerequisite: permission.

3650:697 GRADUATE RESEARCH

1-5 credits

Prerequisite: permission. Candidates for M.S. degree may obtain up to five credits for faculty supervised research projects. Grades and credit received at completion of such projects

3650:698 SPECIAL TOPICS: PHYSICS

1-4 credits

Prerequisite: permission. Enables student who needs 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 candidate for M.S. degree upon satisfactory completion of a master's thesis.

3700: Political Science

3700:100 GOVERNMENT AND POLITICS IN THE UNITED STATES

3 credits

Examination of American political system with emphasis on fundamental principles, ideas, institutions and processes of modern government. Lecture and discussion sections (day classes only).

3700:110 CIVIL LIBERTIES IN AMERICA

2 credits

Not open to political science majors and cannot be used for credit toward a major in political science. Study of civil liberties issues in the 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 a political science major 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 Nineteenth 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.

3700:328 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. Supervised individual placement with political officeholders, party groups, governmental agencies, interest groups.

3700:397 INDEPENDENT STUDY*1-4 credits*

(May be repeated for a total of four credits)

Prerequisites: senior standing, 3.00 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*

(May be repeated)

Group studies of special topics in political science. May not be used to meet undergraduate or graduate requirements in political science. Elective credit only.

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 a political science major in Honors Program. Independent study leading to completion of senior honors thesis or other original work.

Graduate Courses
3700:600 SEMINAR IN POLITICAL THEORY*3 credits*

Prerequisite: six credits of political science or permission. Selected topics in political theory investigated in depth.

3700:610 SEMINAR IN INTERNATIONAL POLITICS*3 credits*

Prerequisite: six credits of political science or permission. Analysis of current problems in theory and practice of politics and organization.

3700:620 SEMINAR IN COMPARATIVE POLITICS*3 credits*

Prerequisite: six credits of political science or permission. Research on selected topics in comparative politics. Comparative method.

3700:626 SEMINAR IN POLITICS OF DEVELOPING NATIONS*3 credits*

Prerequisite: six credits of political science or permission. Selected topics investigated. Emphasis on theories of political development.

3700:630 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.

3700:640 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.

3700:641 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: student is placed with officeholders, government agencies or political groups for research or practical experience of relevance to program.

3700:697 INDEPENDENT RESEARCH AND READINGS*1-4 credits*

(May be repeated, but no more than six credits toward the master's degree in political science)
Prerequisite: permission.

3700:699 THESIS*2-6 credits***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 student applies 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 3470:251-7 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: 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.

3750:400/500 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 and 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 Nineteenth and Twentieth 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**(May be repeated)*

Prerequisite: 100 or permission. Comprehensive survey of contemporary status of specialized topics and issues in psychology. Emphasis on original source materials, critical analysis and synthesis of empirical and theoretical aspects.

3750:488,9 HONORS SEMINAR IN PSYCHOLOGY*4 credits each*

Prerequisites: senior standing, psychology major and permission. 488-Selection of research topic, review of relevant literature, research design and data collection. 489-Analysis and write-up of research project in journal or thesis style.

3750:490/590 WORKSHOP IN PSYCHOLOGY*1-3 credits**(May be repeated)*

Group studies of special topics in psychology. May not be used to meet undergraduate or graduate major requirements in psychology.

3750:497 INDEPENDENT READING, RESEARCH AND/OR PRACTICUM IN PSYCHOLOGY*1-3 credits**(May be repeated)*

Prerequisite: departmental permission. Independent reading, research and/or practicum in an area of psychology under supervision and evaluation of selected faculty member.

Graduate Courses**3750:600 ADVANCED GENERAL PSYCHOLOGY***4 credits*

Selective review of contemporary status in various specialty areas in psychology. Emphasis on current problems, new developments and changing concepts.

3750:610 INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY*4 credits*

Application of industrial/organizational psychology to industry, business and government including organizational theory, differential psychology, personnel selection and training, consumer behavior and engineering psychology.

3750:620 METHODS AND THEORIES OF HUMAN DEVELOPMENT*4 credits*

Survey of current research methodology and theoretical approaches to human development with a life-span emphasis. Reviews of theoretical perspectives include S-R behavior theory, cognitive-organismic, information processing and psychoanalytic approaches.

3750:630 CLINICAL PSYCHOLOGY*4 credits*

Clinical techniques and approaches to study, evaluation and treatment of abnormal behavior.

3750:695 PRACTICUM IN PSYCHOLOGICAL ASSESSMENT AND INTERPRETATION*1-4 credits**(May be repeated)*

Prerequisites: 14 credits of graduate psychology and permission. Supervised work experience in application of psychological techniques to human assessments and interpretations.

3750:699 THESIS RESEARCH*1-4 credits**(May be repeated)*

Prerequisite: departmental permission. Research analysis of data and preparation of thesis for master's degree.

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*4 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. Aspects of development, aging with emphasis on life-span methodology and research design including age-related changes in intelligence, personality, sensation, perception, learning, memory and socialization and intervention approaches.

3750:728 SOCIAL DEVELOPMENTAL PSYCHOLOGY

4 credits

Prerequisite: 620 or permission. Examination of selected theoretical and methodological issues in study of social psychology from developmental perspective. Topics include attitude formation, sex roles, moral development, altruism, aggression, attraction, attribution processes, nonverbal behavior and cultural effects.

3750:729 FUNCTIONAL ANALYSIS OF BEHAVIOR

4 credits

Prerequisite: 620 or permission. Behavioral approaches to treatment of maladaptive behavior. Emphasis on application of learning theory to specific topics such as development of self-control, enuresis and self-destructive behavior.

3750:730 THEORIES OF LEARNING

4 credits

Prerequisite: 600 or permission. Includes a comparative discussion of major traditional theories of learning, as well as analysis of contemporary issues and developments as reflected in review of selected areas of recent research.

3750:731 COGNITIVE DEVELOPMENT

4 credits

Prerequisite: 730 or permission. Theory and research concerning development of cognitive activities including concept formation, problem solving and thinking. Topics include major theories, research paradigms and methods of investigation and 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 promotion. Survey of objective and subjective criteria used in performance appraisal including test validation and training effectiveness.

3750:753 TRAINING AND ORGANIZATIONAL DEVELOPMENT

4 credits

Prerequisite: 610. Review of industrial training methods and techniques in terms of learning theory, with consideration of techniques to evaluate these training and organizational development programs.

3750:754 RESEARCH METHODS IN PSYCHOLOGY

2-4 credits

Prerequisites: 610, 620. Scientific method and its specific application to psychology. Topics include data collection, validity, reliability, use of general linear model and its alternatives and power analysis.

3750:755 COMPUTER APPLICATIONS IN PSYCHOLOGICAL RESEARCH

4 credits

Prerequisite: 610. Practicum in application of computers to psychological research including data collection, analysis and interpretation. Also covers computer simulation of decision making including use of different models.

3750:756 ROLE OF ATTITUDES AND VALUES IN INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY

4 credits

Prerequisite: 610. Consideration of role of attitudes and values on cross-cultural issues of comparative management, selection, training, work motivation and consumer behavior.

3750:757 ORGANIZATIONAL MOTIVATION AND LEADERSHIP

4 credits

Prerequisite: 610. Identification, description, analysis and techniques for implementation of intrinsic and extrinsic incentives during work activity. Leadership process and its relation to motivation and group performance also analyzed.

3750:758 ENGINEERING PSYCHOLOGY AND JOB DESIGN

4 credits

Prerequisite: 610. Survey of field of engineering psychology. Covers such topics as job design, task analysis, man-machine systems analysis, working conditions and accidents.

3750:760 GRADUATE SEMINAR IN PSYCHOLOGY

1-4 credits

(May be repeated)

Prerequisite: permission. Special topics in psychology.

3750:795 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

(May be repeated)

Prerequisite: permission. Individual readings and/or research on a topic under supervision of faculty member with whom specific arrangements have been made.

3750:899 DISSERTATION RESEARCH

1-12 credits

Prerequisite: open to a properly qualified student. 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, social control; organizational typologies; theories of organizational structure, 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, behaviors in women, men including theory, evidence on origins and determinants of differences, 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 major and nonmajor 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. Interrelationships between position in society, 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 life-styles of urban subcultures. Lecture/Discussion.

3850:430/530 JUVENILE DELINQUENCY

3 credits

Prerequisite: 100 or permission. Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/Discussion.

3850:431/531 CORRECTIONS

3 credits

Prerequisite: 330 or 430. Theories, belief systems, correctional practices and effectiveness as related to offender groups. Lecture.

3850:432/532 PROBATION AND PAROLE

3 credits

Prerequisite: 330 or 430 or permission. Analysis of how probationers and parolees are selected, supervised and then released into private life. Emphasis on current and past social research. Lecture/Discussion.

3850:433/533 SOCIOLOGY OF DEVIANT BEHAVIOR

3 credits

Prerequisites: 100 and at least 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.

Graduate Courses

3850:600 FUNDAMENTALS OF SOCIOLOGY

3 credits

Accelerated introduction to sociology for the graduate student deficient in sociological background or from other disciplines who intends to take further graduate courses in sociology. Lecture.

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, i.e. those encountered in thesis preparation. (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; a sociology graduate student only. Methodological problems using advanced multivariate techniques in analysis of sociological data. Topics include nonexperimental causal analysis such as recursive and nonrecursive path analysis. (Same as KSU 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.

3850:615 EPIDEMIOLOGIC METHODS IN HEALTH RESEARCH

3 credits

Prerequisite: permission. Designed to introduce the student to methods of developing and understanding information concerning the distribution of illness and injury in society and evaluations of interventions to reduce that burden.

3850:617 SOCIOLOGICAL THEORY

3 credits

Examination of major theoretical frameworks, concepts that form the foundation of sociological thought. Emphasis on contemporary sociological theory, its debt to classic works. (Same as KSU 72106) Seminar.

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.

3870: Anthropology

3870:150 CULTURAL ANTHROPOLOGY

4 credits

Introduction to 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.

3870:356 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.

3870:397 ANTHROPOLOGICAL RESEARCH

1-3 credits

Prerequisite: permission. Individual study of problem areas of specific interest to an individual student under guidance of a faculty member.

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.

3870:461/561 LANGUAGE AND CULTURE

3 credits

Prerequisite: 150 or permission. Examination of language structure and interaction of language, cognition and culture. Lecture.

3870:463/563 TYPES OF KINSHIP AND SOCIAL ORGANIZATION

3 credits

Prerequisite: 150 or permission. Comparative structural analysis of non-Western systems of kinship and social organization in terms of status, role, reciprocal expectation, nomenclature, nuclear and extended households and other kinship groupings. Lecture.

3870:472/572 SPECIAL TOPICS: ANTHROPOLOGY

3 credits

(May be repeated)

Prerequisites: 150 and permission. Designed to meet needs of student 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

3870:651 SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS

3 credits

Major theoretical viewpoints in cultural anthropology. Nature, scope of research problems. Survey of methods in field work. Seminar.

3870:697 INDIVIDUAL INVESTIGATION

1-3 credits

Prerequisite: permission of instructor and head of department. Intensive reading and/or research in student's chosen field of interest. Regular conferences with instructor. Preparation of a research paper.

3940: Polymer Science

3940:301 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.

3940:302 INTRODUCTION TO PLASTICS*2 credits*

Prerequisite: 301 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.

3940:303 SPECIAL PROJECTS IN POLYMER SCIENCE*1-2 credits*

Prerequisite: 302. Research projects of a limited scope for student desiring experience with a professor working in a specific field. The course would be designed to give the student the processes involved in outlining projects, setting up equipment, collecting and recording research data in a scientific manner.

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: 301 or 302 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. A student prepares one or more formal technical presentations related to chemical aspects of field.

3940:415 MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS LABORATORY*2 credits*

Prerequisite: 413 or permission. Laboratory experiments involving the topics covered in the prerequisite courses.

3940:416 EXTRUSION AND MOLDING*4 credits*

Prerequisite: 302 or permission. Introduction of extrusion and molding processes for plastics. Theory of extrusion and molding processes and their application to the types of materials used, variations in equipment and the processing characteristics involved. Lecture and laboratory.

3940:417 ADHESIVES AND COATING*4 credits*

Prerequisite: 302 or permission. This course involves the fundamentals of adhesives and coatings technology. The chemical and physical properties of adhesives and coatings will be discussed and will be related to molecular structure. Specific materials, applications and testing procedures will be discussed and practical experience gained by experimentation in the laboratory.

3940:418 COMPOSITES, CELLULAR STRUCTURES AND TIRE TECHNOLOGY*4 credits*

Prerequisite: 302 or permission. The importance and science of composite structures will be taught and applied to the technology of foam and tire manufacture. Laboratory experiments will be used to illustrate the principles involved.

3940:490/590 WORKSHOP IN POLYMER SCIENCE*1-3 credits*

(May be repeated with permission)

Group studies on selected topics involving polymers. May not be used to meet undergraduate or graduate major requirements in polymer science. May be used for elective credit only.

Graduate Courses**3940:604 SPECIAL PROJECTS IN POLYMER SCIENCE***1-3 credits*

Prerequisite: permission. Research projects of limited nature assigned to student 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 MASTER'S RESEARCH*1-6 credits*

Prerequisite: permission. For properly qualified candidate 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 in 708 including experimental techniques used in elucidation of chain structure.

3940:711 SPECIAL TOPICS: 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: POLYMER SCIENCE*2 credits*

Prerequisite: permission. Topics of current interest in polymer science, encompassing chemistry, physics or engineering aspects of macromolecular science.

3940:713 CHAIN STRUCTURE LABORATORY*2 credits*

Prerequisite or corequisite: 708 or permission of instructor. Designed to apply principles discussed in 708 to laboratory determination of polymer structure.

3940:899 DOCTORAL RESEARCH IN POLYMER SCIENCE*2-16 credits*

Open to properly qualified student accepted as candidate for degree of Doctor of Philosophy in polymer science, depending on availability of staff and facilities.

3980: Urban Studies

Graduate Courses**3980:590 WORKSHOP***1-3 credits*

(May be repeated)

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.

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.

3980:614 ETHICS AND PUBLIC SERVICE*3 credits*

Prerequisite: permission. Examination of the ethical problems and implications of decisions and policies made by those whose actions impact on the broad public. Case studies of decision making in both the public (government) and private (business and the professions) spheres are studied in relation to classical literature in ethical theory.

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; hierarchies, social problems, relationships to planning, 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.

3980:632 LAND USE CONTROL*3 credits*

Prerequisite: permission. Acquaint student with past and present approaches to land use control in the United States and examine the political, economic, social and legal forces which have shaped existing land use legislation.

3980:633 URBAN PLANNING THEORY AND INNOVATION*3 credits*

Prerequisite: permission. Acquaint the student with the theories, premises and assumptions upon which present urban planning and innovation are based so as to provide the student with a greater understanding of the intellectual bases of the field.

3980:634 URBAN DESIGN PLANNING*3 credits*

Prerequisites: 630 and permission. The purpose of the course is to acquaint student with the history, theory and general practice of urban design activity in a variety of settings including the neighborhood, the community and the region.

3980:635 FIELD METHODS IN URBAN AND REGIONAL PLANNING*3 credits*

Prerequisites: 630, 631, 632, 634, 3350:542 or 3350:544 or equivalent. Provides student with a detailed practical experience in conceptualizing and implementing a solution to an issue or problem in urban or regional planning using the planning process model.

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 eight 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.

3980:680,1 SELECTED TOPICS IN URBAN STUDIES*1-3 credits each*

Prerequisite: permission. Selected topics in specific areas of urban planning, in various developmental processes of cities, or in various urban policy and administrative issues. (A maximum of 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 in which student participates in policy planning, 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 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 Twentieth 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 student in evaluation of programs, both external and internal, to work settings.

3980:704 IMPLEMENTATION OF PUBLIC POLICY

3 credits

Analysis of administrative process within public organizations, federal, state and local, in United States; emphasis on urban community.

3980:705 PLANNING STRATEGIES AND EVALUATION OF PLANS

3 credits

Prerequisite: permission. Analysis of urban planning policy issues and strategies for implementation in public policy formulation. Emphasis on use of planning process as integrative mechanism.

3980:706 URBAN TUTORIAL

3 credits

Prerequisite: permission. Intensive study of a particular approved field or topical area of urban studies with a tutor. Student enrolls in a total of 12 hours of tutorial credit and more than 12 only if tutorial field is changed, as approved by Committee on Doctoral Studies. In no case will a student enroll in more than three credits per term.

3980:699 DISSERTATION RESEARCH

3-15 credits

(May be repeated)

Open to properly qualified student accepted as candidate for Doctor of Philosophy degree. Student must register for at least three credits each semester until dissertation is accepted. Minimum of 15 credits required.

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 student who has 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 student 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 student 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 student 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 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, energy balance calculations applied to solution of chemical problems.

4200:305 MATERIALS SCIENCE

2 credits

Prerequisites: 3150:133 and 3650:292 and junior standing. Structure, processing and properties of metals, ceramics and polymers. Special topics, such as composites, corrosion and wear.

4200:321 FLUID, THERMAL TRANSFER THEORY

3 credits

Prerequisite: 200. Constitutive equations for momentum and energy transfer. Development of microscopic and macroscopic momentum and energy equations. Analogy and dimensions correlations. Problems and applications in unit operations of chemical engineering.

4200:322 THERMAL, MASS TRANSFER THEORY

3 credits

Prerequisite: 321. Constitutive equations for mass transfer. Development of microscopic and macroscopic momentum, energy and mass transfer equations for binary systems. Problems and applications in unit operations of chemical engineering.

4200:325 EQUILIBRIUM THERMODYNAMICS

4 credits

Prerequisite: 200. Second law of thermodynamics, entropy, applications, comprehensive treatment of pure and mixed fluids. Phase and chemical equilibria, flow processes, power production and refrigeration processes covered.

4200:351 FLUID AND THERMAL OPERATIONS

3 credits

Prerequisite: 321. Applications of fluid mechanics including piping, pumping, compression, metering, agitation and separations. Applications of heat transfer by conduction, convection and radiation to design of process equipment.

4200:352 TRANSPORT LABORATORY

2 credits

Prerequisite: 322. Experiments in fluid, heat and mass transfer. Data collection, analysis and reporting in various formats. Relationships to theory emphasized.

4200:353 MASS TRANSFER OPERATIONS

3 credits

Prerequisites: 322, 325. Theory and design of staged operations including distillation, extraction, absorption. Theory and design of continuous mass transfer devices.

4200:354 OPERATIONS LABORATORY

1 credit

Prerequisite: 353. Comprehensive experiments and analysis in combined heat and mass transfer, thermodynamics and reaction kinetics. Comprehensive reports.

4200:408 POLYMER ENGINEERING

3 credits

Prerequisite: permission or senior standing. Commercial polymerization, materials selection and property modification, polymer processing, applied rheology and classification of polymer industry.

4200:430 CHEMICAL REACTION ENGINEERING

3 credits

Prerequisite: 325. Nonequilibrium processes including chemical reaction mechanisms, rate equations and ideal reactor design applied to homogeneous and heterogeneous systems.

4200:435 PROCESS ANALYSIS AND CONTROL

3 credits

Prerequisite: 353 or 430. Response of simple chemical processes and design of appropriate control systems.

4200:441 PROCESS ECONOMICS AND DESIGN

4 credits

Prerequisite: 353. Economic evaluation of chemical plants including justification, profitability, capital investment and operating costs. Design of chemical process equipment.

4200:442 PLANT DESIGN

4 credits

Prerequisite: 441. Integration of process and equipment design for a total plant including justification, site selection and plant layout. Culminates with a case study or A.I.Ch.E. Student Contest Problem.

4200:461/561 SOLIDS PROCESSING

3 credits

Prerequisites: 321 and 353 or permission. Comprehensive problems in sedimentation, fluidization, drying and other operations involving mechanics of particulate solids in liquid and gas continua.

4200:463/563 POLLUTION CONTROL

3 credits

Prerequisite: 353 or permission. Air and water pollution sources and problems. Engineering aspects and methodology.

4200:466/566 DIGITIZED DATA AND SIMULATION

3 credits

Prerequisite: permission. Data acquisition and analysis by digital devices, digital control applications and design.

4200:496 TOPICS IN CHEMICAL ENGINEERING

1-3 credits

(May be repeated for a total of six credits)

Prerequisite: permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthetic fuels processing, bioengineering, simultaneous heat and mass transfer phenomena and new separation techniques.

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.

4200:899 MASTER'S RESEARCH

1-6 credits

(May be taken more than once)

For properly qualified candidate for master's degree. Supervised original research in specific area of chemical engineering selected on basis of availability of staff and facilities.

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 student 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.

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.

4200:640 ADVANCED PLANT DESIGN

3 credits

Prerequisite: permission. Topical treatment of process and equipment design, scale-up, optimization, process syntheses, process economics. Case problems.

4200:696 TOPICS IN CHEMICAL ENGINEERING

1-3 credits

(May be repeated for a total of six credits)

Prerequisite: permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthetic fuels processing, bioengineering, simultaneous heat and mass transfer phenomena and new separation techniques.

4200:898 SPECIAL PROBLEMS

1-4 credits

(May be repeated for a total of four credits)

Prerequisite: permission of department head. For the qualified candidate for M.S.Ch.E. degree. Designed to expand an 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 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.

4300:201 STATICS*3 credits*

Corequisites: 3450:222 and 3650:291. Forces, resultants, couples; equilibrium of force systems; distributed forces; centers of gravity; analysis of simple structures; moments of inertia; kinematics.

4300:202 INTRODUCTION TO MECHANICS OF SOLIDS*3 credits*

Prerequisite: 201. Axial force, bending moment diagrams, axial stress and deformation; stress-strain diagrams; torsion; flexural stress; flexural shearing stress; compound stresses.

4300:230 SURVEYING*4 credits*

Principles of route, construction and land surveying. Use of tape, level, transit and electronic surveying equipment. Computation of land areas and earthwork quantities.

4300:308 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, compression members; openweb joists; beams; bearing plates; beam-columns; bolted, 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: dams, highway fills, cofferdams, etc. Embankment construction techniques, quality control. Analysis of embankment, foundation stability. Instrumentation for monitoring soil movement, stability. Stabilization of foundation soils. Seepage analysis, 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. 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: urban hydraulics, steam channel mechanics, sedimentation, 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.

Graduate Courses**4300:601 ADVANCED MECHANICS OF MATERIALS***3 credits*

Prerequisite: 202. Three-dimensional stress states. Strain transformations. Theories of failure. Shear center. Unsymmetrical bending. Curved beams. Beams on elastic foundations. Torsion of noncircular sections. Castigliano's theorems. Analytical and numerical solutions to column buckling and beam-column problems.

4300:602 FUNDAMENTALS OF ELASTICITY, PLASTICITY AND VISCOELASTICITY*3 credits*

Prerequisite: 202. Analysis of stress and strain. Equilibrium equations. Constitutive equations for isotropic, orthotropic and anisotropic materials. Formulation of boundary value problems. Plasticity and viscoelasticity concepts of yield, strain-hardening and flow. Mathematical modeling of plastic and viscoelastic behavior of metals, polymers, concrete, soils and composites. Methods of material characterization.

4300:603 MATRIX ANALYSIS OF FRAMED STRUCTURES*3 credits*

Prerequisite: 306. Matrix algebra and solution of simultaneous equations. Flexibility analysis of structures. Stiffness analysis of structures. Local and global stiffness matrices for space structures. Automatic dead load analyses. Direct computation of member end-actions. Nonrigid joints. Inclined supports. Nonprismatic members. Computer program implementation.

4300:604 DYNAMICS OF STRUCTURES*3 credits*

Prerequisite: 306. Approximate, rigorous dynamic analysis of one, two, multiple and infinite degrees of freedom structural systems. Elastoplastic, plastic analysis. Equivalent systems, dynamic hinge concept. Modal analysis. Transfer matrices. Fourier, 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.

4300:611 FUNDAMENTALS OF SOIL BEHAVIOR*2 credits*

Prerequisite: 311. In-depth examination of structure and fundamental physico-chemical and mechanical properties of engineering soils viewed as particulate matter.

4300:612 ADVANCED SOIL MECHANICS*3 credits*

Prerequisite: 311. Study of mechanics of behavior of soil as continuum.

Principles of stress, strain, deformation, shear strength and pore water pressure as applied to mechanical behavior of soil masses.

4300:614 FOUNDATION ENGINEERING I

3 credits

Prerequisite: 311 or permission. Foundation bearing capacity and settlement analysis. Design of shallow and deep foundation systems. Pile driving and load test procedures and analysis. Theory and design of earth-retaining structures including retaining walls, tiebacks and bulkheads.

4300:615 FOUNDATION ENGINEERING II

3 credits

Prerequisite: 614 or permission. Soil-structure interaction theory and applications to underground structures including conduits, tunnels and shafts. Advanced foundation construction methods and problems including dewatering, soil stabilization, underpinning and cofferdams. Slope stability analysis.

4300:616 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, 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, waves; design analysis of shore, offshore structures. Movement, 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 student seeking Ph.D. in engineering degree.

4300:898 PRELIMINARY RESEARCH*1-15 credits*

(May be repeated for a total of 15 credits)

Prerequisite: approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

4300:899 DOCTORAL DISSERTATION*1-15 credits*

(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. Covers fundamental aspects of electrical circuits, electronics and electrical machinery. Not open to an electrical engineering major.

4400:333 CIRCUITS III*3 credits*

Prerequisites: 232, 3450:235, 4450:206. Application of Laplace and state variable to frequency and time domain expressions for steady state and transient responses. Network topology and computer-aided circuit design.

4400:334 CIRCUITS IV*3 credits*

Prerequisite: 333. Network topology; node, mesh, loop cut-set and state variable analysis and solutions; matrix formulations. Transform theory and techniques. Computers in network design and analysis.

4400:343 ELECTRICAL MEASUREMENTS*4 credits*

Prerequisite: 231. Study of DC and AC meters and bridges. Evaluation of errors involved in measurements.

4400:344 INSTRUMENTATION*3 credits*

Prerequisites: 343, 362. Analysis and characteristics of transducers, indicating instruments and recorders used in electrical measurements.

4400:353 ELECTROMAGNETIC FIELDS I*4 credits*

Prerequisite: 3450:223. Static and dynamic fields treated on vector basis with Maxwell's equations in point and integral forms. Dynamic electromagnetic fields with applications including particle dynamics and propagation equations.

4400:359 TRANSMISSION LINES AND NETWORKS*3 credits*

Prerequisites: 333, 362. Steady state and transient analysis of distributed parameter circuits. Low and high frequency applications. Networks for transmissions.

4400:361 PHYSICS OF ELECTRONIC DEVICES*3 credits*

Prerequisite: 3640:301; corequisite: 353. Physics of semiconductors. Band theory, energy distribution and electron transport. P-n junctions. BJT and FET devices. Electron emission and ballistics, gaseous discharge, dielectric and magnetic materials. Device modeling.

4400:362 ELECTRONIC CIRCUITS*4 credits*

Prerequisites: 232, 343, 361. Equivalent circuits for electronic devices. Time and frequency domain analysis. Rectification, voltage and power amplification, feedback, oscillators, linear IC's.

4400:363 SWITCHING AND LOGIC*4 credits*

Prerequisites: 343, 361. Analysis of computer circuits. Introduction to use of Boolean algebra and mapping techniques in analyzing switching circuits. Sequential circuits.

4400:371 CONTROL SYSTEMS I*3 credits*

Prerequisites: 333, 361; corequisite: 382. Introduction to servomechanisms and feedback. Modeling and response of feedback control systems. Stability of linear systems. Experiments include analog simulation and basic servomechanism.

4400:360 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, 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*421-3 credits, 521-2 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, equipment; noise, modulation; antennas, propagation; electronic communication circuits; frequency standards 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.

4400:484 PULSE ELECTRONICS

4 credits

Prerequisites: 333, 362. Waveshaping circuits, nonsinusoidal waveform generation and relaxation circuits. Pulse transformers. Application of pulse and switching circuits.

4400:485/585 COMPUTER CIRCUITS

4 credits

Prerequisite: 363. Electronic circuitry considerations in logic circuits; methods of sequential, threshold logic analysis, synthesis; development of computer arithmetic elements; memory, storage devices.

4400:487/587 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.

4400:489 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, design of control systems. Discrete system, analysis, digital computer control. Experiments include hybrid, AC control system, digital computer control.

4400:480/580 SYMMETRICAL COMPONENTS

3 credits

Prerequisite: 382. Per unit method as applied to power system calculations. Fundamental principles of symmetrical components as applied to analysis of electrical circuits and machines.

4400:481 ELECTRICAL POWER SYSTEMS I

3 credits

Prerequisite: 382. Introduction to electricity utility load flow, fault analysis, stability, surge protection and relaying.

4400:482 ELECTRICAL POWER SYSTEMS II

3 credits

Prerequisite: 382. Introduction to industrial power systems. Local generation, power factor correction, conductor selection code requirements, coordination of protective devices.

4400:497 HONORS PROJECT

1-3 credits

(May be repeated for a total of 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, techniques for analysis, 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, nonlinear systems. Controllability, observability, state variable feedback, estimation, control nonlinear system analysis, 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.

4400:661 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.

4400:883 ECONOMICS OF POWER SYSTEMS*3 credits*

Prerequisite: 681. Analysis and operation of power system for economic dispatching using a computer.

4400:884 PROTECTIVE RELAYING*3 credits*

Prerequisite: 480. Principles and application of relays as applied to protection of power systems.

4400:885 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.

4400:893 SPECIAL PROBLEMS*1-3 credits*

(May be taken more than once)

Prerequisite: permission of department head. For a qualified graduate student. Supervised research or investigation in major field of training or experience. 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 specialized topics. For student 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.

4450:207 USER LANGUAGES*2 credits*

Prerequisite: 206 or equivalent. Comparative study of features of high-level computer languages from standpoint of user.

4450:308 ASSEMBLER PROGRAMMING*3 credits*

Prerequisite: 206 or equivalent. Introduction to computer organization and programming at machine language level. Assembler syntax, sub-routine linkage conventions, macrolanguage.

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 SPECIAL TOPICS: COMPUTER SCIENCE*1-2 credits*

(May be taken more than once)

Prerequisite: permission of department head. Special topics in computer engineering.

Graduate Courses**4450:606 COMPUTER ARCHITECTURE***3 credits*

Prerequisites: 306 and 4400:363 or equivalents. Historical development of computer architecture. Design methodologies. Processor organization and design of instruction sets. Parallel processing. Control section implementations. Memory organization. System configurations.

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.

4450:893 SPECIAL PROBLEMS*1-3 credits*

(May be taken more than once)

Prerequisite: permission of department head. For a qualified graduate student. 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 student seeking Ph.D. in engineering.

4450: Engineering Computer Science**4450:208 FORTRAN (SCWENGR)***2 credits*

Prerequisite: 3450:221 or 2020:334. Introduction to use of digital computers in scientific and engineering applications. For student majoring in engineering or physical sciences. No credit for person having completed 3460:201.

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. Introduction to the use of the digital computer.
- 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
Prerequisite: 203. 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, 160 or 4450:206. 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
Prerequisites: 4300:202, 4450:206 or 4600:160. Analysis of stress and strain at a point. Mohr's circles, shear centers, elastic instability. Stresses in thick and thin cylinders. Fatigue analysis.
- 4600:337 DESIGN OF MECHANICAL COMPONENTS**
3 credits
Prerequisite: 336. 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
Prerequisites: 3450:235, 4450:206 or 4600:160. Analytical and numerical methods of solution of mechanical engineering problems.
- 4600:360 MECHANICAL METALLURGY**
2 credits
Prerequisite: 336. Structures of common metallic materials and study of their macroscopic mechanical behavior. Phase changes and heat treatment. Theories of failure.
- 4600:393 INTERNAL COMBUSTION ENGINES LABORATORY**
1 credit
Prerequisite: 301. Study of application and performance in reciprocating and rotary engines.
- 4600:396 COMPUTER METHODS LABORATORY**
1 credit
Prerequisites: 3450:235, 4450:206 or 4600:160. 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. 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. Analysis, design of extended surfaces. Natural convective, combined modes of heat transfer and heat transfer with a change of phase. Heat transfer in magnetohydrodynamic systems.
- 4600:422/522 EXPERIMENTAL STRESS ANALYSIS I**
2 credits
Prerequisites: 336 or 4300:202. Experimental methods of determining stress or strain: brittle lacquer, strain gages, photoelasticity.
- 4600:426/526 INDUSTRIAL NOISE CONTROL**
3 credits
Prerequisite: 431 or permission. Theory of propagation, transmission and reflection of plane waves. Psychological acoustics. Noise control regulations and criteria. Techniques of identification, instrumentation and control of noise sources.
- 4600:430/530 MACHINE DYNAMICS**
3 credits
Prerequisites: 203, 321, 160 or 4450:206. 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**
3 credits
Prerequisite: 440 or equivalent. Operation of basic control mechanisms. Study of mechanical, hydraulic, pneumatic, fluidic control systems, including application areas. Tuning of control devices for optimum performance of system. Case studies on control applications from industry, e.g. boilers, furnaces, 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*2 credits*

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.

4600:486 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. Student suggests a project and makes appropriate arrangements with faculty for supervision.

Graduate Courses**4600:600 GAS DYNAMICS***3 credits*

Prerequisite: 411/511. Derivation of equations for multi-dimensional irrotational flow of a compressible fluid. Method of small perturbations. Method of characteristics. Ideal flow theory. Transonic flow. One-dimensional unsteady flow.

4600:606 THERMODYNAMICS*3 credits*

Prerequisite: 301 or equivalent. Extension and generalization of basic laws of thermodynamics with application to a variety of physical and biological systems. Introduction to irreversible thermodynamics, the third law and statistical thermodynamics.

4600:609 FINITE ELEMENT ANALYSIS I*3 credits*

Prerequisite: 622. Introductory development of finite element method as applied to various topics from continuum mechanics. Areas covered include plane; axisymmetric and 3-D stress analysis; conduction; fluid mechanics; transient problems and geometric and material nonlinearity.

4600:610 DYNAMICS OF VISCOUS FLOW I*3 credits*

Prerequisites: 301, 310 or equivalent. Derivation and solution of equations governing laminar viscous flow. Applications include unsteady flows, slow viscous flows, parallel flows, lubrication theory and laminar boundary layers.

4600:615 CONDUCTION HEAT TRANSFER*3 credits*

Prerequisite: 315 or equivalent. Study of one-, two- and three-dimensional heat conduction. Development of analytical techniques for analysis and design.

4600:616 CONVECTION HEAT TRANSFER*3 credits*

Prerequisite: 315 or equivalent. Heat transfer from laminar, turbulent external, internal flows. Convective heat transfer at high velocities. Heat transfer to liquid metals; high Prandtl number fluids.

4600:617 RADIATION HEAT TRANSFER*3 credits*

Prerequisite: 315 or equivalent. 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*

Prerequisites: 301, 315 or equivalent. Current techniques to determine heat transfer and pressure drop in components such as boilers, heat exchangers, and steam generators, with boiling. Boiling mechanism, slip ratio, critical heat flux and instabilities in boiling 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*

Prerequisites: 336 or 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 and energy. 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*

Prerequisites: 337 or equivalent. Theories of failure and plastic flow. Fatigue, creep analysis and introduction to fracture mechanics.

4600:629 NONLINEAR ENGINEERING PROBLEMS*3 credits*

Prerequisite: 622. 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 equivalent. Study of vibrations of multidegree of freedom systems including free and forced vibrations, damped and transient response, normal mode vibrations and matrix iteration techniques. Application to seismic design and shock design.

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: 440 or equivalent. Uniform methods of modeling and response analysis, controllability and observability, stability theory and analysis of linear and nonlinear engineering processes. Design of feedback controls for optimum performance for multivariable real-time control application.

4600:660 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.

4600:661 DESIGN OF RUBBER COMPONENTS

2 credits

Prerequisite: 337 or equivalent. 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 candidate 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

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. Transition process.

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 equivalent. Stationary random processes and their transmission through linear time-invariant discrete and continuous vibrating systems. Analysis of random data and interaction between mechanisms of 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, large systems. Use of dynamic programming, operational research methods for system optimization, control.

4600:763 ADVANCED METHODS IN ENGINEERING ANALYSIS

3 credits

Prerequisite: 3450:235 or equivalent. 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 student seeking Ph.D. in engineering degree.

4600:696 PRELIMINARY RESEARCH

1-15 credits

Prerequisite: approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

4600:699 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. Planning, scheduling and controlling of field work within time and cost constraints.

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.

4980:356 SAFETY IN CONSTRUCTION

2 credits

The purpose of this course is to explain what creates hazards and why, and to suggest where to anticipate trouble in each phase of the work as it progresses.

4980:361 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.

4980:453 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.

4980:462 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.

4980:465 HEAVY CONSTRUCTION METHODS

3 credits

Prerequisite: 2980:232 or 4300:472 Management techniques in planning, estimating and directing heavy construction operations.

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 (15 clinical hours)

Prerequisite: sophomore standing. 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. Student 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: junior standing. 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 AUDIO-VISUAL EDUCATION

2 credits

Acquaints student with audio-visual 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. Student produces media materials including overhead projection transparencies, audio recordings, slide sequences and opaque materials. The student is 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)

Prerequisite: senior status. Involves student in analytical and critical approach to problems of education as social undertaking in light of history and philosophy of education.

5100:480 SPECIAL TOPICS: EDUCATIONAL FOUNDATIONS

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5100:490,1,2/590,1,2 WORKSHOP

1-3 credits each

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 understanding of 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. Student required to study current theories, research in areas of learning, development, motivation, 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 C.B.E. Student involvement emphasized, required. Knowledge of a programming language.

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. The student will develop extended competence with contemporary measurement and evaluation techniques.

5100:695 FIELD EXPERIENCE: MASTER'S*1-3 credits*

Prerequisite: permission of department head, instructor. 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, 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, instructor. In-depth study of research problem within humanistic and behavior foundation.

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. A student reports on theory, empirical research and applications in areas of individual 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: OBSERVATION***1 credit (30 field hours) (credit/noncredit)*

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.

5200:200 STUDENT PARTICIPATION*1 credit (30 field hours) (credit/noncredit)*

Prerequisite: 100. Planned field experience emphasizing field settings where student works with small groups in classroom.

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) (credit/noncredit)*

Prerequisite: 200. Planned field experience where student works in both small and large group settings in elementary school.

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. Curriculum needs of primary-aged child.

5200:333 SCIENCE FOR THE ELEMENTARY GRADES*3 credits (15 clinical hours)*

Prerequisite: 5100:250. For a prospective elementary school science teacher. Development of a point-of-view toward science teaching and study of methods of presenting science material.

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 teacher 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 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. Elementary reading program, 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 student with knowledge, skills and attitudes which will enable them to model behavior and implement curricular programs consistent with the concept of cultural pluralism.

5200:380 NURSERY SCHOOL LABORATORY*3 credits*

Prerequisite: 7400:265. Concentrated study and experience in nursery school programming under direction of supervising teachers.

5200:385 COMPREHENSIVE MUSICIANSHIP FOR THE ELEMENTARY CLASSROOM TEACHER*4 credits (25 clinical hours)*

Designed to afford a prospective classroom teacher the opportunity to develop individual musical skills in creativity, performance and listening as means of enhancing teaching through use of music.

5200:395 FIELD EXPERIENCE*1-3 credits*

Prerequisite: permission of adviser, department head. Independent field work in area selected by student's adviser, 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 theatre 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. 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.

5200:480 SPECIAL TOPICS: ELEMENTARY EDUCATION

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5200:490,1,2,3/590,1,2,3 WORKSHOPS

1-3 credits each

Elective workshop for elementary education major who would pursue further refinement of teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.

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 PROBLEMS IN ELEMENTARY SCIENCE EDUCATION

2 credits

Examination of influence of new curricular designs in elementary science. Emphasis on inquiry, investigation and discovery and their impact on total elementary school curriculum.

5200:650 EDUCATION AND THE YOUNG CHILD

2 credits

Content centered on educational settings of young children from birth through five years.

5200:686 INDIVIDUALIZED INSTRUCTION: LEARNING STYLE IDENTIFICATION AND RESOURCE PRESCRIPTION

3 credits

Prerequisites: permission of instructor and 630. Individual learning style characteristics, practical approaches in individualization of instruction, multisensory resource development and prescription.

5200:695,6,7 FIELD EXPERIENCE: MASTER'S

1-2 credits each

Prerequisite: permission of adviser and department head. On-the-job experience related to student's course of study.

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

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 student 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.

5200:895,6,7 FIELD EXPERIENCE FOR ELEMENTARY DOCTORAL STUDENT*1-2 credits each*

Prerequisite: permission of adviser and department head. Designed to help student 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, department head. 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. A student diagnoses, implements procedures and follows 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 a student with knowledge, skills and attitudes which will enable employment of effective methods of teaching reading to culturally different learners, and/or learners whose language patterns are non-standard.

5250:480 SPECIAL TOPICS: ELEMENTARY READING INSTRUCTION*1-4 credits*

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

Graduate Courses**5250:880 TRENDS IN READING INSTRUCTION***2 credits*

Prerequisite: 5200:335 or 5300:425. Survey course designed to up-

date reading background of student who has not had a recent course in reading.

5250:681 DIAGNOSIS AND CORRECTION OF READING PROBLEMS*5 credits*

Prerequisite: 680. Relation of growth to reading development and reasons for retardation. Implementation of diagnostic and corrective techniques by developing case studies in supervised setting.

5250:682 CLINICAL PRACTICES IN READING*5 credits*

Prerequisite: 681. Nature and etiology of reading difficulties experienced by selected children. Supervised practices and independent work with children in conjunction with staff from other disciplines.

5250:683 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*

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.

5300:296 EXPLORATORY EXPERIENCES IN SECONDARY SCHOOLS/ MAINSTREAMING*1-2 credits*

Field work for the special education major.

5300:310 PRINCIPLES OF TEACHING IN THE SECONDARY SCHOOL*3 credits (30 clinical hours)*

Prerequisites: 275 and 5100:250. Designed to familiarize the pre-service teacher 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 student 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. Student develops skills for selection of literature that is well suited for secondary student. Student develops, uses and experiences methods for teaching adolescent literature in secondary schools.

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 multicultural 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 teacher 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 student who has 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 teacher prepare 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.

5300:480 SPECIAL TOPICS: SECONDARY EDUCATION

1-4 credits

(May be repeated with a change in topic.)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5300:490,1,2,3/590,1,2,3 WORKSHOP

1-3 credits each

Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

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

4 credits

Prerequisite: senior standing, enrolled in student teaching. Organization of home economics in secondary schools. Emphasis on methodology, techniques, development of vocational concepts, utilization of audio-visual materials, evaluation procedures.

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.

5400:415/515 VOCATIONAL AND TECHNICAL TRAINING IN BUSINESS AND INDUSTRY

3 credits

Examines the role and mission of the training function in the modern industrial setting. Provides a foundation for a student planning to become an industrial trainer or training supervisor of technicians and other occupational skill development levels.

5400:421/521 INSTRUCTIONAL TECHNIQUES IN TECHNICAL EDUCATION

4 credits

Selected topics in instructional techniques appropriate to post-secondary technical education. Emphasis on instructional methods, techniques in classroom, laboratory including tests, 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 a person engaged in providing educational services in the community. Includes examination of community education concept and roles of various personnel and agencies.

5400:441/541 EDUCATIONAL GERONTOLOGY SEMINAR

3 credits

Designed for person practicing in field of gerontology or preparing for a specialization in educational gerontology, including person responsible for development and implementation of courses, seminars, occupational training programs and workshops for older people.

5400:451/551 HOME ECONOMICS JOB TRAINING

3 credits

Prerequisite: senior standing or permission of instructor. Concept development in vocational home economics. Job training, program development, operational procedures, skill and knowledge identification, training profiles, job description and analysis. Individualized study guides. In-school and on-the-job observations.

5400:480 SPECIAL TOPICS: VOCATIONAL EDUCATION

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5400:481 SPECIAL TOPICS: TECHNICAL EDUCATION

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5400:490,1,2/590,1,2 WORKSHOP

1-3 credits each

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: POST-SECONDARY 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.

5550:106 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 a physical education major 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. 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: 3100:206, 207. Application of principles of anatomy to movement of human body.

5550:202 PHYSIOLOGY OF EXERCISE

3 credits

Prerequisites: 3100:206, 207. Study of physiological effects of exercise relative to physical education activities and athletics. Two hours lecture, two hours laboratory.

5550:211 FIRST AID

2 credits

Standard American Red Cross gives instruction and practice in immediate and temporary care of injuries and sudden illnesses. In addition to standard course, C.P.R. is covered.

5550:235 CONCEPTS OF MOTOR DEVELOPMENT AND LEARNING

2 credits

Analysis of concepts fundamental to learning motor activities.

5550:245 INSTRUCTIONAL TECHNIQUES IN ELEMENTARY PHYSICAL EDUCATION

2 credits

Prerequisites: 130, 140, 193. Supervised teaching of elementary physical education activities to peers. Four class periods per week.

5550: 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.

5550:246 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 adaptable for use by persons working with 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 a physical education major. 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, practical application of basic movement experiences for 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 post-injury support.

5550:341 ADVANCED ATHLETIC INJURY MANAGEMENT

4 credits

Prerequisites: 3100:206, 3100:207, 5550:201, 202, 340. Advanced athletic training techniques for the student desiring to become a certified trainer according to the regulations of the National Athletic Trainers Association.

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 a person preparing to teach elementary school physical education and special education.

5550:480 PRACTICUM IN PHYSICAL EDUCATION

3-6 credits

Prerequisites: senior standing and permission of adviser. Practical work experience with certified personnel in a discipline or profession related to physical education. The experience will be a cooperative effort of the student's adviser, the student and agency personnel directly involved with the practicum.

5550:480 SPECIAL TOPICS: PHYSICAL EDUCATION

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5550:490,1,2,3/590,1,2,3 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 person 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**5550:801 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.

5550:803 CURRICULUM PLANNING IN HEALTH AND PHYSICAL EDUCATION*2 credits*

Analysis of objectives, procedures and trends in curricula and principles and procedures for developing sound programs.

5550:805 PHYSIOLOGY OF MUSCULAR ACTIVITY AND EXERCISE*2 credits*

Functions of body systems and physiological effects of exercise. Laboratory experiences, lectures, discussions.

5550:806 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.

5550:808 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.

5550:895 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.

5550:897 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.

5550:899 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 adviser.

5570: Health Education**5570:101 PERSONAL HEALTH***2 credits (10 clinical hours)*

Application of current principles and facts pertaining to healthful, effective living. Personal health problems and needs of a student.

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

Methods and techniques utilized in organization and administration of school health program. The role of school and community personnel in detecting and managing health problems of the student explored. 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. 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. For student considering pupil personnel fields, 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.

5600:480 SPECIAL TOPICS: EDUCATIONAL GUIDANCE AND COUNSELING

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5600:490,1,2/590,1,2 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 for counselors and other helping professionals.

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 major).

5600:631 ELEMENTARY SCHOOL GUIDANCE

3 credits

Introductory course: examines guidance and counseling practices.

5600:633 SECONDARY SCHOOL GUIDANCE

3 credits

Introductory course: 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.

5600:649 COUNSELING AND PERSONNEL SERVICES IN HIGHER EDUCATION

2 credits

Prerequisite: 635 or permission of instructor. 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. 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.

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.

5600:705 RESEARCH DESIGN IN COUNSELING II*3 credits*

Prerequisite: 704. Computer analysis of data related to counseling problem. Development of research proposal.

5600:706,7 INTERNSHIP IN COUNSELING SUPERVISION I, II*3 credits each*

Prerequisite: doctoral residency or permission. Instruction and experience in supervising a graduate student in counseling.

5600:720 TOPICAL SEMINAR: GUIDANCE AND COUNSELING*1-3 credits*

Prerequisite: permission of instructor. A topical study with a variety of disciplinary input. Staffing will be by department faculty and other professionals in counseling and related fields. A maximum of six credits may be applied to a degree.

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.

5610: Special Education**5610:201 STUDENT PARTICIPATION: EDUCABLE MENTALLY RETARDED/LEARNING DISABILITIES***1 credit (credit/noncredit)*

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/ORTHOPEDEICALLY HANDICAPPED*1 credit (credit/noncredit)*

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 (credit/noncredit)*

Prerequisite: sophomore standing and permission. Systematic observation and participation in classes for educable mentally retarded and trainable mentally retarded children for ½ semester each. This experience is prerequisite to student teaching in each area.

5610:395 FIELD EXPERIENCE: SPECIAL EDUCATION*1-3 credits*

Prerequisite: upper college standing. Supervised work with youngsters, individually and in groups in school and/or community settings.

5610:403 STUDENT TEACHING SEMINAR: SPECIAL EDUCATION

1 credit

Corequisite: 495. Support seminar for 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. Etiology, diagnosis, classification, developmental characteristics of the atypical individual.

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. Etiology, diagnosis, classification, developmental characteristics of the orthopedically handicapped.

5610:446/546 DEVELOPMENTAL CHARACTERISTICS OF BEHAVIORALLY DISORDERED INDIVIDUALS

3 credits

Prerequisite: 443/543. Etiology, diagnosis, classification, developmental characteristics of the socially and emotionally maladjusted.

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. Diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of intermediate level exceptional children.

5610:452/552 EDUCATIONAL ADJUSTMENT FOR SECONDARY LEVEL EXCEPTIONAL CHILDREN

3 credits

Prerequisite: 451/551. Study of diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of secondary level exceptional children.

5610:453/553 RECREATIONAL PROGRAMS FOR EXCEPTIONAL INDIVIDUALS

1 credit

Study experience which examines crafts and outdoor recreational programming for exceptional individuals in a field setting.

5610:454/554 EDUCATIONAL ADJUSTMENT FOR MODERATE, SEVERE AND PROFOUND MENTALLY RETARDED INDIVIDUALS

3 credits

Prerequisite: 441/541. Study of programs, services and training

techniques designed to accommodate developmental patterns of moderate, severe and profound mentally retarded individuals.

5610:455/555 EDUCATIONAL ADJUSTMENT FOR INTELLECTUALLY GIFTED INDIVIDUALS

3 credits

Prerequisite: 444/544. Study of programs, services and educational experiences designed to accommodate developmental patterns of intellectually gifted individuals.

5610:456/556 CLASSROOM BEHAVIOR MANAGEMENT FOR EXCEPTIONAL INDIVIDUALS

2 credits

Prerequisite: 451/551 or equivalent. Review, development of behavior management principles, application models for the exceptional.

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.

5610:458/558 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.

5610:490,1,2,3/590,1,2,3 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 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.

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.

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 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 the handicapped.

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.

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.

5620:491,2/591,2 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.

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.

5620:601 COGNITIVE FUNCTION MODELS FOR PRESCRIPTIVE EDUCATIONAL PLANNING*3 credits*

Prerequisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.

5620:602 BEHAVIORAL ASSESSMENT*3 credits*

Prerequisite: permission of instructor. Overview of behavioral theory and its application focusing upon the role of the school psychologist as an agent of behavior change.

5620:603 CONSULTATION STRATEGIES IN SCHOOL PSYCHOLOGY*3 credits*

Prerequisite: permission of instructor. A consideration of consultant roles in the practice of school psychology as related to consultant process and with school and agency personnel, parents and children.

5620:610 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.

5620:611 PRACTICUM IN SCHOOL PSYCHOLOGY*4 credits*

Prerequisite: permission of instructor. Laboratory experience in psycho-educational study of individual children who have learning problems in school.

5620:630,1 INTERNSHIP IN SCHOOL PSYCHOLOGY: FALL/SPRING*3 credits each*

Prerequisite: permission of instructor. Full-time paid work assignment under supervision of a qualified school psychologist for an academic year structured according to provisions of State Department of Education. Additional readings required.

5620:640 FIELD SEMINAR I: ISSUES AND ASSESSMENTS (FALL)**5620:641 FIELD SEMINAR II: CLASSROOM ENVIRONMENT (SPRING)***2 credits each*

Prerequisite: permission of instructor. Consideration of pertinent topics in practice of school psychology with emphasis on field-based problems and issues of a practicing school psychologist.

5620:695 FIELD EXPERIENCE: MASTER'S*1-3 credits*

Prerequisite: permission of instructor. Practical school psychology-related experience in school setting.

5620:696 FIELD EXPERIENCE: MASTER'S*1-3 credits*

Prerequisite: permission of instructor. Practical school psychology-related experience in appropriate setting other than a school.

5620:697 INDEPENDENT STUDY*1-4 credits*

Prerequisite: permission of adviser and supervisor of the independent study. Documentation of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.

5620:698 RESEARCH PROJECT IN SPECIAL AREAS*1-3 credits*

Prerequisite: permission of adviser. Study, analysis and reporting of school psychology problem.

5620:699 SCHOOL PSYCHOLOGY: PROBLEM OR THESIS*1-3 credits*

Prerequisite: permission of instructor. Thorough study, analysis and reporting in depth of an educational problem; field projects in special areas; synthesis of existing knowledge in relationship to specific topic.

5630: Multicultural Education

5630:480 SPECIAL TOPICS: MULTICULTURAL EDUCATION

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

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

5630:666 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: Educational Administration

5700:480 SPECIAL TOPICS: EDUCATIONAL ADMINISTRATION

1-4 credits

(May be repeated with a change in topic)

Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5700:490,1,2,3/590,1,2,3 WORKSHOP

1-3 credits each

Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

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

5700:601 PRINCIPLES OF EDUCATIONAL ADMINISTRATION

3 credits

Theories and practices in administering schools and school systems, with emphasis on administrative process, common problems, career opportunities, getting the first job.

5700:604 SCHOOL AND COMMUNITY RELATIONS

2 credits

Basics in maintaining cooperative relationships between educational in-

stitutions and their supporting publics. Examination, analysis of institutional environments and impact of mass media on public support.

5700:605 DECISION-MAKING THEORY AND PRACTICE IN EDUCATIONAL ADMINISTRATION

3 credits

Theories underlying process of decision making in philosophy, sociology, economics and politics of education. Alternative decisions and their respective consequences. Fundamentals of PPBS and other decision-making aids.

5700:606 EVALUATION OF EDUCATIONAL INSTITUTIONS

3 credits

Theories and practices involved in processes of delineating, obtaining and providing information for decision making.

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 student 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 student test and develop understandings and skills in supervision. Student participates 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. Provides student 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*

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*

For graduate education student 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 student 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.

5700:748 POLITICS, POWER AND THE SCHOOL ADMINISTRATOR*3 credits*

Impacts of formal and informal community power structures and influential persons on educational planning and decision making. Administrator as an influence on the power structure for educational benefit.

5700:747 PRACTICUM: COMPETING AND COMPLEMENTARY SOCIAL SYSTEMS*3 credits*

Designed to bring educational administrator into direct contact with individuals responsible for other community service delivery systems, e.g., city government. Methods of interagency cooperation to provide client services.

5700:795,6 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. 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*

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*

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*

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*

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, character of pupil personnel services.

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.

5900:715 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. Topics of concern to student specializing in student personnel services in higher education. Topics may differ each semester depending upon specific student needs and interests.

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 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.

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.

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. 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.

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. 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

Provides nonaccountant basic knowledge of federal tax law as applied to individuals and businesses. Not open to accounting major.

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 C.P.A. preparation.

6200:430/530 TAXATION I

3 credits

Prerequisite: 317. 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: 317 and required for an accounting major. 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; 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.

6200:460/560 ACCOUNTING PROBLEMS

3 credits

Prerequisite: 318. Independent research on advanced accounting problem in student's specific area of interest.

6200:465 C.P.A. PROBLEMS: COMMERCIAL LAW

2 credits

Prerequisite: permission of instructor. Deals with those general principles of commercial law which appear on C.P.A. examination.

6200:466 C.P.A. 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 C.P.A. examination.

6200:467 C.P.A. PROBLEMS: TAXATION

1 credit

Prerequisite: permission of instructor. Application of current developments in federal income tax law to C.P.A. examination.

6200:466/566 C.P.A. PROBLEMS: AUDITING

2 credits

Prerequisite: 440/540 or permission of instructor. Preparation for auditing section of C.P.A. examination, focusing on auditing principles, standards and ethics and situations encountered by independent auditor.

6200:469/569 C.P.A. PROBLEMS: THEORY

2 credits

Prerequisite: permission of instructor. Preparation for theory section of C.P.A. 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*1-3 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*3 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.

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**6400:318 RISK MANAGEMENT AND INSURANCE***3 credits*

Prerequisite: 371 or permission of instructor. 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*

Gives student an understanding of legal reasoning and analysis. Discussions include court and procedures, business organizations, commercial transactions and legal aspects of government regulation of business.

6400:321 BUSINESS LAW I*3 credits*

Discussions designed to develop legal reasoning within substantive areas of contractual obligation, agency relationships, partnerships, corporations, accountant's legal responsibility, federal securities regulation and antitrust law.

6400:322 BUSINESS LAW II*3 credits*

Applications of Uniform Commercial Code in sales, commercial paper and secured transactions. Additional discussions include property, wills, estates, trusts, bailments, insurance, suretyship, bankruptcy and labor law.

6400:336 FINANCIAL INTERMEDIARIES*3 credits*

Prerequisites: 371 or permission of instructor. 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 or permission of instructor. Range of security investment media explored, alternative investment programs considered and role of securities markets through which goals can be achieved studied.

6400:351 FINANCIAL DECISION MAKING*3 credits*

Prerequisite: 371 or permission of instructor. A study of the tools and techniques used to describe, analyze and determine impact on the firm of problems facing the firm as it attempts to achieve short- and long-term goals.

6400:371 BUSINESS FINANCE*3 credits*

Prerequisite: Completion of collegiate mathematics requirement. 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.

6400:373 FINANCIAL STATEMENT ANALYSIS*3 credits*

Prerequisite: 371 or permission of instructor. Analysis and interpretation of the financial position and performance of the business firm from

the perspective of the credit and financial analyst. Emphasizes mechanics and art of financial analysis.

6400:400 REAL ESTATE: A VALUE APPROACH*3 credits*

Prerequisites: 371 or permission of instructor. A study of real estate: the profession, the process and the product. Emphasis is on real estate as a product and the valuation process. The measurement of value requires tool abilities in accounting, statistics and finance.

6400:410 PERSONAL FINANCIAL MANAGEMENT*3 credits*

Covers the many personal financing decisions made by individuals. Areas of study include money management, credit acquisition, insurance program development, investment analysis and pension evaluation.

6400:419 PROPERTY AND LIABILITY INSURANCE*3 credits*

Prerequisite: 318. A study of the property and casualty insurance contracts, the insurance companies and the industry regulation.

6400:424 LEGAL CONCEPTS OF REAL ESTATE: A MANAGERIAL APPROACH*3 credits*

Prerequisite: 371 or permission of instructor. Study of concepts of law governing the many interests in real estate including acquisition, encumbrance, transfer, rights and obligations of parties, and the various state and federal regulations. The legal concepts of the business of real estate are likewise examined. Emphasis is on a managerial approach utilizing the case method.

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.

6400:436 COMMERCIAL BANK MANAGEMENT*3 credits*

Prerequisite: 338 or permission of instructor. 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 or permission of instructor. Application of quantitative and qualitative techniques of analysis to limited income and equity securities. Timing changes in portfolio composition.

6400:479 ADVANCED BUSINESS FINANCE*3 credits*

Prerequisites: 371 or permission of instructor. 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. 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

6400:802 MANAGERIAL FINANCE

3 credits

Prerequisites: 6200:201 and 202 (or 601) and 3250:201 and 202 (or 600). Emphasis on financial decision making related to goal of firm; specifically, the investment decision, the financing decision and the dividend decision.

6400:833 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.

6400:845 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.

6400:850 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.

6400:855 GOVERNMENT AND BUSINESS

3 credits

Public policy with regard to business, institutions and issues in United States considered from economic, legal and political frameworks.

6400:865 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.

6400:874 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.

6400:876 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.

6400:878 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.

6400:881 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: 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 area of business.

6500:323 COMPUTER APPLICATIONS FOR BUSINESS

3 credits

Prerequisite: Fortran IV programming or its equivalent recommended. Emphasis on use of batch and realtime processing in solving computer-oriented business problems. Includes flowcharting, hardware, and Plotall, Fortran, APL and GPSS programming languages.

6500:331 PRODUCTION AND SYSTEMS MANAGEMENT

3 credits

Prerequisites: 301 and 321. Basic course for management 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: 301, 321, 323, 331. 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, practices in administering functions of recruiting, selecting, training, compensating, 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. 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: 322, 323, 332. Forecasting, materials management, production planning, scheduling and control. Integrates previous courses and provides overall framework including use of computers and quantitative methods. Cases and a project in an operating organization.

6500:435 QUALITY CONTROL

3 credits

Prerequisites: 321, 322. Emphasis on statistical techniques essential to controlling product quality for both measurement and attribute data. Includes control chart methods and acceptance sampling plans.

6500:443 ADVANCED PERSONNEL MANAGEMENT

3 credits

Prerequisite: 341. Advanced study of current issues and problems in field of personnel. Emphasis given to current literature and research. Activities may include projects, library research, case studies.

6500:480/580 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 in organized institutional setting; influence of these styles on individual, 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: schedule last semester of M.B.A. 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 businessmen 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.

6500:690 SELECTED TOPICS IN MANAGEMENT*3 credits*

(May be repeated for a total of six credits)

Prerequisite: 652. Selected topics in historical, contemporary 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 candidate 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: 3250:201,2 or permission. Broad course integrating commodity, institutional, functional and managerial concepts of marketing process: 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 AND MARKETING COMMUNICATIONS*3 credits*

Full range of marketing communication elements. Emphasis on role of each element and coordination required of marketing manager in developing successful and systematic program of marketing communications.

6600:360 INDUSTRIAL MARKETING*3 credits*

Prerequisite: 300. Following principles of modern marketing management, focuses on development of local, regional, national markets. Emphasis on problems of industrial goods manufacturers.

6600:370 PURCHASING*3 credits*

Prerequisite: 3250:202. Process and activities associated with cost effective buying, internal management of all materials, equipment needed by manufacturer to produce product or provide a service.

6600:380 SALES MANAGEMENT*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.

6600:390 MANAGEMENT OF MARKETING CHANNELS*3 credits*

Prerequisite: 300. An integrative approach to analysis of marketing channels of distribution to complement the more specialized analyses of retailing, wholesaling and physical distribution. Stresses the interaction of firms comprising a channel and the nature of managerial decisions designed to coordinate the efforts of the group of institutions that make up a channel of distribution.

6600:420/520 LOGISTICS SYSTEMS ANALYSIS*3 credits*

Prerequisite: 320, 660 (graduate). Stresses application of quantitative techniques in design and operation of individual logistics components as well as integration of total logistics system in the firm. Emphasis on student's evaluation and solving of logistics problems.

6600:429/529 INTERNATIONAL BUSINESS ENTERPRISE*3 credits*

Prerequisite: 300 or 660 (graduate). Provides a comprehensive overview of international business with an emphasis on understanding the interactions between factors in the global environment and decision-making of the multinational organization.

6600:430 PROMOTIONAL CAMPAIGNS*3 credits*

Prerequisite: 350. Examination of total communications efforts involved in planning, developing and monitoring promotional campaigns. Stress is placed on understanding the nature and roles of advertiser, agency and support services.

6600:440/540 PRODUCT PLANNING*3 credits*

Prerequisite: 300, 660 (graduate). In-depth study of tools and techniques involved in new product development process and management of the product through its life cycle. Emphasis on alternative forms of corporate structures for product development and management, product policies and strategies, and product planning procedures and techniques. Differences between consumer and industrial products.

6600:460/560 MARKETING RESEARCH*3 credits*

Prerequisites: 300, 6500:321. Through lectures, cases and team projects, a student is taught to detect and evaluate actionable forces in the marketplace. Emphasis on investigation appropriate to economics of situation.

6600:465/565 FORECASTING AND QUANTITATIVE METHODS IN MARKETING*3 credits*

Prerequisite: 460, 660 (graduate) or permission. Explores structural elements of the firm's marketing information system and more sophisticated processes and tools available to marketing researchers and decision makers. Stress is placed upon understanding quantitative and analytical tools and the many marketing applications of these tools.

6600:490 WORKSHOP IN MARKETING

1-3 credits

Group studies in special topics in marketing. Not used to meet undergraduate or graduate major requirements in marketing. May be used for elective credit 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.

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. A student is 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.

6600:670 MARKETING PLANNING

3 credits

Prerequisite: 660. In the context of a dynamic domestic marketing environment, a 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: 529 and a total of 15 Phase II-III graduate credits. Permits M.B.A. 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 M.B.A. candidate to undertake a carefully delineated program of independent study and reading which leads to a finished major paper.

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.

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 Twentieth Century.

7100:105 UNDERSTANDING ART

3 credits

Uses different societies have found for art and how social and technological levels of the society have affected the kind of art they make.

7100:120 FUNDAMENTALS OF SCULPTURE

3 credits

A study of sculpture through lecture and studio work in a variety of media. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.

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.

7100:130 FUNDAMENTALS OF SCREEN PRINTING

3 credits

A study of screen printing through lecture and studio experiences. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.

7100:131 INTRODUCTION TO DRAWING

3 credits

Freehand drawing experience with an orientation to elements and principles of visual organization. Limited media.

7100:140 FUNDAMENTALS OF ACRYLIC PAINTING

3 credits

A study of the acrylic painting medium through lecture, demonstration and studio activity. An exploration and enrichment opportunity for the non-art major. No credit toward a major in art.

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.

7100:150 FUNDAMENTALS OF CERAMICS

3 credits

A study of ceramics through lecture and studio experiences. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.

7100:160 FUNDAMENTALS OF JEWELRY

3 credits

A study of jewelry making through lecture and studio for the non-art major. No credit toward major in art.

7100:170 FUNDAMENTALS OF PHOTOGRAPHY

3 credits

A study of photography through lecture, demonstration and studio work. An exploration and enrichment opportunity for the non-art major. No credit toward major in art.

7100:180 FUNDAMENTALS OF GRAPHIC DESIGN

3 credits

A study of graphic design through lecture and studio work in a variety of media. An exploration and enrichment opportunity for the non-art major. No credit toward a major in art.

7100:190 FUNDAMENTALS OF OFF-LOOM WEAVING

3 credits

A study of off-loom weaving through lecture and studio work in a variety of media. An exploration and enrichment opportunity for the non-art major. No credit toward a major in art.

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 INTRODUCTION TO LITHOGRAPHY

3 credits

Prerequisites: 131 and 144 or 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 INTRODUCTION TO SCREEN PRINTING

3 credits

Prerequisites: 131 and 144 or 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 INTRODUCTION TO RELIEF PRINTING

3 credits

Prerequisites: 131 and 144 or 231. Printmaking using found objects, synthetic materials, as well as traditional woodcut and linoleum engraving. Emphasis on aesthetic theory, technique and related history.

7100:216 INTRODUCTION TO INTAGLIO PRINTING

3 credits

Prerequisites: 131 and 144 or 231. Intaglio printmaking using drypoint engraving, aquatint and soft-ground techniques. Emphasis on aesthetic theory, technique and related history.

7100:222 INTRODUCTION TO SCULPTURE

3 credits

Prerequisites: 121 or permission. 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

Prerequisite: 131. Continuation of 131. In-depth exploration of wide range of techniques and media. Attention to controlled descriptive drawing and space illusion and their aesthetic applications.

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. Perceptual problems in drawing from the life model. Study of skeletal, muscular, mechanical nature of human figure and application of this knowledge to the resolution of aesthetic problems.

7100:244 COLOR CONCEPTS

3 credits

Prerequisites: 121 or 144 or 286 or 2240:124. Lecture and studio experience giving information concerning perception of color, additive color phenomena of light, subtractive color phenomena of pigments and dyes, color notation systems and psychological effects of color.

7100:245 INTRODUCTION TO POLYMER ACRYLIC PAINTING

3 credits

Prerequisites: 131 and 144. Technical, aesthetic problems involved in polymer acrylic painting. Student pursues, through lecture and experimentation, transparent and opaque uses of this water-based paint.

7100:246 INTRODUCTION TO WATERCOLOR PAINTING

3 credits

Prerequisites: 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 INTRODUCTION TO OIL PAINTING**3 credits**

Prerequisites: 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 INTRODUCTION TO CERAMICS**3 credits**

Prerequisites: 121 or 222 or permission. 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 INTRODUCTION TO METALSMITHING**3 credits**

Prerequisites: 121 or 131 or 144 or permission. Studio experience in which student is introduced to properties of metals, processes of silver-smithing and design and production of jewelry.

7100:266 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 INTRODUCTION TO PHOTOGRAPHY**3 credits**

Prerequisites: 131 and 144 or 284 or 2240:245 or permission. 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.

7100:282 ARCHITECTURAL PRESENTATIONS**3 credits**

Prerequisites: 131 and 144 or 286 or 2240:124. Study and studio practice in architectural design and presentation methods, both residential and commercial and the development of graphic presentations of interior and exterior concepts. Emphasis on professional presentations, renderings of interiors, methods of illustrative and photographic presentations.

7100:283 DRAWING TECHNIQUES**3 credits**

Prerequisites: 131 and 232. Includes advanced drawing and presentation techniques commonly used in graphic design. Various presentation and design problems will be encountered stressing use of selected drawing methods and processes.

7100:284 INTRODUCTION TO GRAPHIC DESIGN**3 credits**

Prerequisites: 131 and 232. Studio experience in use of tools and materials of commercial graphic artist. Elementary design problems in commercial graphic design.

7100:286 COMMERCIAL DESIGN THEORY**3 credits**

Prerequisite: 284. Basic course in visual problem solving emphasizing visual movements in, and graphic elements of, single as well as multiple images. Equal emphasis given to existing and created images.

7100:288 LETTER FORM AND TYPOGRAPHY**3 credits**

Prerequisite: 286. Letter symbols studied in terms of communication and aesthetic awareness. History of letter forms, hand lettering, alphabet design, contemporary type faces and reproduction processes.

7100:293 INTRODUCTION TO WEAVING**3 credits**

Prerequisites: 131 or 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 SEVENTEENTH AND EIGHTEENTH 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 Seventeenth 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 Thirteenth through Sixteenth Centuries.

7100:304 ART IN EUROPE DURING THE NINETEENTH 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 with a different process)
Prerequisites: 213 or 214 or 215 or 216 in the appropriate medium. 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: 222 or permission. 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: 222 or permission. 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: 141, 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: 245, 246 or 247 in the appropriate medium. Continuation of painting with concentration in one medium designated by letter as follows: A. Polymer Acrylic, B. Watercolor, C. Oil.

7100:354 CERAMICS II**3 credits**

Prerequisite: 254. Wheel throwing of both functional and sculptural form. Experiments in glaze chemistry and firing experience with both gas and electric kilns. Emphasis on technique, studio procedures and critical evaluation of each student's progress.

7100:366 METALSMITHING II**3 credits**

(May be repeated for a total of six credits)

Prerequisite: 266. Continuation of experiences presented in 266 with further development of skills and expansion of technical knowledge.

7100:366 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

Prerequisite: 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 projects in corporate identity, graphic systems analysis, 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)

Prerequisite: 293. Continuation of 293. Advanced off-the-loom and loom techniques. Spinning. 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

Prerequisite: 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)

Prerequisite: 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.

7100:466 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.

7100:460 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.

7100:465 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.

7100:488 PUBLICATION DESIGN**3 credits**

Prerequisite: 389. Advanced research, design of promotional brochures, annual reports and other multipaged communicational print. Emphasis on total design from concept to camera-ready art. 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.

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**

(May be repeated for credit when a different subject or level of investigation is indicated)

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.

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. Two hours lecture, two 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 plan-

ning, 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, two-hour laboratories.

7400:147 HOME ECONOMICS SURVEY**1 credit**

Survey of history and development of home economics with emphasis on professional and career opportunities.

7400:156 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**

Study of composition of common foods, 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 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.

7400:281 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. Two hours lecture, four hours laboratory.

7400:311 CONTEMPORARY NEEDLE ARTS

3 credits

Prerequisite: 123 or permission of instructor. 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 C.U.P.; 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 C.U.P.; 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 theatre with consideration of cultural forces that affected the development. Lecture.

7400:328 INTRODUCTION TO NUTRITION IN MEDICAL SCIENCE

3 credits

Prerequisite: 316; C.U.P. 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, C.U.P. 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: for the student to apply knowledge of home furnishings principles specifically in areas of drapery making, reupholstering/slipcovering and accessory construction.

7400:333 INTERIOR DESIGN I

3 credits

Prerequisite: 7100:282. An in-depth study of the interior design profession and its complexities, with emphasis on developing skills necessary to function effectively as a residential designer.

7400:334 INTERIOR DESIGN II

3 credits

Prerequisite: 333. Continuation of *Interior Design I* with an emphasis on both residential interior design and commercial interior design, and the development of the basic skills necessary to function effectively as an interior designer.

7400:335 FUNDAMENTALS OF BUYING HOME FURNISHINGS

3 credits

Prerequisite: 333. Study of the business aspects of interior design: business procedures, manufacturing of home furnishings and principles and psychology of marketing home furnishings.

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. 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.

7400:403/503 ADVANCED FOOD PREPARATION

3 credits

Prerequisite: 245 or 141 or permission of instructor. Study of

advanced techniques of food preparation. Introduction to and interpretation of classic and foreign cuisines. Emphasis on individualized experience, skill development and evaluation of procedures and results.

7400:404/504 ADOLESCENCE IN THE FAMILY CONTEXT

3 credits

Prerequisite: 201 and 265 or permission of instructor. The influences of adolescent behavior on the family and the influence of the family environment on adolescent development.

7400:406/506 FAMILY RESOURCE MANAGEMENT

3 credits

Management of family resources as families function as consuming units in today's economy. Exposure to current consumer education resources including sources of consumer information and methods of utilizing these resources.

7400:412 INSTITUTIONAL MANAGEMENT

3 credits

Organization and management in administration of food service systems; problems in administration of food service systems; problems in control of labor, time and cost. 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/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 C.U.P. in dietetics, 328, 329; corequisite: 429. Overview of major areas of diet therapy not covered.

7400:429 NUTRITION IN MEDICAL SCIENCE - CLINICAL

4 credits

Prerequisite: C.U.P. student only; corequisite: 428. Clinical experience in hospitals applying 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.

7400:442/542 HUMAN SEXUALITY

3 credits

Prerequisite: 201 or permission of instructor. Introduction to problems and values. Emphasis is on the role of values in intimate relationships, the diverse dimensions of sexual responsibility.

7400:445/545 PUBLIC POLICY AND THE AMERICAN FAMILY

3 credits

How legislation in such areas as housing, clothing, consumer affairs, family formation and dissolution, resource conservation, child development and health care affects and, in some cases, determines the nature, structure and quality of the family as a social institution.

7400:447 CRITICAL ISSUES IN HOME ECONOMICS

1 credit

Prerequisites: 147 and senior standing. Consideration of home economics as a profession and its impact on the quality of life of individuals, families and their environments. Analysis of challenges facing the profession and all home economists.

7400:449 DESIGN AND DRAPING

3 credits

Prerequisite: 305. Theory and experience in clothing design utilizing flat pattern and draping techniques. Two hours lecture, four hours laboratory.

7400:450 DEMONSTRATION TECHNIQUES

2 credits

A major 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: C.U.P. 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: C.U.P. 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: C.U.P. student only, 480, 481; corequisite: 483. Food and nutrition related problems on national/international level. Controversies, alternative solutions as well as existing programs and rationales.

7400:483 COMMUNITY NUTRITION II - CLINICAL*1 credit*

Prerequisites: C.U.P. 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*1-3 credits*

Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas.

7400:486 STAFF RELIEF*2 credits (credit/noncredit)*

Prerequisite: graduating senior student in C.U.P. Opportunity to function as an entry-level dietician in area of administrative, therapeutic or community dietetics. The graduating senior C.U.P. 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 Children's Hospital-Medical Center of Akron.

7400:496/596 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.

7400:605 DEVELOPMENTAL PARENT-CHILD INTERACTIONS*3 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.

7400:607 FAMILY DYNAMICS*3 credits*

Development of techniques in home economics programs utilizing role theory, exchange theory and systems theory as understood through the study of the family across the life cycle.

7400:616 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.

7400:651 FAMILY AND CONSUMER LAW*3 credits*

Study of laws which control and protect individuals within family. Emphasis on current trends, legal rulings. Course taught by attorney.

7400:660 PROGRAMMING FOR CHILD CARE CENTERS*2 credits*

Principles, procedures involved in program development for child care centers. Examination of current programs available for preschool children. Implications, literary analysis, application, evaluation stressed.

7400:665 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD*3 credits*

Prerequisite: 265 or permission of instructor. Analysis of research and theoretical frameworks regarding infant and child development from conception through age five. Implications for guidance and education.

7400:675 CONCEPTUAL FRAMEWORKS IN FAMILY ECOLOGY*3 credits*

Prerequisites: 362 and 301 or 406/506. The ecosystem will be used as a model for viewing the family as a unit and the relation between familial groups and the environment.

7400:695 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.

7400:699 THESIS*5 credits*

Prerequisite: permission of adviser. Preparation of thesis pertaining to a selected research project in area of family or child development.

Graduate Courses**7400:800 EVALUATION OF HOME ECONOMICS LITERATURE***3 credits*

A study of selected literature with emphasis upon evaluation and interpretation strategies.

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.

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 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 major to correct deficiencies in theory background as determined through department placement testing. In-

cludes classroom instruction and 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.

7500:151,2 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.

7500:154,5 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.

7500:161 AURAL/ORAL MUSIC READING SKILLS

4 credits

Prerequisite: 101 or passing placement test or permission of instructor. Competency-based, supervised drill in the vocal mastery of scales, modes, intervals, broken chords, melodies, rhythms, meter, tempo, modulation. Computer-based education programs in ear training and error detection.

7500:251,2 THEORY III, IV

3 credits each

Sequential. Prerequisite: 152. Renaissance vocal counterpoint; baroque instrumental counterpoint; form and analysis of music of all eras.

7500:254,5 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.

7500:261,2 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.

7500:265,6 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: NINETEENTH AND TWENTIETH CENTURIES

2 credits

301 and 302 designed as electives for non-music major 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 knowledge and skills on band instruments applied to ensemble, large group and individualized instruction. Clinical and field-based experiences.

7500:351,2 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.

7500:353 ELECTRONIC MUSIC*3 credits*

Prerequisite: 252. Theory of electronically-generated sound and practice of electronic music composition. Emphasis is on developing practical understanding of the components of the voltage-controlled studio.

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.

7500:356 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.

7500:366 GUITAR STYLES*2 credits*

Prerequisite: 200 performance level or permission of instructor. Techniques involved in performing musical styles other than those in classical guitar. Included are plectrum styles such as bluegrass, country and rock, as well as flamenco, folk, popular and jazz.

7500:371 ANALYTICAL TECHNIQUES*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 TECHNIQUES FOR THE ANALYSIS OF TWENTIETH CENTURY MUSIC*2 credits*

Prerequisite: 252. Techniques for the analysis of musical scores from the twentieth century. Required of a theory-composition major.

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 twentieth-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.

7500:462/562 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*3 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 twentieth-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.

7500:491 SPECIAL TOPICS IN MUSIC*2 credits**(May be repeated for a total of four credits)*

Group project related to a specific phase of music. Experimental course topics designed and implemented according to student interest. For elective credit only.

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 major only. Independent study under supervision of specially selected faculty members in subject area bearing on student's own goals.

7500:498 SENIOR HONORS PROJECT: MUSIC*1-3 credits**(May be repeated for a total of six credits)*

Individually designed project demonstrating scholarship, analysis, advanced musicianship, research and/or creativity according to student interest. Restricted to University Honors Music student.

Graduate Courses

7500:601 CHORAL LITERATURE

2 credits

Prerequisite: permission of instructor. Study in depth of style, structure, technical demands, manner of setting text, and special performance problems found in masterworks by great choral composers of nine centuries.

7500:604 DEVELOPMENT OF OPERA

2 credits

Prerequisite: permission of instructor. Growth and development of opera from 1600 to present. Includes detailed examination of stylistic and structural changes as well as performance practices.

7500:606 SEMINAR IN MUSIC OF THE WESTERN HEMISPHERE

2 credits

Prerequisite: permission of instructor. Designed to develop understanding of peoples and cultures of Western Hemisphere through study of music of each major area. Research and writing in areas of special interest.

7500:611 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION

3 credits

Prerequisite: permission of instructor. Study of basic philosophical, historical, sociological and psychological concepts around which public school music programs function.

7500:612 PRACTICES AND TRENDS IN MUSIC EDUCATION

3 credits

Prerequisite: permission of instructor. In-depth exploration of innovative practices and trends in music education. Findings of research and practice related to prevailing situations in public/private school programs.

7500:614 MEASUREMENT AND EVALUATION IN MUSIC

2 credits

Prerequisite: permission of instructor. Study and application of principles of music aptitude, music achievement, and content evaluation. Elementary statistics for music test interpretation and construction explored.

7500:615 MUSICAL STYLES AND ANALYSIS I

2 credits

Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in western music from period of Gregorian chant through music of Palestrina, Gesualdo and others of late Renaissance.

7500:616 MUSICAL STYLES AND ANALYSIS II

2 credits

Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in western music from Monteverdi through early Beethoven.

7500:617 MUSICAL STYLES AND ANALYSIS III

2 credits

Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in western music from period of late Beethoven through Mahler and Strauss.

7500:618 MUSICAL STYLES AND ANALYSIS IV

2 credits

Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in western music in twentieth century.

7500:619 THEORY AND PEDAGOGY

2 credits

Prerequisite: permission of instructor. Methodology of theory teaching in twentieth century. Focus on differing philosophies of approach to theory instruction as noted from texts on subject. Recent innovations and techniques of teaching, such as programmed material, computer-assisted instruction, etc., studied.

7500:620 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: TWENTIETH CENTURY

2 credits

Prerequisite: permission of instructor. Historical and stylistic analysis of twentieth 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.

7500:647 MASTER'S CHAMBER RECITAL

1 credit

Prerequisite: permission of instructor. Composition student will present a recital of chamber music compositions (at least one-half hour in length) written while in residence at the University. Student will actively organize and coordinate the recital and will also participate either as performer or conductor.

7500:665 VOCAL PEDAGOGY

3 credits

Prerequisite: permission. In-depth study of subjects dealing with teaching of voice: physiology of vocal instrument, principles governing vocal production and application of vocal pedagogy.

7500:697 ADVANCED PROBLEMS IN MUSIC

1-3 credits

(May be repeated for a total of eight credits)

Prerequisite: permission of graduate adviser. Studies or research projects related to problems in music.

7500:696 GRADUATE RECITAL*2 credits*

Prerequisite: permission of graduate adviser. Recital prepared and presented as a requirement for any appropriate degree option. If recital document is to be written in conjunction with the recital, add 699 for the additional credit.

7500:699 THESIS RESEARCH/RECITAL DOCUMENT*4-6 credits*

Prerequisite: permission of graduate adviser. Research related to the completion of the master's thesis or recital document written in conjunction with the graduate recital, depending on the student's degree 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 six 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 major required to enroll for at least three years. Music education major 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.

7510:116 GUITAR ENSEMBLE*1 credit*

Membership by audition. Provides experience in conducted ensemble performance for guitarists. Major conducted ensemble.

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.

7510:606 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.

7510:607 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.

7510:608 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.

7510:609 PERCUSSION ENSEMBLE*1 credit*

Membership by audition. Study and performance of literature for various percussion groups; develops skill in ensemble performance.

7510:610 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.

7510:611 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.

7510:612 MEN'S GLEE CLUB*1 credit*

Membership by audition. Designed to perform variety of music written for male voices in ensemble.

7510:613 WOMEN'S GLEE CLUB*1 credit*

Membership by audition. Designed to perform variety of music written for female voices in ensemble.

7510:614 KEYBOARD ENSEMBLE*1 credit*

Involves three hours a week of accompanying. Keyboard major required to enroll for at least three years. Music education major may substitute another musical organization for one year.

7510:615 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.

7510:616 GUITAR ENSEMBLE*1 credit*

Membership by audition. Provides experience in conducted ensemble performance for guitarists. Major conducted ensemble.

7520:021-42 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****7520:132-232-332-432/532 FRENCH HORN****7520:133-233-333-433/533 TROMBONE**

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 non-music major studying applied music will appear before a jury at the discretion of the private teacher.

Credit is earned on the basis of two credits per semester for one 30-minute lesson per week and 90 minutes practice per day. Enrollment may be repeated each semester for credit.

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

7520:821-41 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.

7520:821 PERCUSSION

7520:822 CLASSICAL GUITAR

7520:823 HARP

7520:824 VOICE

7520:825 PIANO

7520:826 ORGAN

7520:827 VIOLIN

7520:828 VIOLA

7520:829 CELLO

7520:830 STRING BASS

7520:831 TRUMPET OR CORNET

7520:832 FRENCH HORN

7520:833 TROMBONE

7520:834 BARITONE

7520:835 TUBA

7520:836 FLUTE OR PICCOLO

7520:837 OBOE OR ENGLISH HORN

7520:838 CLARINET OR BASS CLARINET

7520:839 BASSOON OR CONTRABASSOON

7520:840 SAXOPHONE

7520:841 HARPSICHORD

7520:842 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

THESE COURSES ARE EFFECTIVE UNTIL FALL 1982

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

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.

7600:281 INTRODUCTION TO RADIO AND TELEVISION

2 credits

Special projects in message design and development with practical radio and television production experience.

7600:282 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 person 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.

7600:360 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. Study of role of producer in complexities of developing a television program from inception to completion.

7600:364 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.

7600:386 AMERICAN FILM HISTORY: 1945 TO THE PRESENT

3 credits

Continuation of 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. 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 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.

7600:450 SPECIAL TOPICS: MASS MEDIA-COMMUNICATION

3 credits

(May be repeated for a total of nine)

Prerequisite: permission of instructor. Special interest topics in mass communication, journalism, or communication, supplementing courses listed in *University Bulletin*. See department for current listing of offerings.

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

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.

7600:465 SENIOR HONORS PROJECT IN MASS MEDIA-COMMUNICATION

1-6 credits

(May be repeated for a total of six credits)

Prerequisite: senior standing in Honors Program; approval of Honors Preceptor; major in Mass Media-Communication. Independent study leading to completion of Senior Honors Thesis or other original work.

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**7600:600 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.

7600:601 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.

7600:660 SPECIAL PROBLEMS IN COMMUNICATION AND MASS MEDIA

2 credits

(May be repeated for a total of four credits)

Problem analysis, investigation, evaluation of interest area related to communication theory, mass media or interpersonal communication.

7600:661 THEORY OF INTERPERSONAL COMMUNICATION

3 credits

Prerequisite: permission. Analysis of complex systems in persuasion and propaganda, particularly as related to information control.

7600:663 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.

7600:665 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.

7600: Mass Media-Communication

THESE COURSES ARE EFFECTIVE FALL 1982

7600:102 SURVEY OF MASS COMMUNICATION

3 credits

Considers entire field of contemporary American mass communication. Presents and explains functions of agencies through which news, views and entertainment reach the general public.

7600:115 SURVEY OF COMMUNICATION THEORY

3 credits

Presents models of major forms of speech communication and discusses elements of models, their interaction and their function in the human communication system.

7600:201 NEWS WRITING

3 credits

Prerequisite: 102; typing. Writing of news stories; applying theory through discussions, illustrative material; actual writing for publication.

7600:204 EDITING

3 credits

Prerequisites: 201, ability to type or permission. Copyreading, headline writing, proofreading, makeup, type and typography, printing machines and processes, newspaper methods and systems.

7600:206 FEATURE WRITING

3 credits

Prerequisites: 102, ability to type or permission. Short newspaper and magazine articles, preparation of articles for publication, human interest situations, extensive writing with class discussion.

7600:225 LISTENING

1 credit

Prerequisite: permission. Techniques and approaches involved in understanding the listening process and practice of listening improvement techniques.

7600:226 INTERVIEWING

1 credit

Prerequisite: 225 or permission. A concentrated study of the principles of interviewing and application of those principles to varied settings (especially those crucial to media study).

7600:227 NONVERBAL COMMUNICATION

1 credit

Focused study of the principal aspects of nonverbal communication in public, group and interpersonal settings.

7600:228 INTERCOLLEGIATE FORENSICS

1 credit

(May be repeated for a total of eight credits)

Study and techniques of contest speech and debate, including techniques of research and presentation. Requires participation in University's forensics program.

7600:235 INTERPERSONAL COMMUNICATION

3 credits

Prerequisite: 115. Theory and practice in interpersonal communication concepts and principles. Special topics in communication apprehension, assertive communication, communication dyads and triads, and transactional communication.

7600:245 ARGUMENTATION

3 credits

Prerequisite: 115 or permission of instructor. 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 PERSUASION*3 credits*

Prerequisite: 115 or permission. Emphasis on understanding persuasion theory and practice. Includes information analysis of motivational appeals and introduction to propaganda analysis.

7600:270 VOICE TRAINING FOR MEDIA*2 credits*

Prerequisites: 115 and permission. Safe and effective uses of the vocal instrument in its specific application to radio, television and films.

7600:280 MEDIA PRODUCTION TECHNIQUES*3 credits*

Introduction to production techniques used in the mass communication covers sound, image, lighting, fundamentals of conveying messages on slide, film and video.

7600:282 RADIO PRODUCTION*3 credits*

Prerequisite: 281. Study of radio production techniques and the functional operation of AM and FM radio stations. Includes practical production experience in studio.

7600:283 TELEVISION PRODUCTION*3 credits*

Prerequisite: 281 or permission. Function, structure and influence of television as communication medium with practical production experience in studio.

7600:288 FILM PRODUCTION*3 credits*

Prerequisite: 281 or permission. 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 ADVANCED NEWS WRITING*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*

Prerequisites: 201, ability to type or permission. Fundamental course for person engaged in production of publications. Consideration of variety of processes for reproducing printed work including photo-engraving, lithography, letterpress, rotogravure, mimeographing.

7600:325 INTERCULTURAL COMMUNICATION*3 credits*

Study of effect on oral communication process of existence of cultural barriers. Includes study of verbal and nonverbal communication in trans-racial, informal international and diplomatic communicative settings.

7600:335 ORGANIZATIONAL COMMUNICATION*3 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.

7600:344 PUBLIC DECISION MAKING*3 credits*

Prerequisite: 115 or permission. Discussion of basic considerations, approaches and techniques involved in understanding and participating in the communication processes essential to public decision making.

7600:345 BUSINESS AND PROFESSIONAL SPEAKING*3 credits*

Prerequisites: 1100:105 or 1100:106. Practical improvement in speaking skills used in business settings.

7600:355 FREEDOM OF SPEECH*3 credits*

Discussion and analysis of the Constitution's free speech guarantee;

contemporary issues in freedom of communication; role of the media in free speech issues.

7600:357 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.

7600:361 AUDIO RECORDING TECHNIQUES*3 credits*

Prerequisite: 280. Basic principles of sound, human hearing and the techniques of audio recording. Theory and laboratory training, recording of live vocal and instrumental performance.

7600:380 MASS MEDIA-COMMUNICATION INTERNSHIP*1-8 credits*

(May be repeated for a total of eight credits)

Prerequisite: 24 credits in departmental courses and permission. Provides student with supervised experience and on-the-job training. Written permission must be obtained from the department prior to the term for which credit is to be received.

7600:383 ADVANCED TELEVISION PRODUCTION*3 credits*

Prerequisite: 283. In-depth study of role of producer in complexities of developing a television program from inception to completion.

7600:384 MASS MEDIA-COMMUNICATION RESEARCH*3 credits*

Prerequisites: 102, 115. Fundamental concepts and methods of survey research, and the application and interpretation of survey data in communication and in media operations.

7600:385 AMERICAN FILM HISTORY: THE BEGINNING TO 1945*3 credits*

Prerequisite: 102 or permission. Acquaints undergraduate student with historical developments of film and film concepts; ends with films of 1945.

7600:386 AMERICAN FILM HISTORY: 1945 TO THE PRESENT*3 credits*

Prerequisite: 385 or permission. Continuation of student's survey of film history and film concepts begun in 385.

7600:387 RADIO AND TV WRITING*3 credits*

Prerequisite: 280. Practical application of script writing principles and techniques used in writing scripts for commercials, announcements, comedy/drama, news and documentaries.

7600:388 HISTORY AND STRUCTURE OF BROADCASTING*3 credits*

Prerequisite: 280. Growth of broadcasting in America; historical evolution of approaches to programming, news and financing of broadcasting operations.

7600:395 RADIO STATION PROGRAMMING AND OPERATIONS*3 credits*

Prerequisites: 282 and 388. History and development of radio programming from early formation to present; nature, structure and function of educational and commercial radio broadcasting.

7600:396 TELEVISION STATION PROGRAMMING AND OPERATIONS*3 credits*

Prerequisites: 280 and 388. Examines the operations and programming processes of a broadcast station; programming philosophies, broadcast schedules, feature and syndication acquisition, local productions, issues of staffing and funding.

7600:401 PHOTO EDITING*3 credits*

Prerequisite: 309. Use of the photograph as a reporting tool. Criteria for a publishable photograph, selection and cropping of photographs, display of photo stories, combining of print and photographs in a communication effort.

7800:403 COMMUNICATION IN PUBLIC RELATIONS*3 credits*

Prerequisite: 309. Selected communication theories used to analyze and implement effective public relations programs with emphasis placed upon research, planning, promotional messages and evaluation of program.

7800:405 MEDIA COPYWRITING*3 credits*

Prerequisites: 102, 484, ability to type or permission. Selected communication theories and research techniques used to plan, write and analyze commercial messages. Emphasis will be placed on selection of audience, medium, appeal, writing style and evaluation of efforts.

7800:439 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. Selected faculty-directed independent study projects. Appropriate documentation of project must be submitted to departmental committee and written permission obtained before registering for project.

7800:450 SPECIAL TOPICS IN MASS MEDIA-COMMUNICATION*3 credits*

(May be repeated for a total of nine credits)

Prerequisite: permission of instructor. Special interest topics in mass communication, journalism, or communication, supplementing courses listed in *University Bulletin*. See department for current listing of offerings.

7800:454/554 THEORY OF GROUP PROCESSES*3 credits*

Prerequisite: 344 or permission. Group communication theory and conference leadership as applied to individual projects and seminar reports.

7800:465 NON-BROADCAST MEDIA*3 credits*

Prerequisites: 201 or 206, 387 and permission of instructor. Analysis of production problems and design, production and evaluation of solutions involving slides, film and non-broadcast video. Materials fee.

7800:470/570 ANALYSIS OF PUBLIC DISCOURSE*3 credits*

Prerequisite: 245, 252 or permission. Identifies principal textual and contextual elements of public discourse and presents various theories and models to be applied in studying rhetorical acts.

7800:471/571 THEORIES OF RHETORIC*3 credits*

Prerequisite: 115. Study of key figures in history of rhetorical theory, stressing interrelationships among theories of rhetoric, intellectual climates and social climates.

7800:464 REGULATIONS IN MASS MEDIA*3 credits*

Concentration on government regulations and self-regulatory bodies in broadcasting, film and print media.

7800:465 SENIOR HONORS PROJECT IN MASS MEDIA-COMMUNICATION*1-6 credits*

(May be repeated for a total of six credits)

Prerequisite: senior standing in Honors Program; approval of Honors Preceptor; major in Mass Media-Communication. Independent study project leading to completion of Senior Honors Thesis or other original work.

7800:466 BROADCAST SALES AND MANAGEMENT*3 credits*

Prerequisite: senior standing or permission of instructor. Using simulation and case history techniques, this course examines the sales and decision-making processes of a broadcast station.

7800:468/568 ADVANCED FILM PRODUCTION*3 credits*

Prerequisites: 288 and permission of instructor (audition films or tapes required). Advanced study in film. Includes study of 35 mm, 16 mm, and Super-8 mm color and black and white, sound on film. Emphasis on individual production.

7800:469 DOCUMENTARY FORM IN FILM AND TELEVISION*3 credits*

Historical and critical study of documentary and non-fiction forms in film and television with an analysis of their roots in photography and radio. Emphasis on American film and TV.

7800:490/590 MASS MEDIA-COMMUNICATION WORKSHOP*1-3 credits*

(May be repeated for a total of six 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**7800:800 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.

7800:801 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.

7800:806 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.

7800:810 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.

7800:871 SEMINAR: RHETORICAL FORMS*3 credits*

Study of various periods, forms and functions of discourse in sustaining social order and mediating social change.

7800:875 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.

7800:876 SURVEY OF RHETORICAL THEORIES*4 credits*

Concentrated study and research of ancient, modern or contemporary writers or on some specific topic in rhetorical theory.

7800:880 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.

7800:881 THEORY OF INTERPERSONAL COMMUNICATION*3 credits*

Prerequisite: permission. Detailed analysis of complex systems in persuasion and propaganda, particularly as related to information control.

7800:863 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.

7600:884 SURVEY OF COMMUNICATION THEORY*3 credits*

Study of dimensions of field of communication: information analysis, social interaction and semantic analysis.

7600:885 SCHOOL ADMINISTRATOR: COMMUNICATION DESIGN IN THE MASS MEDIA*2 credits*

Designed to teach school administrator communication development for media in order to take full advantage of potentialities of radio, TV and films for message impact.

7600:888 STUDIES IN COMMUNICATION MEDIA: RADIO**7600:887 STUDIES IN COMMUNICATION MEDIA: TELEVISION****7600:886 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.

7600:897 GRADUATE RESEARCH IN MASS MEDIA-COMMUNICATION*1-6 credits*

(May be repeated for a total of six credits)

Prerequisites: 7800:600 and approval of project prospectus one term prior to undertaking the project. Performance of research on problems found in mass media-communication.

7600:899 RESEARCH AND THESIS*1-6 credits*

(May be repeated for a total of six credits)

Prerequisite: permission of department head.

7700: Communicative Disorders

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 a communicative disorder major.)

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 major in communicative disorders.)

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*

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 development 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, remediation of symbolic, cognitive, interpersonal language disorders of children. 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**(May be repeated for a total of two credits)*

Prerequisites: 250, 321. Supervised clinical practicum in articulation. Emphasis on therapy procedures, diagnostic techniques and preparation of reports.

7700:351 CLINICAL PRACTICUM: LANGUAGE*1 credit**(May be repeated for a total of two credits)*

Prerequisites: 250, 330. Supervised clinical practicum in language. Emphasis on therapy procedures, diagnostic techniques and preparation of reports.

7700:352 CLINICAL PRACTICUM: AURAL REHABILITATION*1 credit**(May be repeated for a total of two credits)*

Prerequisites: 240, 250. 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 a major in communicative disorders. 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. Introductory course devoted to discussion of role of speech and hearing clinician in differential diagnosis. Emphasis on case history taking, and administration of standardized and informal procedures in diagnosis of communicative disorders.

7700:451 CLINICAL PRACTICUM: DIAGNOSTIC AUDIOLOGY*1 credit**(May be repeated for a total of two credits)*

Prerequisites: 250, 340. Supervised clinical practicum in hearing diagnostics. Diagnostic procedures, preparation of reports.

7700:460/560 SPEECH AND HEARING DISORDERS IN THE PUBLIC SCHOOLS*2 credits*

May not be taken by a major in communicative disorders. Nature, causes and treatment of speech, hearing and language disorders in public schools. Special reference to role of classroom teacher in identi-

fying 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 major in communicative disorders 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 the Ohio Department of Education.

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: COMMUNICATIVE DISORDERS*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 major in communicative disorders.

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.

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. On-the-job experience with specialized case populations.

7700:496 SENIOR HONORS PROJECT: SPEECH PATHOLOGY AND AUDIOLOGY*1-3 credits**(May be repeated for a total of six credits)*

Prerequisites: enrollment in the Honors Program, senior standing and major in communicative disorders.

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 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.

7700:619 COMMUNICATION DISORDERS: ADULT DYSPARTHRIA AND APRAXIA

2 credits

Development, symptoms, diagnosis and treatment of adult dysarthria and apraxia.

7700:820 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 LANGUAGE DEVELOPMENT: NORMAL AND DISORDERED

3 credits

Survey of research in normal, discovered development of language skills.

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.

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 LANGUAGE SKILLS IN CHILDREN: ASSESSMENT AND INTERVENTION

3 credits

Prerequisite: 625 or permission of instructor. Theoretical and applied study of child language assessment and intervention strategies.

7700:636 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 psychoacous-

tic 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 (O.S.H.A.) 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.

7700:649 ELECTRONYSTAGMOGRAPHY

2 credits

Prerequisite: permission of instructor. Study of the anatomy and physiology of the vestibular system; nystagmus; electronystagmographic (ENG) recording procedures; ENG protocols; interpretation of ENG results.

7700:650 ADVANCED CLINICAL PRACTICUM: DIFFERENTIAL DIAGNOSIS

1 credit

(May be repeated for a maximum of two credits)

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.

7700:654 ADVANCED CLINICAL PRACTICUM: DIAGNOSTIC AUDIOLOGY

1 credit

(May be repeated for a total of six credits)

Supervised clinical practicum: diagnostics and aural rehabilitation.

7700:655 ADVANCED CLINICAL PRACTICUM: ARTICULATION

1 credit

(May be repeated for a total of two credits)

Prerequisites: 321 and permission of the director of the Speech and Hearing Center. Supervised clinical practicum in articulation. Therapy procedures, diagnostic techniques and preparation of reports.

7700:656 ADVANCED CLINICAL PRACTICUM: LANGUAGE

1 credit

(May be repeated for a total of three credits)

Prerequisites: 330 and permission of the director of the Speech and Hearing Center. Supervised clinical practicum in language. Therapy procedures, diagnostic techniques and preparation of reports.

7700:657 ADVANCED CLINICAL PRACTICUM: REHABILITATIVE AUDIOLOGY

1 credit

(May be repeated for a total of six credits)

Prerequisites: 240 and permission of the director of the Speech and Hearing Center. Supervised clinical practicum in hearing rehabilitation. Emphasis on therapy procedures, diagnostic techniques and preparation of reports.

7700:895 EXTERNSHIP: SPEECH PATHOLOGY AND AUDIOLOGY*2-4 credits*

(May be repeated for a total of four credits)

Clinical practicum in a selected area center.

7700:897 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.

7700:899 RESEARCH AND THESIS*4-6 credits*

(May be repeated for a total of six credits)

Prerequisite: permission of department head.

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 person 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; place of social work profession within human services institutions of United States. Introduction of basic concepts relating social welfare institutions and social work to 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.

7750:411/511 WOMEN'S ISSUES IN SOCIAL WORK PRACTICE*3 credits*

Prerequisite: 401. Social Work practice knowledge and skill, social welfare institutions and social policy in relation to women's issues and concerns in the United States.

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.

7750:425/525 SOCIAL WORK ETHICS*3 credits*

Prerequisite: 276. Social Worker's code of ethics as applied to practices, problems and issues in social work.

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. 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 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.

7750:453/553 SOCIAL WORK WITH FAMILIES*3 credits*

Prerequisite: 401. Professional social work practice with families in social services; the dynamics of family systems, assessment of family function and dysfunction, professional helping processes.

7750:454/554 SOCIAL WORK IN JUVENILE JUSTICE*3 credits*

Prerequisite: 401, 445 (undergraduate). The theory and practice of Social Work in the juvenile justice systems of the United States. Traditional procedures and recent developments, prevention, diversion and community outreach, legal concerns, case management, institutional functioning.

7750:456/556 SOCIAL WORK IN HEALTH SERVICES*3 credits*

Prerequisite: 401. Policies, programs and practice in health care settings: short-term, intermediate and long-term hospitals, out-patient services, emergency services, clinics, visiting nurse services, nursing homes, pediatric services, self-help organizations, etc.

7750:457/557 ADVANCED PRACTICE WITH INDIVIDUALS*3 credits*

Prerequisites: 401 (undergraduate); an undergraduate social work degree or permission (graduate). Advanced professional development of direct and indirect strategies and techniques of intervention to aid individuals in improving psychosocial functioning.

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.

7750:470/570 LAW FOR SOCIAL WORKERS

3 credits

Prerequisite: 445. Basic terminology, theories, principles, organization and procedures of law will be explored along with the relationships between social work and law and comparisons of the theoretical bases of the two professions.

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.

7750:495 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.

7750:499 SENIOR HONORS PROJECT IN SOCIAL WORK

1-3 credits

(May be repeated for a total of six credits)

Prerequisites: senior standing in Honors Program and approval of Honors preceptor in department. Open only to social work major enrolled in Honors Program. Independent study leading to completion of senior honors thesis or other original work resulting in writing of research paper in proper scholarly form, supervised by student's honors project adviser within the department.

7800:117 BALLET ANALYSIS II

2 credits

Prerequisite: 116 or permission. Continuation of 116.

7800:119 INTRODUCTION TO CONTEMPORARY DANCE I

2 credits

For novice dancer and teacher 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.

7800:124,5 INTRODUCTION TO BALLET I,II

2 credits each

Basic exercises of classical ballet with emphasis on body placement, rhythmic and muscular awareness.

7800:175 ORAL INTERPRETATION I

3 credits

Oral interpretation of printed page with special emphasis on individual performance of poetry and prose fiction.

7800:219 INTRODUCTION TO CONTEMPORARY DANCE III

2 credits

Prerequisite: permission of instructor. A continuation of 120, expanding the contemporary dance techniques, designed to perfect the student's technique for entering the *Contemporary Technique I*.

7800:220 INTRODUCTION TO CONTEMPORARY DANCE IV

2 credits

Prerequisite: permission of instructor. A continuation of 219, expanding the contemporary dance techniques, designed to perfect the student's technique for entering the *Contemporary Technique I*.

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 vocabulary of the Barre and developing strength.

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

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.

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**7800:115 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.

7800:116 BALLET ANALYSIS I

2 credits

Required of all ballet majors in their freshman year. Lecture and laboratory: prepares dancer to understand the body and its function in the technique class, as student and future teacher or performer.

7800:282 STAGE MAKEUP*2 credits*

Study of basic principles of stage makeup, from character analysis to execution of a makeup plan. Laboratory hours required.

7800:283 SCENE PAINTING*1 credit*

Introduction to basic equipment and techniques of scene painting. No particular artistic skills required. Laboratory hours required.

7800:285 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.

7800:275 ORAL INTERPRETATION II*3 credits*

Prerequisite: 175. Oral interpretation from printed page, with special emphasis on group performance of literature.

7800:316 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.

7800:317 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.

7800:320 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.

7800:323 JAZZ DANCE TECHNIQUE I*2 credits*

Emphasizes basic Jazz techniques and styles, including East Indian, Afro-Cuban, Early American Hoe-Down and Folklore styles. Also, Soft-Shoe, Charleston and Early Burlesque.

7800:324 TAP TECHNIQUE I*2 credits*

Emphasizes basic tap combinations and routines, tap terminology and methods for recording combinations. Special clothing/shoes required.

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 a theatre major; optional for a dance major.

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.

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 Greece and Rome, Medieval period and Renaissance, with emphasis on culture of each period, dramatists, plays, stage conventions, architecture.

7800:366 HISTORY OF THEATRE: RESTORATION TO PRESENT*4 credits*

Prerequisite: 261 or permission. Development of theatre from English Restoration, eighteenth and nineteenth 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 seventeenth century to present, with emphasis on achievements in twentieth 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*3 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.

7800:377 JAZZ DANCE TECHNIQUE II*2 credits*

Prerequisite: 323. The use of more complex Jazz technique combinations and presentation on individual style.

7800:378 TAP TECHNIQUE II*2 credits*

Prerequisites: 324 and 124.5. A study of more complex routines and combinations, including syncopation, classical tap and style (Astaire, Kelly, Vereen, Draper, Bolger). Special clothing/shoes.

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*.

7800:416 CHOREOGRAPHY III*2 credits*

Prerequisites: 127 and permission of the instructor. Continuation of 127 with emphasis on rhythmic analysis and non-traditional forms.

7800:417 CHOREOGRAPHY IV*2 credits*

Prerequisites: 226 and permission of the instructor. Continuation of 226 expanding into group choreography and counterpoint.

7800:421 MUSICAL THEATRE PRODUCTION*3 credits*

Designed to make the musical theatre performer aware of the total creative process involved in mounting a stage musical. (May be taught in conjunction with the production of a musical.)

7800:422 BALLET TECHNIQUE IV*5 credits*

(May be repeated for a total of 40 credits)

Prerequisite: 322 and permission. Professional level of technique.

7800:423 HISTORY OF THE DANCE*2 credits*

Survey of in dance from prehistory to Renaissance.

7800:424 TWENTIETH 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.

7800:482/582 PLAYWRITING*2 credits*

Prerequisite: permission. Principles of dramatic construction learned through analysis of playwright's art, as well as through writing of dramatic compositions by individual student.

7800:484 STAGE LIGHTING*3 credits*

Outlines history, theories and practices of stage lighting. Among areas discussed are colored light and color theory; electricity and electrical safety; dimming control systems; other aspects of craft of effective stage lighting.

7800:465 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.

7800:466 ACTING FOR THE MUSICAL THEATRE*3 credits*

Prerequisites: 373, 7520:124, 373 and permission of instructor. A performance course designed to enable student actors to analyze and perform roles in musical plays. Emphasis will be on coordinating musical aspects of the role for the purpose of fully developing characterization. Laboratory hours required.

7800:467/567 CONTEMPORARY THEATRE STYLES*3 credits*

Study of contemporary theatre from emergence of modern drama in nineteenth 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.

7800:803 SPECIAL TOPICS IN THEATRE ARTS/DANCE*2 credits*

(May be repeated as different subject areas are covered, but no more than eight 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.

7800:836 SPECIAL PROBLEMS IN ORAL INTERPRETATION*2 credits*

Prerequisite: permission. Theory and performance course centering upon interpretation of variety of literary forms. Individual and 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. 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.

7800:668 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.

7800:667,8,9 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 EIGHTEENTH CENTURY

2 credits

7800:669 THEATRE: NINETEENTH AND TWENTIETH CENTURIES

2 credits

7800:690 GRADUATE RESEARCH/READINGS

1-3 credits

(May be repeated for a total of nine 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 FOR R.N.'s

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. 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.

8200:305 NURSING THEORIES, CONCEPTS AND RESEARCH

6 credits

Prerequisites: 101 and admission to the college. The specific focus is to relate concepts, theories and investigative projects to the practice of nursing in a health care system using the nursing process.

8200:320 NURSING: DIMINISHED HEALTH I

12 credits

Prerequisites: 100, 200, 300. 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.

8200:405 HEALTH MAINTENANCE NURSING

6 credits

Prerequisites: 101 and 305. Designed to focus on healthy man throughout the life cycle. Theory and practice focus on healthy man's reciprocal interaction with ecological variables.

8200:415 DIMINISHED HEALTH NURSING

5 credits

Prerequisites: 101 and 305. Theoretical and clinical components emphasize alternative behaviors for the client and the nurse, within the framework of the nursing process, to assist individuals and families experiencing diminished health to attain, maintain and regain optimal levels of health.

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 explora-

tion of the state of health care delivery in the United States of America today and their ramifications and implications for nursing.

8200:480 SENIOR HONORS PROJECT

1-3 credits per semester

Prerequisite: senior standing in Honors Program and nursing major. A creative project, independent study or research relevant to nursing which is supervised by a faculty preceptor and/or sponsor.

8200:489/589 SPECIAL TOPICS: NURSING

1-4 credits

(May be repeated as new topics are presented)

Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit.

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 FAMILY HEALTH NURSING 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 FAMILY HEALTH NURSING 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

Not offered after fall 1981

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.

8200:618 FAMILY HEALTH APPRAISAL

5 credits

Prerequisite: formal admission into M.S. in Nursing program. Combination of seminar and clinical practicum used to study health appraisal. Holistic aspects of health appraisal through life span.

8200:620 NURSING I

6 credits

Prerequisites: 600 and 615. 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 accom-

panying maturational and situational issues/crises which precipitate health-related issues/crises.

8200:670,1 SPECIAL TOPICS

2 credits each

Prerequisite: completion of all required first-year courses. Selected topics and areas of interest to faculty, student. Available as electives.

8200:672 INDEPENDENT STUDY

1-4 credits

An opportunity for the graduate student to elect an area of nursing for practice and is considered as an option for the following: 1) Nursing elective credit; and 2) Leadership Role of Nursing elective credit.

8200:680 FUNCTIONAL AREA OF NURSING-DIRECT CARE OF FAMILIES SEMINAR

3 credits

Prerequisites: 600, 601, 612 and 620. Examines concepts and issues regarding developing roles and functions of Family Health Nurse.

8200:681 FUNCTIONAL AREA OF NURSING-DIRECT CARE OF FAMILIES PRACTICUM

3 credits

Prerequisites: 621 and 680. Clinical practicum for implementing the Family Health Nurse.

8200:685 FUNCTIONAL AREA OF NURSING — EDUCATION SEMINAR

3 credits

Prerequisites: 600, 601, 612 and 620. Concepts in curriculum development with focus on philosophical commitments, theoretical frameworks and educational goals.

8200:686 FUNCTIONAL AREA OF NURSING — EDUCATION PRACTICUM

3 credits

Prerequisites: 621 and 685. Guided study and practice in roles and functions of a teacher with focus on student learning opportunities and appraisal of student achievement.

8200:687 FUNCTIONAL AREA OF NURSING — ADMINISTRATION SEMINAR

3 credits

Prerequisites: 600, 601, 612 and 620. Appraisal made of power, communication, decision making and change processes in all health care organizations. Theories and principles of administration discussed as they apply to nursing services.

8200:688 FUNCTIONAL AREA OF NURSING — ADMINISTRATION PRACTICUM

3 credits

Prerequisites: 621 and 687. Guided study and practice in roles and functions of nursing administrator in selected clinical setting.

8200:689 COLLOQUIUM

1 credit

Prerequisite: completion of Functional Area Seminar. Means whereby a student in Functional Area Practicum can synthesize role in relation to family health nursing.

8200:699 THESIS RESEARCH

1-4 credits

Prerequisite: completion of first year of program. Student must register for a total of three semester credits. 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

9200:601 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.

9200:602 CIVIL PROCEDURE II

3 credits

Prerequisite: 601. Continuation of 601.

9200:603 CONSTITUTIONAL LAW I

3 credits

Governmental authority and its distribution under Constitution. Introduction to individual rights and liberties.

9200:604 CONSTITUTIONAL LAW II

3 credits

Prerequisite: 603. Continuation of 603. Rights, privileges and immunities under the Constitution.

9200:605 CONTRACTS I

3 credits

Nature and purpose of contract law. Formation. Consideration. Contractual alternatives. Reality of consent. Capacity. Statute of Frauds.

9200:606 CONTRACTS II

3 credits

Prerequisite: 605. Construction. Breach and associated remedies. Resolution of disputes. Discharge. Third party interests.

9200:607 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.

9200:608 EVIDENCE

3 credits

Covers basic evidence law with emphasis on the Federal Rules of Evidence and state rules patterned thereon.

9200:611 LEGAL PROCESS

1 credit

Law making by private parties, courts, legislatures and administrative agencies. Statutory interpretation. Coordination of techniques.

9200:612 LEGAL PROFESSION

2 credits

Legal profession as an institution. Responsibilities of lawyers. Duties and privileges. Professional qualifications.

9200:614 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.

9200:615 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.

9200:616 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.

9200:617 TORTS II

3 credits

Prerequisite: 616. Continuation of 616.

9200:618 LEGAL RESEARCH

2 credits

Familiarization with basic legal publications and computer assisted legal research necessary to perform legal research.

9200:619 BASIC LEGAL COMMUNICATIONS

1 credit

Development and integration of skills in legal writing and argumentation.

9200:620 INTERMEDIATE LEGAL COMMUNICATIONS

1 credit

Building oral advocacy, argumentation abilities through appellate practice.

9200:621 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.

9200:622 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.

9200:623 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.

9200:624 AIR LAW

3 credits

Law of modern air transportation in international and domestic flight and emerging area of outer space.

9200:625 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.

9200:626 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.

9200:627 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.

9200:628 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.

9200:629 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.

9200:630 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

3 credits

Problems of application of private law in jural relations containing one or more foreign law elements. Jurisdiction and enforcement.

9200:633 CORPORATIONS

4 credits

An introduction to the law relating to the typical American enterprise. Principal emphasis is on financing, control, management and regulation of corporations, both publicly owned and closely held.

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.

9200:640 SEMINAR IN ADVANCED CORPORATE TAXATION

3 credits

Prerequisite: 642. An analysis of federal corporate taxation problems.

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

3 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, 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; sources and subjects; relation to municipal law, individuals and 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

3 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 (credit/noncredit)

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). Credit for 656, 657, 658, 696 and 698 not to exceed ten.

9200:657 LAW REVIEW STAFF

1 credit (credit/noncredit)

(May be repeated twice)

Prerequisite: 656. Preparation of comment or article of publishable quality. Credit for 656, 657, 658, 666, 696 and 698 not to exceed ten.

9200:656 LAW REVIEW EDITORIAL BOARD

1 credit (credit/noncredit)

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. Credit for 656, 657, 658, 666, 696 and 698 not to exceed ten.

9200:659 LAWYER AS NEGOTIATOR

2 credits

Prerequisite: 602. 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

3 credits

Study of law as it relates to regulation of derivative process in the publicly regulated and private unregulated sectors of the economy.

9200:663 LEGISLATION

2 credits

Process in context of legislative organization, policy formulation, drafting, statutory construction, constitutional limitations on subject matter and form and judicial interpretation; illustrative drafting problems.

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, co-operatives, 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 (credit/noncredit)

(May be repeated once)

Credit for participation by brief writing or written argumentation in intramural National Moot Court, Jessup International or other approved moot court competitions. Not open to first-year student. Total credits for courses designated Moot Court (666, 694 and 695) not to exceed four. Credit for 656, 657, 658, 666, 694, 695, 696, 697 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

3 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

3 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

3 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 DEFERRED COMPENSATION AND EMPLOYEE BENEFIT PLANS

3 credits

Recommended: 633 and 642. Employee benefit plans; qualified pension and profit-sharing plans under Internal Revenue Code. Non-qualified contracts involving individual employees.

9200:661 SEMINAR IN LEGAL PROBLEMS OF THE DISADVANTAGED

2 credits

Selected legal problems of persons disadvantaged by such factors as age, illness, mental incompetency and poverty.

9200:682 SEMINAR IN POLITICAL AND CIVIL RIGHTS

2 credits

Prerequisite: 604. Study of some basic problems in relationship of individual to government and in protection of rights of minority groups.

9200:683 SEMINAR IN PRODUCT LIABILITY

2 credits

Prerequisite: 617; recommended: 628. Liability for defective products and developing legal theories and remedies. Examination of government regulation of dangerous and defective products.

9200:684 SEMINAR IN SELECTED LEGAL PROBLEMS

1-3 credits

(May be repeated)

Analysis of special or current legal problems offering opportunities for legal research, effective integration of legal and relevant nonlegal materials, and expository legal writing.

9200:685 WILLS, TRUSTS AND ESTATES I

3 credits

Intestate succession; execution, revocation and revalidation of wills; creation and termination of trusts; gifts to charity; will substitutes; future interests; powers of appointment; class gifts.

9200:686 WILLS, TRUSTS AND ESTATES II

3 credits

Prerequisite: 685. Continuation of 685.

9200:667 SEMINAR IN SELECTED PROBLEMS IN EVIDENCE

3 credits

Prerequisite: 606. Designed to give the student extensive practice in solving difficult evidence problems in order to supplement the instructions given in the basic Evidence course.

9200:666 ADVANCED LEGAL COMMUNICATIONS

1 credit

Prerequisites: 619 and 620. Advanced exercises in legal expression focused on prescriptive formulations such as legislative drafting, contract drafting and the like.

9200:669 APPELLATE ADVOCACY

1 credit

Prerequisites: 619, 620 and 688. Refinement of skills in research and writing, together with acquisition of knowledge and experience in appellate practice.

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.

9200:694 REGIONAL MOOT COURT

1 credit (credit/noncredit)

Prerequisite: open only to members of the National Moot Court Team competing or alternates in the National Appellate Advocacy Competition

(NAAC) Spring Regional Competition. Each person enrolled for credit will be required to: (1) do substantial research on the brief problem; (2) prepare preliminary drafts of arguments; (3) participate in practice rounds for oral presentations. Total credits for courses designated Moot Court (666, 694 and 695) not to exceed four. Credit for 656, 657, 658, 666, 694, 695, 696, 697 and 698 not to exceed ten.

9200:695 NATIONAL MOOT COURT

2 credits (credit/noncredit)

Prerequisite: open only to National Moot Court Team members or alternates in the National Moot Court Competition. Each person enrolled for credit will be required to: (1) read and grade all intramural competition briefs; (2) listen to and judge oral arguments in intramural competition; (3) do substantial research on current National Moot Court problem; (4) prepare drafts of brief; (5) write a final brief; (6) practice oral arguments. Total credits for courses designated Moot Court (666, 694 and 695) not to exceed four. Credit for 656, 657, 658, 666, 694, 695, 696, 697 and 698 not to exceed ten.

9200:696 CLINICAL SEMINAR I

2-3 credits (credit/noncredit)

Prerequisites: successful completion of 28 credit hours and permission of clinical director. Application of legal knowledge to practical problems in supervised public law office contexts. May be taken independently of 697. Credit for 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.

Board of Trustees

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July 1981

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ALAN N. GENT, *Dean of Graduate Studies and Research*, Ph.D.

Emeritus Faculty

July 1981

- 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.
- JOHN ARENDT**, *Instructor Emeritus in Surveying and Construction Technology* (1967) (Ret. 1980) B.S.M.E., Cleveland State University, 1944.
- 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. 1966) 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.
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July 1981

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ASSISTANT PROFESSORS: Elizabeth Erickson, Gasper A. Garofalo, Randall H. King, Lung-Ho Lin, Devinder M. Malhotra, Steven C. Myers, Richard W. Stratton.

English

HEAD: Associate Professor Frederik N. Smith.

PROFESSORS: Gerald H. Levin, R. Paul Merrix, 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, Arthur L. Palacas, Sally K. Slocum, Gerard M. Sweeney.

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INSTRUCTORS: Jutta T. Bendremer, Marlene C. Hathaway, Alice MacDonald, Arlene A. Toth.

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PROFESSORS: Ashok Dutt, Edward W. Hanten, Laurence J. Ma.

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ASSISTANT PROFESSOR: Charles B. Monroe.

Geology

HEAD: Professor Arthur E. Burford.

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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, Robert L. Zangrando.

ASSOCIATE PROFESSORS: J. Wayne Baker, Boris Blick, June Burton, Barbara E. Clements, David E. Kyvig, William McGucken, Howard S. Reinmuth, Jr.

Mathematical Sciences

HEAD: Professor William H. Beyer.

PROFESSORS: Douglas E. Cameron, Leonard Sweet.

ASSOCIATE PROFESSORS: David Buchthal, Robert C. Carson, Peter J. Gingo, William W. Hokman, Ernest A. Kuehls, Thomas E. Price, Neal C. Raber, Phillip H. Schmidt, George L. Szoke, Richard J. Turek.

ASSISTANT PROFESSORS: Dale S. Borowiak, Todd Feil, Joseph C. Hintz, Martha Lierhaus, Judith Palagallo, Wolfgang Pelz, Fernando Proietti-Orlandi, Harold Putt, James F. Reed, Donald P. Story.

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Modern Languages

PROFESSORS: Arno K. Lepke, Hugo Lijeron, Theodore Mackiw, Eugene A. Maio, Claude Y. Meade, Herbert W. Smith, Jr., Isaac Yetiv.

ASSOCIATE PROFESSORS: Jolita Kavaliumas, Allan McIntyre, Phillip Stuyvesant, Russell Weingartner.

ASSISTANT PROFESSORS: William I. Miller, Helen Ryan, Janet Waisbrot, Hans O. Zbinden.

INSTRUCTORS: Joseph J. Donatelli, Stephen A. Faria, Janice Houser, Sys Inman, Kriemhilde Livingston, Susan Schunk.

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HEAD: Associate Professor Alan Hart.

ASSOCIATE PROFESSORS: David F. Cox, James H. Buchanan, William McMahon.

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ASSOCIATE PROFESSORS: Walter H. Heintz, Peter N. Henriksen II, Harry T. Pinnick, Ronald E. Schneider.

Political Science

ACTING HEAD: Associate Professor Jesse Marquette.

PROFESSORS: Yong H. Cho, Yogendra Malik, Paul A. Weidner.

ASSOCIATE PROFESSORS: Vernon F. Cook, Katherine Hickley, Frank J. Kendrick, Carl Lieberman, David J. Louscher.

ASSISTANT PROFESSOR: Richard Franklin.

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HEAD: Professor Howard L. Stephens.

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PROFESSORS: Lewis J. Fetters, Alan N. Gent, H. James Harwood, Frank N. Kelley, Donald McIntyre, Eberhard A. Meinecke, Irja Piirma, Charles W. Wilson III.

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HEAD: Associate Professor Richard J. Gigliotti.

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College of Education

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School of Law

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DEAN: Associate Professor Tyrone M. Turning.

BUSINESS MANAGER: Martin Kemp.

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Reserve Officers' Training Corps

July 1981

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, Field Artillery.

JAMES HANSEN, Assistant Professor of Military Science (1980) B.S., Kent State University; M.A., Central Michigan University; Graduate of the Army Command and General Staff College; Major, Infantry.

FRANK P. BEVILACQUA, Assistant Professor of Military Science (October 1980) B.S., M.B.A., The University of Akron; CPA, 1980; Captain, Finance Corps.

THOMAS G. RASETA, Assistant Professor of Military Science (1980) B.A., Youngstown State University, 1970; Major, Signal Corps.

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

JOHN E. HALLIGAN, Professor of Aerospace Studies (August 1981) B.S., Texas A&M University; M.A.O.M., University of Southern California, 1970; Lieutenant Colonel, 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; Major, USAF.

JOHN A. SIMPSON, Assistant Professor of Aerospace Studies (June 1981) B.G.S., University of Nebraska; M.A., Central Michigan University, 1980; Captain, USAF.

TRAVIS N. HAMMONDS, GMC NCO/IC (1980); Staff Sergeant, USAF.

THOMAS E. WHITMYER, Detachment NCO/IC (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.

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.

GARY R. HAMED, Assistant Professor of Polymer Science (1980) B.S.C.E., M.S.C.E., Cornell University; Ph.D., The University of Akron, 1978.

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.

IRJA PIIRMA, 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, Institute of Polymer Science; Professor of Polymer Science; 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; Professor of Polymer Science (1965) B.S.E., M.S., University of Michigan; Ph.D., Washington University, 1952.

DAVID WINKLER, Manager of Applied Research, Institute of Polymer Science; Research Associate (October 1969) B.S., Ashland College; M.S., The University of Akron, 1972.

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NORMAN P. AUBURN, 1951-1971, B.A., D.Sc., Litt.D., L.H.D., LL.D., D.C.L.

D. J. GUZZETTA, 1971-, Ed.D., LL.D., D.S.Sc., L.H.D.

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ROBERT A. OETJEN, 1970-1977, Ph.D.
CLAIBOURNE E. GRIFFIN, 1977-, Ph.D.

College of Engineering

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MICHAEL J. RZASA*, 1964-1970, Ph.D.
COLEMAN J. MAJOR, 1970-1979, Ph.D.
JOSEPH EDMISTER, 1980-1981, J.D. (acting)
LOUIS A. HILL, JR., 1981-, Ph.D.

College of Education

W. J. BANKES*, 1921-1931, M.A.
ALBERT I. SPANTON*, 1931-1933, M.A., Litt.D. (acting)
HOWARD R. EVANS*, 1933-1942, Ph.D.
HJALMER W. DISTAD, 1942-1944, Ph.D. (acting)
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D. J. GUZZETTA, 1958-1959, Ed.D., LL.D., D.S.Sc., L.H.D. (acting)
CHESTER T. McNERNEY, 1959-1966, Ph.D., LL.D.
H. KENNETH BARKER, 1966-, Ph.D.

College of Business Administration

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School of Law

STANLEY A. SAMAD, 1959-1979, J.S.D.
ALBERT S. RAKAS, 1979-1981, J.D. (interim)
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Graduate School

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ERNEST H. CHERRINGTON, JR., 1960-1967, Ph.D. (Dean of the Division)

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EDWIN L. LIVELY, 1968-1974, Ph.D. (Dean of Graduate Studies and Research)

CLAIBOURNE E. GRIFFIN, 1974-1977, Ph.D. (Dean of Graduate Studies and Research)

JOSEPH M. WALTON, 1977-1978, Ph.D. (Associate Dean of Graduate Studies and Research)

ALAN N. GENT, 1978-, Ph.D. (Dean of Graduate Studies and Research)

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D. J. GUZZETTA, 1959-1962, Ed.D., LL.D., D.S.Sc., L.H.D.
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PAUL S. WINGARD, 1977-1978, Ph.D. (acting)
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CHARLES V. BLAIR, 1967-1970, M.A. (Dean)
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ROBERT C. WEYRICK, 1974-, M.S.

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GERARD L. KNIETER, 1978-, Ph.D.

College of Nursing

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LILLIAN J. DeYOUNG, 1975-, Ph.D.

Wayne General and Technical College

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JOHN G. HEDRICK, 1974-1974, M.A. (Director)
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*Committee members serve overlapping 3-year terms.

Directory of Student Organizations

July 1981

Athletics

Frisbee Club
Gymnastics Club
Intramurals — Men's, Women's
Karate Club (Tae Kwon Do)
Ski Club
Table Tennis Club
Tennis Club
Water Polo Club
Water Ski Club
Women's Track Club

Communications and Publications

Akros (literary magazine)
Amateur Radio Club
The Buchtelite (newspaper)
Forensic Union
Tel-Buch (yearbook)
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
Association for Health & Physical Education
Collegiate Nursing Students
Council for Exceptional Children
Der Deutsche Studentenklub
Economics Association
Finance Club
Home Economics
Industrial Management Student Association
Institute of Electronic and Electrical Engineers
International Food Service Executive Association
Johnson Club (English)
La Comunidad Hispanica
Le Cercle Francais Universitaire
Mathematics Club
Medical Technology Club
Philosophy Club
Psychology Club
Slavic Studies Club
Social Work League
Sociology Club
Student Art League
Student Dietetic Association

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)
Financial Management Association Honor Society
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

Performing Arts

Choral Ensembles
Jazz/Pops Singers
Men's Glee Club
Opera Theatre
Symphony Chorus
University Concert Choir
Women's 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 Association
Akron Simulation Society
American Congress on Surveying and Mapping
Arab Students Organization
Associated Student Government
Association for Women Students
Backgammon Club
Black United Students (BUS)
Center for Concern
Chess Club
College Republicans
Council for International Relations and United Nations Affairs
Gentlemen and Touches Plus
Gospel Chorus
The Hellenic Club
Indian Students Association
International Students Club
Outing Club
Pre-Law Club
Public Relations Student Society of America (PRSSA)
Residence Hall Council
Residence Hall Program Board
Senior Class
Stargate
Student Toastmasters Club
Students' International Meditation Society
Veterans Involved in College Enrichment
Vietnamese Student Club
Young Democrats Club

Religious Organizations

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
Intervarsity Christian Fellowship
Kappa Phi Club
Students for Christ
True Vine Campus Ministry

Social Fraternities

Alpha Phi Alpha
Delta Tau Delta
Lamda Chi Alpha
Omega Psi Phi
Phi Beta Sigma
Phi Delta Theta
Phi Kappa Psi
Phi Kappa Tau
Phi Sigma Kappa
Pi Kappa Epsilon (Lone Star)
Sigma Pi
Tau Kappa Epsilon
Theta Chi
Intrafraternity Council

Social Sororities

Alpha Delta Pi
Alpha Gamma Delta
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Delta Gamma
Delta Sigma Theta
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