



**The
University
of Akron**
GENERAL BULLETIN
1977-78

*A descriptive
bulletin with
explanations of
courses and
colleges at
The University of
Akron*



Ten Years Toward Tomorrow is the theme of The University of Akron's celebration of ten years as a state-assisted university. The three bars of the triangular logo represent the three stages of the University—first as a private institution, then as a municipal university and, for the past ten years, as a state-assisted institution of higher education. The past and present are the building blocks which serve as a foundation for future education at The University of Akron. So, the bars lean toward the future—thus the theme—Ten Years Toward Tomorrow.

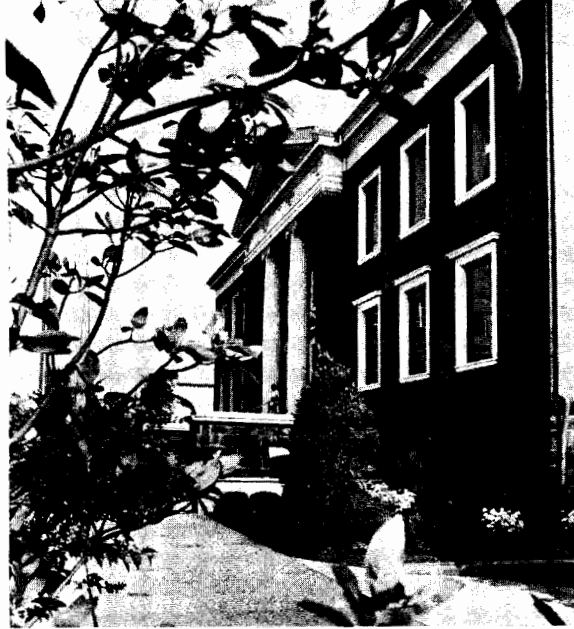
THE UNIVERSITY OF AKRON BULLETIN

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I. The University of Akron

A Story of Growth

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 half a million dollars and spirit sustained the enterprise in higher education. Support also came from local men who pioneered such important industries as cereals, clay products, matches, farm implements and rubber.

By 1913 it was apparent that Buchtel College was more closely oriented toward Akron than toward 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 in that decade, and the University grew apace. In 1914 a College of Engineer-

ing was established. Other professional colleges followed: Education (1921), Business Administration (1953), Law (1959), Community and Technical (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 7,000 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 the awarding of the first master's degree (1882) to the beginning of doctoral work in 1956. Currently, doctoral programs are offered in fourteen fields of study.

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

Akron scientists participated in the critical development of synthetic rubber during World War II, and the University's Institute of Polymer Science is now a world leader in polymer research and education. Currently Akron's research efforts, totalling approximately \$1,100,000, reach into many fields, from barnacles to inner-city problems.

The 114-acre campus with 51 modern buildings is located at the hub of an industrial urban area of 1½ million persons. The University of Akron now enrolls more than 21,750 day and evening students in credit courses and an additional 4,200 in "informal" adult education. Its students come from 28 states and 58 foreign countries. The 44,000 alumni are situated around the globe in positions of responsibility. Akron's long-time leadership in continuing adult education through its Institute for Civic Education, Center for Urban Studies, Department of Special Programs and its Institute for Life-span Development and Gerontology 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 securing a base that enables it to extend its influence far beyond local boundaries. Its first century of service has

prepared it for a widening role in years to come.

MISSION

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

Distinguishing Characteristics As an Urban University

The distinction of a university as urban goes beyond its geographic location within a urban environment. It is an integral part of the city. It strives for a symbiotic relationship with the urban community for its own vitality as a responsible social institution. The urban university, wherever appropriate, integrates its own programs with the host of cultural, intellectual, and social activities generated by other community institutions. Most importantly, the urban university is looked upon as one of several important community resources.

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

A. Students

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

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

Full-time employees seeking to gain promotion in their companies, advanced professionals wanting to keep current in their own areas of specialization, homemakers released from the responsibilities of preschool children, and citizens who simply want to satisfy some special interest find The University of Akron a welcome opportunity within convenient commuting dis-

tance. They constitute a significant portion of the student body in credit and non-credit programs, day and evening. The presence of mature, working students in the classroom provides special educational and socialization experiences for the younger, full-time students from throughout the nation who make up the larger part of the student body. The older students have less time for extracurricular involvement. Outside work loads, financial demands and demands of the home and family cause frequent interruptions in their educational programs.

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

B. Faculty

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

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

C. Program and Teaching/Learning Process

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

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

The Urban Mission of The University of Akron

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

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

GOALS AND PURPOSES OF THE UNIVERSITY OF AKRON

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

GOAL I

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

Some Policies and Procedures to Achieve Goal

A policy of open admission and selective retention for graduates of accredited high schools will be continued.

While giving particular attention to serving students from Northeastern Ohio, the University will also endeavor to attract more students from the rest of Ohio, other states, and countries.

Program offerings, both credit and non-credit, as well as course accessibility and scheduling will recognize that the University's constituency includes:

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

The University will utilize its urban environment in providing learning opportunities for its students.

Program counseling for students will take into consideration their desires and interests as well as their aptitudes and academic potential.

Both student *need* and *academic achievement* will be considered when granting financial assistance.

Assistance will be provided to students in locating employment commensurate with their competence and interests.

GOAL II

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

Some Policies and Procedures to Achieve Goal

The University will continue its preeminence as a teaching institution by employing only well qualified faculty and by expanding opportunities for them to become more effective.

The University will encourage and assist faculty members to secure outside support for research and creative activities related both to their teaching and to the advancement of knowledge.

Faculty members will be encouraged to publish in professional journals, to take editorial responsibility for the publication of national journals, and to demonstrate their creative work in shows and performances.

Resources will be made available for the Library, Computer Center, and Media services to secure the materials, information, and services necessary to support teaching, research and scholarly activity.

Teaching, research, creative activities and community involvement will be considered when faculty performance is evaluated.

GOAL III

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

Some Policies and Procedures to Achieve Goal

The University will encourage a continuous search for improved ways and means of conducting the teaching/learning process. Current programs and curricula will be evaluated continuously in relationship to this goal.

New programs at all levels will be developed on a selective basis to meet changing technological, social and cultural needs within the resources available.

All undergraduate programs will contain a general education experience, including courses in the social sciences, the humanities, and the natural sciences.

An honors program will be provided for those with outstanding intellectual capability and motivation.

Priority for new doctoral and master's degree programs will be based on demon-

strated needs of contemporary society and the academic disciplines, the need to maintain quality, the resources available, and the enrollment potential.

Inter-institutional cooperation in offering academic programs, both undergraduate and graduate, will be encouraged where appropriate.

GOAL IV

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

Some Policies and Procedures to Achieve Goal

Evening scheduling of degree programs as well as continuing education programs will continue to increase.

The University will continue to encourage faculty to conduct research related to urban problems and to utilize their expertise in public service activities in the community. Selective programming in the visual and performing arts will contribute to Akron's cultural renaissance.

The University's urban setting will be utilized as a "laboratory" for students to gain a variety of experiences related to their course work, to develop their cultural awareness, and to acquire those skills necessary to learning in a complex society.

Accreditation . . . The University's Standing

Any educational institution is as strong as the level of excellence which it demands of itself, as well as of its faculty and students.

The University of Akron has set high standards for itself which result in its being accredited and approved by the following organizations and associations:

The North Central Association of Colleges and Secondary Schools, American Association of State Colleges and Universities, Ohio College Association, American Medical Association, American Chemical Society, the Engineers' Council for Professional Development, National Council for Accreditation of Teacher Education,

State Board of Nursing Education and Nurse Registration and the National League for Nursing. The College of Business Administration is accredited by the American Assembly of Collegiate Schools of Business. The Electronic Technology, Mechanical Technology and Surveying and Construction Technology Associate degree programs in the Community and Technical College are Engineering Technology curricula accredited by the Engineers' Council for Professional Development.

The University of Akron is a member of the following organizations:

American Council on Education, Association of American Colleges, Association of Urban Universities, American Society for Engineering Education, Ohio College Association, American Association of Community and Junior Colleges, the American Association of Colleges for Teacher Education, holds associate membership in the International Council on Education for Teaching and membership in the National League for Nursing, Department of Baccalaureate and Higher Degree Programs.

The School of Law has membership in the League of Ohio Law Schools and is fully approved by the American Bar Association, Association of American Law Schools, and is registered with the State Education Department, The University of the State of New York.

The University is also a member of the Association of University Evening Colleges and the Ohio Council on Higher Continuing Education. In addition to this, it is an accredited member of the North Central Conference on Summer Schools.

Women graduates of the University with approved baccalaureate degrees (requiring at least two years or a minimum of 60 credits of non-professional, non-technical work credited toward a B.A. degree) are eligible to membership in the American Association of University Women.

Accreditation assures a student that his degree is recognized and approved by select regional and national educational associations, societies and councils.

A student has the security of knowing that credits earned at his university have transfer value to comparable institutions of learning just as incoming transfer students learn by checking this list that The University of Akron can be expected to honor most of their credits earned at a similarly accredited college or university.

For the student taking pre-professional courses in order to enroll eventually for subsequent study in advanced fields such as medicine,

dentistry, law or theology, there is the assurance that courses taken at The University of Akron will prepare him to be accepted by a graduate or professional school where he can specialize further.

For the student who intends to meet the University requirements for a bachelor's degree or associate degree and then enter his chosen profession or vocation, there is the satisfaction of knowing that this degree will be respected whenever he presents his credentials to a prospective employer.

Academic Offerings

The University of Akron's academic offerings cover the complete educational spectrum from two-year associate degree programs, through four-year baccalaureate programs, to master's degree programs as well as programs of study leading to the doctorate.

The first year student may be enrolled in either the General College, obtaining the background in General Studies required for transferring to one of the University's Upper Colleges, or he may be enrolled in the Community and Technical College, taking courses that will earn him an associate degree at the end of two years.

By the time a student who is aiming toward a baccalaureate degree reaches his second year, he has completed many of the General Studies courses and is ready to enter an Upper College. It is in the Upper College of his choice that he begins devoting more and more of his time and attention to a specific area of study.

The student may also be one of the hundreds of graduate students working toward a master's degree. Or, he may have completed the earlier programs and be engaged in the scholarly study and research essential to preparation for a doctoral degree in chemistry, history, polymer science, psychology, education, engineering, or sociology.

ASSOCIATE PROGRAMS

In this fast-paced age of technological development, a need has grown for persons trained specifically for work in the semiprofessional, technical and highly skilled classifications. Most critically needed are lab technicians, engineering assistants, industrial sales people, supervisors, secretaries and management assistants.



COMMUNITY AND TECHNICAL COLLEGE —

The University of Akron began offering programs aimed toward helping society meet such needs in 1937 when it introduced its Community College program. Initially offering only non-credit studies, the Community College expanded rapidly and in 1959 the University began offering associate degree programs in a variety of fields through its General College.

The demand for such training has continued to grow. As a result in 1964, the associate degree program was separated from the General College and the Community and Technical College was established.

The Community and Technical College offers credit courses leading to an associate degree at the end of a two-year program of study in the areas of industrial technology, electronic technology, mechanical technology, cytotechnology, transportation, chemical technology, sales and merchandising, commerce, food service management, community services technology, arts, commercial art, surveying and construction technology, office service technology, fire science technology, instrumentation technology, data processing, criminal justice technology, educational technology, and secretarial science. Included in the latter are courses aimed specifically toward preparing graduates to qualify as executive, international, legal and technical secretaries, and as medical assistants.

BACCALAUREATE PROGRAMS

In 1935 The University of Akron pioneered a concept in general education in the belief that all college students should have mastered basic courses in the humanities and the social and physical sciences. Students, even those aiming toward careers in such vocationally-directed fields as engineering, chemistry or business ad-

ministration, benefit from these "know-why" courses.

GENERAL COLLEGE—

As a result, students seeking a baccalaureate degree who are enrolling in the University with less than 45 credits, study in the General College before transferring to an Upper College. Here they develop the ability to understand and express ideas effectively and to comprehend the processes involved in accurate thinking. They learn the responsibilities of an educated member of society, as well as learning to understand themselves and their individual abilities.

After completing their courses of study in the General College, students seeking a baccalaureate degree enter one of the following upper colleges:

BUCHTEL COLLEGE OF ARTS AND SCIENCES—

is organized in divisions of the humanities, natural sciences and social sciences, and furnishes a broad, thorough liberal education as well as preparation necessary for the medical, dental and legal professions. Baccalaureate degrees conferred in the liberal arts area are the Bachelor of Arts, Bachelor of Science, Bachelor of Science in Labor Economics, and Bachelor of Science in Medical Technology.

COLLEGE OF ENGINEERING—

offers a four-year and a five-year co-op program of courses leading to a Bachelor of Science in Chemical, Civil, Electrical and Mechanical Engineering and Bachelor of Science in Engineering. The five-year program is arranged on the highly successful cooperative work-study plan that bridges the gap between academic college training and practical industrial experience.

COLLEGE OF EDUCATION—

furnishes the necessary preparation for prospective teachers, counselors and administrators for primary, elementary and secondary schools, in health and physical education and special education. All courses comply with State certification requirements and degrees of Bachelor of Science in Education, Bachelor of Arts in Education, and the Bachelor Science in Technical Education are offered.

COLLEGE OF BUSINESS ADMINISTRATION—

offers professional programs in business to pre-

pare students for careers in commerce, industry and government. Undergraduate degrees conferred are the Bachelor of Science in Accounting, Bachelor of Science in Business Administration and the Bachelor of Science in Industrial Management.

COLLEGE OF FINE AND APPLIED ARTS—

encompasses the fine and applied arts including Art, Home Economics and Family Ecology, Music, Social Work, Speech and Theatre Arts and Speech Pathology and Audiology. The College confers the following undergraduate degrees: Bachelor of Arts, Bachelor of Music, Bachelor of Fine Arts, Bachelor of Arts in Dietetics, Bachelor of Arts in Foods and Nutrition, Bachelor of Arts in Textiles and Clothing, Bachelor of Arts in Family and Child Development, Bachelor of Arts in Speech Pathology and Audiology, Bachelor of Arts in Ballet, Bachelor of Arts in Communication/Rhetoric, Bachelor of Arts in General Speech, Bachelor of Arts in Mass Media Communications, Bachelor of Arts in Theatre Arts.

COLLEGE OF NURSING—

offers a basic collegiate program in nursing which leads to the degree of Bachelor of Science in Nursing with a major in nursing. The program prepares nurses for all beginning positions in professional nursing.

COMMUNITY AND TECHNICAL COLLEGE—

offers two programs leading to baccalaureate degrees; both are designed as transfer programs which permit qualified engineering technology students to continue their education to the baccalaureate level. During his first and second years the 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 in either electronic technology or mechanical technology.

ADVANCED STUDY

After earning a baccalaureate degree, students desiring still further education may embark on programs in either of the following:

SCHOOL OF LAW—

provides legal education in either day or evening

classes leading to the Juris Doctor degree. For admission an applicant must have an undergraduate degree from an accredited college or university in an appropriate field of study.

GRADUATE SCHOOL—

offers advanced courses leading to the Doctor of Philosophy degree in chemistry, history, polymer science, psychology, education (elementary, secondary, or guidance and counseling), engineering and sociology; to the Doctor of Education degree in school administration; and to the master's degree in biology, chemistry, economics, English, French, earth science, geography, history, mathematics, philosophy, physics, political science, polymer science, psychology, sociology, Spanish, statistics, urban studies, engineering, chemical engineering, civil engineering, electrical engineering, mechanical engineering, elementary education, secondary education, elementary or secondary school principal, supervisor, local superintendent, counseling, special education, visiting teacher or school social worker, reading specialist or reading consultant, teaching the culturally disadvantaged, employment counselor, administrative specialist in school and community relations, technical education, accounting, finance, international business, management, marketing, speech pathology and audiology, communication and rhetoric, general speech, mass media, theatre arts, home economics and family ecology, and music.

CONTINUING EDUCATION

EVENING COLLEGE—

education is a year-long, round-the-clock endeavor at The University of Akron. To provide educational opportunities for those who must earn their livelihood at daytime jobs, the University operates an Evening College. The courses offered in the Evening College are fully accredited, and many of the faculty members teach both day and evening courses. As a result, more than 7,000 of the University's student enrollment attended evening courses in their quest for associate, baccalaureate and advanced degrees or for added education in their chosen professions.

SUMMER SESSIONS—

for more than 40 years, the University has also offered both daytime and evening classes during summer months. Specific goals of the Summer

Sessions are to permit University students to accelerate their academic progress; to help teachers work toward additional or advanced degrees or toward certification during summer vacations; to permit regular engineering students to continue their studies on schedule while working in the cooperative program; for transient students from other universities who wish to work toward their degrees during the vacation; and for high school graduates who may wish to enter the University immediately after their graduation in June.

OFF-CAMPUS ACADEMIC PROGRAMS

Since 1968, The University of Akron has offered special institutes, workshops, and courses to professional groups. The University, through its academic departments, Institute for Civic Education, Department of Special Programs, Developmental Programs and its Institutes and Centers will continue to provide "outreach" programs, whenever practical.

As an urban institution of higher learning, the University clearly identifies and supports its Public Service role. Off-Campus programs have been developed throughout the calendar year.

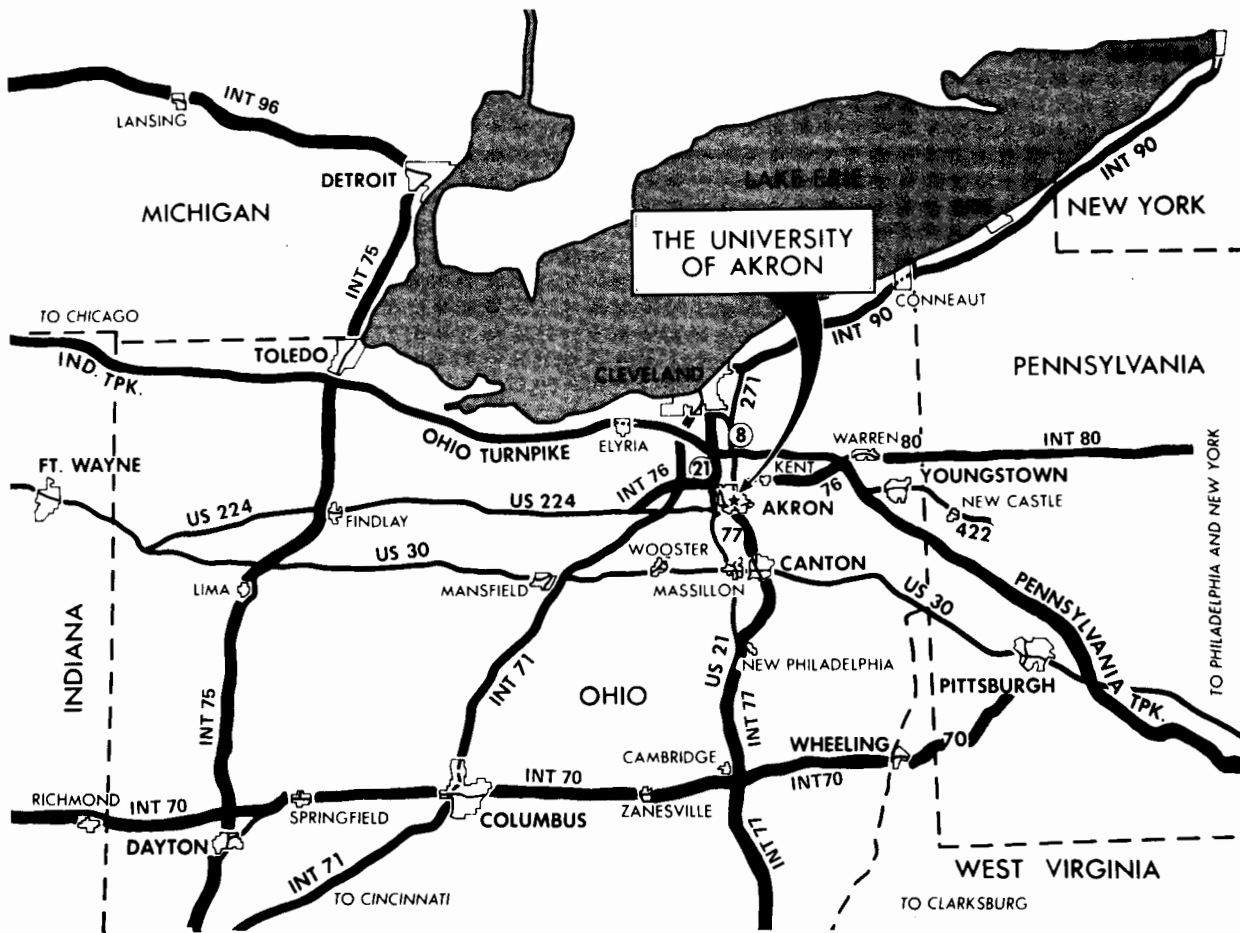
For further information, please call the office of the Executive Dean for Continuing Education and Public Services, 375-7028.

WAYNE GENERAL AND TECHNICAL COLLEGE

Opening its doors in fall, 1972, Wayne General and Technical College, in Orrville, accepted nearly 500 day and evening students working towards associate degrees and the first two years of baccalaureate instruction.

Location

Strategically located in the industrial heartland of America, and situated in the central part of a major metropolitan area, the University is uniquely qualified to help men and women seek the enlightening adventure of college education. Its location provides an easily accessible center of learning while permitting the student to examine the many vocational opportunities of a wide variety of business and industrial institutions. And, by offering fully-accredited courses throughout the year, both during daytime hours and at night, it also permits the student to work in one of the area's many industries, thus combining a collegiate education with experience.



The area surrounding The University of Akron also offers unusual cultural opportunities. Living in an area of the United States called the "culture trail", students have frequent access to plays, lectures and professional performances, either within Akron or in the surrounding area, which includes Warren and Canal Fulton with their famous summer stock theaters and the Cleveland Orchestra's summer home at Blossom Center.

How to get there

The location of The University of Akron is ideal from a traveling standpoint. Automobile travelers find Akron but 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, Interstate 80 that links the nation coast-to-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 but a short walk from the campus. And airline passengers will find Akron the terminal of limousine service from both the Cleveland-Hopkins and the Akron-Canton airports.

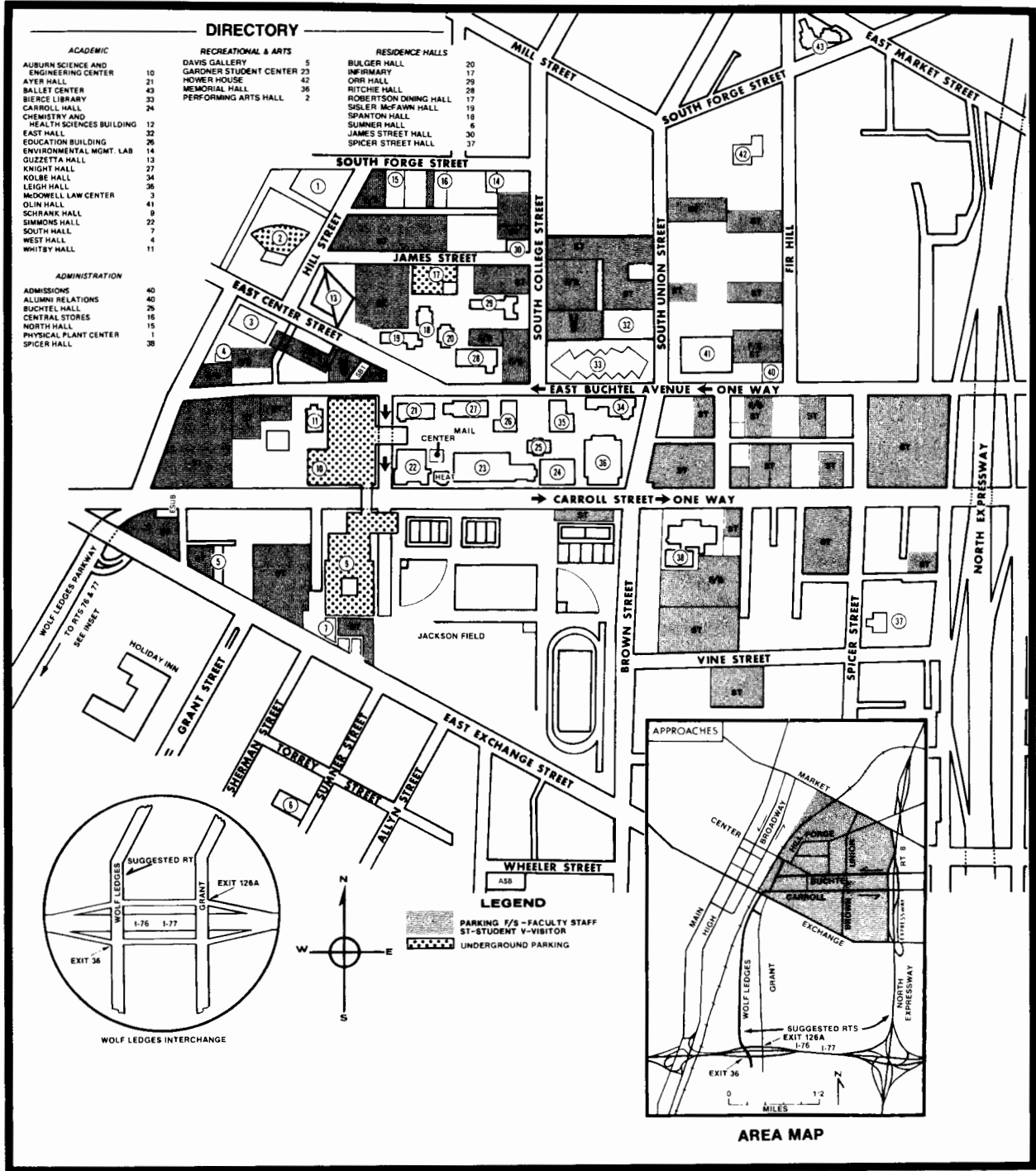
Buildings

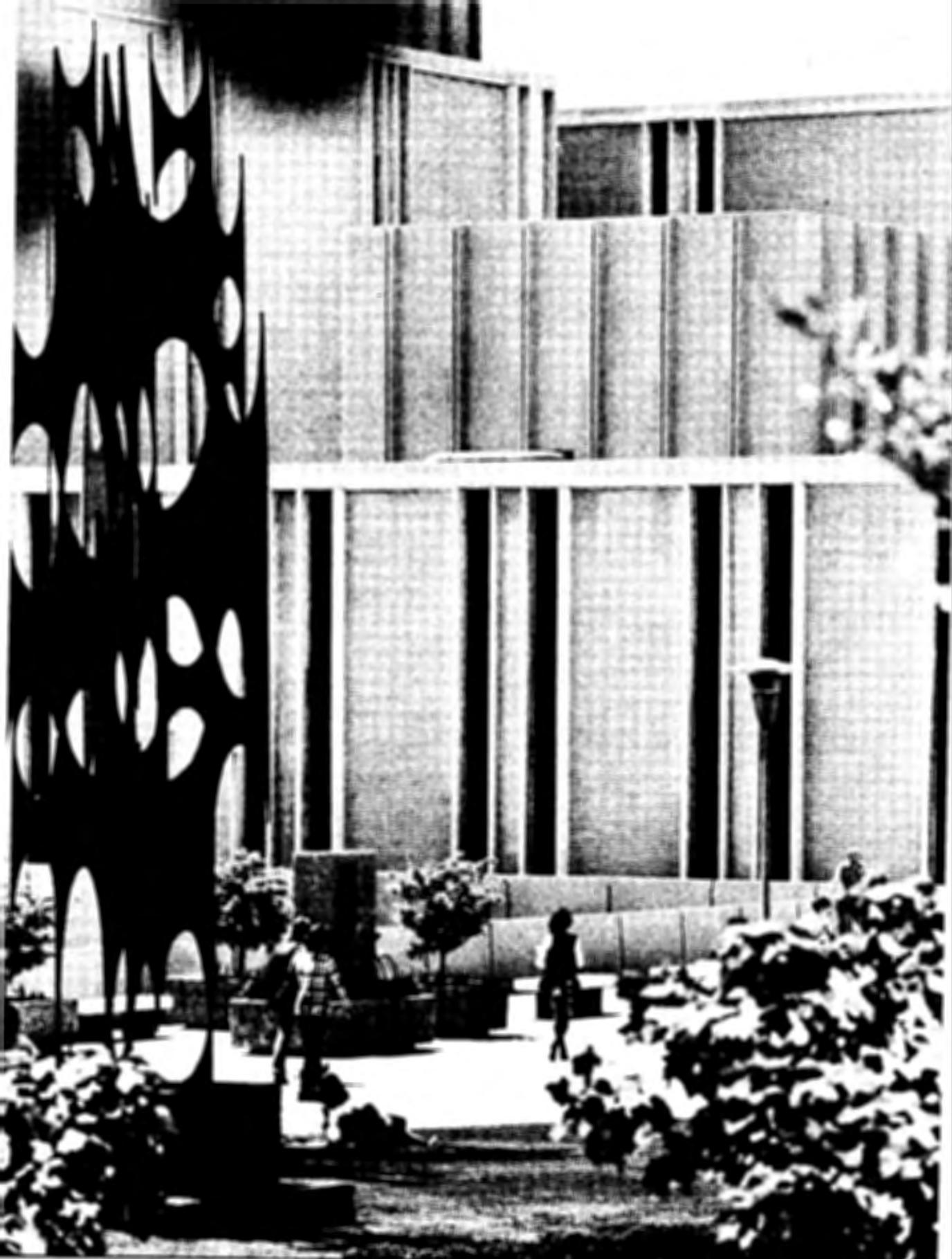
ADMISSION/ALUMNI BUILDING at the corner of Fir Hill and East Buchtel Avenue houses the offices of admissions and alumni relations.

AUBURN SCIENCE AND ENGINEERING CENTER, one of the largest academic buildings under one roof in the state of Ohio, houses the four departments and the Dean of the College of Engineering, the department of biology, the Institute of Polymer Science, and the scientific and engineering holdings of the University's library. The ground floors of the structure are devoted to vehicular parking for faculty and students.

AYER HALL provides classrooms, laboratories, and offices for the departments of mathematics and physics. Testing and Counseling Bureaus are also located here.

THE UNIVERSITY OF AKRON CAMPUS MAP





BALLET CENTER contains classrooms, laboratories, and offices for the ballet faculty and students. It also provides offices for the Chamber Ballet, the resident ballet company of the University.

BIERCE LIBRARY, the Main Division, located on the north side of Buchtel Avenue at College Street, was completed in 1973 at a cost of \$8,000,000. Holdings in the Main Division and the Science-Technology Division, located in the Auburn Science and Engineering Center, total 755,000 volumes. The Library also houses the University Archives, an audio-visual materials center, microforms, maps, government documents and materials in various other formats. The library for the Division of Rubber Chemistry, ACS, Inc., is in the Science-Technology Division; the Herman Muehlstein rare book is in the Main Library.

The subject areas housed in the Science-Technology Division include engineering, biology, chemistry, geology, mathematics, physics, polymer science and nursing.

The Law Library, described in the section on the School of Law, is not a part of Bierce Library.

BUCHTEL HALL, built in 1901, is the University's last remaining link with its predecessor, Buchtel College. Completely restored in 1973 following a major fire in 1971, it provides office space for the major administrative officials of the University.

CARROLL HALL, adjacent to the Gardner Student Center, houses classrooms, laboratories and offices for the Center for Economic Education, the College of Nursing, the department of counseling and special education, developmental programs, computer-assisted instruction, audio-visual services, electronic systems engineering, the Learning Resources Center, and the planning department.

DAVIS GALLERY provides cultural programs in the visual arts, a showcase for the artistic achievements of students and faculty, and the finest exhibitions available of professional art work.

EAST HALL includes classrooms, an experimental theatre the University's Day Care Nursery Center as well as offices for the Black Cultural Center, the Center for International Programs, and the honors program.

EDUCATION BUILDING houses the College of Education and provides general and special purpose classrooms as well as a micro-teaching facility.

FIRESTONE CONSERVATORY OF MUSIC, located on East Market Street, provides classrooms, practice rooms, and offices for ballet.

GARDNER STUDENT CENTER houses nearly eighty percent of all nonacademic activities on campus. It provides space for bowling alleys, music rooms, lounges, student activity offices and work rooms, a game and billiard room, a cafeteria, and dining facilities. Also located in the complex are the Book Store, senior placement office, student teaching office, and the student legal services office.

HOWER HOUSE, designated as an Historic Place by the National Park Service, is a 102-year-old mansion which houses the Institute for Civic Education.

KNIGHT HALL provides classrooms, laboratories, and offices for the chemistry department.

PARKE R. KOLBE HALL houses the University Theatre, the campus radio station, instructional media studios as well as classrooms and offices for the departments of geography, geology.

WARREN W. LEIGH HALL houses the entire College of Business Administration. The John S. Knight Auditorium, located at street level, is the site of many programs open to both campus and community.

C. BLAKE McDOWELL LAW CENTER houses the entire School of Law, the 120,000-volume law library, classrooms, a moot court room, seminar rooms and faculty offices.

MEMORIAL HALL, dedicated to the memory of Summit County men and women who died in World War II, is the center of men's and women's physical education activities. Providing offices for the departments of athletics and physical education as well as the Sports Information Office, it contains two large gymnasiums, a swimming pool, training rooms, and classrooms.

MUSIC, SPEECH AND THEATRE ARTS BUILDING: Complementing the Edwin J. Thomas Performing Arts Hall, this facility was constructed directly across from Thomas Hall on Hill Street. This \$4.5 million structure houses the Dean of the College of Fine and Applied Arts, and the departments of music and theatre arts.

NORTH HALL houses news service, publications, radio and television information, purchasing, duplicating services, mailing services, parking systems, and staff personnel

offices.

OLIN HALL houses the office of the Dean of the College of Arts and Sciences, the departments of modern languages, political science, history, sociology, economics, classics, English, and philosophy. In addition it provides classrooms and a language laboratory.

SCHRANK HALL provides office and classroom space for the Community and Technical College, the departments of art and home economics, and the Army and Air Force ROTC units.

SIMMONS HALL provides offices, classrooms and laboratories for the departments of psychology and the division of science and engineering. The University's computer center is also located in this building.

SOUTH HALL provides offices and classrooms for a portion of the art department.

SPICER HALL, the major student contact building, houses offices for counseling and advising, the Dean of the General College, the Dean of the Evening and Summer Sessions, special programs, and financial aids. It also includes offices for the registrar, controller, cashier, accounts payable and receivable, University auditor, state auditor, parking, and budget director.

E. J. THOMAS PERFORMING ARTS HALL, one of the most unique cultural centers in the world, is designed to accommodate concerts, opera, ballet and theatre productions.

WEST HALL, located at the corner of Grant St. and East Buchtel Avenue, houses both the Department of and the Center for Urban Studies as well as the Speech and Hearing Clinic.

WHITBY HALL, which is adjacent to the Auburn Science and Engineering Center, provides additional office and laboratory facilities for the Institute for Polymer Science.

Residence Halls

The University of Akron Residence Hall complex is located north of Buchtel Avenue, adjacent to the main campus, and within easy walking distance of downtown Akron. The complex contains five residence halls with a capacity for 1,300 students, a residence hall dining facility and a 12-bed infirmary which also serves the University as a Health Center. Ritchie, Sisler-McFawn and Orr are three-story residence halls which house approximately 120 women students each. Spanton Hall is a 10-story

residence hall housing 315 women; Bulger Hall is a 16-story residence hall housing 490 men. Additional housing for men is available in two leased facilities located two blocks south of Jackson Field. Sumner Hall houses 40 men and Torrey House, 63 men. Although leased, both facilities are operated and supervised by the University and considered part of the residence hall program. Similar housing is available for women at the Alpha Gamma Delta Sorority house located two blocks east of campus.

All of the University residence halls are fully air-conditioned and equipped with modern, built-in furniture and conveniences. Each building has its own lounges and recreational areas and is equipped with laundry facilities and storage rooms. All resident rooms are designed for double occupancy.

Gardner Student Center

The Gardner Student Center complex provides the University family and the community with a multitude of services, and is the focal point for campus relaxation and enjoyment of lectures, conferences and discussions. Within this "service center", one can find at their fingertips: Cafeteria and Dining facilities, Student Activities Offices, Student Legal Services, the Bookstore, Faculty and Student Lounges, Placement Office, Student Teaching Office and a Student Art Store. The Student Center Director's Office coordinates the Student Activities Program and, through the University Calendar Office, schedules meeting facilities and offers experienced personnel for planning conferences, workshops and large social events. In continual demand are the services of the Communication Center, which include information and referrals, Xeroxing and mimeograph service, mailing, literature distribution, sign making and ticket sales. There is also a "Hot Line" telephone available for fast, free communication with any campus office. The Game Room has bowling alleys, billiard tables, and amusement games.

Growth

Growth in size and facilities is part of the story of any dynamic institution and The University of Akron is no exception. In 1951 the student body numbered only 3,673 and the University's 13 acres of ground encompassed only 10 buildings. Since then, however, the stu-

dent body had quadrupled, reaching in the 1975 academic year, a high of more than 26,000. The campus has also grown, covering 110 acres with 51 buildings.

Nor is the end in sight. As rapidly as the need for an increasing number of educated minds has grown, the University has expanded. The Edwin J. Thomas Performing Arts Hall, a community-university \$13 million auditorium adjacent to downtown Akron to be used for symphonic concerts, opera, drama, ballet and lectures was opened in 1973. In that same year a new main Library was completed on the north side of Buchtel Avenue at College Street and the stack capacity of the Science-Technology Division in the Auburn Science and Engineering Center was doubled. A new Law Center has been completed at the corner of Center and Grant Streets as has a new Social Science and Humanities Building on Buchtel Avenue.

Thus, although situated on valuable land within easy walking distance from the heart of Akron's downtown business district, The University of Akron continues to grow. New buildings, modern equipment, expanding campus area, adequate parking facilities, comfortable residence halls and many other necessities of modern education are rapidly being added to provide the students of today and tomorrow with all the facilities required to meet the University's continuing high standards of excellence as an institution of higher learning.

Teaching Aids and Facilities

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 teaching technological aids makes most learning situations more effective and efficient. Concern for student learning, in keeping with these facts, resulted in the establishment, in 1967, of the Office of Instructional Media—a major step toward the creation of The University of Akron's Learning Resource Center. The Office of Instructional Media incorporates the departments of Audio-Visual Services, Electronic Systems Engineering, and the Instructional Television Center.

AUDIO-VISUAL SERVICES dates back to 1945 when the first centralized collection of instructional materials (filmstrips, slides, etc.) was

purchased for the purpose of supplementing several University professors' lectures. This new service was eagerly accepted and in 1961 the scope of audio-visual services was greatly expanded. An extensive collection of moveable media hardware and mediated software is housed in the Audio-Visual Services 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 was brought under the Instructional Media Department's direction in 1972 to compliment 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. In addition, the Electronic Systems Engineering operates the Instructional Media Distribution Center which transmits video tapes and audio taped lectures as well as remedial and enrichment materials. The Center transmits via 24 video channels and 15 audio channels to most classroom buildings on the University campus.

THE INSTRUCTIONAL TELEVISION CENTER, which was made operational in 1960, functions as an effective teaching tool through continuous production of lectures originating from the University's Instructional Television Center and are transmitted via co-axial cables to campus classrooms 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-to-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 program and produce learning and information materials for Northeastern Educational Television of Ohio, Inc. (NETO) via Channels 45 and 49.

WAUP-FM AND THE RADIO WORKSHOP are integral parts of the Department of Speech and Theatre Arts. Students gain invaluable experience in mass media by writing, producing, and presenting programs over the University's radio station WAUP-FM. Active

participation in the Radio Workshop is open to all qualified students and many professional careers have begun in these radio-television studios.

THE STRUCTURES, MATERIALS, AND MECHANICS LABORATORY, one of the modernly-equipped facilities of the Department of Civil Engineering, provides training for students interested in structures, foundation engineering, and structural, solid, fluid and soil mechanics.

The Laboratory, equipped with an Elec-To-Matic torsion testing machine and Universal hydraulic testing machines, is used by undergraduate and graduate students and also by faculty members for studies and research.

Faculty and students also have access to hardness testers, an electronically-controlled MTS closed-loop materials testing system, a seven-channel, six-speed tape recorder, strain gage indicators and vibration systems.

Additional equipment includes a complete soil mechanics laboratory, an hydraulic demonstration channel, a modern moisture room, a loading platform, load cells, hydraulic jacks and items for general use.

THE SPEECH AND HEARING CLINIC, of the Department of Speech Pathology and Audiology functions as both a service and a practicum training component of the traditional academic program of training-service-research. The clients served in the Clinic provide the practicum experience needed by student clinicians in training, while receiving badly 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 COMPUTER CENTER at The University of Akron provides: (a) the computational support to those academic efforts of research and instruction where such support is feasible, and (b) the administrative data pro-

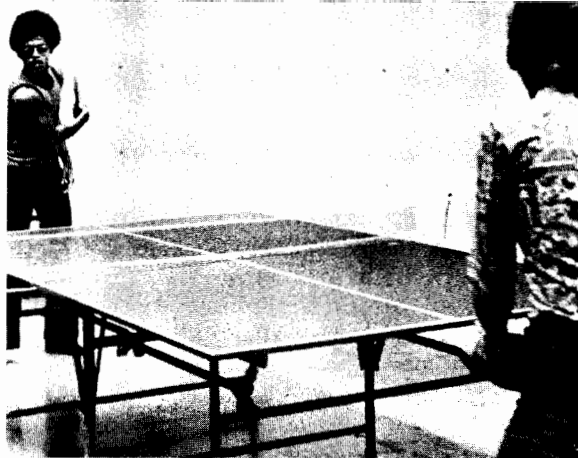
cessing to assist in the conduct of the business of the University.

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

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

The Center is equipped with an IBM 370 model 158 computer with magnetic tapes, disks, remote terminals, and a wide variety of peripheral equipment. An OpScan 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, COURSEWRITER, SIMSCRIPT, etc. An extensive library of computer programs covers a wide range of disciplines for research and instructional support. Digital plotting can be provided by high-speed printer or by line drawings from a thirty-inch CalComp 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. Keypunches, sorters, and various off-line equipment are available for general use by qualified faculty and students.





II. The University of Akron Student Activities and Services

Extracurricular Activities

Students today are concerned about their environment — in the University, in the community, and in the world. Through participation in selected extracurricular activities, a student can extend his classroom experiences into relevant programs which will provide him a participatory role in the areas of his interests. A voice in the governance and direction of his University environment can be expressed through such groups as Associated Student Government, Residence Hall Council, program boards of the Residence Halls and the Student Center, Associated Women Students, Black United Students, Interfraternity Council and Panhellenic Council. A student might contribute through the communications media which include the *Buchtelite*

(University student newspaper), the *TelBuch* (University yearbook) and the television and radio networks, one of which is the University FM station.

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

Currently the Extracurricular Activities subcommittee of the Student Affairs Committee, made up of four faculty members, ten students, and two administrators serves to recommend University recognition to student groups. It also makes recommendations regarding the allocation of monies from the Extracurricular Activities Fund. Students interested in forming a group must prepare a constitution and charter to be considered for University recognition. Each student group has a faculty adviser who is recommended by the student members and appointed by the President of the University.

The Extracurricular Activities Fund is a portion of the General Service Fee which the University has made available to those campus groups which program for the total campus community. As a result, a student by showing his ID card may attend athletic, musical, ballet and theatrical events, hear nationally known speakers and receive campus publications with little or no additional charge.

Musical Activities

There are many campus musical groups which perform for the large University functions and also present instrumental and vocal concerts and recitals.

Students may audition for membership in the marching or symphonic bands, the orchestra, or the brass, woodwind, percussion, or string ensembles, if they have talent in playing a musical instrument.

Vocalists may apply for membership in the Opera Workshop, Choral Ensemble, and, with the University Singers or the Evening Chorus,

may perform in the choral concerts of the Akron Symphony Orchestra.

About 400 recitals by individual music students and faculty members are presented each year.

Students with musical ability will find a wide variety of instruments including a three-manual classic-style Moller organ, a Neupert harpsichord, and a concert-style harp owned by the University and offered to students for use in the instrumental groups or as adjuncts of private or group instrumental lessons.

Many off-campus groups avail themselves of the musically trained students and during the course of an academic year, about 75 performances will be presented by instrumental ensembles or singing groups.

Private lessons are offered to University non-music majors and also to non-campus musicians with payments through the conventional quarter arrangement as used for other courses of instruction. Such services are possible whenever the schedule of faculty time can provide for them after meeting first the obligation to music majors and minors.

Performing Arts

University students have ample opportunity to develop their abilities to face the public and talk "on their feet" - either to "live" audiences in plays, discussions or debates or to the unseen audiences who tune them in on radio or TV.

The center of dramatic activities is the University Theatre. This intimate proscenium stage is located in Kolbe Hall, which was built in 1955 and named in honor of a former President, Dr. Parke R. Kolbe. Facilities are of the finest for both the on-stage actor and the backstage technician.

Each year, five or more University Theatre productions are presented. Students enrolled in all Colleges of the University are encouraged to attend open tryouts for acting roles or technical theatre positions.

There are outlets for those who aspire to write, produce or act in experimental theatre, also. A series of one-act plays is presented annually with student directors, actors and crews. In addition to these productions, the Experimental Theatre Company of the Theatre Guild (student theatrical organization) mounts a number of productions, many of which are original conceptions. Here, the student has an opportunity to "do his own thing" - to try things that are theatrically innovative.

Forensic and debate teams compete with other universities in an active Forensic program.

For those who want to gain valuable experience in the mass media, the University has complete facilities for telecasting and broadcasting. It is in the University Television Studio that all closed circuit television lectures originate. The Radio Workshop presents daily programs which are broadcast to the public over WAUP, the University's independent FM station, and WRHA, which broadcasts directly to the residence halls and through Akron Cablevision to the community.

The newest of the University's performing arts concentrations is the academic program in Ballet, which gained its impetus from the Ohio Chamber Ballet, the University's highly acclaimed resident ballet company.

Student Publications

THE BUCHELITE . . . a newspaper with two issues a week during the academic year. This is the campus "voice" with news, columns, and photographs describing campus events. It is published on regular newsprint, distributed to students free of charge on newsstands located in various spots on campus. A staff of about 50 students works on this publication.

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

NITE-LIFE . . . a monthly publication with news of interest to students in the Evening College. Each year there are 10 issues. This, too, is distributed free to students on campus newsstands.

YAWP . . . a literary magazine, published twice a year by student editors who seek expression through creative writing and art work.

Sports Activities

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

A wide variety of intramurals ranging from flag football to tennis are offered. On the inter-

collegiate level the University provides 11 men's varsity sports (football, soccer, cross country, basketball, wrestling, swimming, riflery, track, baseball, golf and tennis) and two women's varsity sports (volleyball and basketball). On a club basis students may also participate in skiing, bowling, karate and skydiving, and women's softball and tennis. Over 400 students participate annually in intercollegiate sports and thousands benefit from competition on the intramural level.

Such a comprehensive athletic program must be accompanied by the necessary facilities to accommodate it. The hub of the current athletic facilities is Memorial Hall. Included in the building are two gymnasiums and a five-lane heated swimming pool. The main gymnasium, seating 3,200 is the home of both the men and women's varsity basketball teams. Adjacent to Memorial Hall is Lee Jackson Field, a 24-acre sports complex that includes an 8-lane all-weather track, a soccer field, a baseball and two softball diamonds, a basketball court and 12 tennis courts.

Three miles from the main campus sits the Rubber Bowl, the University's renovated, multi-purpose 35,000 seat stadium and an AstroTurf-covered field. Besides being the site for University intercollegiate football and soccer games, the stadium also serves as a playing field for Akron area high school football teams.

All varsity athletic sports are under the control of the Director of Athletics (offices in Memorial Hall) and the Faculty Committee on Athletics. This group sets the rules for awards, honors and appointments. Students desiring information about eligibility to participate in varsity athletics should consult the Registrar.

Social Organizations

While in college a student learns much about himself as an individual. One of the best ways to learn who he is can be gained through group membership. There are 10 national sororities for women and 13 national fraternities and one local fraternity for men on the University campus. Although these are University-supervised, the selection of membership and government of each organization is the responsibility of each individual group in accordance with the rules of the Panhellenic Council, the Interfraternity Council, and the University.

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

Although most sororities have limited residence facilities in their houses, one new group now accommodates 52 women students. All fraternities have housing for men. Appointment of a housemother is by the organization itself.

Fraternal organizations contribute to the campus color of the University, conducting a "Greek Week", and competitive events such as the Interfraternity-Panhellenic Songfest.

Many students find the social programs of the Residence Halls and the Student Center as their channel for co-ed activities.

Black United Students have organized a group of men and women students who assist in the recruitment, orientation and adjustment of black students. BUS is the group which presents the Black History Week and other cultural programs for the benefit of all University students.

In the A-Book are listed the recognized student groups which cover all facets of extracurricular activities, including the honor societies, professional fraternities, departmental organizations, and military groups. The national senior men and women's honor societies are Omicron Delta Kappa and Mortar Board.

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. The facilities which help to accomplish this objective include:

COUNSELING AND ADVISING

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

Academic counseling helps the student adjust to the requirements of the curriculum and to utilize course offerings that will better prepare him for his future. Sensible credit hour loads,

proper choice of subjects, scholastic achievement, study habits, outside work loads and other circumstances having an effect on successful work are all matters for concern in this kind of counseling.

Personal counseling is that which aids the student when problems of a personal nature are obstructing his academic career or his personal life.

TESTING AND COUNSELING BUREAU

The Testing and Counseling Bureau provides psychological testing and professional counseling, without charge, to all students enrolled for credit at The University of Akron.

Counseling Service. The Bureau's Counseling Service offers assistance:

(1) in identifying one's interests, aptitudes and needs for consideration in the choice of an educational or vocational goal, (2) in dealing with personal or social problems which deter one from deriving the maximum benefit from the university experience, and (3) in strengthening one's reading and study skills.

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

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

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

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

PLACEMENT OFFICE

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

For graduating students opportunities are provided for interviews with on-campus repre-

sentatives of prominent businesses, industries and branches of government, including the military services and education at the primary, elementary, and secondary levels. Information of careers in both administration or teaching at the college and university level is available.

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

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

FINANCIAL AIDS

A detailed statement regarding all of the aspects of the Financial Aids Office, a Division of Student Services, appears in Chapter III of the *Bulletin*. Part-time employment is another responsibility of the Financial Aids Office, and many part-time job opportunities are listed in the Financial Aids Office, which is located in Spicer Hall.

It is the responsibility of each student who holds a job while attending the University to report to his Dean and to the Office of Counseling and Advising, the number of hours he is employed. Whenever there are significant changes made in the number of hours of employment, the student is expected to keep the information up-to-date in the Dean's office.

Vocational guidance and information are available to all students throughout their college careers through the counselors in the Office of Counseling and Advising, the Testing and Counseling Bureau, and in the Placement office.

RESIDENCE HALLS

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

Residence Halls at The University of Akron house 1,300 students. The double occupancy room accommodations have ample space for books and clothing. The furniture and decor are attractive and modern. Sun bathing areas and outdoor recreation areas are available for all residents. A full schedule of student-planned activities is provided, although each student's in-

dividual involvement and contribution is essential to the success of these programs.

All unmarried, undergraduate students under 20 years of age are required to live with their parents, legal guardian, relatives or in University-approved housing. Undergraduate students 20 years of age, but not yet 21 years of age, with permission of their parents or legal guardian, may live in housing of their choice.

For the annual rate of \$1,398 per year (\$466 per quarter), the student receives housing accommodations and 20 meals per week.

STUDENT HEALTH SERVICE

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

Increased numbers of University students have brought about the expanded Health Service facilities immediately adjacent to the Residence Halls. First aid services are available in the Health Services, and an infirmary area is provided for 12 in-patients, with facilities for Residence Hall students not requiring hospital treatment.

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

Residence Hall students receive bed care for up to 72 hours, without charge. Those students receiving bed care for a greater period of time than 72 hours will be charged the daily rate which is currently charged by local hospitals for similar services.

The student who becomes seriously ill or suffers a serious injury on campus should be taken to an emergency ward of one of the local hospitals without delay. Whoever is present should call Security or an ambulance immediately in this kind of an emergency situation. The University assumes no legal responsibility or obligation for the expenses of such transportation or for medical services at the hospital.

Student health and accident insurance designed specifically for students of The University of Akron is required of all residence hall students and all international students except those who present proof that they already have similar coverage. Other day students carrying nine or

more credits may purchase this insurance at the same annual individual rate of \$41.00. The student insurance provides coverage for such items as hospitalization, surgical benefits, and in-hospital medical benefits.

STUDENT LEGAL PROGRAMS

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

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

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

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

Religious Guidance

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

The campus ministers see the Church as assisting the university in shaping values, in creating awareness of self-identity, and in providing technological and economic preparedness. To this end, the campus ministry team carries out a number of programs: lectures, workshops, discussions, weekend encounters, and social action projects.

The campus ministry staff is ecumenical, and includes: the Reverend Barrie F. Bodden, Father Thomas R. Dunphy, Sister Eileen Kazmierowicz, and Sister Laura Marie Kuhns. Offices for the staff are located in the Newman Center at 143 South Union Street. (Phone: 762-8823).

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

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

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



III.

The University of Akron Admissions, Requirements, Procedures, and Cost

Type of Students

A University with an enrollment of 22,017, The University of Akron has several classifications of students, each seeking an education according to his own needs and abilities. Classifications include:

UNDERGRADUATE — One who has not earned a Baccalaureate degree and is eligible to enroll in undergraduate level credit courses.

POSTBACCALAUREATE — One who holds a 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. Postbaccalaureate students apply for admission to the undergraduate college (Arts and Sciences, Education, etc.) in which they wish to earn undergraduate credit.

GRADUATE — One who holds a Baccalaureate degree from an accredited institution, has been admitted to the Graduate School, and is eligible to enroll in graduate level credit courses.

PROFESSIONAL — One who holds a Baccalaureate degree from an accredited institution, and has been admitted to the School of Law.

SPECIAL STUDENT — One who does not meet the Admissions requirements but is admitted by petitioning the Dean concerned for permission to take courses for which he is qualified by certain abilities or maturity. A special student may not take more than 15 credits unless he gains official transfer to the status of a regular student.

AUDITOR — One who enrolls in a course with the intention of not obtaining a quality point value grade (A, B, C, D, F) or a grade of NC or CR. A student must indicate that he is an auditor at the time of registration. Audit status may be denied if space is not available. An audi-

tor is expected to do all prescribed course work except the writing of examination.

TRANSIENT — *From another institution* — One who is regularly enrolled and eligible to continue at another institution, and who desires to enroll at The University of Akron for specified courses. Undergraduate transient students apply directly to the Admissions Office. Graduate students apply through the office of the Dean of the Graduate School.

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

From the University of Akron — A student enrolled at The University of Akron must obtain written permission of the Dean of his college before enrolling (transient student status) for credit work at any other institution. Credit for such work may be granted at the discretion of the Dean of his college.

Entrance Requirements

RECOMMENDED HIGH SCHOOL COURSES

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

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

Additional subject recommendations for students planning to major in:

- Engineering, Science and Pre-Professional
 - 1 1/2 units of high school algebra
 - 1 unit of geometry
 - 1/2 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.

A prospective student who has been graduated from a regionally accredited Ohio secondary school and takes one of the college entrance tests is eligible to enroll. An applicant may submit scores from either the American College Testing Program (ACT) or from the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board. Out-of-state applicants

who meet the above requirements may be admitted upon the basis of the quality of their secondary school work and their standing in the entrance tests.

Students applying for admission who have formerly attended other institutions of higher learning are eligible to transfer to the University if they present satisfactory scholastic records as judged by The University of Akron officials and if the students are eligible to re-enter the institution from which they desire to transfer. Students under 25 years of age who present fewer than 12 quarter credits or their equivalent of accredited transfer work must submit a high school transcript or G.E.D. scores. Students under 21 years of age with fewer than 12 transfer credits must submit results from the ACT or SAT test in addition to a high school transcript and G.E.D. scores. If it appears necessary to validate the transfer credits of students with more than 12 quarter credits, the appropriate admitting officer may require the ACT battery for these persons also.

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

Admission Procedure

1. Obtain an Application Form from the Admissions Office. If your request is by mail, use this address: ADMISSIONS OFFICE, The University of Akron, Akron, Ohio 44325. Fill it out and return as soon as possible with the non-refundable Application Fee.

2. At the time of your application ask an official of your high school to send your transcript to the Admissions Office. This record of your secondary school standing must be received and evaluated before any admission action can be taken by the University. Students over 25 years of age are not required to submit high school transcripts.

3. Take Entrance Tests. You can make arrangements through your local high school to take the ACT or SAT. (The University of Akron's Testing and Counseling Bureau serves as a testing center for both of these nationally recognized tests.) These test scores are needed before an applicant is formally admitted to the University. Students over 21 are not required to submit test scores.

4. If you are a transfer applicant, request registrars of all institutions previously attended to send complete and official transcripts to the Admissions Office. If you have completed less than 12 credits of course work at other institu-

tions and are under 21 years of age you must also submit the results of either the ACT or SAT. If you are under 25 years of age and have completed less than 12 credits of course work at other institutions you must submit a copy of your high school transcript. These documents must be received and evaluated before any admission action can be taken by the University.

5. A Health Record will be sent from the Admissions Office after you have been admitted. Take it to your family physician and after he has filled it out, return the form to the University.

6. In your letter of admission to the University, you will receive directions as to academic counseling. General College freshmen and some sophomore day students receive academic advisement through the Counseling and Advising Division of the Office of Student Services. Evening students at the same level will be advised by the Evening College. Students in the Community and Technical College or at the upper college level will be advised by a faculty member in the appropriate department.

(All checks should be made payable to: The University of Akron, and should specify what fees and for *which student* payment is being made.)

International Student Program

The University of Akron welcomes qualified students from other lands and seeks to make their educational experiences pleasant and meaningful. During the 1976-77 academic year approximately 360 students with citizenship other than the United States attended the University. These students represent 64 countries and are pursuing studies in 51 major fields.

The international student is requested to transmit a letter from an appropriate governmental or bank official showing that he has sufficient funds to cover the cost of his education while attending The University of Akron and that these funds will be available to him in this country.

ADMISSION PROCEDURES

Acceptance as a new applicant from abroad will be made only for enrollment in September,

the beginning of the academic year. All admission requirements must be completed by July 1 preceding the September in which the student desires to enroll.

In addition to those records mentioned under "Admission Procedures" for all students, two additional documents are required of the international student:

1. Proof of English language proficiency. The University of Akron requires all students for whom English is not the native language to participate in the Test of English as a Foreign Language (TOEFL). This test is administered throughout the world in major cities. Applications may be obtained from bi-national agencies, U.S.I.S. offices, or by applying directly to Educational Testing Service, Princeton, New Jersey 08540. Because it normally takes 4 to 6 weeks for

the University to receive the results of the TOEFL, students are encouraged to take the examination in October or January. The University cannot guarantee the student who takes the examination in March that his records will be processed completely before the July 1 deadline.

2. Proof of adequate financial support. It is estimated that the international student will need a minimum of \$4,000 per year for undergraduate and graduate study for his tuition and living expenses while attending The University of Akron. Immigration regulations prevent the student from earning any substantial portion of this amount. There are virtually no scholarships available to undergraduates from abroad. Graduate students may request and often receive financial aid through fellowships and graduate assistantship. The graduate student who is interested in applying for this aid should request the necessary forms at the time he applies for admission.

ORIENTATION

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

ENGLISH LANGUAGE INSTITUTE

The University of Akron offers an intensive English Language Institute for international students whose command of the English Language has not reached a level of proficiency to enable them to begin full-time course work. The English Language Institute operates on a schedule of three 10 week quarters and a summer session. Applicants are required to pass a language proficiency test before they can be admitted as degree seeking university students for full-time course work.

SPECIAL NOTE

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

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

SPECIAL INTERNATIONAL EDUCATION PROGRAMS

In 1975 The University of Akron sent students to South America as part of its continuing program "Classrooms Around the World". This program, offered for graduate or undergraduate credit, was the fifteenth such trip.

Procedures and Requirements

ORIENTATION

The first major contact a new student has with the University after having been admitted comes during an Orientation period held prior to the beginning of each quarter. During Orientation, new students learn a great deal about the University and about what it expects from students. They meet many of the University's administrative officers and faculty members and discuss their problems and questions with upper college students. In this way, new students have

an opportunity to become acquainted with their chosen University and clear up many of the questions that arise when embarking on a new enterprise.

COUNSELING

During Orientation, and each quarter thereafter, each student sits down with a counselor to discuss his progress to date and the next logical steps toward completion of his academic program. During that session, the counselor and

student together review the areas of success and of problems that the student has encountered in previous quarters and determine what courses the student's academic record calls for in future quarters. During that session the two then work out a list of courses to be taken during the following quarter.

REGISTRATION

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

The student may elect to register by mail or in person. Details relative to each of these options is described in the Schedule of Classes published every academic period and available upon request from the student's advising agency: Office of Student Services, Evening College or Upper College. A non-refundable late Registration Fee is assessed registrants enrolling after the official Open Registration Week.

ATTENDANCE

Each student is expected to attend all class meetings for which he is registered. A student may be dropped from a course by his Dean if he is repeatedly absent and the instructor recommends this action; said student can gain readmission only with permission of the instructor and his Dean.

MODIFICATION OF STUDENT SCHEDULES

A student must register for a course before the end of the first week of the quarter. A student may alter the schedule of courses for which he is registered only with the permission of his Dean or Dean's designate.

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

WITHDRAWAL

A student may withdraw from a course for any reason up to the mid-point of a quarter or summer session (the end of the fifth week of a quarter and the equivalent point of a summer session) with the signature of his/her advisor.

After midpoint of a quarter or a summer session, a student must have the written approval of both his or her instructor and advisor to withdraw. Such approval must be dated and signed by the instructor and adviser and turned in to the Registrar prior to the last week of classes. Should either refuse to sign the withdrawal form, the student may appeal to the Dean of his College, who shall make the final decision. This requirement need not be met when the student is requesting complete withdrawal from the University.

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

A student may be dropped from a course by his/her Dean if the student is repeatedly absent 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 quality-point ratio calculations are made.

TRANSFER CREDIT

Course work taken at an institution of higher education in the United States of America which:

- (1) is fully accredited by an appropriate regional accrediting association, or
- (2) is not fully accredited by an appropriate regional accrediting association but which has an "A", "B", "C", or "I" listing in the *Report of Credit Given*, the American Association Collegiate Registrars and Admissions Officers (AACRAO).

will be listed on The University of Akron official academic record. Each course will reflect the course number, title, grade, and credit value; no quality point value will appear on the record and no grade point average will be calculated for the course work listed. In addition, the name of the institution will be listed on The University of Akron official academic record as well as the time period during which the courses were taken.

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

granting college. The Dean of the General College will specify which courses listed will apply toward the General Studies requirements when the student enters the University.

For courses which have been taken at an institution which has a "B", "C", or "I" listing in the AACRAO *Report of Credit Given*, 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 24 credits of designated course work at The University of Akron with a grade point average of 2.000 or better.

TRANSIENT STUDENT

A University of Akron student may take course work 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 he is enrolled; for General Studies courses, prior written permission must be obtained from the Dean of the General College. These courses will be listed on The University of Akron official academic record. Each course will reflect the course number, title, grade and credit value; no quality point value will appear on the record and no grade point average will be calculated for the course work listed. The name of the institution will be listed on The University of Akron official academic record as well as the date that the course work was taken.

CREDIT BY EXAMINATION

A student interested in earning credits by special examination may do so with the permission of the Dean of his college and the Dean of the college in which a particular course is offered and by payment of the Special Examination Fee of \$8.00 per credit. The grade obtained in such an examination is recorded on the student's permanent academic record. Credit by examination is not permitted in the quarter before graduation.

CREDIT/NON-CREDIT OPTION (UNDERGRADUATE AND POST- BACCALAUREATE ONLY)

1. Students who take a course on a "Credit" or "Non-Credit" (CR/NC) basis, and who earn a grade equivalent to A, B, or C, shall receive credit (CR) for the course and have the grade, CR, placed on their permanent record; a grade equivalent to D or F will be recorded with the Non-Credit grade, NC.

2. Students who have completed 50% of the number of credits required for a degree with a G.P.A. of at least 2.3, shall be allowed, with the consent of their adviser, to take one free-elective* course per quarter on a CR/NC basis.

3. 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, and regardless of the G.P.A.

4. No more than 24 credits of non-language courses and no more than 30 credits in total, including language courses, may be taken on a CR/NC basis. (For an associate degree, half this number is permitted).

5. The election to take a course on a CR/NC basis can be made *only* at the time of registration for that course. Students who elect to take a course on a CR/NC basis cannot withdraw and register to take that course for a letter grade after the first week of that quarter. The Registrar will notify the instructor by means of the final class list of those students who have elected to utilize the CR/NC option.

6. 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 permanent record.

7. A student may repeat a course for Credit (CR), or a quality point grade (A, B, C, D, F) after receiving a grade of NC.

8. 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.

9. Students taking the course on non-credit basis are 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:

- (1) In order to secure a quality point value grade (A, B, C, D, F) or a grade of NC, CR or AUDIT, the student may repeat a course in which he previously received

*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 grade of D, F, AUDIT or NC. Registrations under the CR/NC option are subject to the restrictions in the CR/NC policy.

- (2) The student must repeat the same course within 12 months of the completion of the prior attempt unless given special permission by the student's Dean to extend this period or substitute another course if the previous course is no longer offered. Such course must be repeated at The University of Akron.
- (3) Grades for all attempts at a course will appear on the student's official academic record.
- (4) Only the grade for the last attempt will be used in the grade point average.
- (5) All grades for attempts at a course will be used in grade point calculation for the purpose of determining graduation with honors and the student's class standing.
- (6) 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 (which is fully accredited by an appropriate regional accrediting association or which has an 'A' listing in the Report of Credit Given, the American Association of Collegiate Registrars and Admissions Officers) for at least three calendar years and enrolls at The University of Akron and maintains a grade point average of 2.5 or better for his first 36 credits may petition his Dean to delete from his grade point average the grades of his previous enrollment at The University of Akron. If the student qualifies, all previous grades will be deleted from the grade point average up to the maximum allowed.

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

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

In the determination of graduation with honors and in the determination of the student's

class standing, all grades obtained at The University of Akron shall be used in the calculations.

DISCIPLINE

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

GRADES AND THE GRADING SYSTEM

Students at the University receive grades on various types of classroom performance during the progress of most courses and a final grade at the end of the quarter. At the end of the quarter, the Registrar's office mails the quarter grade reports to student's home addresses.

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

This method of recording grades is explained as follows:

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

The following grades may also appear on the quarter grade reports or on the permanent record; there are no quality points associated with these grades.

- I - Incomplete: Means that the student has done passing work in the course but that some part of the work is, for good and acceptable reason, not complete at the end of the term. Failure to make up the omitted work satisfactorily by the end of the following quarter, not including summer sessions, converts the "I" to an "F". When the work is satisfactorily completed within the allotted time the "I" is converted to whatever grade the student has earned.*
- IP - In Progress: Means that the student has not completed the scheduled course work during the quarter because the nature of the course does not permit completion within a single quarter, such as work toward a thesis.
- PI - Permanent Incomplete: The student's Instructor and the Instructor's Dean may for special reason authorize the change of an Incomplete (I) to a Permanent Incomplete (PI).
- W - Withdraw: Indicates that the student registered for the course but withdrew officially sometime after the second week of the term.
- NGR - No Grade Reported: Indicates that, at the time grades were processed for the present issue of the record, no grade had been reported by the Instructor.
- INV - Invalid: Indicates the grade reported by the Instructor for the course was improperly noted and thus unacceptable for proper processing.

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

IMPORTANCE OF GRADES

1. A student becomes either eligible or ineligible to remain at the University, according to the quality point value of each grade for each course which he has completed.

2. The student who maintains specified levels of scholastic achievement receives privileges to participate in extra-curricular activities.

3. On the basis of grades, students receive opportunities to take additional courses which will accelerate their academic progress.

4. A student must maintain a quality point average of at least 2.0 (C) and complete approximately 45 credits to be eligible to be transferred to an upper college from the General College. His acceptance is dependent on the approval of the Dean of the upper college which he has chosen to enter and on his academic performance to date.

5. To receive a degree, each student must have attained a quality point average of at least 2.0 for all work taken at The University of Akron.

6. High grades are essential for persons to go on into graduate work.

PROBATION, DISMISSAL

A student who fails to maintain a quality point average of 2.0 (C) is placed on academic probation and may be subject to a change of courses, suspension or some other form of discipline. Academic discipline is determined by the Dean of the college in which the student is enrolled. Reinstatement of a student is determined by the Dean of the college from which he was dismissed.

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

GRADUATION WITH HONORS

If he has earned 90 or more credits at the University, a student receiving his initial baccalaureate degree will be graduated "summa cum laude" if he has an overall quality point average of 3.75 or higher; he will be graduated "magna cum laude" if his overall average is between 3.50 and 3.74; and "cum laude" if it is between 3.25 (B plus) and 3.49.

Students receiving the first two-year associate degree who have earned a quality point ratio of 3.25 or higher for all work taken and who have a minimum of 45 credits at The University of Akron are honored at graduation with the designation, *with distinction*.

REQUIREMENTS FOR BACCALAUREATE AND ASSOCIATE DEGREES

A candidate for the Baccalaureate or the Associate degree must:

1. File an application for graduation with the Registrar

a. For June Commencement, on or before January 15.

b. For December Commencement, on or before July 15.

2. Earn a minimum 2.000 grade point average as computed by the Registrar for work attempted at The University of Akron consistent with the REPEATING COURSES policy.

3. Earn the minimum grade point average specified in the CREDIT AND GRADE POINT REQUIREMENTS FOR GRADUATION TABLE as computed by the appropriate college and/or major department for work attempted in the major field at The University of Akron consistent with REPEATING COURSES policy.

4. 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.

5. Be approved for graduation by the appropriate college faculty, University Council and Board of Trustees.

6. 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.

7. Earn the last 48 credits in the baccalaureate degree total or 24 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.

8. If a student who has transferred from another institution wishes to present for his ma-

for fewer than 20 credits earned at The University of Akron he must have the written permission of both his Dean and head of the department concerned.

9. Discharge all other individual obligations to The University of Akron.

REQUIREMENTS FOR ADDITIONAL BACCALAUREATE AND ASSOCIATE DEGREES.

1. Meet all the requirements given in the section *Requirements for Baccalaureate and Associate Degrees*.

2. Earn a minimum of
 a. 48 credits which have not counted toward the first baccalaureate degree.

b. 24 credits which have not counted toward the first associate degree.

3. Earn the above credits in residence.

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 im-

mediately with respect to each student who subsequently enters the University, whatever the date of his matriculation.

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

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

2. Deleting courses.

3. Amending courses by increasing or decreasing the credits of specific courses, or by varying the content of specific courses.

4. Offering substitute courses in the same or in cognate fields.

The Dean of a College, in consultation with the Department or Division Head of the student's major field of study, may grant waivers in writing, in the event a change in rules affecting degree requirements operates with undue hardship upon a student enrolled before the change was effective. The action of the Dean of the College in granting or refusing a waiver must be reviewed by the Vice President for Academic Affairs 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 QUALITY POINT REQUIREMENTS FOR GRADUATION

<i>College</i>	<i>Degrees Granted</i>	<i>Minimum Quarter Credits</i>	<i>Minimum Qual. Pt. Average Required</i>	
Arts and Sciences	Humanities:	Bachelor of Arts	192	2.0
	Social Sciences:	Bachelor of Arts	192	2.0
		Bachelor of Science in Labor Economics	192	2.0
	Natural Sciences:	Bachelor of Arts	192	2.0
		Bachelor of Science	192	2.0
		Bachelor of Science in Medical Technology	192	2.0
Engineering	Bachelor of Science in Engineering	204	2.0	
	Bachelor of Science in Chemical Engineering	204	2.0	
	Bachelor of Science in Civil Engineering	201-202	2.0	
	Bachelor of Science in Electrical Engineering	204	2.0	
	Bachelor of Science in Mechanical Engineering	204	2.0	
	Bachelor of Construction Technology	204	2.0	
Education	Bachelor of Arts in Education	192	2.0*	
	Bachelor of Science in Education	192	2.0*	
Business Administration	Bachelor of Science in Business Administration	192	2.0	
	Bachelor of Science in Industrial Management	192	2.0	
	Bachelor of Science in Accounting	192	2.0	
College of Fine and Applied Arts	Bachelor of Arts	192	2.0	
	Bachelor of Arts in Dietetics	192	2.0	
	Bachelor of Arts in Foods and Nutrition	192	2.0	
	Bachelor of Arts in Textiles and Clothing	192	2.0	
	Bachelor of Arts in Family and Child Development	192	2.0	

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

CREDIT AND QUALITY POINT REQUIREMENTS FOR GRADUATION (Continued)

<i>College</i>	<i>Degrees Granted</i>	<i>Minimum Quarter Credits</i>	<i>Minimum Qual. Pt. Average Required</i>
College of Fine and Applied Arts	Bachelor of Arts in Speech Pathology and Audiology	192	2.0
	Bachelor of Arts in General Speech	192	2.0
	Bachelor of Arts in Theatre Arts	192	2.0
	Bachelor of Arts in Mass Media Communications	192	2.0
	Bachelor of Arts in Communication/Rhetoric	192	2.0
	Bachelor of Arts in Ballet	192	2.0
	Bachelor of Music	193	2.0
	Bachelor of Fine Arts	192	2.0
	College of Nursing	Bachelor of Science in Nursing	195
Community and Technical College	Associate Degree in: Arts	96	2.0
	Associate Degree in Applied Science in:		
	Chemical Technology	99	2.0
	Commerce	96	2.0
	Commercial Art	96	2.0
	Community Services Technology	96	2.0
	Criminal Justice Technology	96	2.0
	Cytotechnology	96	2.0
	Data Processing	96	2.0
	Educational Technology	96	2.0
	Electronic Technology	102	2.0
	Fire Science Technology	96	2.0
	Food Service Management	96	2.0
	Industrial Technology	96	2.0
	Instrumentation Technology	101	2.0
	Mechanical Technology	102	2.0
	Office Services Technology	96	2.0
	Respiratory Therapy Technology	104	2.0
	Sales and Merchandising	96	2.0
	Secretarial Science	96	2.0
	Surveying and Construction Technology	102	2.0
	Transportation	96	2.0
	Bachelor of Technology Degree in:		
	Mechanical Technology	202	2.0
	Bachelor of Science in Electronic Technology	202	2.0

Fees and Expenses

(Fees subject to change without notice)

	<i>Commut- ing Resi- dents of Ohio</i>	<i>Resi- dents of Ohio Living in Dorms</i>	<i>Non- Ohio Resi- dents</i>
Despite 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 June) based on an average academic load of 48 credits for the three quarters are:			
Undergraduate fee for regular load	\$675	\$675	\$1,635
General Service Fee	165	165	165
Books (average)	225	225	225
Food and Housing in Residence Halls	—	1,551	1,551
	<u>\$1,065</u>	<u>\$2,616</u>	<u>\$3,576</u>

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

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

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

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

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

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

FEES

(Fees subject to change without notice.)

1. INSTRUCTIONAL FEE* (ALL STUDENTS)

<i>Undergraduate</i>	
1-14 credits	\$16 per credit
14 1/2-16 credits	\$225 per quarter
16 1/2 and over credits	\$225 + 16 per credit over 16
 <i>Graduate and Professional (Law)</i>	
1 or more credits	\$25 per credit

2. TUITION SURCHARGE* (Non-residents of Ohio pay the surcharge in addition to the Instructional Fee)

<i>Undergraduate</i>	
1/2 or more credits	\$ 20 per credit
 <i>Graduate and Professional (Law)</i>	
1 or more credits	\$10 per credit

3. GENERAL FEE

<i>Undergraduate</i>	
	\$6 per credit to a maximum of \$55 per quarter (Maximum General Fee for three combined Summer Sessions is \$55)
 <i>Graduate and Professional (Law)</i>	
Full-time (9 or more credits in any quarter)	\$ 16 per quarter
Part time (8 1/2 or less credits in any quarter)	7 per quarter

4. ADMISSION APPLICATION FEE (non-refundable)

Undergraduate and Postbaccalaureate	\$ 20
Entering Graduate Student	20
Entering School of Law Student	20
Transient Student (each period of enrollment)	20

5. SPECIAL FEES

<i>Late Registration Fee</i>	
Charged to students who have not completed registration and paid fees before close of registration or by final date of payment	\$20

<i>Music Fees</i>	
Private lessons in Band Instrument, Organ, Piano, Violin and Voice (in addition to normal instructional fees):	
Two 1/2 hour lessons per week (Undergraduate)	\$ 55
Two 1/2 hour lessons per week (Graduate)	55
One 1/2 hour lesson per week (Undergraduate)	\$ 27.50
One 1/2 hour lesson per week (Graduate)	27.50

<i>Thesis and Binding Fees</i>	
Binding (per volume)	7
Microfilming (for Ph.D. degrees only)	31

<i>Graduation Fees</i>	
Each Degree	12
In Absentia, per degree (add'l)	2
Late Application Charge	5

<i>Informal Course Fee</i>	
Per course unless otherwise noted	27

6. MISCELLANEOUS FEES

A.C.T. Test	\$8.50
Education Administration Battery	6

*Does not include special or miscellaneous fees, i.e.: music, late registration, etc. Zero credit courses (such as 352:205) are charged on the basis of the number of hours of class per week.

Miller Analogies Test	7
Transcripts (If more than one copy is ordered at the same time, the fee is \$.50 for each additional copy)	2
I.D., late or lost	5
Credit by Examination (Undergraduate and Postbaccalaureate), per credit	8
Student Teaching Fee (Course 05 — .402)	25
Language Tape Rentals (refundable)	10
Locker Fee (\$2.00 refundable) (September-June)	6
Locker Fee, Physical Education and Schrank Hall (\$2.00 refundable) per quarter	4
Towel Rental	5
Change of Course Registration (add/drop)	4
Laboratory Breakage and Late Service Deposit (refundable) "Insufficient Funds" or Returned Check Charge	10
Co-op Course Fee	5

7. PARKING FEES

Students enrolled for 9 or more credits	\$ 20 per quarter
Students enrolled for 8½ or fewer credits	10 per quarter
Summer Session students	10 per session
Workshop participants	8
Department of Special Programs	5 per quarter

8. DAY CARE

Per Hour, according to ability to pay	\$.85-1.15
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9. NURSERY SCHOOL

Per quarter (for 3 mornings)	\$58
Per quarter (for 4 afternoons)	78
Summer Session per week	\$8.40

ROOM AND BOARD

Residence hall facilities are available for the housing of University students. The total cost of Room and Board is \$517 per quarter or \$1,551 per year. All students who live in the residence halls must participate in a 20-meal per week Board plan.

Students living off campus may participate in the Board plan for \$264 per quarter.

VETERANS' EXPENSES

Disabled veterans who are eligible for admission to the University may register for

courses without payment of fees, if they are certified by the Veterans' Administration.

Full payment of fees is required if the veteran does not have his Certificate of Eligibility at the time of registration. The cash payment will be refunded when the veteran presents his Certificate of Eligibility.

Non-disabled veterans must pay their fees at the time they register. They will receive specified allowances under Public Law 89-358.

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

Sons and daughters of deceased veterans covered under Public Law 634, must pay their fees at the time of registration. They will receive specified allowances under Public Law 634.

AUDITORS

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

STUDENT HEALTH AND ACCIDENT INSURANCE

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

RULES GOVERNING NON-RESIDENT SURCHARGE

RESIDENCY REQUIREMENTS

Payment of nonresident tuition surcharge is required of any student who does not qualify as a permanent resident of Ohio as defined by one or more of the following sections which became effective 1 September 1973 and shall continue in effect until rescission or amendment.

OHIO STUDENT RESIDENCY FOR TUITION SURCHARGE PURPOSES

A. Definitions

For purposes of this rule:

1. A resident of Ohio "for all other legal purposes" shall mean any person who maintains a 12-month place or places of

residence in Ohio, who is qualified as a resident to vote in Ohio and receive state welfare benefits, and who may be subjected to tax liability under Section 5747.02 of the Revised Code: provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.

2. "Financial support" as used in this rule, shall not include grants, scholarships and awards from persons or entities which are not related to the recipient.
3. An "institution of higher education" as used in this rule shall mean any university, community college, technical institute or college, general and technical college, medical college or private medical or dental college which receives a direct subsidy from the State of Ohio.

B. General Residency for Tuition Surcharge Purposes

The following persons shall be classified as residents of the State of Ohio for tuition surcharge purposes:

1. Dependent students, at least one of whose parents or legal guardian has been a resident of the State of Ohio for all other legal purposes for 12 consecutive months or more immediately preceding the initial enrollment of such student in an institution of higher education.
2. Persons who have resided in Ohio for all other legal purposes for at least 12 consecutive months preceding their initial 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.
3. Persons who reside and are gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who are pursuing a part-time program of instruction at an institution of higher education.

C. Specific Exceptions and Circumstances

1. 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.

2. A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile.
3. Any alien holding an immigration visa shall be considered a resident of the State of Ohio for tuition surcharge purposes in the same manner as any other student.
4. No person holding a student or other temporary visa shall be eligible for Ohio residency for these purposes.
5. A dependent person classified as a resident of Ohio who is enrolled in an institution of higher education when his or her parents or legal guardian remove their residency from the State of Ohio, shall be considered a resident of Ohio for these purposes during continuous full-time enrollment and until his or her completion of any one academic degree program.
6. Any person once classified as a nonresident, upon the completion of 12 consecutive months of residency in Ohio for all other legal purposes, may apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes. 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.
7. Any reclassification of a person who was once classified as a nonresident for these purposes shall have prospective application only from the date of such reclassification.

D. Procedures

Institutions of higher education charged with reporting student enrollment to the Ohio Board of Regents for state subsidy purposes and assessing the tuition surcharge shall provide individual students with a fair and adequate opportunity to present proof of their Ohio residency for purposes of the 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 nonresident student at the time of registration for each quarter or session. The Registrar may in advance of his determination seek the advice of the Committee on Residence Status. The Committee on Residence Status means a committee comprised of the Director of Institutional Research and Systems Development who shall act as chairman, the University Registrar, the Dean of the School of Law and the University Auditor.

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

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

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

be subject to disciplinary procedures.

Note: For purposes of residency determination only, enrollment of nine credit hours or more will be considered full-time.

REGULATIONS REGARDING REFUNDS

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

Fees Subject to Refund are:

1. Instructional and Nonresident Surcharge.
2. General Fee.
3. Special Programs (Informal Courses).
4. Parking (Only if permit is returned).
5. Student Teaching.
6. Laboratory Breakage and Late Service Deposit.
7. Residence Hall Fees (Note: These fees subject to special Refund Policy).

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

A. In full:

1. If the University cancels the course.
2. If the University does not permit the student to enroll or continue.
3. If the student dies before or during the quarter 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 quarter in which he is called to active duty, presents his notice of induction or Orders to Active Duty. Students who enlist voluntarily for active duty, see "D" below.

B. In full less \$3 per enrolled credit hour to a maximum of \$30:

If the student requests in writing official withdrawal from all credit courses on or before the first day of the enrolled term. (See General Information, Change of Course Registration procedures in this *Bulletin*.)

C. In full less \$3:

If the student requests in writing official withdrawal from Department of Special Programs courses on or before the first day of the enrolled term.

D. In part:

If the student requests in writing official withdrawal after the first day of the Fall, Winter or Spring quarters, the following refund percentages apply:

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

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

2 through 7 calendar days	60%	60%
8 through 15 calendar days	40	40
Thereafter	0	0

Refunds will be determined as of the date of formal withdrawal unless proof is submitted that circumstances beyond control of the student prevented the filing of the formal withdrawal earlier, in which case the refund will be determined as of the date he last attended class. 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.

E. No refund:

If a student is dismissed or suspended by the University for disciplinary reasons he will receive no refund.

RESIDENCE HALL REFUNDS**Refund/Release and Forfeiture Policy**

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

(A) a full refund of any prepaid fees (except the advance \$50 rental payment) and release of other financial liability therefor under the following circumstances:

- (1) graduation of the student from The University of Akron;
- (2) academic dismissal of the student from The University of Akron;
- (3) non-attendance or complete withdrawal by the student from The University of Akron prior to the start of the contract term;
- (4) in the event mandatory or recommended participation in academic programs of The University of Akron require the student to commute regularly beyond the Akron metropolitan area (i.e., student teaching or co-op engineering assignments).

(B) with a partial refund of prepaid fees (except the advance \$50 rental payment) according to the Refund Schedule below, and release of financial liability for subsequent quarters 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.

(C) with a partial refund of prepaid fees (except the advance \$50 rental payment) in accordance with the Refund Schedule below:

- (1) 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.
- (2) 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 quarters beyond that quarter 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.
- (3) 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, Winter, and Spring Quarters, the following re-

fund percentages shall apply for all contracts for housing accommodations and food services:

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

Notice Requirements

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

Financial Aids

An entering freshman or an enrolled student at the University in undergraduate, graduate or post-graduate courses has several possibilities of receiving financial aid which can facilitate his acquiring a college degree. A student transferring from another institution must complete a regular quarter at the University before he is considered for scholarship assistance.

Financial aid for post-secondary education takes many forms and comes from many sources. In assessing the need for financial aid, a determination is made regarding the ability of the student and his family to pay for post-secondary education. The difference between what a family is expected to contribute and the cost of education is considered unmet need; unmet need represents the amount of money which the financial aid officer tries to award so the student can realize his academic potential.

In order to meet the needs of financial aid applicants, there are a number of sources from which aid can be received. The following pro-

grams represent those sources of aid for which The University of Akron selects recipients and distributes the funds. A special aid application for these programs can be secured at The University Student Financial Aids Office.

1. National Direct Student Loan (NDSL)
2. The College Work Study Program (CWSP)
3. The Supplemental Educational Opportunity Grant (SEOG)
4. The Nursing Student Loan Program (NSL)
5. The Nursing Scholarship Grant Program (NSG)

In addition to the above, there are two other major financial aid programs in which a student may be interested. Both require a separate application which can be secured in a university financial aid office or at a high school.

1. *The Basic Educational Opportunity Grant (BEOG)*

This program is sponsored by the Federal Government and is available to

eligible students who started post-secondary education after April 1, 1973.

2. *The Ohio Instructional Grant (OIG)*

This program is for Ohio residents only; applications can be secured at a university financial aid office or at a local high school.

There is an additional program of aid called the University Academic Scholarship Program. Scholarships are given to outstanding high school students who apply for scholarships and outstanding scholars within the University. A separate application must be completed for one to be considered for such aid. A need analysis form is not required although the amount of aid is determined by relative need and scholarship.

A special scholarship, called The Presidential Scholarship, was awarded for the first time to 25 new freshmen scholars beginning with the 1975-76 academic year. The application mentioned above is all that is necessary to compete for the Presidential Scholarship. Further details can be found in the listing of scholarships.

Graduate fellowships and other graduate awards are distributed by The Graduate School and, therefore, a separate application is required.

In essence, there are a number of sources of funds. Consultations with a high school counselor or a university financial aid counselor are suggested as one considers the many financial aid options.

MAJOR FINANCIAL AND PROGRAMS

BASIC EDUCATIONAL OPPORTUNITY GRANT

This program is sponsored by the Federal Government, and provides gift assistance in the form of grants ranging from \$50 to \$1,400 annually to students demonstrating financial need. Students must enroll on at least a half-time basis, and must have begun their post-secondary school education after April 1, 1973.

OHIO INSTRUCTIONAL GRANT

This program is sponsored by the State of Ohio, and provides gift assistance in the form of grants ranging from \$90 to \$600 annually to students demonstrating financial need. Students must be residents of Ohio, and must enroll on a full-time basis.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT

The University administers this federally funded program which provides gift assistance in the form of grants ranging from \$200 to \$1,500 annually. These grants are awarded to students who have demonstrated good academic achievement, and who have exceptional financial need. The student must accept an equal amount of other assistance.

COLLEGE WORK-STUDY PROGRAM

The Federal Government and the University contribute funds to this program which provides on-campus work opportunities to students who have demonstrated financial need. Every attempt is made to place students in work related to their major field of interest.

NATIONAL DIRECT STUDENT LOAN

This loan is available to students who have demonstrated financial need, and are enrolled on at least a half-time basis. Loan amounts range up to \$1,500 annually. Repayment, with 3% interest, begins nine months after the borrower ceases to pursue a full-time course of study at a post-secondary school of education. Cancellation of the loan will be made in varying amounts for teaching in special education fields.

NURSING STUDENT LOAN

The Nurse Training Act provides for loans of up to \$2,500 annually to students enrolled in the course leading specifically to a Bachelor of Science in Nursing, and who have demonstrated financial need. Repayments are similar to the National Direct Student Loan, and cancellation will be made in varying amounts for each year of full-time employment in professional nursing.

GUARANTEED STUDENT LOAN PROGRAM

The State of Ohio, through the Ohio Student Loan Commission, administers guaranteed student loans made to students by private lending institutions within the state. Students may qualify for a loan of up to \$2,500 annually if they are enrolled in an eligible school of post-secondary education. Other states have similar loan programs for their residents.

LAW ENFORCEMENT EDUCATION PROGRAM

The U. S. Department of Justice, through the Law Enforcement Assistance Administration, provides for grants, administered by the University, of up to \$250 per quarter for tuition, fees and books, to full-time employees of publicly-funded criminal justice agencies. The recipients must agree to remain in full-time criminal justice employment for two years after completion of the courses for which the grant was awarded. Eligible students who are attending on a full-time basis may also qualify for a loan to meet additional expenses.

UNIVERSITY SCHOLARSHIPS, FELLOWSHIPS, AWARDS AND LOANS

Currently offered fellowships, scholarships and awards, as well as sources of money which can be loaned to worthy students are listed as follows:

THE ART AUCTION SCHOLARSHIP FUND

These scholarships are made possible from the proceeds from the Annual Art Auction held by the Art Department.

DAVID BRUCE AUBURN SCHOLARSHIP

An endowed fund established by the Schaefer Foundation in 1968 in honor of David Bruce Auburn, the youngest

child of Dr. and Mrs. Norman P. Auburn, and supported further by the Auburn family. Endowed income is used for scholarship purposes for deserving students from the State of Ohio enrolled in the Community and Technical College of Akron as determined by the University Scholarship Committee.

**KATHLEEN MONTGOMERY AUBURN
SCHOLARSHIP FOR
GRADUATE STUDY**

Contributions from major women's campus groups, alumnae, Faculty Women's Club and faculty members provide scholarship aid for women pursuing graduate or professional study at the University.

**KAY AUBURN CHAMBER
BALLET SCHOLARSHIP**

A fund established by The Women's Committee of The University of Akron in honor of the late Kathleen Montgomery Auburn, wife of President Emeritus Norman P. Auburn, for the purpose of assisting a full-time student who has been recommended by the Artistic Director of the Chamber Ballet and approved by the Dean of the College of Fine and Applied Arts. The amount of the award is \$200 annually.

**NORMAN P. AUBURN
SCHOLARSHIP IN ENGINEERING**

An annual \$1,500 scholarship to a first-year College of Engineering student who shows promise of high academic achievement. This scholarship is for the first academic year only (resident or nonresident). The selection of the recipient is to be made by the University Scholarship Committee and the Dean of the College of Engineering. This scholarship, in honor of President Emeritus Norman P. Auburn, is in recognition of his dedicated academic leadership of the University (1951-71), and especially in the development and expansion of the College of Engineering in comprehensive programs through the doctorate. Established January, 1974.

**THE EDWARD SPENCER
BABCOX SCHOLARSHIP FUND**

This endowed fund was established by the Babcox Business Publications in honor of the company founder, Mr. Edward Spencer Babcox. One half of the income will be used for scholarship assistance as determined by the University Scholarship Committee and the remaining half will go into the University's current operating fund. Students in the field of rubber and tire journalism will be given preference.

**SUMMERFIELD BALDWIN III
SCHOLARSHIP**

In memory of the late Dr. Summerfield Baldwin III, Professor of History, an award is presented to a student in the junior class who is majoring in the field of history and who scholastically and intellectually proves that he or she intends to pursue studies in this field, preferably to the graduate level.

**MARY LOUISE BEVERLY
SCHOLARSHIP**

A fund established in 1965 by Mr. Robert F. Harris, Class of 1928, in memory of his sister, Mrs. Mary Louise Beverly, Class of 1940, who was for many years principal of Spicer School and more recently Director of Elementary Education in the Akron Public Schools. The income will be

used to assist worthy students in the College of Education. Memorial contributions are still being accepted as additions to this endowed fund.

**RAY C. AND ELLEN P. BLISS
POLITICAL SCIENCE SCHOLARSHIP FUND**

This endowment fund was established in 1972 by Mr. Ray C. Bliss, Class of 1935, and Mrs. Ray C. Bliss (Ellen Palmer), Class of 1931, for the purpose of making scholarship awards to any full-time undergraduate student, without regard to race, color, creed, sex, or national origin who is in need of a grant in pursuing a major in Political Science within the Buchtel College of Arts and Sciences. First preference is to be given to students from Summit County, State of Ohio. All applicants must have demonstrated scholastic ability, possess high qualities of citizenship, moral character, promise and leadership. The Fund is administered by The University of Akron Development Foundation. Contributions to the Fund are accepted from interested donors.

**MARSHA L. BLOOM
SCHOLARSHIP FUND**

A fund established by family and friends in memory of the late Marsha L. Bloom for the purpose of providing scholarship assistance to undergraduate women students in the Department of Chemistry.

BREWSTER SCHOLARSHIP

A fund established by Mr. and Mrs. Evan B. Brewster (Margaret Zink, Class of 1925) to provide scholarship assistance to junior or senior students in amounts up to \$200 a year.

**MILDRED HETER BUCKINGHAM
MEMORIAL SCHOLARSHIP**

This endowment fund was established by Mr. Lisle M. Buckingham for the purpose of making awards to full-time students who show promise in the field of applied music and who are recommended by the Department of Music.

**LELAND STANFORD
BUCKMASTER SCHOLARSHIP**

This endowment fund established by friends and relatives of the late Mr. Leland Stanford Buckmaster, a member of the Board of Directors of The University of Akron from 1957 to 1962, and supported in large measure by contributions from the American Federation of Labor — Congress of Industrial Organizations of which he was Vice President, and many unions affiliated with the United Rubber Workers of which he was International President. The income is used to assist worthy students who are selected by the University Scholarship Committee. Memorial Contributions are still being accepted as additions to this fund.

**THE BURGNER MEMORIAL
MEDICAL SCHOLARSHIP**

An endowed fund established in memory of the late Dr. Earl W. Burgner by his wife Lois A. (Class of 1922) and friends for the purpose of providing financial assistance to a premedical student at The University of Akron selected on the basis of academic achievement.

**HERVEY E. CHAMBERS
SCHOLARSHIP**

The trust agreement of Hervey E. Chambers provides

scholarship assistance not to exceed \$500 per year to worthy and deserving persons attending The University of Akron. The recipients and the amount of scholarships to be determined by the University Scholarship Committee.

**THE CHILTON, STUMP AND DAVERIO
AWARDS TO OUTSTANDING STUDENTS
MAJORING IN ACCOUNTING**

Scholarship awards of \$250 each are provided by the firm of Chilton, Stump and Daverio to outstanding juniors majoring in accounting as selected by the faculty of the Accounting Department.

**THE CARL COFFEEN
EDUCATIONAL SCHOLARSHIP**

A \$300 per year scholarship offered annually by the Summit Federal Credit Union in honor of Dr. Carl Coffeen, retired Superintendent of Summit County Schools. Preference will be given to any student who is a member or son or daughter of a member of the Credit Union who will enter the junior year at The University of Akron and who expects to enter the field of Education. Recipients will be selected on the basis of financial need, academic achievement and leadership. Scholarship is renewable in the senior year.

**COLLEGE CLUB OF
AKRON SCHOLARSHIP**

A scholarship sponsored by the College Club of Akron in the amount of \$600 per year for one year to an entering freshman girl. Recipients are selected by the Scholarship Committee of the College Club of Akron upon the recommendation of The University of Akron Scholarship Committee. Need, character and ability to succeed in college work are important qualifications.

**HUGH F. COLLIER
SCHOLARSHIP**

A scholarship to cover student fees and text books, established in 1971 by Hugh F. and Evelyn J. Collier. Selection will be made by the University Scholarship Committee based on financial need and satisfactory academic progress.

**COPPERWELD STEEL COMPANY'S
WARREN EMPLOYEES'
TRUST SCHOLARSHIP**

The Aristoloy Steel Division of the Copperweld Steel Company provides scholarship assistance to worthy students attending The University of Akron. Preference is given to students who are Copperweld Steel Company employees or dependents of employees, retirees, or former employees who became deceased while still associated with the firm. Recipients must meet the qualifications prescribed by the University Scholarship Committee.

**ROBERT CRAFTS
MEMORIAL SCHOLARSHIP**

A fund established in 1969 by Mrs. Robert Crafts in memory of her husband, Robert Crafts, Esq. The income or principal or both will be used to assist worthy students in the School of Law who enter under the Council on Legal Education Opportunity program, and students similarly situated, on the recommendation of the Dean of the School of Law.

THE GEORGE J. CURTIS SCHOLARSHIP

A \$300 per year scholarship offered annually by the

Summit Federal Credit Union in honor of George J. Curtis, an official of long standing on the Credit Committee and a director on the Board. Preference will be given to any student who is a member or son or daughter of a member of the Credit Union who will enter the senior year at The University of Akron and who expects to enter the field of education. Recipients will be selected on the basis of financial need, academic achievement and leadership.

**SCHOLARSHIPS, FELLOWSHIPS
AND GRANTS**

**AIR FORCE ROTC COLLEGE
STUDENTS SCHOLARSHIP PROGRAM**

These scholarships, authorized by Public Law through the Vitalization Act of 1964, are designed to offer assistance to outstanding students who enroll in the Air Force ROTC program. Each scholarship provides for full payment of tuition, laboratory and associated fees, an allowance for textbooks, and includes a tax-free allowance of \$100.00 each month during the period the student is in school and on scholarship status.

**AKRON AREA PLUMBERS
AND PIPEFITTERS INDUSTRY
SCHOLARSHIP FUND**

These scholarships are designed to provide educational opportunities for students interested in careers in fields related to the Akron Area Plumbers and Pipefitters Industry, such as public health, sanitation, community planning, mechanical and civil engineering. First preference will be given to children of journeyman plumbers and contractor members of the organization who are pursuing programs in civil engineering, mechanical engineering, business administration or nursing at The University of Akron.

**THE AKRON BAR ASSOCIATION
AUXILIARY SCHOLARSHIP**

This fund, established by the Akron Bar Association Auxiliary, provides an annual scholarship from principal and income net to exceed \$1,000 to an entering student in a full-time program of law study. The University Scholarship Committee, on the basis of scholarship, legal aptitude, character and need, and with the advice of the Dean of the 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.

**AKRON BRICK AND BLOCK
COMPANY FOUNDERS
MEMORIAL SCHOLARSHIPS**

A fund established in 1967 by the Akron Brick and Block Company in memory of the company founders, Messrs. Henry Camp, Kenneth Kutz, Albert A. Hilbert and George H. Meyers for the purpose of providing scholarships to students with serious financial need. Preference will be given to male students in the field of Engineering or Business Administration.

**AKRON COUNCIL OF
ENGINEERING AND SCIENTIFIC
SOCIETIES SCHOLARSHIP**

Funds contributed by the Akron Council of Engineering and Scientific Societies provide a \$500 award to a senior majoring in engineering, chemistry, physics or mathematics on the basis of academic performance, character, financial need and co-curricular activity.

AKRON DISTRICT SOCIETY
OF PROFESSIONAL
ENGINEERS SCHOLARSHIP

The Akron District Society of Professional Engineers sponsors this scholarship in the amount of \$300 per year to a junior or senior student recommended by the Dean of the College of Engineering.

AKRON EDUCATION
ASSOCIATION SCHOLARSHIP

A scholarship, sponsored jointly by The University of Akron, the Akron Board of Education and the Akron Education Association to cover registration fees. The scholarship will be awarded to a student planning to enter the teaching profession. The award will be granted by the University Scholarship Committee upon recommendation of a committee of the Akron Education Association. First preference will be given to a son, daughter, niece, nephew, brother, sister or spouse of certificated employees of the Akron Board of Education who is enrolled in the College of Education as a full-time student.

AKRON PANHELLENIC
ASSOCIATION SCHOLARSHIP

The Akron Panhellenic Association sponsors this scholarship in the amount of \$100 per year. The recipient must be a full-time student meeting the Panhellenic average grade point requirement, an active member of a sorority, and an involved and contributing member in campus and Greek activities.

AKRON RUBBER GROUP
SCHOLARSHIPS IN CHEMISTRY

Awards of \$660 per year are made to entering students and/or undergraduate students majoring, or intending to major, in chemistry or chemical engineering. Outstanding ability in science and chemistry will be given primary emphasis in awarding these scholarships.

AKRON U ALUMNI
FUND SCHOLARSHIPS

Scholarships to men and women of excellent scholastic achievement are awarded by the University Scholarship Committee.

AKRON UNIVERSITY
ASSOCIATES SCHOLARSHIPS

Scholarships for qualified students are available from unrestricted funds provided by the following corporations which hold membership in Akron University Associates: The Akron, Canton & Youngstown Railroad Company; Akron Coca-Cola Bottling Company; Akron Equipment Company; Akron National Bank and Trust Company; Akron Savings & Loan Company; The Fred W. Albrecht Grocery Company; Alcoa Foundation; The Babcock & Wilcox Company; Bellows International, Division of IBEC; Brown Derby, Inc.; The Burger Iron Company; Cabot Corporation; Centran Bank of Akron; Chrysler Corporation; The Cotter Merchandise Storage Company; E.I. du Pont de Nemours & Company; The East Ohio Gas Company; Eastman Kodak Company; Eaton Corporation, Molded Products Division; Ernst & Ernst; The Firestone Bank; Firestone Foundation; The Firestone Tire & Rubber Company; First National Bank of Akron; Firwood Manufacturing Company; The General Tire & Rubber Company; The B.F. Goodrich Com-

pany; The Goodyear Tire & Rubber Company; HWH Associates, Inc.; The Hardware & Supply Company; Hiney Printing Company; The Hoover Company; J.M. Huber Corporation; Knight Foundation, Inc.; J.K. Lasser and Company; Lord Corporation; Marting Realty, Inc.; Massey-Ferguson, Inc.; Merrill Lynch, Pierce, Fenner & Smith, Inc.; Laura R. and Lucian Q. Moffitt Foundation; Monsanto Company; NRM Corporation; Norton Company; Ohio Edison Company; Ohio Match Company; The M. O'Neil Company; Owens-Corning Fiberglas Company; Pepsi-Cola Bottlers of Akron, Inc.; Petro-Tex Chemical Company; Polskey's; Reilly Foundation; The Roush Foundation; John G. Ruhlin Construction Company; A. Schulman, Inc.; The J.M. Smucker Company; The Spohn Corporation; Teledyne Monarch Rubber Company; Temperature Control Company; The Timken Company; The Tower Agencies; R.T. Vanderbilt Company, Inc.; Witco Chemical Company, Inc.; Xerox Corporation.

AKRON WOMEN IN
CONSTRUCTION SCHOLARSHIP

A scholarship in the amount of \$300 a year to be awarded to a female student from the Akron area, majoring in a construction field.

ALLIED CHEMICAL
FOUNDATION GRANT

Awarded in 1975, this grant provided by the Allied Chemical Foundation, is being used by the Institute of Polymer Science as a fund for a fellowship and/or other form of support for the Institute's graduate research program.

AMERICAN CYANAMID
COMPANY GRANT

This grant, awarded in 1974, is being used by the Institute of Polymer Science to fund the training and academic research of selected graduate students in the Institute.

ARMY ROTC SCHOLARSHIPS

These scholarships provide financial assistance to highly qualified, highly motivated students who desire to pursue careers as commissioned officers in the Regular Army after graduation from college. Each scholarship provides for payment of instructional and other fees, an allowance for textbooks and supplies and a subsistence allowance of \$100 per month during the period of the scholarship.

HUGH F. COLLIER
SCHOLARSHIP

A scholarship to cover student fees and text books, established in 1971 by Hugh F. and Evelyn J. Collier. Selection will be made by the University Scholarship Committee based on financial need and satisfactory academic progress.

COPPERWELD STEEL COMPANY'S
WARREN EMPLOYEES'
TRUST SCHOLARSHIP

The Aristoloy Steel Division of the Copperweld Steel Company provides scholarship assistance to worthy students attending The University of Akron. Preference is given to students who are Copperweld Steel Company employees or dependents of employees, retirees, or former employees who became deceased while still associated with the firm. Recipients must meet the qualifications prescribed by the University Scholarship Committee.

**ROBERT CRAFTS
MEMORIAL SCHOLARSHIP**

A fund established in 1969 by Mrs. Robert Crafts in memory of her husband, Robert Crafts, Esq. The income or principal or both will be used to assist worthy students in the School of Law who enter under the Council on Legal Education Opportunity program, and students similarly situated, on the recommendation of the Dean of the School of Law.

**THE GEORGE J. CURTIS
SCHOLARSHIP**

A \$300 per year scholarship offered annually by the Summit Federal Credit Union in honor of George J. Curtis, an official of long standing on the Credit Committee and a director on the Board. Preference will be given to any student who is a member or son or daughter of a member of the Credit Union who will enter the senior year at The University of Akron and who expects to enter the field of education. Recipients will be selected on the basis of financial need, academic achievement and leadership.

**THE FRED AND RUBY DANNER
MEMORIAL SCHOLARSHIP**

A fund established by Mr. Bob F. Danner in 1967 in memory of his parents, Fred and Ruby Danner, for the purpose of providing scholarship assistance to worthy students. First preference is given to students from the Canton, Ohio, area. The University Scholarship Committee selects the recipient and determines the amount of the grants.

**ROSE AND JULIUS DARSKY
SCHOLARSHIP**

An endowed fund made possible by Dorothy and Samuel Cohen, Shirley and Stanford Lerner, Arlene and Bertram Lockshin, Arlene and Hugh Allen Lockshin, and Joyce and Robert Lockshin. The income will be used for the purpose of providing scholarship assistance to any worthy person attending the University of Akron without regard to race, creed, sex, or national origin. Preference will be given to those who are unable to be employed while attending college due to a physical handicap. Selections of the recipients will be made by the University Scholarship Committee.

**THE MALCOLM J. DASHIELL
SCHOLARSHIP FUND**

Established in the memory of the late Malcolm J. Dashiell, Professor of Art, scholarship assistance is provided annually to an Art student in the College of Fine and Applied Arts.

**ELIZABETH C. DELLENBERGER
AWARD**

This fund has been established by Miss Elizabeth C. Dellenberger for the purpose of making awards to students who are in need of financial assistance and who have demonstrated satisfactory scholarship. Selection is made by the University Scholarship Committee.

**DELTA GAMMA — RUTH K. BILLOW
MEMORIAL SCHOLARSHIP**

Established by Akron Alumnae Chapter of Delta Gamma, this scholarship provides assistance on the basis of need, to a visually handicapped undergraduate or graduate student who is a resident of Summit County.

**DELTA GAMMA FOUNDATION
SCHOLARSHIPS**

Scholarships in varying amounts are awarded by the Delta Gamma Foundation to women in universities in the United States and Canada.

**DELTA KAPPA GAMMA
SCHOLARSHIP**

This scholarship is offered by the Akron Area Chapters of the Delta Kappa Gamma Society. The award of \$300 annually is made to a woman in her junior year who expects to enter the field of teaching.

**MR. AND MRS. CHARLES C. DILLEY
SCHOLARSHIP**

An endowed fund established in 1966 by Mr. and Mrs. Charles C. Dilley. The income is used to assist worthy students selected by the University Scholarship Committee.

**THE EDWARD F. DISSMEYER
MEMORIAL SCHOLARSHIP FUND**

A fund established by family and friends in memory of the late Edward F. Dissmeyer for the purpose of providing scholarship assistance to worthy students in the College of Engineering.

**BETTY DOBKIN
NURSING SCHOLARSHIPS**

Two or more scholarships of \$300 each are granted annually by the Women's Auxiliary to the Summit County Medical Society to students enrolled in or entering The University of Akron or the Akron Hospital Schools of Nursing. First preference will be given to Summit County residents. Recipients will be chosen on the basis of need, academic achievement and leadership.

ERNST & ERNST FUND

An annual grant of \$2,500 is given for the purpose of providing achievement awards of \$250 each to two outstanding senior accounting students based upon scholarship and leadership, plus an unrestricted matching amount to the Department of Accounting. Balance of the grant is provided for undergraduate scholarships under the auspices of the Associates program, with first preference being qualifying students of the College of Business Administration.

**EVANS FOUNDATION
SCHOLARSHIPS**

The Evans Foundation Scholarships in varying amounts are open to full-time students enrolled at The University of Akron who have demonstrated scholastic ability, possess high qualities of citizenship, promise and leadership, and who have financial need. For equally qualified students, preference shall be given to those enrolled in the College of Business Administration.

**THOMAS W. EVANS
MEMORIAL SCHOLARSHIP FUND**

Established in 1974 through the memorial contributions of friends and family of Professor Emeritus Thomas W. Evans, dedicated and loyal member of the University family who will long be remembered for his outstanding contributions in the field of Athletics, this scholarship fund is to be used by the University Scholarship Committee to provide

assistance to worthy students, with first preference being participants in varsity track.

EXXON CHEMICAL COMPANY SCHOLARSHIP FUND

A fund established by the Exxon Education Foundation for the purpose of providing financial assistance to junior or senior students in the Department of Chemistry. The selection of recipients will be made on the basis of academic achievement and financial need.

FIRESTONE TIRE AND RUBBER COMPANY FELLOWSHIP

This fellowship is awarded to a graduate student in Polymer Science. It is open to graduates of accredited American colleges and universities.

FORD MOTOR COMPANY GRANT

This grant, awarded in 1974, is being used by the Institute of Polymer Science to fund the training and academic research of selected graduate students in the Institute.

ARTHUR L. FOSTER SCHOLARSHIPS

Awards in the freshman year are made to graduates of Akron high schools. Awards are based on scholastic achievement, citizenship, promise and leadership.

IRL A. FREDERICK SCHOLARSHIPS

An endowment fund established under the will of the late Irl A. Frederick, Class of 1909, provides scholarship assistance to worthy students wishing to continue their education. The recipients and the amount of scholarships are determined by the University Scholarship Committee.

ERVIN D. FRITCH AND ADA B. FRITCH SCHOLARSHIPS

Scholarships are awarded annually to worthy and capable young women and men selected by the University Scholarship Committee on the basis of scholarship, financial need, moral character and ability.

FUTURE SECRETARIES ASSOCIATION SCHOLARSHIP

The Future Secretaries Association Scholarship has been established to provide funds for a promising Secretarial Science student in FSA. Academic standing, financial need, and participation in FSA are the requirements for a member to receive the scholarship.

DONFRED H. GARDNER MEMORIAL SCHOLARSHIP FUND

Established in 1975 through the memorial contributions of friends and relatives of the late Dr. Donfred H. Gardner, who retired in 1962 as vice president and dean of administration emeritus following 38 years of distinguished service to The University of Akron as teacher, counselor and administrator, this scholarship fund is to be used by the University Scholarship Committee to help meet the financial needs of qualified and deserving undergraduate students. Memorial contributions may be made to the Gardner Fund.

GENERAL MOTORS SCHOLARSHIP PLAN

Supported by the General Motors Corporation, this scholarship plan provides an annual stipend ranging from \$200 to \$2,000 annually depending upon the recipient's need. The University Scholarship Committee selects an entering freshman student on the basis of academic potential and achievement and leadership qualities.

GENERAL TIRE & RUBBER COMPANY RESEARCH FELLOWSHIP

This fellowship is awarded to a graduate student in Polymer Science.

THE GLAUS, PYLE, SCHOMER, BURNS, AND DE HAVEN SCHOLARSHIP

The firm of Glaus, Pyle, Schomer, Burns, and De Haven, Architect and Consulting Engineers, established this fund of \$500 in appreciation of the University's contributions to the community. Proceeds will provide scholarship assistance to worthy students in the College of Engineering.

GLOVER SCHOOL PARENT-TEACHERS ASSOCIATION SCHOLARSHIP FUND

Graduates of Glover School with good academic records and financial need are provided scholarship assistance with funds provided by the Glover School PTA.

B.F. GOODRICH COMPANY FELLOWSHIP

This grant supports a fellowship to a graduate student in the field of Polymer Science.

THE GOODYEAR TIRE AND RUBBER COMPANY ACCOUNTING SCHOLARSHIPS

Two scholarships established by The Goodyear Tire and Rubber Company for the purpose of assisting junior or senior students majoring in accounting recommended by the Accounting Department Faculty. The recipients must be United States citizens, desire to enter business or industry upon graduation and require financial assistance. The total amount awarded is \$1,000 annually.

GOODYEAR INTERNATIONAL CORPORATION FELLOWSHIP

The Goodyear International Corporation Fellowship is in the value of \$2,300 per annum plus fees and tuition for each fellowship recipient. To be eligible for this fellowship, a candidate must be working toward a Master of Science in Engineering or Chemistry Degree and be an employee or family member of an employee in the overseas operation of the Goodyear International Corporation.

GOODYEAR SERVICE PIN ASSOCIATION SCHOLARSHIPS

These scholarships were established by the Goodyear Service Pin Association of The Goodyear Tire and Rubber Company. Annual scholarships of \$450 each are awarded to an entering freshman, a sophomore, a junior, and a senior student. To be eligible, a candidate must be a United States citizen, desire to enter industry upon graduation, and a child whose parent is an employee with five (5) years or more service with The Goodyear Tire and Rubber Company or one of its domestic subsidiaries.

**GOODYEAR TIRE AND RUBBER
COMPANY FELLOWSHIP**

This fellowship is awarded to a graduate student in Polymer Science. It is open to graduates of accredited American colleges and universities.

**GOODYEAR TIRE AND RUBBER COMPANY
FUND FOR LEGAL EDUCATION
OPPORTUNITY STUDENTS**

A fund established in 1969 by Goodyear Tire and Rubber Company Fund. The principal and income will be used for living expenses of students admitted to the School of Law under the Legal Education Opportunity program, on the recommendation of the Dean of the School of Law.

**GRAND LODGE OF FREE
AND ACCEPTED MASONS
OF OHIO SCHOLARSHIP**

One \$400 scholarship is awarded to a deserving student meeting the scholarship requirements.

**CARLOTTA C. GREER
SCHOLARSHIP**

An undergraduate scholarship in the Department of Home Economics and Family Ecology, established in 1962 by Miss Carlotta C. Greer, Class of 1903.

**GULF OIL FOUNDATION
GRADUATE FELLOWSHIP**

This Fellowship, established in 1975 by the Gulf Oil Foundation, provides funds for tuition and fees for a graduate student in the Department of Chemistry.

**THE CARL L. HALL
MEMORIAL SCHOLARSHIP FUND**

An endowed fund established in 1973 by family and friends of the late University Treasurer Carl L. Hall. Income is to be used to provide scholarship assistance for worthy students selected by the University Scholarship Committee.

**THE LULU HANES SCHOLARSHIP
IN POLITICAL SCIENCE**

A scholarship in the amount of \$100 established in 1973 by the First and Eighth Ward Women's Democratic Club in honor of Lulu Hanes, founder of the club, provides tuition for students majoring in Political Science.

**THE CHARLOTTE HANTEN
ART SCHOLARSHIP**

A scholarship established in 1971 by Charlotte Hanten to provide financial assistance in the amount of \$300 a year (\$100 each quarter) to a student who has presented evidence of financial need and who has demonstrated superior art ability during at least one year of college work. Selection is made by a committee of the Art Department Faculty without consideration of the candidate's race, sex, color, religion or political beliefs.

**M. M. HARRISON
MEMORIAL SCHOLARSHIP**

An award for a male chemistry student with a high scholastic average. The amount per year is determined by the University Scholarship Committee.

OTIS C. HATTON SCHOLARSHIP

This scholarship in the amount of \$375 a year was established by the Akron Council of the Parent-Teachers Associations in honor of the late Otis C. Hatton, former Superintendent of Schools. Preference is to be given to students planning to enter the education profession.

**ELLEN HERBERICH
BALLET SCHOLARSHIPS**

Full tuition scholarships awarded annually to members of The University of Akron Chamber Ballet, who are full-time students at The University of Akron, and who have been recommended by the artistic director of the Ballet and selected by the Dean of the College of Fine and Applied Arts. This scholarship was established in 1970 by Ellen (Mrs. Charles) Herberich, Chairman of the Women's Board of The University of Akron Chamber of Ballet. Contributions to the Fund are accepted from interested donors.

**WALTER AND MARY EFFIE HERBERICH
SCHOLARSHIP**

Established in 1965 by Mrs. Walter Herberich with income from endowment used to provide scholarship assistance as determined by the University Scholarship Committee. First consideration shall be to a blind student in the Department of Music, or if not applicable, to a meritorious student in the Department of Music as recommended by the Head of the Department. If no student in the Music Department is eligible, the scholarship should be awarded by the University Scholarship Committee in accordance with normal scholastic requirements.

**HESELBART AND MITTEN
SCHOLARSHIP**

This fund was established by the Hesselbart and Mitten Advertising Agency to provide scholarship assistance for students selected by the University Scholarship Committee on the basis of academic achievement and need. Preference will be given to unmarried sons or daughters of employees of the agency.

**MR. AND MRS. JOHN S. HEUSS
SCHOLARSHIP**

This fund has been established by Mr. and Mrs. John S. Heuss for the purpose of making awards to students who are in need of financial assistance and who have demonstrated satisfactory scholarship. Selection is made by the University Scholarship Committee.

**KENNETH M. AND BARBARA HINEY
SCHOLARSHIP**

A scholarship established by Mr. and Mrs. Kenneth M. Hiney. Preference will be given to a student from the Akron area. Selection will be made by the University Scholarship Committee based on financial need and satisfactory academic progress.

**ALICE HESLOP HOOVER
SCHOLARSHIP**

This scholarship is to be used for the purpose of aiding talented young women at The University of Akron, studying voice culture, who merit assistance.

FRED F. AND BESSE WILLETT
HOUSEHOLDER MEMORIAL
SCHOLARSHIPS

A fund established under the will of the late Fred F. Householder, former Professor and Head of the Department of Physics at The University of Akron, provides scholarships to students in the Department of Physics as selected by the Physics faculty.

THE FRANK C. HOWLAND
SCHOLARSHIP

An endowed fund established by Mrs. Frank C. Howland in memory of her late husband. The income will be used to assist worthy students in the form of scholarships as determined by the University Scholarship Committee.

CLARENCE L. HYDE
MEMORIAL SCHOLARSHIP

This scholarship of \$200 for the academic year was created by the Clarence L. Hyde League, and is a living commemoration of Dr. Hyde and his service to humanity. It shall be awarded each year to an outstanding senior student residing in Akron.

ITALIAN AMERICAN PROFESSIONAL
AND BUSINESS MEN'S
CLUB SCHOLARSHIPS

Established in April, 1973, by the Italian American Professional and Business Men's Club of Akron, three scholarships valued at \$500 each are awarded annually to deserving students entering the senior year majoring in Music, Art and Theatre Arts. Selection of a recipient from each of these categories will be made by the University Scholarship Committee upon the recommendation of the Dean of the College of Fine and Applied Arts.

THE WILLIAM A. JATEFF
MEMORIAL SCHOLARSHIP FUND

A scholarship established in 1967 by family and friends in memory of the late William A. Jateff, with additional funding in 1970 in memory of the late Barry Jateff, provides scholarship assistance for worthy students selected by the University Scholarship Committee.

JUNIOR WOMEN'S CIVIC
CLUB SCHOLARSHIP

Annual scholarships in varying amounts are awarded to deserving students. Recommendations are made by the University Scholarship Committee with final approval by the Junior Women's Club Scholarship Committee.

KAUFMAN FOUNDATION
SCHOLARSHIP

One half of the income derived from this fund, established by Mr. Jerome J. Kaufman, is to be used to assist worthy students in the form of scholarships with an equal amount being used for faculty salaries.

THE FAMA N. KEITH
SCHOLARSHIPS

Scholarships awarded annually to students majoring in music. Recipients to be selected by the Dean of the College of Fine and Applied Arts upon recommendation of the Head of the Department of Music based on need and achievement.

This scholarship fund was established in 1971 by Fama N. Keith (Mrs. Walter P.).

DR. KEVIN E. KELLEHER
MEMORIAL FUND

An endowed fund established by the immediate family of the late Dr. Kevin E. Kelleher, former Assistant Professor of Biology. The income will be used to provide scholarship assistance to worthy students specializing in ecology selected by the University Scholarship Committee.

ALICE M. KESSLER
MEMORIAL SCHOLARSHIP

An endowed fund established in 1973 by Mr. George W. Kessler in memory of his wife, Alice M. Kessler, for the purpose of providing scholarship assistance to worthy students majoring in arts and/or music. The selection of the recipients will be made by the University Scholarship Committee.

GEORGE S. KETTER
MEMORIAL SCHOLARSHIP

A scholarship established in 1972 by Mrs. George S. Ketter in memory of her late husband. Recipients shall be selected by the University Scholarship Committee based on financial need and satisfactory academic progress. Preference shall be given to freshmen or sophomore students in Electrical Engineering.

MARTIN LUTHER KING, JR.,
MEMORIAL SCHOLARSHIP

A fund established in memory of the late Dr. Martin Luther King, Jr., for the purpose of providing scholarship assistance to worthy students attending The University of Akron. The selection of recipients will be made by the King Scholarship Committee on the basis of financial need without regard to race, creed, color or national origin.

DR. WALTER C. KRAATZ
MEMORIAL SCHOLARSHIP FUND

A fund to memorialize the late Dr. Walter C. Kraatz, Professor Emeritus of Biology and former Head of the Department, in recognition of his dedication to teaching, especially in premedical training. Qualified and deserving students in biology will be selected by the University Scholarship Committee for the Kraatz Scholarship awards.

THE E. P. LAMBERT
COMPANY SCHOLARSHIP

An endowed fund established by the E. P. Lambert Company, with the income used to assist worthy students selected by the University Scholarship Committee.

JOSEPH T. LENTINI
MEMORIAL SCHOLARSHIP FUND

A scholarship fund established in 1974 by the Joseph R. Lentini family and friends in memory of Joseph T. Lentini. Earnings are used for scholarship purposes for deserving full-time second year Criminal Justice majors enrolled in the Community and Technical College. Selection is based on academic achievement without regard to race, color, creed, sex or national origin, and with consideration for financial need. Contributions to the fund are accepted from interested donors.

**RUTH E. LEOPOLD
SCHOLARSHIP FUND**

An endowed fund established under the will of the late Ruth E. Leopold. The income is used to aid needy worthy students to obtain an education at The University of Akron. The recipients are selected by the University Scholarship Committee without regard to race, creed or color.

**ISAAC LIBERMAN
MEMORIAL SCHOLARSHIP**

An endowment fund, established by the Wooster Sheet Metal and Roofing Company in memory of Isaac Liberman, with earnings going toward a scholarship for a student demonstrating college potential and financial need. The selection will not be limited in any way by race, color, or creed of applicants and, if qualified candidates are available, family members of employees of the Wooster Sheet Metal and Roofing Company will be given primary consideration.

**BETTY JANE LICHTENWALTER
SCHOLARSHIP**

This scholarship was established from a memorial fund in the name of Betty Jane Lichtenwalter. The income from this account is to be awarded to worthy students with music or speech majors.

**LOCAL 296 UAW
MEMORIAL SCHOLARSHIP**

A memorial scholarship established by a grant from Local 296 United Automobile, Aerospace and Agricultural Implement Workers of America. First preference shall be given to the children of the Roger M. Crowe family in memory of a deceased member of the family.

**LOUIS LOCKSHIN
SCHOLARSHIP**

An award up to \$350 a year for a deserving entering freshman established by the employees of the Workingmen's Overall Supply, Inc., in honor of Louis Lockshin. The applicant will be chosen on the basis of scholarship and need. Preference will be given to immediate family relatives of the employees. Race, color, creed or sex shall not be considered in making the award.

LUBRIZOL SCHOLARSHIP

An award is given to a student or students nominated by the Department of Chemistry. No restriction as to year of study.

**PHILIP P. AND FAYE LUTZ
SCHOLARSHIP**

A \$100,000 trust agreement established by Mr. and Mrs. Philip P. Lutz in 1968 provides endowed scholarship assistance to students on the basis of need, scholastic potential and ultimate advantage to the student as meriting such scholarship grants. The University Scholarship Committee determines amount of the grants and number of recipients. A graduating senior who has been a Lutz Scholarship recipient and who, in the opinion of the University Scholarship Committee, has used the scholarship grant to his or her own and the University's best advantage is eligible to receive an incentive award in the amount of \$1,000 or in such amount as determined by the Committee.

**3M COMPANY GRANT
(Minnesota Mining & Manufacturing)**

Provided in 1974, this grant by 3M Company is being used by the Institute of Polymer Science in support of its research and graduate program.

**THE ALAN L. MacCRACKEN
SCHOLARSHIP FUND**

This Scholarship fund was established in 1974 by Mrs. Alan L. MacCracken (Marthena Brewster) of Hudson, Ohio, in honor of her husband, Alan L. MacCracken, and her son, Alan L. MacCracken, Jr. The income or principal, or both, will be used to provide scholarship assistance in the amount of \$300 per year to a worthy student graduating from Hawken School, Cleveland, or from Hudson High School. Selection will be made on the basis of need and academic record.

**GEORGE W. MATHEWS
SCHOLARSHIP FUND**

Established in 1964 by Mr. George W. Mathews with income used to provide scholarships to students demonstrating ability and potentiality and requiring financial help. The award to be made without regard to race, creed, color or national origin. The number of scholarships, recipients, and the amount of aid to be determined each year by the University Scholarship Committee, with an equal amount going to the University's current operating fund.

**C. BLAKE McDOWELL
SCHOLARSHIP**

The proceeds from this fund may be used for the benefit of any person attending The University of Akron. The recipient of this assistance will be selected by the University Scholarship Committee.

**RUTH McKNIGHT
SCHOLARSHIP**

Scholarships in varying amounts are granted by the Ellet Women's Club to graduates of Ellet High School who are financially deserving and who wish to attend The University of Akron as full-time students.

**McNEIL CORPORATION
SCHOLARSHIPS**

Four-year scholarships for students enrolled in the College of Engineering, preferably in mechanical engineering, have been provided by the McNeil Corporation. These are full scholarships for residents of Akron and include a grant for books.

**VIRA DUNN MEYERS
SCHOLARSHIP**

The proceeds from this fund may be used for the benefit of any worthy person attending The University of Akron. The recipient of this assistance will be selected by the University Scholarship Committee.

CARL MIRMAN SCHOLARSHIP

This scholarship was established by The Akron Scrap Iron Company in memory of its founder, Carl Mirman. It is awarded to students who are in need of financial assistance and who have demonstrated satisfactory scholarship. Selection is made by the University Scholarship Committee.

DR. LEON F. MOLDAVSKY
SCHOLARSHIP

This scholarship was established in 1957 by Leon F. Moldavsky, M.D. and since his death in December, 1969, is being continued by his sister, Mrs. Sophie M. Leuchtag. It is awarded to an outstanding sophomore majoring in the biological sciences who must have a minimum of 3.0 grade point average for all work taken. The recipient must have demonstrated high quality of citizenship, good moral character and high aptitude and motivation in his major field.

VICTOR I. MONTENYOHL
SCHOLARSHIPS

This scholarship fund for advanced study was established in memory of Victor I. Montenyohl, in recognition of his devotion to the rubber industry, and his belief that The University of Akron offered a unique opportunity for rubber research. The income from this fund is awarded to a student well qualified and interested in the field of rubber chemistry.

HERMAN MUEHLSTEIN FUND
FOR SCHOLARSHIP AID

Earnings on a \$750,000 grant from the Herman Muehlstein Foundation of New York will provide scholarships for qualified men students at The University of Akron who come from the New York City area.

JULIUS MUEHLSTEIN
SCHOLARSHIP AWARDS

Awards of varying amounts are made to promising students in the field of chemistry who might otherwise find it impossible to continue their education.

THE UNIVERSITY OF AKRON
NATIONAL MERIT SCHOLARSHIPS

Through an arrangement with the National Merit Scholarship Corporation, The University of Akron sponsors National Merit Scholarships. Selections are made by the University Scholarship Committee from National Merit Finalists who indicate a desire to attend the University. The amounts of the awards range from \$100 to \$1,500 annually depending upon the student's need as estimated by the National Merit Scholarship Corporation.

NATIONAL SECRETARIES
ASSOCIATION SCHOLARSHIP

The Louise Gamble Annual Scholarship in the amount of fees and books is awarded to an outstanding student in secretarial science to defray normal college expenses.

THE NORTH CENTRAL (AKRON)
CHAPTER OF THE
NATIONAL ELECTRICAL CONTRACTORS
ASSOCIATION AWARD

An annual scholarship of \$500 to an electrical engineering student whose father is affiliated with the electrical industry in Ohio.

NORTH HIGH SCHOOL
PARENT-TEACHERS
ASSOCIATION SCHOLARSHIP

Funds donated by the North High School PTA provide

scholarships in the amount of \$180 each to two graduates of North High School with good academic records and financial need.

EUGENE O'NEIL SCHOLARSHIP

Proceeds from an endowment fund established at The University of Akron by Mr. Eugene O'Neil, Class of 1936, will provide a scholarship for a qualified student, preferably from the New England area.

HUGH MICHAEL O'NEIL
SCHOLARSHIP

Originally established in 1959 as the Ferdinand A. and Lorry Brubaker Scholarship Fund, this fund now honors Hugh Michael O'Neil who lost his life in the heroic attempt to save the lives of others in July of 1964. It is hoped that this fund will grow through contributions of others. The income will be used to render financial assistance to students selected by the University Scholarship Committee.

M. G. O'NEIL
FOUNDATION SCHOLARSHIP

A scholarship established by the M. G. O'Neil Foundation which will provide funds for a needy and promising entering male student, preferably of the Negro race, who otherwise would be unable to attend college. Funds will cover living expenses, fees and books for the year.

DOWNTOWN OPTIMIST CLUB
OF AKRON SCHOLARSHIP

This scholarship was established with the purpose of encouraging talented young people to enroll in the University and pursue a career of benefit to themselves and society.

JUDGE AND MRS. W. E. PARDEE
MEMORIAL SCHOLARSHIP

Established in 1965, in memory of Judge and Mrs. W. E. Pardee, this scholarship, maximum amount of \$500 per year, will be awarded to a full-time student in The University of Akron School of Law day program.

WILLIAM E. PASCHAL AND
GRACE D. PASCHAL SCHOLARSHIP

An endowment established in 1967 by Mr. and Mrs. William E. Paschal the income from which is used to provide scholarship assistance to students participating in intercollegiate football.

LEMUEL G. PENCE
MEMORIAL SCHOLARSHIP

This endowed scholarship in memory of Lemuel G. Pence was established in 1973 by his wife, Ethel V. Pence. Annual awards will be made to students selected by the University Scholarship Committee.

PETRO-TEX SCHOLARSHIP

The Petro-Tex Chemical Corporation has established an endowed scholarship of \$750 per year for a student or students entering the junior or senior year in Chemistry or Chemical Engineering and intending to specialize in the field of rubber and polymer chemistry. The University Scholarship Committee, with the advice of the head of the Chemistry Department, shall make the selection.

HELEN PETROU SCHOLARSHIP

A fund established by the Barberton Brookside Country Club which provides athletic awards to students selected by Athletic Director Gordon Larson or such person as he may appoint. Selection is to be made from qualified applicants from the Barberton-Norton-Wadsworth area of Ohio.

THE WILLIAM M. PETRY SCHOLARSHIP FUND

The income but not the principal of this fund, established in 1974 in memory of the late Dean of the Community and Technical College, shall be used to provide scholarships for deserving students of the College. The amounts of such awards and the recipients thereof shall be determined by a person designated by the Petry family.

PHILLIPS PETROLEUM COMPANY RESEARCH FELLOWSHIP

This fellowship, funded annually since 1960, is awarded to a graduate student in Polymer Science.

PHI SIGMA ALPHA SCHOLARSHIP

This scholarship in the amount of \$600 is awarded each year to a full-time Buchtel College of Arts and Sciences junior or senior with at least a 3.0 cumulative average.

PIXLEY SCHOLARSHIPS

From the Frank Pixley Memorial Fund, awards are made to students of outstanding ability and promise in the fields of literature, music and speech.

PPG INDUSTRIES FOUNDATION SCHOLARSHIPS

A fund established by the PPG Industries Foundation in 1970 provides scholarships to students pursuing an associate degree in data processing or the several curricula of engineering and science technology.

BERT A. POLSKY MEMORIAL SCHOLARSHIP FUND

This endowed fund was established in 1970 by contributions from family and friends of the late Bert A. Polsky, revered Akron community and business leader and dedicated member of the University's Board of Directors. Earnings from this fund are used to provide scholarship assistance for worthy students in the College of Business Administration.

CHARLES PONGRACZ SCHOLARSHIP FUND

Established in 1974, this fund provides scholarship assistance for graduating seniors from Akron North High School who have demonstrated high academic achievement and participation in school activities.

PREFERENTIAL SCHOLARSHIPS

Two scholarships in the amount of \$300 per year each are available to worthy students selected by The University of Akron Scholarship Committee. Sons and daughters or grandchildren of Negro employees of the B. F. Goodrich Company are given preferential attention, but the award of

the scholarships is not necessarily restricted to such individuals.

THE PRESIDENTIAL SCHOLARSHIPS

As part of a program to add to the number of outstanding scholars enrolled at the University, 25 Presidential Scholarships will be awarded annually to incoming Freshmen beginning with the 1975-76 academic year. The scholarships cover tuition and fees up to a maximum of \$750 per year. Recipients will be selected by the University Scholarship Committee on the basis of their high school records and national test scores.

GEORGE E. PRICE MEMORIAL SCHOLARSHIP (II)

Two scholarships in the amount of \$100 each quarter of the senior year for no more than three quarters, established by the Purchasing Management Association of Akron in honor of George E. Price, Jr., a former member of the Chapter who was National President of the Purchasing Management Association, for his contribution to the field of industrial purchasing. The award will be made annually to two juniors majoring in Business Administration. Selection will be made by the University Scholarship Committee upon recommendation of the Dean of the College of Business Administration.

ERROL S. PRINGLE SCHOLARSHIP

A Scholarship in the amount of \$500 or more for a student in the data processing program of the Community and Technical College. Selection is made by the University Scholarship Committee based on academic achievement and with consideration for financial need. This scholarship was established in 1971 by Errol S. Pringle, a 1961 graduate of the University.

THE G. A. PROFITA SCHOLARSHIP FUND

A fund established by friends and associates of G. A. Profita for the purpose of providing assistance to an undergraduate student at The University of Akron who after one year of college work has demonstrated superior qualities of leadership and scholastic achievement and who is in need of financial assistance. Selection is by the University Scholarship Committee.

RESEARCH FELLOWSHIP — ARCHIVES OF THE HISTORY OF AMERICAN PSYCHOLOGY

This research fellowship, funded for the first time in 1974 by the History of Psychology Foundation, is awarded annually by The University of Akron to promote research in the history of psychology through the granting of stipends to aid scholars wishing to utilize the primary resources of the Archives of the History of American Psychology, located at the University. The stipends, which range up to \$500, are provided to defray travel and living expenses of the recipient while in residence in Akron. Preference is given advanced graduate students and younger postdoctoral scholars.

THE QUAKER OATS FOUNDATION SCHOLARSHIPS

These scholarships were established in 1972 in recogni-

tion of the great role the City of Akron has played in the development of the cereal industry and the history of The Quaker Oats Company. The endowed Quaker Oats Foundation Scholarship Fund provides financial assistance to worthy students attending The University of Akron, with preference being given to students majoring in the areas of science, nutrition, and home economics.

**RADNEY CIGARETTE
SERVICE SCHOLARSHIPS**

These scholarships are open to any student enrolled at The University of Akron who has demonstrated ability to do college work. Scholastic achievement, citizenship, leadership, and need are qualities used as a basis for making the awards. The amount of these scholarships is \$300 a year, payable \$100 per quarter, upon satisfactory scholastic progress.

**READERS DIGEST
FOUNDATION ENDOWED
SCHOLARSHIP FUND**

This endowment fund was established in 1973 by the Reader's Digest Foundation for the purpose of making scholarship awards to deserving students, without regard to race, color, creed, sex or national origin, who are in need of financial assistance in pursuing undergraduate degrees. Reader's Digest Scholars are selected by the University Scholarship Committee.

**WILLIAM S. RICHARDSON
FELLOWSHIP**

This is an annual fellowship in the amount of \$1,200 for a student who will serve as a graduate assistant in the undergraduate teaching program while pursuing graduate work in chemistry.

**MABEL M. RIEDINGER
SCHOLARSHIP FUND**

Established in 1972 by Beta Lambda Chapter of Pi Lambda Theta in honor of its founder and first adviser, this fund provides an annual scholarship for a woman preferably a member of Pi Lambda Theta attending The University of Akron, and majoring in the field of education.

**MERLE DAVID RIEDINGER
SCHOLARSHIPS**

This scholarship is the amount of \$300 a year is awarded to students from the Akron area. Although unrestricted as to field of study, students in retail merchandising are given preference, all other qualifications being equal. Candidates are chosen on the basis of scholarship, character and need.

**WILLIAM EBER ROBINSON
SCHOLARSHIP**

A scholarship in the amount of \$400 a year from The Robinson Clay Product Company Fund. Scholarships awarded on the basis of scholarship and need with preference given to a son or daughter of a Robinson Clay Product employee. An amount equal to the scholarship is given annually to the University General Operating Fund.

**CLETUS G. AND CLARA E. ROETZEL
SCHOLARSHIPS**

An endowment fund with earnings to be used to provide

a scholarship or scholarships to worthy students and a matching amount to be used for the general operating expenses of the University.

**RUBBER MANUFACTURERS
ASSOCIATION SCHOLARSHIPS**

The Rubber Manufacturers Association has established a scholarship fund in the amount of \$2,100 annually to be awarded to students who are U.S. citizens enrolled in engineering or natural science and who are preparing to enter the rubber and plastics industry. The scholarships are renewable each quarter upon satisfactory performance, scholarship and the student's continued preparation for a career in the rubber and plastics industry.

**THE JUDGE AND MRS. CHARLES SACKS
SCHOLARSHIP**

This scholarship fund was 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. Income from the fund will be used to provide scholarships to deserving students in the School of Law. Recipients of the scholarship will be selected by the Dean of the School of Law.

MORRIS SACKS SCHOLARSHIPS

This scholarship, established in memory of Morris Sacks, provides income to be used annually for scholarships, with matching amount to be used for current operating expenses. It is to be awarded to a worthy student.

**SALES MARKETING EXECUTIVES
ASSOCIATION OF AKRON SCHOLARSHIP**

A scholarship in the amount of \$500 per year to a junior majoring in marketing who has demonstrated superior qualities of leadership and scholastic achievements and who is in need of financial assistance. Selection will be made by the Dean of The College of Business Administration upon recommendation by the Department of Marketing.

ALEX SCHULMAN SCHOLARSHIPS

The income from the Alex Schulman Endowment Fund is used to provide scholarships to worthy students with matching amounts to be used for current operating expenses.

**THE ALEX SCHULMAN
MEMORIAL AWARD**

This endowed fund was established by Ernest Kirtz, Bernard S. Schulman and William C. Zekan in memory of the late Alex Schulman. The income will be used to assist worthy students preferably of the Negro race. The recipients and the amount each receives will be determined by the University Scholarship Committee.

**THE DR. SAMUEL M. SELBY
SCHOLARSHIP**

An endowed fund, established in honor of Dr. Samuel M. Selby, Distinguished Professor of Mathematics at The University of Akron who served as head of the department from 1945 until his retirement in 1968. The income from the fund will be used for scholarship assistance for outstanding undergraduate or graduate students pursuing courses in mathematics at the University. The recipients and the amount each receives will be recommended by the faculty of

the department and approved by the University Scholarship Committee.

**CARL D. AND MARGARET A. SHEPPARD
MEMORIAL SCHOLARSHIP**

A fund established by family and friends in memory of the late Carl D. Sheppard and Margaret A. Sheppard for the purpose of providing scholarship assistance to worthy students. Preference will be given to undergraduate students in print journalism in the Department of Speech and Theatre Arts.

**THE H. E. SIMMONS
MEMORIAL SCHOLARSHIPS**

The H. E. Simmons Memorial Scholarship Fund was established in memory of President Emeritus H. E. Simmons. The earnings from this endowment will be awarded to a freshman student or students interested in chemistry. The University Scholarship Committee will determine the amount of the awards and make the selection of the scholarship recipients.

**ENDOWED SCHOLARSHIP FUND
OF THE WOMEN'S AUXILIARY
BOARD OF THE SUMMIT COUNTY
CHILDREN'S HOME, INC.**

This 25th Anniversary Endowment Fund was established in September of 1973 by The Women's Auxiliary Board of the Summit County Children's Home, Inc., for the purpose of using the earnings for making scholarship awards available to undergraduate or graduate students at The University of Akron under the care of the Board of Children's Service. This scholarship fund was established for the purpose of encouraging Our Children to enroll at the University to pursue careers of benefit to themselves and to society. The recipients and scholarship amounts shall be determined by the University Scholarship Committee upon the recommendation of The Women's Auxiliary Board. Contributions to the Fund are accepted from interested donors.

**JASON AND CORINNE SUMNER
SCHOLARSHIP**

Established by Mrs. Beatrice S. Williamson, Class of 1908, in memory of her father and mother, Jason and Corinne Sumner, this fund provides financial assistance to worthy students attending The University of Akron. Recipients are selected by the University Scholarship Committee.

**FRANK E. TIMBERLAKE
MEMORIAL SCHOLARSHIP**

Funds provided by family and friends of the late Frank E. Timberlake are used by the University Scholarship Committee to aid worthy students in need of financial assistance.

TOUCHDOWN CLUB AWARDS

Touchdown Club awards vary in amount and periods of coverage. Scholastic achievement, citizenship, athletic ability, need and leadership will be used as a basis for making these awards.

**TRAFFIC CLUB OF AKRON
SCHOLARSHIP**

A fund established by the Traffic Club of Akron for the purpose of providing scholarship assistance to a student or students pursuing a program in Transportation.

**TUESDAY MUSICAL
CLUB SCHOLARSHIPS**

Awards up to \$500 each to music majors for advanced study of music at The University of Akron for the entire academic year. Also awards to students at The University of Akron to cover the cost of courses in applied music in the Department of Music for one term of the academic year.

**UNION CARBIDE CORPORATION
RESEARCH FELLOWSHIP**

This fellowship is awarded to a graduate student in Polymer Science.

**UNIVERSITY BOARD OF
TRUSTEES SCHOLARSHIPS**

Scholarships are available for entering law students to the School of Law, and these are renewable from year to year on superior performance. The faculty of the School of Law makes the selections based on the quality of the collegiate record, the Law School Admission Test score, and need.

**UNIVERSITY OF AKRON
ALUMNAE OF MORTAR
BOARD FUND**

A fund established by The University of Akron Alumnae of Mortar Board for the purpose of providing grants in the amount of \$50 to worthy female students at the sophomore or junior level who are in good academic standing and have financial need. The recipients will be selected by the University Scholarship Committee.

**THE UNIVERSITY OF AKRON
PREMEDICAL SCHOLARSHIP**

This scholarship fund, established in 1963 and funded in the amount of \$500 a year by The Sacks Electric Supply Company, provides an annual award to a worthy student who is entering the field of medicine.

**THE UNIVERSITY CLUB OF
AKRON SCHOLARSHIP**

This scholarship was established by The University Club of Akron to provide \$500 per year to a full-time senior male student in the baccalaureate program who is from a community within a twenty-mile radius of The University Club of Akron.

**DR. AND MRS. GEORGE VAN BUREN
SCHOLARSHIPS**

A scholarship each year in the amount of \$100 awarded to one graduate from each of the following nine Akron Schools: Buchtel, Central-Hower, East, Ellet, Firestone, Garfield, Kenmore, North and South High Schools. The selection of the graduating senior at each school to receive the scholarship is to be made by teachers of junior and seniors at the respective schools. These scholarships were endowed in 1970 by a contribution of Dr. and Mrs. George Van Buren, both of whom are graduates of The University of Akron.

**EDWARD AND ELEANOR VOKE
FAMILY SCHOLARSHIP**

This scholarship is available to full-time and part-time students enrolled at the University who have demonstrated

scholastic ability, possess high quality of citizenship, promise and leadership and who have financial need.

**PINDY WAGNER, JR.,
BOWLING SCHOLARSHIPS**

These scholarships in the amount of fees, not to exceed \$400 per year, for two years are awarded to high school senior men and women who are candidates for admission to The University of Akron.

**JUDGE WALTER B. WANAMAKER
MEMORIAL SCHOLARSHIP**

The Judge Walter B. Wanamaker Memorial Scholarship was created in 1966 by Frederick H. Gillen to give financial assistance to worthy students. The recipients are selected by the University Scholarship Committee.

**THE WAYNE GENERAL AND
TECHNICAL COLLEGE BRANCH
OF THE UNIVERSITY OF AKRON
IN ORRVILLE GRANT**

For students attending Wayne College, the Orrville Campus Foundation provides grants which pay one-half of the tuition per quarter. In order to qualify for these grants a student must be officially admitted as a full-time student at Wayne. Determination of recipients will be based upon individual financial need.

**WESTERN ELECTRIC
FUND SCHOLARSHIP**

This fund provides an annual scholarship for a student in engineering. Amounts will vary, but in no case will exceed tuition and fees, for a fourth- or fifth-year student in an engineering curriculum. The recipient shall be a citizen of the United States and shall be chosen without regard to color, creed, or national origin.

**ARTHUR LEE WILLIAMS
MEMORIAL SCHOLARSHIP**

Because Arthur Lee Williams sincerely believed that education of the young was one of the steps to freedom for his people, this memorial scholarship fund was established in 1974 by his family and friends. The fund provides annual emergency grants up to \$75 to assist one or more black students. Recipients of this assistance will be selected by the University Scholarship Committee. Although there are no requirements for repayment, it is hoped that those who use this memorial fund will contribute to it later in life when they are self sufficient. Memorial contributions are still being accepted as additions to this fund.

**ROSS E. WILSON
MEMORIAL FUND**

Established in 1974 by family and friends of the late Akron community and business leader, The Ross E. Wilson Memorial Fund is used by the University Scholarship Committee to aid worthy undergraduate students in need of financial assistance. Memorial contributions may be made to this fund.

**WOMEN'S AUXILIARY
OF THE AKRON DISTRICT SOCIETY
OF PROFESSIONAL ENGINEERS**

An award of \$300 a year is made to a sophomore student in the College of Engineering who has acquired a

minimum of 42 quarter hours of credit at The University of Akron.

**THE DORETTE YATES SCHOLARSHIP
FUND OF THE AKRON BUSINESS
AND PROFESSIONAL WOMEN'S CLUB**

Established in May of 1973 by The Akron Business and Professional Women's Club of Akron, Ohio, in memory of Dorette Yates, a devoted club member and former president, income from this endowed fund is used to provide scholarship assistance as determined by the University Scholarship Committee. First consideration is given to a mature woman wanting to further her education. Selection of each recipient is made on the basis of financial need without regard to race, creed, color or national origin. Contributions to the Fund are accepted from interested donors.

**MR. AND MRS. WILLIAM D. ZAHRT
SCHOLARSHIPS**

Scholarships in the amount of \$500 per year will be awarded to outstanding and deserving students at The University of Akron.

**HONORS AND PRIZES
(For 1974-75 academic year unless otherwise indicated)**

SENIOR ALUMNI PRIZE

This award is given to that senior student who has completed the regular undergraduate curriculum with the highest grade for the work taken, having carried a minimum load of 12 credits per quarter.

**ALPHA CHI SIGMA
CHEMISTRY FRATERNITY
FRESHMAN RECOGNITION**

A student is selected by the fraternity from nominees chosen by the Department of Chemistry from the freshman chemistry classes on the basis of academic records.

**ALPHA LAMBDA
DELTA AWARD**

The National Chapter of Alpha Lambda Delta awards a book at the June Commencement to the senior woman with the highest scholastic average who has graduated at any time during the current academic year.

**AKRON DISTRICT SOCIETY
OF PROFESSIONAL ENGINEERS AWARD**

A plaque is awarded to the outstanding senior engineer based on scholarship, citizenship, promise of excellence in the profession and leadership. In addition, a permanent plaque is mounted in The Auburn Science and Engineering Center on which successive winners of the award will be listed.

**AKRON NATIONAL BANK & TRUST COMPANY
AWARD IN TRUSTS AND ESTATES**

An annual award of \$200 to the graduating law student who excels in the study of the law of trusts and estates. Selection to be made by the Dean of the School of law

AKRON SECTION
OF THE AMERICAN CHEMICAL
SOCIETY AWARDS

Awards of student memberships and subscriptions of two of the Society's official publications are made to a chemistry major student of junior rank on the basis of scholarships.

THE HOMER F. ALLEN
MEMORIAL AWARD

The Homer F. Allen Memorial Award, to be presented annually in the name of the late President of the Goodyear Musical Theatre, through an endowment created by the Goodyear Employees Activities Committee, Inc., to an outstanding undergraduate major in the area of Theatre Arts. The selection of the recipient of this award will be determined by the Dean of the College of Fine and Applied Arts upon the recommendation of the Head of the Department of Speech and Theatre Arts.

AMERICAN INSTITUTE
OF CHEMISTS AWARD

The American Institute of Chemists awards to the outstanding seniors in chemistry a certificate and a one-year subscription to *The Chemist*, the publication of the A.I.C. This award is granted upon the recommendation of the Head of the Department.

AMERICAN LAW BOOK
COMPANY AWARD

An annual award of selected titles of *Corpus Juris Secundum* to be made at the discretion of the Dean of the School of Law for high scholarship and leadership in student affairs, in each of four classes.

AMERICAN MARKETING
ASSOCIATION AWARD

This award is made to the outstanding senior Marketing student by the Akron-Canton Chapter of the American Marketing Association.

AMERICAN SOCIETY OF CIVIL
ENGINEERS MEMORIAL AWARD

The purpose of this fund is to honor the memory of members of American Society of Civil Engineering who have made outstanding contributions to the civil engineering profession. The fund will pay one year's dues in the Society to a graduating member of The University of Akron Student Chapter of American Society of Civil Engineers. The student is to be selected by the Dean of the College of Engineering as representing the best qualities of a civil engineer.

W. H. ANDERSON COMPANY AWARD

An award of law books made annually to two graduating seniors displaying scholarship in the study of the law of Corporations and Wills.

ASHTON PRIZES

Cash awards are given to undergraduates for excellence in oral interpretation and original oratory.

THE EDWARD S. BABCOX
POLITICAL SCIENCE BOOK AWARD

An annual award of selected books established by the

Department of Political Science in memory of Edward S. Babcox. The award will be given to an outstanding Political Science major as determined by the faculty of the Department of Political Science.

BANKS-BALDWIN LAW
PUBLISHING COMPANY AWARD

An award of *Jacoby's Ohio Civil Practice* is made to the graduating senior displaying scholarship in the study of Code Pleading.

THE NEWTON D. BECKER AWARD
FOR EXCELLENCE IN ACCOUNTING

An award of \$100 given to an outstanding accounting major as determined by the faculty of the Accounting Department. The award also includes a scholarship to the Becker CPA Review course valued at \$450.

THE BREWSTER BOOK AWARD

An annual sum of \$200 established in 1964 by Attorney and Mrs. Evan B. Brewster to award two deserving law students their textbooks, as selected by the Dean of the School of Law.

BUREAU OF NATIONAL
AFFAIRS INC. AWARD

This award, a year's complimentary subscription to *Law Week*, is given to the graduating senior who, in the judgement of the Law Faculty, has made the most satisfactory progress in his final year.

CRC FRESHMAN CHEMISTRY
ACHIEVEMENT AWARD

The Chemical Rubber Company awards a scroll and a copy of the current *CRC Handbook of Chemistry and Physics* to a student designated by the faculty for outstanding scholastic achievement in the freshman chemistry course.

PETER C. DANEMAN POLITICAL
SCIENCE HONORS AWARD

Mary Daneman and family, in memory of Peter C. Daneman, make this award which provides the sum of \$50 to be awarded each year to a political science major graduating with an average above 3.5 and with at least a 3.2 overall average, such student to be designated by the Dean of the Buchtel College of Arts and Sciences.

DELTA SIGMA PI

This award is presented annually to that male senior who upon graduation ranks highest in scholarship in the College of Business Administration.

ERNST & ERNST ACCOUNTING
ACHIEVEMENT AWARD

Two annual awards of \$250 each to outstanding senior accounting students based on scholarship and leadership.

FELLOWS OF THE OHIO STATE
BAR ASSOCIATION FOUNDATION AWARD

Two annual awards of \$247.50 each have been established by the Fellows of The Ohio State Bar Association Foundation. One award is to a law student with the highest academic average for the first third of his law school work, and the second is to a law student with the highest academic

average for the second third of his law school work.

DR. E. B. FOLTZ PREMEDICAL PRIZE

Under the provisions of the will of the late Dr. E. B. Foltz a fund was established to provide for a premedical prize of \$100, which is awarded each year to that member of the graduating class who makes the highest average grade in all work taken in the four-year premedical course and who plans to enter medical college the following year. The actual award is not made until the winner has enrolled in medical college.

JACOB GORDON MERIT AWARD FUND

Established in 1975 by Jacob Gordon, CPA, as an endowed merit award fund, earnings will be used to honor outstanding senior accounting graduates of the University. Student selected for award will be chosen on the basis of academic achievement and participation in campus activities.

DR. FRED S. GRIFFIN AWARD

An award of \$100 established by the Akron Section of the American Society of Mechanical Engineers in honor of the late Dr. Fred S. Griffin, Professor Emeritus and former Head of the Department of Mechanical Engineering, given annually to the senior showing the greatest proficiency in design.

THE WILLIAM S. HEIN LAW BOOK COMPANY AWARD

The William S. Hein Law Book Company has provided a cash award of \$200 and law books to a student (or students), who in the judgment of the Dean, has excelled in scholarship and student leadership.

HOUSEHOLDER PHYSICS PRIZE

A fund established under the will of the late Fred F. Householder, former Professor and Head of the Department of Physics, provides recognition and cash awards to outstanding students majoring in Physics, as selected by the Physics faculty.

DUANE R. KELLER MEMORIAL FUND

An award of \$50 to the senior engineering student who has made the greatest improvement in his cumulative grade average during his pre-junior and junior years.

THE J. K. LASSER & COMPANY AWARD TO THE OUTSTANDING STUDENT MAJORING IN ACCOUNTING

A scholarship award of \$600 from J. K. Lasser & Company to an outstanding junior majoring in accounting as selected by the faculty of the Accounting Department.

THE LAW WIVES CLUB AWARD

The Club awards annually three \$50 cash awards to three law students, spouses of Club members, displaying scholarship and leadership in student affairs, as determined by the Dean of the School of Law.

LAWYERS CO-OPERATIVE PUBLISHING COMPANY AND BANCROFT-WHITNEY COMPANY AWARD

An annual award of a separately bound volume from

American Jurisprudence to the highest ranking student in each of the courses listed:

MERCK AWARD

An award from Merck & Company, Inc., of a complimentary copy of *The Merck Index of Chemicals and Drugs* to the outstanding senior of the year in the Department of Chemistry.

NATIONAL ASSOCIATION OF ACCOUNTANTS AWARD

An award made annually by the Akron Chapter of the National Association of Accountants to an outstanding senior student in the Accounting Department of the College of Business Administration.

OUTSTANDING SENIOR GEOGRAPHY MAJOR AWARD

Each year the faculty of the Geography Department submits the name of the outstanding senior major in geography to the National Council for Geographic Education. If they concur the student is granted the Council's award.

JUDGE W. E. PARDEE MEMORIAL AWARD

Established in 1963 in memory of the Hon. W. E. Pardee, Judge on the original Ninth District Court of Appeals of Ohio, the grant of \$150 is awarded annually to a participant, or team of participants, in Bracton's Inn, the Case Club of the School of Law, who best display's advocacy skill and professional decorum.

THE PHI DELTA DELTA LEGAL FRATERNITY (WOMEN'S INTERNATIONAL) BETA XI CHAPTER AWARD

An annual award of \$25, in memory of Judge Florence E. Allen, to a graduating woman law student excelling in the study of law. Selection of recipient is at the discretion of the Dean of the School of Law.

PHI SIGMA AWARD

An annual award by the National Phi Sigma Society to an outstanding student in the biological sciences.

PHI SIGMA ALPHA JUNIOR PRIZE

The Phi Sigma Alpha Junior Prize of \$50, to the student in the Buchtel College of Arts and Sciences having the highest average for 120-144 quarter hours in residence.

PRENTICE-HALL, INC. AWARD

Prentice-Hall, Inc., provides an annual award of its three volume Federal Tax Guide, Edition "A," to the graduating senior who has excelled in the study of federal tax law, as determined by the Dean of the School of Law.

PRO MUSICA VOCALIS AWARD

This award is given to a student of voice who has excelled in choral work during the previous academic year.

RUBBER AGE AWARDS

These are awards of \$100 each to the students writing the best master's thesis and the best doctoral dissertation on some aspect of rubber chemistry or technology.

**SALES MARKETING EXECUTIVE
ASSOCIATION OF AKRON AWARD**

An annual award of \$100 to an outstanding senior marketing student who has demonstrated superior qualities of leadership and scholastic achievement. Selection is to be made by the Dean of The College of Business Administration upon recommendation of the Department of Marketing. In addition, a permanent plaque is mounted in The College of Business Administration on which successive winners of the award will be listed.

**TREADGOLD POLYMER SCIENCE AWARDS IN
CARBON BLACK TECHNOLOGY**

Awards of not less than \$50.00 are available annually to one or more qualified graduate students in Polymer Science who are engaged in research on the application and/or function of carbon black. These awards are available from a fund established in 1970 by the children and grandchildren of Elodie and Anthony Galen Treadgold in honor of their Fiftieth Wedding Anniversary.

**DR. AND MRS. GEORGE VAN BUREN
MEDICAL AWARD**

A \$200 award to be made each year to a deserving student at The University of Akron who has been accepted as a medical student by a medical college. The award to be applied to the first year tuition of the medical college. Selection will be made by a committee appointed by the President of The University of Akron and will be based on character, scholarship and need. This award was endowed by a gift of Dr. and Mrs. George Van Buren in 1967. Dr. Van Buren received his premedical training at The University of Akron.

WALL STREET JOURNAL AWARD

This award is made annually to the senior student in the field of finance for academic achievement.

WEST PUBLISHING COMPANY AWARDS

An annual award of law books to the law student with the highest academic average in each of the four classes.

WOMEN'S ART LEAGUE OF AKRON AWARDS

Awards made to promising women art students.

The following funds are available for loans to students who need financial assistance to continue their education at The University of Akron:

Akron Council of Parent-Teacher Associations Loan Fund
Altrusa Loan Fund
Homer C. Campbell Fund
Stephen Richard Chesrown Memorial Scholarship Loan Fund
Katherine Claypole Loan Fund
Cuyahoga Portage Chapter D.A.R. Loan Fund
Evening College Loan Fund
Martha Blanche Cook Loan Fund
Robert F. Hagenbaugh Memorial Fund
Harriet Hale Loan Fund
Hermine Z. Hansen Loan Fund
Jessie and William Hyde Memorial Fund
Indian Trail Chapter of Daughters of the American Col-

onists Loan Fund
William A. and Ethel E. Keller Loan Fund
The Paul J. Kuzdrall Loan Fund
Lichter Foundation Loan Fund
Litchfield-Thomas Fund
Lodge No. 547 Independent Order of Odd Fellows Loan Fund
Ellen Nadolski Loan Fund
National Defense Student Loan Fund
Ohio Society of Certified Public Accountants Loan Fund
George and Elizabeth Pfaff Student Loan Fund
Jesse A. Riner and Blanche Pease Riner Fund
Mabel Jane Rogers Memorial Fund
Milo W. Sample Loan Fund
Philp H. Schneider Scholarship Loan Fund
Richard R. Shreve Fund
Albert E. Sidnell Loan Fund
May Steves Memorial Loan Fund
Nina Urpman Memorial Loan Fund
Captain Richard J. Witner Memorial Fund
The Darrel E. Witters Student Loan Fund

FINANCIAL AIDS

An entering freshman or an enrolled student at The University of Akron in undergraduate, graduate or postgraduate courses has several possibilities of receiving financial aid which can facilitate his acquiring a college degree. A student transferring from another institution must complete a regular quarter at the University before he is considered for scholarship assistance.

Students who are intellectually capable of completing University courses and have indication of this on their academic records are eligible for consideration as recipients of a fellowship, scholarship, award, loan, or employment opportunity. Applicants wishing to be considered on the basis of need must submit a Parents' Confidential Statement to the national College Scholarship Service.

Definition of terms:

FELLOWSHIP — an endowment or sum of money paid for the support of a graduate or postgraduate student.

SCHOLARSHIP — an endowment or sum of money paid for the support of a student, usually undergraduate, while he is studying at the University.

AWARD — a sum of money given to a University student as special recognition of an achievement, to aid him in continuing his higher education.

LOAN — an amount of money which a student may borrow, with a planned schedule of repayment.

Information and application forms for fellowships can be obtained from the Office of the Dean of Graduate Studies & Research. Information and application forms for scholarships, awards and loans are available in the Student Financial Aids Office.

Currently offered fellowships, scholarships and awards, as well as sources of money which can be loaned to worthy students are listed in this booklet.



IV. The University of Akron Academic Programs

Here are definitions and examples which help explain the academic organization at The University of Akron.

THE UNIVERSITY — the entire institution; an academic whole. *For example: The University of Akron.*

A COLLEGE — a wide area of specialized higher learning within the framework of the University itself. *For example: The Buchtel College of Arts and Sciences.*

A DIVISION OF INSTRUCTION — a generic grouping within a college. *For example: The Buchtel College of Arts and Sciences has three divisions: Humanities, Social Sciences and Natural Sciences.*

A DEPARTMENT OF INSTRUCTION— a closely defined area of specialization within a division. *For example: The Humanities Division within the Buchtel College of Arts and Sciences has four departments: English, Classics, Modern Languages, Philosophy.*

SUBJECTS OF INSTRUCTION — the most minutely specialized part within each department; the actual point of academic contact between faculty and student. *For example: The Chemistry Department has more than 108 subjects of instruction or courses.*

CREDITS — when used in this Bulletin, credits refer to the number of quarter hour credits for any course.

THE STUDENT — the individual receiver of all academically imparted information; the focal point of University instruction. The University's subdivisions of colleges, divisions and departments are basically designed so that students of similar interest and ambitions may study together and spend their college years most advantageously.

Two other terms it would be helpful to know are *Code Numbers* and *Course Numbers*. Because these terms are similar they are often confused.

Code Number	Course Number
(Mechanical Engineering)	(Kinematic Analysis of Mechanisms)
460:320	

In the above example the first three digits of that number (460) are called the *Code Number*. These numbers refer only to the college and department in which the course is taught. In this case the number refers to the Mechanical Engineering Department (60) of the College of Engineering (400). A complete listing of Department Code Numbers appears at the beginning of Chapter VI, Courses of Instruction.

The second set of digits (320), following the colon, make up the *Course Number*. These numbers pin down exactly which course in the Mechanical Engineering Department is being specified.

The Course Numbers also tell at what level the course is being taught or at what point in his college career 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 Doctor's level courses.

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

In the pages that follow, the curricula of the various colleges will be discussed along with the general requirements of each, the degrees offered and other information needed for fuller understanding of their programs. In addition, a complete list of the courses offered, detailing the Code and Course Number, course title, number of credits, prerequisites and general course description, may be found in a later chapter. Curricula leading to Master's or Doctor's degrees are detailed under the Graduate School rather than with the Upper College through which it is offered.

Associate Degree Programs

Specialized programs of study directly applicable to professions in technical and highly skilled fields are offered on-campus through the Community and Technical College and off-campus through The Wayne General and Technical College. These programs, leading to the Associate degree, are provided for high school graduates who do not consider it desirable to pursue a baccalaureate program of study, but do have the conviction that education beyond the high school is necessary if they are to be self-supporting, useful intelligent members of our modern, complex society. Associate programs require two years for their completion and are designed to give the graduating student the concepts and skills that are demanded in today's commercial and industrial world.



Community and Technical College

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

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

Frederick J. Sturm, M.A., *Assistant to the Dean*

OBJECTIVES

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

To offer specialized technical programs in the areas of Business Technology, Engineering Technology, Public Service Technology, and Allied Health Technology.

To provide nonvocationally oriented students with a two year Associate Degree program in the liberal Arts.

To counsel students with respect to their adjustment to the collegiate environment and to their academic, personal and vocational objectives.

The College recommends each student for the appropriate degree in accordance with his 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 training through the Evening College where employed persons may pursue the same degrees while working full time.

In order to provide the university and community with information about potential careers an Office of Career Planning has been instituted in the Community and Technical College. Any person interested in information related to a potential career is encouraged to contact the Office of Career Planning.

ASSOCIATE PROGRAMS

Departments within the four divisions of the College offer programs of study leading to the Associate Degree in Arts or Associate Degree in Applied Science (carrying a designation of the program completed).

Associate Studies Division

Arts

Commercial Art

Community Services Technology

Educational Technology

Elementary Aide

Child Development Aide
Library Aide
Criminal Justice Technology
Fire Science Technology
Business and Office Technology Division
Commerce
General
Real Estate
Data Processing
Food Service Management
Sales and Merchandising
Secretarial Science
Technical
Executive
Legal
International
Medical Assistant
Office Services Technology
Transportation
General
Commercial Aviation
Engineering and Science Technology Division
Chemical Technology
Electronic Technology
Industrial Technology
Instrumentation Technology
Mechanical Technology
Surveying and Construction Technology
Allied Health Technology Division
Nursing (Hospital Diploma Program)
Cytotechnology
Respiratory Therapy Technology

BACCALAUREATE PROGRAMS

The Engineering and Science Technology Division also offers programs of study leading to the Bachelor of Science in Electronic Technology and the Bachelor of Technology in Mechanical Technology degrees. Requirements for the baccalaureate degrees are listed in the section on Baccalaureate Degree Programs.

REQUIREMENTS FOR GRADUATION

Candidates for the Associate Degree must

1. Earn credit in all of the required courses listed in the program.
2. Complete successfully as a minimum the number of credits listed for each program.
3. Complete a program of study that includes at least 24 credits in the *general studies* or *general educational* areas. These courses shall be based on a broad interpretation of the liberal arts concept and will include courses offered by

the University in such areas as written and oral communications, humanities, and social and physical sciences.

4. Earn a minimum quality point ratio of 2.0 in all work attempted and all work taken at The University of Akron.

5. Be recommended by the faculty.

6. Spend his last two quarters in residence (earning a minimum of 24 credits) at the University unless excused by the Dean of the College.

7. Other requirements are set forth in the section on "Requirements for Graduation" in Chapter 3.

A student who expects to receive a second Associate Degree must earn a minimum of 24 credits in residence which have not counted toward his first degree.

Note: In all Associate Programs, students electing ROTC will substitute 1½ credits ROTC each quarter for elective hours.

ARTS

A program of general education beyond the high school level intended to produce a socially intelligent individual, one who understands effective social behavior and appreciates social values as well as scientific facts.

<i>First Year</i>		<i>Second Year</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>First Quarter</i>	<i>Credits</i>
110:111 English Composition	4	110:317 Western Cultural Traditions	4
202:242 American Urban Society*	4	110:22- Science Requirement**	3
110:211 Numbers Communication	4	110:108 Effective Speaking	4
Elective	4	Elective	5
	—		—
	16		16
<i>Second Quarter</i>		<i>Second Quarter</i>	
110:112 English Composition	4	110:318 Western Cultural Traditions	4
202:240 Human Relations*	4	110:22- Science Requirement**	3
110: Physical Education	1	Electives	9
Electives	7		—
	—		16
	16		
<i>Third Quarter</i>		<i>Third Quarter</i>	
110:205 Types of Literature	4	110:319 Western Cultural Traditions	4
202:247 Survey of Basic Economics*	5	110:22- Science Requirements**	3
110: Physical Education	1	Electives	9
Electives	6		—
	—		16
	16		
			Total Credits 96

*See pages 70-71 for alternative course options.

**Three of the following four are required: 110:221 Biology, 110:222 Chemistry, 110:223 Geology, 110:224 Physics.

220: EDUCATIONAL TECHNOLOGY

This program prepares individuals for employment as Educational Technicians to assist the professional teacher, counselor and administrator. It includes a core of general and education courses. Elective courses can be chosen to satisfy any one of the following three options: Elementary Aide; Child Development Aide; or Library Aide.

CORE PROGRAM

<i>First Year</i>		<i>Second Year</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>
202:118 English	4	202:120 English	3
254:150 Beginning Typewriting	4	510:157 Human Development & Learning	4
375:141 Intro. to Psychology	5	110:211 Numbers Communication	4
110: Physical Education	2	Electives	5
Elective	2		—
	—		16
	16		

<i>Third Quarter</i>		<i>Credits</i>
110:108	Effective Speaking	4
510:156	Education in American Society	3
110:	Physical Education	1
	Electives	8
		—
		16

Second Year

<i>First Quarter</i>		<i>Credits</i>
202:240	Human Relations	4
510:410	Audio-Visual Education	3
202:247	Survey of Basic Economics	5
	Electives	4
		—
		16

<i>Second Quarter</i>		<i>Credits</i>
202:242	American Urban Society	4
555:211	Red Cross First Aid	2
	Electives	10
		—
		16

<i>Third Quarter</i>		<i>Credits</i>
585:280	Education Technician	5
	Field Experience	11
	Electives	—
		16
Total Credits:		96

Elementary Aide Option

Required Courses:		<i>Credits</i>
585:120	Mechanics of the Language Arts Program	4
585:207	Mechanics of Student Appraisal	3
	Electives*	8
		—
		15

Child Development Option

Required Courses:		<i>Credits</i>
775:270	Poverty in the Inner City	4
740:265	Child Development	5
740:133	Nutrition Fundamentals	3
740:200	Marriage and Family Relations	2
740:275	Theory and Guidance of Children's Play	3
740:285	Creative Expression Programs for Child Care Centers	3
740:295	Administration of Child Care Centers	5
520:360	Nursery School Laboratory	4
		—
		29

Library Aide Option

Required Courses:		<i>Credits</i>
220:201	Processing, Cataloguing and Classifying Materials	4
220:202	Organizing and Administering Library Media Centers	4
220:203	Materials Selection	4
220:204	Reference Procedures	4
		—
		16

*Elective credits must be selected from required courses in other options or from the electives listed below.

Recommended Electives

202:251	Work Relations	2
244:120	Introduction to Information Processing	4
244:121	Introduction to Programming	3
254:151	Intermediate Typewriting I	4
254:125	Business Machines	2
292:121	Technical Drawing I	3
520:141	Handicrafts in the Elementary School	3
555:338	Health and Physical Education Activities for the Elementary Grades	5
585:213	Orientation of the Educational Technician to the Secondary School	3

Additional courses to meet the requirements of 96 credits may be chosen from the required courses in other options, from the above list of recommended electives, or from among any of the University courses which will fit the student's vocational goals. All selection of courses beyond the core requirements will be made with the assistance and approval of the student's academic adviser.

222: CRIMINAL JUSTICE TECHNOLOGY

A program to prepare young people seeking a career in criminal justice and to provide additional education to those employed in criminal justice areas. The curriculum includes the technical functions of criminal justice and courses to develop a better understanding of our rapidly changing society.*

*Certain courses in the Criminal Justice Technology Program require permission of the instructor in addition to course 222:100. It is, therefore, the responsibility of each Criminal Justice Technology student to meet with an advisor at the start of his or her program of study at The University of Akron.

<i>First Year</i>		<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>
<i>First Quarter</i>			202:253 Intergroup Relations	2
202:118 English		4	222:240 Law Enforcement Administration & Supervision	3
202:131 Math Analysis I		3	222:250 Criminal Justice Theories and Practices*	3
375:141 Intro. to Psychology		5	Elective	8
222:100 Introduction to Criminal Justice		3		—
110: Physical Education		1		16
		—		
		16		
<i>Second Quarter</i>			<i>Third Quarter</i>	
202:240 Human Relations		4	222:252 Police Community Relations	3
222:102 Criminal Law for Police		4	222:256 Criminal Investigation	3
385:100 Introduction to Sociology		5	222:258 Traffic Planning & Operations*	3
202:120 English		3	222:204 Vice and Narcotic Control Elective	3 4
		—		—
		16		16
<i>Third Quarter</i>				
222:104 Criminal Evidence & Court Procedures		4		
284:100 Basic Chemistry		4		
110:108 Effective Speaking		4		
202:122 Technical Report Writing		3		
		—		
		15		
<i>Summer Quarter</i>				
222:259 Police Internship (for pre-service students only with approval of department)		6		
		—		
		15		
			Total Credits	96
			<i>Recommended Electives:</i>	
			222:244 Industrial Security	3
			202:132 Math Analysis II	4
			202:247 Survey of Basic Economics	5
			202:254 The Black American	2
			385:104 Social Problems	4
			242:211 Basic Accounting I	3
			385:314 Criminology	4

NOTE: Elective credits to be reduced by number of credits of Police Internship.

*Students with a particular interest in *Corrections* may vary their program of study by substituting 385:314, Criminology (4 credits), 385:424, Probation and Parole (4 credits), and 385:425, Corrections (4 credits), for courses: 222:202, Basic Criminalistics, 5 credits; 222:250, Criminal Justice Theories and Practices*, 3 credits; and 222:258, Traffic Planning and Operations, 3 credits. Students electing this pattern of courses will have one less hour of electives thus their total program will still require a total of 96 credits.

223: 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.

<i>First Year</i>		<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>
<i>First Quarter</i>			202:132 Math Analysis II	4
202:118 English		4	223:102 Fire Prevention and Bldg. Construction	3
202:131 Math Analysis I		3	284:100 Basic Chemistry	4
375:141 Intro. to Psychology		5	202:120 English	3
223:100 Intro. to Fire Science		3	110: Phys. Education	1
		—		—
		15		15

<i>Third Quarter</i>		<i>Credits</i>	<i>Second Quarter</i>		<i>Credits</i>
223:104	Fire Investigation Methods	3	223:204	Fire Preventions Practices	3
292:151*	Basic Physics-Mech.	4	223:240	Fire Dept. Admin. and Supervision	3
110:108	Effective Speaking	4	223:250	Hazardous Materials	3
202:122	Tech. Report Writing	3	555:211	Red Cross First Aid	2
	Technical Elective	4	202:240	Human Relations	4
		<hr/>			<hr/>
		18			15
<i>Second Year</i>					
<i>First Quarter</i>			<i>Third Quarter</i>		
223:200	Fire Detection and Suppres. Systems	3	223:252	Fire Hydraulics & Equip.	3
223:202	Fire-Fighting Tactics and Strategy	3	223:254	Legal Aspects of Fire Protection	3
202:242	American Urban Society	4	223:256	Fire Safety Codes (OSHA Standards)	3
110:	Phys. Education	4	242:111	Public Relations	3
	Technical Elective	6		Technical Elective	4
		<hr/>			<hr/>
		17			16
			Total Credits:		96

*Approved elective may be substituted.

224: COMMERCIAL ART

A program enabling 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.

<i>First Year</i>		<i>Credits</i>	<i>Second Year</i>		<i>Credits</i>
<i>First Quarter</i>			<i>First Quarter</i>		
224:245	Design in Commercial Art	3	224:243	Commercial Art Problems 1	3
710:131	Drawing I	5	202:242	American Urban Society	4
202:118	English	4		Math Elective	
252:103	Principles of Advertising	3		Electives*	
110:	Physical Education	1			<hr/>
		<hr/>			16
		16			
<i>Second Year</i>					
<i>Second Quarter</i>			<i>Second Quarter</i>		
224:140	Typography & Lettering	3	224:243	Commercial Art Problems II	3
710:275	Photography I	5	224:247	Packaging & Display Design	3
202:120	English	3	202:247	Survey of Basic Economics	5
710:232	Instrument Drawing	5		Electives*	
	or				<hr/>
292:121	Technical Drawing I	3			16
		<hr/>			
		16			
<i>Third Year</i>					
<i>Third Quarter</i>			<i>Third Quarter</i>		
224:124	Commercial Art Studio Mechanics	3	223:244	Commercial Art Problems III	3
710:375	Photography II	3	224:248	Presentation Techniques	3
202:240	Human Relations	4		Electives*	
292:122	Technical Drawing II	3			<hr/>
	(for students enrolling 292:121)				16
110:	Physical Education	1			
	Electives*				
		<hr/>			
		16			
			Total credits		96
			*Minimum Art Electives — 13; Minimum Non-Art Electives		
		<hr/>	— 4		

226: COMMUNITY SERVICES TECHNOLOGY

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

<i>First Year</i>		<i>Credits</i>		<i>Credits</i>
<i>First Quarter</i>				
202:118 English		4	202:254 The Black American	2
385:100 Introduction to Sociology		5	510:157 Human Development & Learning	4
254:150 Beginning Typewriting		4	Electives	2
202:240 Human Relations		4		—
		—		17
		17	<i>Third Quarter</i>	
<i>Second Quarter</i>				
202:120 English		3	226:279 Technical Experience in	
385:104 Social Problems		4	Community & Social Services	6
375:141 Intro. to Psychology		5	242:121 Administrative Office Supervision	4
202:253 Intergroup Relations		2	Electives	5
110: Physical Education		1		—
		—		15
		15	Total Credits: 96	
<i>Third Quarter</i>				
775:276 Introduction to Social Welfare		5	<i>Alcoholism Services Option:</i>	
222:100 Introduction to Criminal Justice		3	226:260 Alcohol Use and Abuse	4
740:200 Marriage & Family Relations		2	226:261 Alcoholism Prevention	
110:108 Effective Speaking		4	and Treatment	4
110: Physical Education		1	226:299 Community Services	
Elective		1	Seminar	2-4
		—		(total credits 5)
		16	226:279 Technical Field Experience	
			in Community Service	6
<i>Second Year</i>				
<i>First Quarter</i>				
775:270 Poverty in the Inner City		4	<i>Suggested Electives</i>	
202:122 Technical Report Writing		3	202:251 Work Relationships	2
242:102 Personnel Practices		4	242:111 Public Relations	3
Electives		5	254:151 Intermediate Typewriting I	4
		—	254:152 Intermediate Typewriting II	4
		16	254:257 Secretarial Machines	4
<i>Second Quarter</i>				
202:242 American Urban Society		4	335:230 Rural and Urban Settlement	3
226:278 Techniques of Community Work		5	375:151 Developmental Psychology	5
			520:141 Handicrafts in Elementary School	3
			555:311 Red Cross First Aid	2
			740:133 Nutrition Fundamentals	3
			740:265 Child Development	5
			Students interested in emphasis in Alcoholism Services will enroll in courses in Alcohol Use and Abuse, Alcoholism Prevention and Treatment, and special topic seminars such as Industrial Alcoholism.	

228: FOOD SERVICE MANAGEMENT

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

<i>First Year</i>		<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>
<i>First Quarter</i>				
254:119 Business English		3	110:108 Effective Speaking	4
228:135 Food Purchasing		4	202:120 English	3
228:121 Fundamentals of Food Preparation I		3	228:122 Fundamentals of Food Preparation II	3
242:101 Elements of Distribution		4	252:103 Principles of Advertising	3
Elective		2	110: Physical Education	1
		—	Elective	2
		16		—
				16

<i>Third Quarter</i>		<i>Credits</i>	<i>Second Quarter</i>		<i>Credits</i>
228:236 Menu Planning and Cost Control		4	242:180 Essentials of Law		4
242:170 Business Math		3	242:212 Basic Accounting II		3
228:245 Food Service Maintenance & Sanitation		3	228:237 Food Service Internship I		4
740:133 Nutrition Fundamentals		3	202:240 Human Relations		4
110: Physical Education		1			16
Elective		2			
		16			
	<i>Second Year</i>		<i>Third Quarter</i>		
<i>First Quarter</i>			228:240 Food Service Management		4
254:293 Business Communications		3	310:177 Introductory Bacteriology		3
242:211 Basic Accounting I		3	228:243 Food Equipment and Plant Operations		4
242:102 Personnel Practices		4	202:247 Survey of Basic Economics		5
228:233 Quantity Food Service		5	Elective		1
Elective		1			15
		16			
					Total Credits 96

242: BUSINESS MANAGEMENT TECHNOLOGY

This program provides training in varied business activities in preparation for a beginning management or supervisory career with a company or as a self-employed manager. The broad program includes study of finance, marketing, personnel practices, and office management. An option is available for a speciality in Real Estate.

GENERAL OPTION

<i>First Year</i>		<i>Credits</i>	<i>Second Quarter</i>		<i>Credits</i>
<i>First Quarter</i>			242:180 Essentials of Law		4
254:119 Business English		3	288:232 Labor-Management Relations		4
254:150 Beginning Typewriting		4	254:125 Business Machines		2
242:104 Introduction to Business		4	Elective		6
202:240 Human Relations		4			16
110: Physical Education		1			
		16			
<i>Second Quarter</i>			<i>Third Quarter</i>		
242:170 Business Mathematics		3	242:243 Survey in Finance		4
202:120 English		3	242:121 Administrative Office Supervision		4
242:101 Elements of Distribution		4	202:242 American Urban Society		4
242:211 Basic Acctg. I		3	Elective		4
110: Physical Education		1			16
Elective		2			
		16			
					Total Credits 96
<i>Third Quarter</i>			<i>Recommended Electives</i>		
242:212 Basic Acctg. II		3	244:121 Introduction to Programming		3
254:293 Business Communications		3	252:202 Retailing and Franchising		3
110:108 Effective Speaking		4	254:121 Office Problems		4
252:210 Consumer Service Fundamentals		3	252:103 Principles of Advertising		3
Elective		3	254:151 Intermediate Typewriting I		4
		16	254:152 Intermediate Typewriting II		4
			254:253 Advanced Typewriting		3
<i>Second Year</i>			252:212 Principles of Salesmanship		3
<i>First Quarter</i>			202:251 Work Relationships		2
202:247 Survey of Basic Economics		5	202:254 The Black American		2
244:120 Introduction to Information Processing		4	256:221 Transportation Traffic Principles		3
256:110 Transportation Econ. Policy I		3	202:253 Intergroup Relations		2
242:102 Personnel Practices		4	202:241 Man and Technology		4
		16			

REAL ESTATE OPTION

<i>First Year</i>		<i>Third Quarter</i>		<i>Credits</i>
<i>First Quarter</i>		<i>Credits</i>	242:243 Survey in Finance	4
254:119 Business English	3	202:240 Human Relations		4
242:104 Intro. to Business	4	Elective		5
242:180 Essentials of Law	4	242:275 Real Estate Project		3
242:106 Real Estate Principles	3			—
110: Physical Education	1			16
	—			
	15			Total Credits 96
<i>Second Quarter</i>				
242:170 Business Mathematics	3			
202:120 English	3			
242:211 Basic Accounting I	3			
242:185 Real Estate Law	3			
Electives	4			
	—			
	16			
<i>Third Quarter</i>				
242:212 Basic Accounting II	3			
254:293 Business Communications	3			
110:108 Effective Speaking	4			
242:245 Real Estate Financing	3			
110: Physical Education	1			
Electives	3			
	—			
	17			
<i>RECOMMENDED ELECTIVES</i>				
		<i>Technical Electives</i>		<i>Credits</i>
		242:215 Essentials of Real Estate		
		Economics		3
		242:115 Elements of Housing Design		
		and Construction		3
		242:125 Elements of Land Planning		
		and Real Estate Development		3
		242:205 Introduction to Real		
		Estate Management		4
		242:225 Industrial Real Estate		3
		242:235 Commercial Real Estate		3
		242:295 Applied Real Estate Math		3
		242:299 Special Topics in		
		Real Estate		6
		252:213 Sales Motivation		3
		252:212 Prin. of Salesmanship		3
<i>Second Year</i>				
<i>First Quarter</i>				
202:247 Survey of Basic Economics	5			
244:120 Intro. to Info. Proc. I	4			
242:265 Real Estate Brokerage	3			
242:102 Personnel Practices	4			
	—			
	16			
<i>Second Quarter</i>				
202:242 American Urban Society	4			
242:255 Valuation of Residential				
Property	3			
252:212 Prin. of Salesmanship	3			
242:121 Admin. Office Supervision				
Elective	2			
	—			
	16			
		<i>General Electives</i>		
		(Minimum 3 credits required)		
		202:251 Work Relationships		2
		202:254 The Black American		2
		202:253 Intergroup Relations		2
		202:241 Man & Technology		4

244: DATA PROCESSING

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

<i>First Year</i>		<i>Second Quarter</i>		<i>Credits</i>
<i>First Quarter</i>		<i>Credits</i>		<i>Credits</i>
242:104 Introduction to Business	4	202:120 English		3
202:131 Mathematical Analysis I	3	202:132 Mathematical Analysis II		4
254:119 Business English	3	202:240 Human Relations		4
244:120 Introduction to Information Processing	4	254:125 Business Machines		2
110: Physical Education	1	244:121 Introduction to Programming		3
	—			—
	15			16

<i>Third Quarter</i>		<i>Credits</i>	<i>Third Quarter</i>	<i>Credits</i>
202:122 Technical Report Writing		3	110:108 Effective Speaking	4
202:135 Mathematics for Data Processing		4	244:229 RPG Programming	2
202:247 Survey of Basic Economics		5	244:234 Computer Programming V	3
244:130 Computer Programming I		3	244:252 Data Processing Project II	2
110: Physical Education		1	*Option A or B	4
		—		—
		16		15
<i>Second Year</i>				
<i>First Quarter</i>				Total Credits 96
244:131 Computer Programming II		3		
244:232 Computer Programming III		3		
244:240 Data Processing Systems I		3		
*Option A or B		3 or 4		
Elective		5 or 4		
		—		
		17		
<i>Second Quarter</i>				
244:233 Computer Programming IV		3		
244:241 Data Processing Systems II		2		
244:251 Data Processing Project I		4		
*Option A or B		3 or 4		
Elective		4 or 3		
		—		
		16		
			<i>Recommended Electives</i>	
			202:133 Mathematical Analysis III	4
			202:234 Mathematical Analysis IV	4

*Option A: 242:211 *Basic Accounting I*, 3 credits; 242:212 *Basic Accounting II*, 3 credits; and 242:121 *Administrative Office Supervision*, 4 credits; (445:301 *Computer Fundamentals*, 3 credits, may be substituted for 242:121).

*Option B: 620:221 *Principles of Accounting*, 4 credits; 620:222 *Principles of Accounting*, 4 credits; plus 620:270 *Managerial Accounting*, 4 credits; or 620:290 *Cost Accounting*, 4 credits.

252: SALES AND MERCHANDISING

This program equips graduates to fill entry level positions in distributive business fields including retailing, wholesaling, and related services. The core curriculum includes courses in advertising, marketing, sales, and visual merchandising. The program provides emphases in Retailing, Visual Merchandising, Industrial Distribution, and Fashion.

<i>First Year</i>			<i>Second Quarter</i>	
<i>First Quarter</i>		<i>Credits</i>	244:120 Intro. to Information Processing	4
242:104 Introduction to Business		4	252:202 Retailing and Franchising	3
242:111 Public Relations		3	252:212 Principles of Salesmanship	3
242:170 Business Mathematics		3	Technical Electives	6
110: Physical Education		1		—
254:119 Business English (or 202:118)		4		16
		—		
		15	<i>Third Quarter</i>	
<i>Second Quarter</i>			242:180 Essentials of Law	4
242:101 Elements of Distribution		4	252:203 Techniques of Retail Merchandising	3
242:102 Personnel Practices		4	252:290 Field Study in Retailing	1
242:211 Basic Accounting I		3	110:105 Introduction to Public Speaking	4
252:104 Visual Merchandising		3	OR	
110: Physical Education		1	110:106 Effective Oral Communication	4
General Elective		2	Technical Elective	4
		—		—
		17		16
<i>Third Quarter</i>				Total Credits 96
242:212 Basic Accounting II		3		
252:103 Principles of Advertising		3		
252:105 Sales Promotion		3		
202:120 English		3		
202:240 Human Relations		4		
		—		
		16		
<i>Second Year</i>				
<i>First Quarter</i>				
252:210 Consumer Service Fundamentals		3		
252:211 Mathematics of Retail Distribution		3		
202:247 Survey of Basic Economics		5		
Technical Electives		5		
		—		
		16		
			<i>Technical Electives</i>	
			<i>Retailing Emphasis</i>	<i>Credits</i>
			242:243 Survey of Finance	4
			252:213 Sales Motivation	3
			Electives	8
				—
				15
			<i>Visual Merchandising Emphasis</i>	
			242:243 Survey of Finance	4
			252:206 Intro. to Advertising Media	3
			Electives	8
				—
				15

<i>Industrial Distribution Emphasis</i>		<i>Fashion Emphasis</i>	
252:201 Principles of Wholesaling	3	740:121 Textiles	3
252:213 Sales Motivation	3	740:158 House Furnishings	3
242:243 Survey of Finance	4	740:317 Historic Costume	3
Electives	5	740:419 Clothing Communication	3
	<hr/>	740:439 Fashion	3
	15		<hr/>
			15

254: SECRETARIAL SCIENCE

Prepares students for the different but often overlapping fields of secretarial, stenographic, or clerical work; provides thorough training in typing, shorthand, and communications; includes courses that prepare graduates for work as technical, executive, and legal secretaries, and as medical assistants. An international option provides secretarial training for overseas assignments.

EXECUTIVE SECRETARIAL SCIENCE OPTION

<i>First Year</i>			
<i>First Quarter</i>	<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>
254:119 Business English	3	242:212 Basic Accounting II	3
254:150 Beginning Typewriting	4	254:257 Secretarial Machines	4
254:171 Shorthand Principles	4	254:291 Data Communications	3
202:240 Human Relations	4	254:275 Advanced Dictation & Transcription II	4
110: Physical Education	1	254:241 Records Management	2
	<hr/>		<hr/>
	16		16
<i>Second Quarter</i>		<i>Third Quarter</i>	
110:111 English Composition	4	254:276 Executive Dictation & Transcription	4
254:121 Office Problems	4	242:102 Personnel Practices	4
254:151 Intermediate Typewriting I	4	110:108 Effective Speaking	4
254:172 Intermediate Shorthand & Transcription	4	202:242 American Urban Society	4
	<hr/>		<hr/>
	16		16
<i>Third Quarter</i>			
254:125 Business Machines	2		
254:293 Business Communications	3		
242:170 Business Mathematics	3		16
254:152 Intermediate Typewriting II	4		
254:173 Shorthand & Transcription	4		
	<hr/>		
	16		
<i>Second Year</i>		<i>Recommended Electives</i>	
<i>First Quarter</i>		242:111 Public Relations	3
242:211 Basic Accounting I	3	252:212 Principles of Sales	3
202:247 Survey of Basic Economics	5	254:126 Advanced Business Machines	3
254:274 Advanced Dictation & Transcription I	4	244:120 Introduction to Information Processing	4
254:253 Advanced Typewriting	3	242:101 Elements of Distribution	4
110: Physical Education	1	242:104 Introduction to Business	4
	<hr/>		<hr/>
	16		Total Credits 96

TECHNICAL SECRETARIAL SCIENCE OPTION

<i>First Year</i>			
<i>First Quarter</i>	<i>Credits</i>	<i>Second Quarter</i>	
254:119 Business English	3	110:111 English Composition	4
254:125 Business Machines	2	254:121 Office Problems	4
254:150 Beginning Typewriting	4	254:151 Intermediate Typewriting I	4
254:171 Shorthand Principles I	4	254:172 Introduction to Shorthand and Transcription	4
242:170 Business Mathematics	3		
	<hr/>		<hr/>
	16		16

<i>Third Quarter</i>	<i>Credits</i>		<i>Credits</i>
110:108 Effective Speaking	4	254:257 Secretarial Machines	4
110: Physical Education	1	Elective	1
254:152 Intermediate Typewriting II	4		—
254:173 Shorthand and Transcription	4		16
254:293 Business Communications	3		
	—		
	16	<i>Third Quarter</i>	
<i>Second Year</i>		202:122 Technical Report Writing	3
<i>First Quarter</i>		202:240 Human Relations	4
242:211 Basic Accounting I	3	202:247 Survey of Basic Economics	5
254:274 Advanced Dictation and Transcription I	4	254:278 Technical Dictation and Transcription	4
254:253 Advanced Typewriting	3		—
254:291 Data Communications	3		16
254:241 Records Management	2		Total Credits 96
110: Physical Education	1		
	—	<i>Recommended Electives</i>	
	16	242:101 Elements of Distribution	4
<i>Second Quarter</i>	<i>Credits</i>	242:111 Public Relations	3
202:242 American Urban Society	4	252:212 Principles of Sales	3
242:212 Basic Accounting II	3	256:110 Transportation Economic Policy I	3
254:275 Advanced Dictation and Transcription II	4	242:243 Survey in Finance	5
		254:126 Advanced Business Machines	3
		242:104 Introduction to Business	4

LEGAL SECRETARIAL SCIENCE OPTION

<i>First Year</i>		202:247 Survey of Basic Economics	5
<i>First Quarter</i>	<i>Credits</i>	254:274 Advanced Dictation & Transcription I	4
254:119 Business English	3		—
254:150 Beginning Typewriting	4		16
254:171 Shorthand Principles	4	<i>Second Quarter</i>	
254:125 Business Machines	2	254:254 Legal Typewriting	3
202:240 Human Relations	4	254:241 Records Management	2
	—	254:275 Advanced Dictation & Transcription II	4
	17	242:212 Basic Accounting II	3
<i>Second Quarter</i>		General Elective	3
110:111 English Composition	4		—
254:151 Intermediate Typewriting I	4		15
254:172 Intermediate Shorthand & Transcription	4	<i>Third Quarter</i>	
242:170 Business Mathematics	3	254:277 Legal Dictation & Transcription	4
110: Physical Education	1	254:295 Legal Office Procedures	4
	—	254:180 Essentials of Law	4
	16	Technical Electives	4
<i>Third Quarter</i>			—
254:293 Business Communications	3		16
254:152 Intermediate Typewriting II	4		
254:173 Shorthand and Transcription	4		Total Credits 96
202:242 American Urban Society	4	<i>Technical Electives</i>	
110: Physical Education	1	242:121 Administrative Office Supervision	4
	—	242:102 Personnel Practices	4
	16	242:213 Basic Accounting III	3
<i>Second Year</i>		242:105 Real Estate Principles	3
<i>First Quarter</i>		242:185 Real Estate Law	3
242:211 Basic Accounting I	3	254:121 Office Problems	3
254:257 Secretarial Machines	4	254:291 Data Communications	4

INTERNATIONAL SECRETARIAL SCIENCE OPTION

<i>First Year</i>		<i>Second Quarter</i>	<i>Credits</i>
<i>First Quarter</i>	<i>Credits</i>	110:111 English Composition	4
254:119 Business English	3	254:151 Intermediate Typewriting I	4
254:150 Beginning Typewriting	4	254:172 Intermediate Shorthand and Transcription	4
254:171 Shorthand Principles	4	Beginning Foreign Language	4
Beginning Foreign Language	4		—
110: Physical Education	1		16
	—		
	16		

<i>Third Quarter</i>	<i>Credits</i>		<i>Credits</i>
110: Physical Education	1	254:125 Business Machines	2
254:152 Intermediate Typewriting II	4	254:257 Secretarial Machines	4
254:173 Shorthand and Transcription	4		—
254:293 Business Communications	3		16
Beginning Foreign Language	4		
	—		
	16		
<i>Second Year</i>			
<i>First Quarter</i>			
202:242 American Urban Society	4		
254:253 Advanced Typewriting	3		
254:274 Advanced Dictation and Transcription I	4		
Intermediate Foreign Language	3		
254:241 Records Management	2		
	—		
	16		
<i>Second Quarter</i>			
242:170 Business Mathematics	3		
254:275 Advanced Dictation and Transcription II	4		
Intermediate Foreign Language	3		
	—		
	16		
			16
		Total Credits	96
		<i>Recommended Electives</i>	
		244:120 Introduction of Information Processing	4
		242:111 Public Relations	3
		254:291 Data Communications	3
		254:126 Advanced Business Machines	3
		242:104 Introduction to Business	4
		340:209 Modern Europe 1870-Present	4
		370:220 American Foreign Policy	4
		Process and Problems	4

MEDICAL ASSISTANT OPTION

<i>First Year</i>		<i>Credits</i>		<i>Credits</i>
<i>First Quarter</i>				
254:119 Business English	3	242:180 Essentials of Law	4	
254:150 Beginning Typewriting	4	254:283 Medical Terminology	4	
284:101 Basic Chemistry	4	254:253 Advanced Typewriting	3	
310:147 Anatomy and Physiology	3	Elective	2	
Elective	2		—	
	—		16	
	16			
<i>Second Quarter</i>				
202:120 English	3	242:212 Basic Accounting II	3	
254:121 Office Problems	4	254:181 Office Nursing Techniques I	3	
254:151 Intermediate Typewriting I	4	202:240 Human Relations	4	
310:148 Anatomy and Physiology	3	555:211 Red Cross First Aid	2	
110: Physical Education	1	254:257 Secretarial Machines	4	
Elective	1		—	
	—		16	
	16			
<i>Third Quarter</i>				
254:293 Business Communications	3	242:102 Personnel Practices	4	
254:152 Intermediate Typewriting II	4	254:125 Business Machines	2	
110: Physical Education	1	254:282 Medical Machine Transcription	3	
110:108 Effective Speaking	4	254:182 Office Nursing Techniques II	3	
242:170 Business Mathematics	3	254:241 Records Management	2	
Elective	1	Elective	2	
	—		—	
	17		16	
		Total Credits	96	
<i>Second Year</i>				
<i>First Quarter</i>				
242:211 Basic Accounting I	3			

Electives should be selected from: Psychology, Sociology, Humanities, Art, Science, Home Economics (Foods & Nutrition courses), or the Associate Studies (202's).

255: OFFICE SERVICES TECHNOLOGY

The Office Services Technology career program emphasizes skill development 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 the development of skills in operating office machines and systems, records management, and personnel supervision.

First Year

<i>First Quarter</i>	<i>Credits</i>
254:119 Business English	3
254:150 Beginning Typewriting	4
202:240 Human Relations	4
242:104 Introduction to Business	4
—	—
	15

Second Quarter

242:170 Business Mathematics	3
202:120 English	3
254:121 Office Problems	4
254:151 Intermediate Typewriting I	4
110: Physical Education	1
Elective	2
—	—
	17

Third Quarter

110:108 Effective Speaking	4
254:125 Business Machines	2
254:152 Intermediate Typewriting II	4
254:293 Business Communications	3
110: Physical Education	1
Elective	2
—	—
	16

Second Year

<i>First Quarter</i>	<i>Credits</i>
202:242 American Urban Society	4
242:211 Basic Accounting I	3
242:102 Personnel Practices	4
254:241 Records Management	2
254:253 Advanced Typewriting	3
—	—
	16

Second Quarter

202:247 Survey of Basic Economics	5
254:257 Secretarial Machines	4
242:180 Essentials of Law	4
254:126 Advanced Business Machines	3
—	—
	16

Third Quarter

254:291 Data Communications	3
242:121 Administrative Office Supervision	4
242:101 Elements of Distribution <i>OR</i>	4
252:212 Principles of Salesmanship	3
Electives	5 or 6
—	—
	16

Total Credits 96

Electives should be selected from: Psychology, Sociology, Humanities, Art or Home Economics.

256: TRANSPORTATION

This program provides qualified personnel for the field of transportation in such areas as sales, traffic and operations, personnel management, and public relations. The program includes courses in traffic practices and procedures, rate theory, and terminal management as they pertain to the movement of goods and people by rail, highway, water, and air.

GENERAL OPTION*First Year*

<i>First Quarter</i>	<i>Credits</i>
110: Physical Education	1
254:119 Business English	3
202:242 American Urban Society	4
256:110 Transportation Economic Policy I	3
256:115 Transportation Commercial Motor	3
Elective	2
—	—
	16

Second Quarter

110: Physical Education	1
202:120 English	3
202:240 Human Relations	4
256:111 Transportation Economic Policy II	3
256:116 Transportation Commercial Air	3
288:141 Safety Procedures	3
—	—
	17

Third Quarter

242:101 Elements of Distribution	4
242:180 Essentials of Law	4
256:117 Transportation Commercial Water	4

256:118 Transportation Freight Rates and Classification	3
Elective	2
—	—
	16

Second Year

<i>First Quarter</i>	<i>Credits</i>
202:247 Survey of Basic Economics	5
256:220 Transportation Terminal Management and Operations	3
256:225 Interstate Traffic Practices and Procedures I	3
242:104 Introduction to Business	4
—	—
	15

Second Quarter

110:108 Effective Speaking	4
254:293 Business Communications	3
256:221 Transportation Traffic Principles	3
256:226 Interstate Traffic Practices and Procedures II	3
242:170 Business Mathematics	3
—	—
	16

<i>Third Quarter</i>	<i>Credits</i>		<i>Credits</i>
202:122 Technical Report Writing	3	256:227 Interstate Traffic Practices and	
242:102 Personnel Practices	4	Procedures III	3
242:111 Public Relations	3		—
256:222 Transportation Traffic Practices and			16
Procedures	3		Total Credits 96

COMMERCIAL AVIATION OPTION

<i>First Year</i>		<i>Credits</i>		<i>Credits</i>
<i>First Quarter</i>				
256:110 Transportation Economic Policy I	3	242:111 Public Relations		3
242:170 Business Mathematics	3	256:220 Transportation Terminal Management		
245:119 Business English	3	and Operations*		3
254:150 Beginning Typewriting	4	Elective		2
110: Physical Education	1			—
Elective	3			16
	—			
	17			
<i>Second Quarter</i>				
256:111 Transportation Economic Policy II	3	256:221 Transportation Traffic Principles		3
256:116 Transportation: Commercial Air	3	242:101 Elements of Distribution*		4
242:211 Basic Accounting I	3	110:108 Effective Speaking		4
202:120 English	3	Elective		5
110: Physical Education	1			—
Elective	3			16
	—			
	16			
<i>Third Quarter</i>				
242:212 Basic Accounting II	3	256:222 Transportation Traffic Practices		3
202:240 Human Relations	4	202:247 Survey of Basic Economics*		5
242:104 Introduction to Business	4	242:180 Essentials of Law		4
256:118 Transportation Freight Rates and		252:212 Principles of Sales		3
Classification*	3			—
Elective	2			15
	—			Total Credits 96
	16			
<i>Second Year</i>				
<i>First Quarter</i>				
242:102 Personnel Practices	4	254:181 Office Nursing Techniques I		3
244:120 Introduction to Information Processing	4	254:182 Office Nursing Techniques II		3
		254:121 Office Problems		4
		555:211 Red Cross First Aid		2

*It is recommended that those persons who are particularly interested in a career as an Airline Hostess substitute the following courses for courses identified above by an asterisk.

275: CYTOTECHNOLOGY

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

<i>First Year</i>		<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>
<i>First Quarter</i>				
202:118 English	4	202:120 English		3
310:121 Principles of Biology	4	310:122 Principles of Biology		4
315:121 Inorganic Chemistry	3	315:122 Inorganic Chemistry		3
202:131 Math Analysis I	3	Electives		6
110: Physical Education	1			—
	—			16
	15			

<i>Third Quarter</i>		<i>Credits</i>	<i>Second Quarter</i>		<i>Credits</i>
202:240 Human Relations		4	110:108 Effective Speaking		4
310:123 Principles of Biology		4	202:242 American Urban Society		4
315:123 Inorganic Chemistry		3	310:191 Human Physiology		4
310:133 Microbiology		4	242:211 Basic Accounting I		3
110: Physical Education		1	Elective		2
		<hr/>			<hr/>
		16			17
<i>Second Year</i>					
<i>First Quarter</i>		<i>Credits</i>	<i>Third Quarter</i>		<i>Credits</i>
202:122 Technical Report Writing		3	310:328 Histology		4
310:246 General Genetics		4	242:212 Basic Accounting II		3
310:247 Genetics Lab		1	Electives		9
254:181 Office Nursing Techniques I		3			<hr/>
Elective		5			16
		<hr/>			<hr/>
		16			Total Credits 96

279: RESPIRATORY THERAPY TECHNOLOGY

This program prepares a person who, under the supervision of a physician, administers oxygen, other gases, and medication and operates equipment in the medical care of patients with respiratory disorders.

<i>First Year</i>		<i>Credits</i>	<i>Second Year</i>		<i>Credits</i>
<i>First Quarter</i>			<i>First Quarter</i>		
310:147 Anatomy and Physiology I		3	110: Physical Education		1
284:100 Basic Chemistry		4	278:233 Clinical Appl. III: Respiratory Therapy		2
202:131 Mathematical Analysis I		3	279:201 Anatomy & Physiology of Cardiopulmonary System		3
279:102 Introduction to Respiratory Therapy		1	278:223 Med. Asst. Proc. III; Respiratory Therapy		4
254:283 Medical Terminology		4	110:105 Intro to Public Speaking		<hr/>
		<hr/>			4
		15			OR
			110:106 Effective Oral Communication		<hr/>
					14
<i>Second Quarter</i>			<i>Second Quarter</i>		
310:148 Anatomy and Physiology II		3	202:122 Technical Report Writing		3
202:118 English		4	110: Physical Education		1
279:139 Physical Science for Respiratory Therapy		3	278:234 Clinical Appl. IV: Respiratory Therapy		6
310:133 Microbiology		4	278:224 Med. Asst. Proc. IV: Respiratory Therapy		<hr/>
278:121 Med. Asst. Proc. I: Respiratory Therapy		4			4
		<hr/>			14
		18	<i>Third Quarter</i>		
<i>Third Quarter</i>			202:242 American Urban Society		4
310:149 Anatomy and Physiology III		3	254:241 Records Management		2
202:120 English		3	278:225 Med. Asst. Proc. V: Respiratory Therapy		4
202:240 Human Relations		4	279:235 Clinical Appl. V:		<hr/>
278:131 Clinical Appl. I: Respiratory Therapy		2			4
279:140 Patient Care in Respiratory Therapy		4			14
		<hr/>			
		16			Total Credits 103
<i>Summer Quarter</i>					
278:122 Med. Asst. Proc. II: Respiratory Therapy		4			
279:142 Pathology in Respiratory Therapy		3			
279:141 Pharmacology in Respiratory Therapy		3			
278:232 Clinical Appl. II: Respiratory Therapy		2			
		<hr/>			
		12			

Note: It is recommended that a course in economics such as 202:247, *Survey of Basic Economics*, be taken by the student.

284: CHEMICAL TECHNOLOGY

This program prepares students for technological services in chemical manufacturing plants and in processing industries and for technical positions in chemical laboratories. The curriculum includes the fundamentals of chemistry, physics, and mathematics and emphasizes instrumentation methods for chemical analysis.

<i>First Year</i>		<i>Second Quarter</i>	
<i>First Quarter</i>	<i>Credits</i>	284:202 <i>Instrumental Methods I</i>	4
284:101 <i>Introductory Chemistry I</i>	4	202:122 <i>Technical Report Writing</i>	3
284:121 <i>Organic Principles I</i>	4	110: <i>Physical Education</i>	1
202:131 <i>Math Analysis I</i>	3	<i>General Elective*</i>	5
202:118 <i>English</i>	4	<i>Basic Electives***</i>	4
110: <i>Physical Education</i>	1		<hr/>
	16		17
		<i>Third Quarter</i>	
<i>Second Quarter</i>		284:203 <i>Instrumental Methods II</i>	4
284:102 <i>Introductory Chemistry II</i>	4	284:250 <i>Elements of Physical Chemistry</i>	4
284:122 <i>Organic Principles II</i>	4	284:255 <i>Literature of Chemistry</i>	1
202:132 <i>Math Analysis II</i>	4	<i>General Electives*</i>	7
292:151 <i>Basic Physics; Mechanics</i>	4		<hr/>
	16		16
		Total Credits	99
<i>Third Quarter</i>		<i>*General Electives</i>	
284:103 <i>Qualitative Methods</i>	4	110:105 <i>Intro. to Public Speaking</i>	4
284:270 <i>Polymer Chemistry Methods</i>	4	OR	
202:133 <i>Math Analysis III</i>	4	110:106 <i>Effective Oral Communication</i>	4
292:153 <i>Basic Physics; Heat, Sound & Light</i>	3	202:241 <i>Man & Technology</i>	4
<i>General Elective*</i>	2	202:247 <i>Survey of Basic Economics</i>	5
	<hr/>	202:253 <i>Intergroup Relations</i>	2
	17	202:240 <i>Human Relations</i>	4
		202:242 <i>American Urban Society</i>	4
		202:251 <i>Work Relationships</i>	2
		202:254 <i>The Black American</i>	2
		<i>**Technical Electives</i>	
		284:210 <i>Scientific Glass Blowing I</i>	1
		284:211 <i>Scientific Glass Blowing II</i>	1
		284:260 <i>Compounding Methods</i>	3
		191:121 <i>Technical Drawing I</i>	3
		223:260 <i>Hazardous Materials</i>	3
		394:402 <i>Introduction to Elastomers</i>	2
		394:403 <i>Introduction to Plastics</i>	2
		<i>***Basic Electives</i>	
		202:234 <i>Math Analysis IV</i>	4
		445:201 <i>Introductory Fortran Programming</i>	3

286: ELECTRONIC TECHNOLOGY

(An ECPD accredited Engineering Technology curriculum)

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

<i>First Year</i>		<i>Third Quarter</i>	
<i>First Quarter</i>	<i>Credits</i>	202:120 <i>English</i>	3
202:131 <i>Math Analysis I</i>	3	286:124 <i>Electronics II</i>	4
286:153 <i>DC Circuits</i>	6	292:153 <i>Basic Physics, Heat, Sound & Light</i>	3
202:118 <i>English</i>	4	202:133 <i>Math Analysis III</i>	4
202:240 <i>Human Relations</i>	4	286:128 <i>Electronic Drafting</i>	2
	<hr/>	110: <i>Physical Education</i>	1
	17		<hr/>
			17
		<i>Second Year</i>	
<i>Second Quarter</i>		<i>First Quarter</i>	
292:151 <i>Basic Physics; Mechanics</i>	4	286:225 <i>Electronics III</i>	4
202:132 <i>Math Analysis II</i>	4	286:242 <i>Machinery</i>	4
286:122 <i>Circuit Theory</i>	4	202:234 <i>Math Analysis</i>	4
286:123 <i>Electronics I</i>	4	286:255 <i>Shop Practices</i>	1
110: <i>Physical Education</i>	1	<i>Elective*</i>	5
	<hr/>		<hr/>
	17		18

<i>Second Quarter</i>		286:253 Servomechanisms	3
286:237 Digital Computers	4	286:226 Integrated Circuits	2
286:245 Analog Computers	4		—
286:249 Industrial Electronics	4		16
202:122 Technical Report Writing	3		Total Credits 102
Elective*	2	<i>* Recommended General Electives</i>	
	—	202:241 Man and Technology	4
	17	202:242 Amer. Urban Society	4
		202:251 Work Relations	2
<i>Third Quarter</i>		202:253 Intergroup Relations	2
286:251 Communication Circuits	4	202:254 The Black American	2
202:247 Survey of Basic Economics	5	110:108 Effective Speaking	4
286:250 Electronic Project	2	ROTC	

288: INDUSTRIAL TECHNOLOGY

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

<i>First Year</i>		<i>Second Quarter</i>		<i>Credits</i>
<i>First Quarter</i>		242:211 Basic Accounting I		3
202:131 Math Analysis I	3	288:241 Quality Control Procedures		4
288:100 Mgt. Functions in Mfg.	4	202:122 Technical Report Writing		3
288:141 Safety Procedures	3	Technical Elective		5
292:121 Technical Drawing I	3			—
292:247 Shop Methods & Practices	4			15
	—			
	17	<i>Third Quarter</i>		
<i>Second Quarter</i>		242:212 Basic Accounting II		3
202:132 Math Analysis II	4	288:200 Mfg. Profitability		4
202:247 Survey of Basic Economics	5	288:245 Plant & Equip. Maintenance		3
288:130 Work Measurement Proc. I	3	General Elective		5
292:122 Technical Drawing II	3			—
110: Physical Education	1			15
	—			Total Credits 96
	16			
<i>Third Quarter</i>		<i>General Electives</i>		
202:118 English	4	100:108 Effective Speaking		4
202:133 Math Analysis III	4	202:242 American Urban Society		4
288:131 Work Measurement Proc. II	3	202:241 Man and Technology		4
292:151 Basic Physics — Mechanics	4	202:251 Work Relations		2
110: Physical Education	1	202:254 The Black American		2
	—			
	16	<i>Technical Electives</i>		
<i>Second Year</i>		242:102 Personnel Practices		4
<i>First Quarter</i>		242:104 Intro. to Business		4
202:120 English	3	284:100 Basic Chemistry		4
202:240 Human Relations	4	298:122 Basic Surveying		4
288:210 Controlling & Sched. Prod.	2	292:152 Basic Phys.-El. & Mag.		3
288:231 Factory Plan. & Mtl. Hdl.	4	292:153 Basic Phys.-H., S., L.		3
288:232 Labor Management Relations	4	244:120 Intro. to Inform. Proc.		4
	—	254:125 Business Machines		2
	17			

290: INSTRUMENTATION TECHNOLOGY

This career area offers training with instruments and control devices used in automatic manufacturing and processing, power generation, space exploration, and communications systems. The program develops the principles and technical skills involved in the instrumental control of processes and operations in modern industry.

<i>First Year</i>		<i>Second Quarter</i>		<i>Credits</i>
<i>First Quarter</i>		292:151 Basic Physics; Mechanics		4
202:131 Math Analysis I	3	202:132 Math Analysis II		4
286:153 DC Circuits	6	286:122 Circuit Theory		4
202:118 English	4	286:123 Electronics I		4
202:240 Human Relations	4	110: Physical Education		1
	—			—
	17			17

<i>Third Quarter</i>				<i>Credits</i>
202:120 English	3	290:240 Calibration and Standardization		2
202:133 Math Analysis III	4	290:232 Computer Principles		5
290:120 Instrumentation Drafting	2	Elective*		2
286:124 Electronics II	4			—
292:153 Basic Physics; Heat, Sound and Light	3			17
110: Physical Education	1			
	—	<i>Third Quarter</i>		
	17	202:247 Survey of Basic Economics		5
		290:231 Automatic Process Control		4
		290:241 Instrumentation Project		3
		286:253 Servomechanisms		3
		Elective*		1
				—
				16
<i>Second Year</i>				
<i>First Quarter</i>				
290:121 Fundamentals of Instrumentation	5			
202:242 American Urban Society	4			Total Credits 101
202:234 Math Analysis IV	4			
Elective*	4	<i>* Recommended General Electives</i>		
	—	202:241 Man and Technology		4
	17	202:251 Work Relations		2
		202:253 Intergroup Relations		2
		202:254 The Black American		2
<i>Second Quarter</i>		110:108 Effective Speaking		4
202:122 Technical Report Writing	3	ROTC		
290:230 Control Principles	5			

292: MECHANICAL TECHNOLOGY

(An E.C.P.D. accredited Engineering Technology curriculum)

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

<i>First Year</i>			<i>Second Year</i>	
<i>First Quarter</i>		<i>Credits</i>	<i>First Quarter</i>	
202:118 English	4		202:234 Math Analysis IV	4
202:131 Math Analysis I	3		292:152 Basic Physics; Electricity and Magnetism	3
202:240 Human Relations	4		298:241 Strength of Materials	5
292:121 Technical Drawing I	3		292:243 Kinematics	3
110: Physical Education	1		Elective	2
	—			—
	15			17
<i>Second Quarter</i>			<i>Second Quarter</i>	
202:120 English	3		292:247 Shop Methods and Practices	4
202:132 Math Analysis II	4		292:242 Design Materials	4
292:151 Basic Physics; Mechanics	4		292:244 Mechanical Design I	4
292:122 Technical Drawing II	3		110:108 Effective Speaking	4
110: Physical Education	1		Elective	2
Elective	2			—
	—			18
	17			
<i>Third Quarter</i>			<i>Third Quarter</i>	
292:153 Basic Physics; Heat, Sound, Light	3		292:249 Applied Thermal Energy	4
202:133 Math Analysis III	4		292:251 Elementary Fluid Mechanics	4
298:125 Statics	5		292:245 Mechanical Design II	5
292:123 Technical Drawing III	3		202:242 American Urban Society	4
202:122 Technical Report Writing	3			—
	—			17
	18			Total Credits 102

298: SURVEYING AND CONSTRUCTION TECHNOLOGY

(An E.C.P.D. accredited Engineering Technology curriculum)

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

CONSTRUCTION MAJOR

First Year

<i>First Quarter</i>	<i>Credits</i>		<i>Credits</i>
202:118 English	4	298:235 Soils Testing	2
202:131 Math Analysis I	3	298:241 Strength of Materials	5
292:121 Technical Drawing I	3	Elective* (General)	3
202:240 Human Relations	4		—
110: Physical Education	1		18
	—		
	15	<i>Second Quarter</i>	
		202:122 Technical Report Writing	3
		298:231 Building Construction	4
		298:233 Construction Administration	4
		298:236 Materials Testing-Metals	2
		298:245 Cost Analysis and Estimating	3
			—
			16
<i>Second Quarter</i>		<i>Third Quarter</i>	
202:120 English	3	298:232 Construction	4
202:132 Math Analysis II	4	298:234 Elements of Structure	4
292:122 Technical Drawing II	3	202:247 Survey Basic Economics	5
292:151 Physics Mechanics	4	298:239 Materials Testing-Nonmetals	2
Elective* (General)	4	298:250 Structural Drafting	3
	—		—
	18		18
<i>Third Quarter</i>			
202:133 Math Analysis III	4		
298:122 Basic Surveying	4		
298:125 Statics	5		
292:152 or 153 Physics Elective	3		
110: Physical Education	1		
	—		
	17	*Suggested Electives: (General)	
		202:242 American Urban Society	4
		202:251 Work Relations	2
		202:254 The Black American	2
		337:100 Earth Science	4
		ROTC	
		202:241 Man and Technology	4
		202:253 Intergroup Relations	2
		110:108 Effective Speaking	4
		335:100 Intro. to Geography	4
		555:211 Red Cross First Aid	2
			—
		Total Credits	102

Second Year

<i>First Quarter</i>	<i>Credits</i>		<i>Credits</i>
202:234 Math Analysis IV	4		
298:222 Construction Surveying	4		

SURVEYING MAJOR

First Year

<i>First Quarter</i>	<i>Credits</i>		<i>Credits</i>
202:118 English	4		
202:131 Math Analysis I	3		
292:121 Technical Drawing I	3		
202:240 Human Relations	4		
110: Physical Education	1		
	—		
	15		
		<i>Summer</i>	
		298:123 Surveying Field practice**	3
			—
		<i>Second Year</i>	
<i>Second Quarter</i>		<i>First Quarter</i>	
202:120 English	3	202:234 Math Analysis IV	4
202:132 Math Analysis II	4	298:222 Construction Surveying	4
292:122 Technical Drawing II	3	298:235 Soils Testing	2
292:151 Physics Mechanics	4	298:241 Strength of Materials	5
Elective* (General)	4	110: Physical Education	1
	—		—
	18		16
		<i>Second Quarter</i>	
<i>Third Quarter</i>		202:122 Technical Report Writing	3
202:133 Math Analysis III	4	298:224 Land Surveying	4
298:122 Basic Surveying	4	298:233 Construction Administration	4
298:125 Statics	5	298:236 Material Testing-Metals	2
292:152 or 153 Physics Elective	3	298:226 Subdivision Design	3
	—		—
	16		16

<i>Third Quarter</i>			<i>Credits</i>	
298:225	Advanced Surveying	4	202:259 The Black American	2
298:232	Construction	4	335:100 Intro. to Geography	4
202:247	Survey Basic Economics	5	ROTC	
298:239	Materials Testing-Nonmetals	2	202:242 American Urban Society	4
	Elective* (General)	3	202:253 Intergroup Relations	2
		—	110:108 Effective Speaking	4
		18	337:110 Earth Science	4
	Total Credits	102	337:101 Intro. Physical Geology	5
			555:211 Red Cross First Aid	2
<i>* Suggested Electives: (General)</i>				
202:241	Man and Technology	4		
202:251	Work Relations	2		

**10-day session-please see Summer Bulletin

DIPLOMA NURSING PROGRAM

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

Nursing students must meet the University entrance requirements and are regularly enrolled with college credit for the courses satisfactorily completed.

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

The programs planned for the three schools of nursing differ slightly in regard to courses taken and their sequence. The following courses are offered:

	<i>Credits</i>
310:133 Microbiology	4
310:147,148,149 Anatomy and Physiology	3, 3 and 3
315:124 Chemistry	4
375:141 General Psychology	5
375:141 Intro. to Psychology	5
385:100 Introduction to Sociology	5
740:133 Nutrition Fundamentals	3

ALLIED HEALTH PROGRAMS

The University of Akron, in cooperation with a number of area hospitals, provides credit instruction for students interested in careers in allied health fields including Surgical Assisting, and Radiologic Technology.

Students must meet the University entrance requirements and are regularly enrolled with college credit for the courses satisfactorily completed. A list-

ing of the University courses is given on page 192 of this bulletin.

Applications for these programs are handled through the hospitals where the clinical instruction is held. An associate degree is not offered for these programs. Interested students may contact the office of the Dean of the Community and Technical College for further information.

CERTIFICATE PROGRAM IN REAL ESTATE

The Certificate Program in Real Estate augments the present Business Management Technology (Real Estate) associate degree program. It is a professional education program designed to enhance the student's understanding of real estate as a product, a process, and a profession. The Certificate Program is open to persons actively engaged in the real estate profession as well as to graduates and undergraduates at The University of Akron or other accredited institutions.

PROGRAM REQUIREMENTS

To satisfy the requirements for a Certificate in Real Estate, a regularly enrolled student at The

University of Akron must complete the following requirements:

<i>Core Course Requirement</i>		<i>Credits</i>
242:105	Real Estate Principles	3
242:185	Real Estate Law	3
242:245	Real Estate Financing	3
242:255	Valuation of Residential Property	3
242:265	Real Estate Brokerage	3
252:212	Principles of Salesmanship	3
<i>Elective Course Requirement</i>		
<i>(At least 5 of the following courses must be completed)</i>		
242:215	Essentials of Real Estate Economics	3

242:125 Elements of Land Planning and Real Estate Development	3
242:115 Elements of Housing Design and Construction	3
242:205 Introduction to Real Estate Management	4
242:225 Industrial Real Estate	3
242:235 Commercial Real Estate	3
242:295 Applied Real Estate Mathematics	3
242:299 Special Topics in Real Estate (May be repeated for a total of 6 credits)	3
252:213 Sales Motivation	3

Upon completion of the Core and Elective Course requirements, the student will take 242:275, Real Estate Project. In this course the student will produce a paper covering some aspect of real estate chosen by the student and approved by the Coordinator of the Program.

QUALITY OF STUDENT WORK

A grade of "C" or better is required in all courses undertaken as part of the Certificate Program.

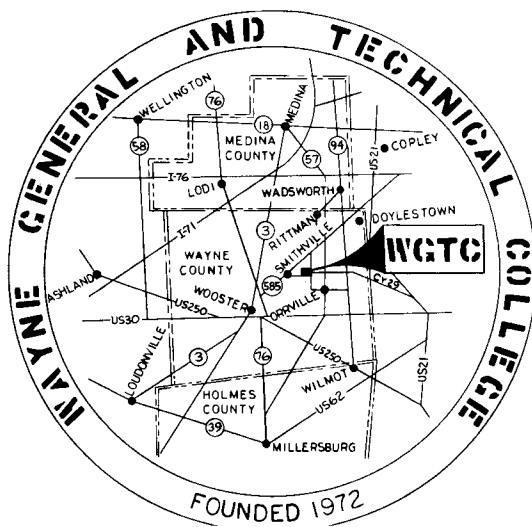
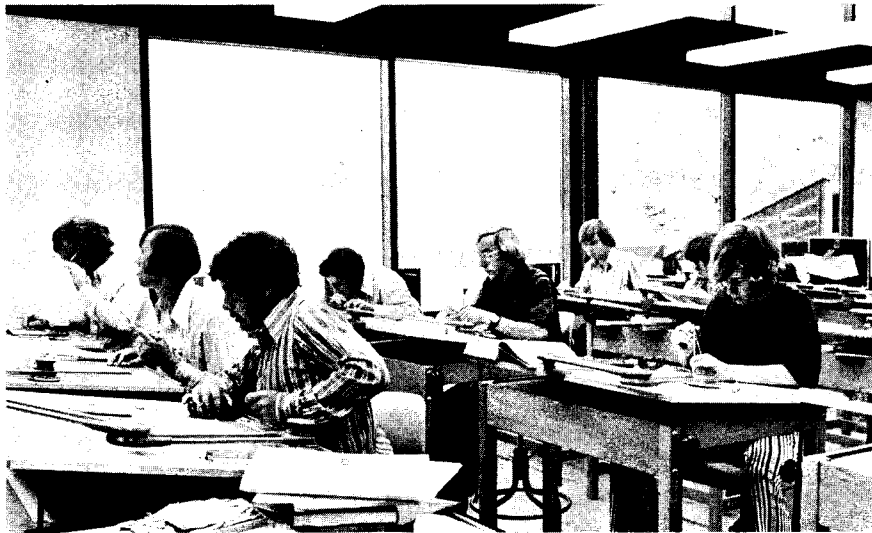
AWARD OF CERTIFICATE AWARD

The Certificate will be awarded by The University of Akron upon successful completion of the program's requirements.

FOR FURTHER INFORMATION

Contact Mr. James Nolte
Business and Office Technology Division
Community and Technical College
The University of Akron
Akron, OH 44325
216/375-7435

The Wayne General and Technical College



Suggested Routes from:

Akron

US 224 and 76 to Ohio 57 to Wayne County 29 at yellow blinker, right to Wayne County 47.

Medina

Ohio 57 to Wayne County 29 at yellow blinker, right to Wayne County 47.

Wadsworth

Ohio 57 to Wayne County 29 at yellow blinker, right to Wayne County 47.

Rittman

Ohio 57 to Wayne County 29 at yellow blinker, right to Wayne County 47.

Wooster

US 30 to Ohio 57, north to junction of Wayne County 29, left to Wayne County 47.

The Wayne General and Technical College

John G. Hedrick, M.A., *Dean*
 Martin Kemp, M.S., *Business Manager*
 Robert McElwee, M.A., *Coordinator of Curriculum and Advising*

The University of Akron, allied with The Wayne General and Technical College for administrative and academic support, operates on the principle that students bring to the campus a wide range and variety of experience, needs, capacities, aspirations and interests. This principle has been incorporated in planning of The Wayne General and Technical College. Thus, The Wayne General and Technical College exists for these specific purposes:

1. To provide the first and second year of baccalaureate instruction integral to the traditional four-year liberal arts and sciences programs. After successful completion of the first two years, students will be awarded the degree of Associate in Arts. These students may transfer as juniors to four-year colleges and universities.

2. To provide collegiate technical education leading to the degree of Associate in Applied Science in such specialized areas of Business Technology, Engineering Technology and Public Service Technology. Students will acquire specific skills leading to employment or advancement if currently employed.

3. To provide programs of community service, adult education, and cultural activities as determined jointly with local community interest groups. Community services are provided in cooperation with other educational institutions, labor and business.

4. To provide continuing general education for all members of the community on a demand basis. Citizens at any age beyond high school are able to attend day or evening classes with ease of admission accorded by open-admission policies established throughout the Ohio system of higher education. Continuing Education is concerned with the common knowledge, skills and attitudes needed by each individual to be effective as a person, member of a family, employee and citizen in our free society.

5. To provide counseling and education-vocation information to assist enrolled students and other members of the community in the selection and pursuit of a lifework appropriate to aptitude, values and interests.

B. Instructional Programs

Consistent with the purposes and objectives of the Ohio Board of Regent's standards, The Wayne General and Technical College of The University of Akron will offer the following two major academic career choices:

1. *The College Transfer Program*, a replication of the liberal arts programs of the first two years of a baccalaureate college or university.

A growing number of students each year choose to take the first two years of collegiate study near home in a two-year college; The Wayne General and Technical College, for example.

2. *The Two-Year Technical Program* is designed to provide specialized collegiate technical programs organized to develop high levels of skill in specialized occupations.

A major objective of The Wayne General and Technical College is to provide an all inclusive series of programs in technology and business to serve the needs of employers and individuals in Wayne, Holmes and Medina Counties.

A PROFILE OF TWO-YEAR COLLEGE STUDENTS

All students live off campus.

All students commute to campus; most drive.

Most day students are recent high school graduates in the age range 17-24.

Most evening students are working adults in the age range 17-70 (average 28).

Most day students enroll for slightly more than 12 credits per quarter.

Most evening students enroll for 4 to 6 credits per quarter.

Most day students have part-time jobs.

Most evening students are employed in full-time jobs.

Many evening students have previously attended college.

Fewer day students attended college previously.

Most day students change their academic goals several times prior to their junior year.

Most evening students have decided upon vocational or academic goals.

Some evening students enroll in courses mainly for self-interest and enrichment.

All students day and evening have long-term community relationships.

ADMISSION

Admission applications are available at the Admissions Office on campus or at The Wayne General and Technical College in Orrville.

REGISTRATION

Campus students who wish to take a course(s) at Wayne College too, include the branch courses along

with their other selections.

Wayne College students who wish to take a course(s) on campus too, include campus courses along with their other selections.

The General College

Thomas Sumner, Ph.D., *Dean*

OBJECTIVES

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

To offer all students a basic program of General Studies and the prerequisite courses for advancement to the degree-granting colleges.

To counsel students with respect to their adjustment to the collegiate environment and to their academic, personal, and occupational objectives.

To direct students to the proper curricula so that they will enter the degree-granting colleges prepared to undertake advanced work.

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

110: DEPARTMENT OF GENERAL STUDIES

The Department of General Studies of the General College provides students with courses aimed at developing ability to understand and express ideas effectively, to comprehend the processes involved in accurate thinking and to learn the responsibilities of an educated member of society. Also, by taking courses in the General Studies department, students gain knowledge which helps them to develop intelligent behavior patterns and gain understanding of themselves and their own individual abilities.

The General Studies program is an outgrowth of the belief that a student's personal education is like a pyramid — that is, in order for him to develop his intellectual abilities to their cultural or professional height, he must first establish a wide foundation of general knowledge to serve as the structural basis.

Serving as the foundation of each University student's educational pyramid is the General Studies curriculum including English

Composition, Types of Literature, Effective Speaking, Numbers Communication, Natural Science, Institutions in the United States, Western Cultural Traditions, Eastern Civilizations, and Physical Education. This well-balanced program of studies has been thoughtfully evolved by experts in academic research, representing many leading American educational institutions including The University of Akron. The General Studies program as it is now presented is the fruit of a half century of planning, revising and developing.

Students, well-grounded in the General Studies, are academically prepared to continue into realms of higher education; this curriculum has proved the most advantageous starting point for a student, no matter his eventual scholastic goal. It is valuable in equal measure to the enrollee who is indecisive about his professional future and to the enrollee who arrives at the University convinced that he knows what he wants to become.

Students who complete the courses outlined in the General College curriculum, earning a total of approximately 45 credits (slightly more for Engineering) and achieving a quality point ratio of 2.0 (C) or better, are eligible for transfer to the Upper College of their choice.

Acceptance of a student in an upper college is the responsibility of the respective academic Dean, in consultation with the Dean of the General College and heads of departments concerned.

The required General Studies courses are:

	<i>Credits</i>
110:108 Effective Speaking	4
110:111-112 English Composition	8
110:115-117 Institutions in the United States*	9
110:120-182 Physical Education	minimum of 2
110:205 Types of Literature	4
110:211 Numbers Communication**	4
110:221-224 Natural Science***	minimum of 9
110:317-319 Western Cultural Traditions	12
110:330-335 Eastern Civilizations****	minimum of 6
Total	58

* The 9 credit requirements in the social science area also may be met through one of the following options.

A. Completion of a minimum of two courses totaling at least 9 credits selected from two of the following four sets of course offerings:

1. 325:244, Introduction to Economic Analysis, 4 cr. (Students majoring in engineering are advised to take this as one of their selections.)

or

325:201, Principles of Economics, 4 cr. (Students majoring in business, economics, etc., are advised to take this as one of their selections. Students doing so should plan to take 325:202, 4 cr.)

or

325:100, Introduction to Economics, 5 cr.

2. 370:100, Government and Politics in U.S., 5 cr.

or

370:150 Introduction to Political Science, 5 cr.

3. 385:100, Introduction to Sociology, 5 cr.

or

387:150, Cultural Anthropology, 5 cr.

4. 340:201, U.S. History of 1815, 4 cr.

or

340:202, United States, 1815-1898, 4 cr.

or

340:203, United States, 1898-Present, 4 cr.

- B. For Community and Technical College majors only, completion of the following three courses (total of 13 credits):

202:240, Human Relations, 4 cr.

202:242, American Urban Society, 4 cr.

202:247, Survey of Basic Economics, 5 cr.

**The mathematics requirement also may be met by taking 4 credits in the Department of Mathematics and Statistics.

***Minimum of nine credits of science. This requirement can be met either by taking courses in the Departments of Biology, Chemistry, Geology or Physics, or by any combination of three out of four of the Natural Science courses.

****Engineering students are only required to take 3 credits; all other students must take 6 credits.

Reserve Officers Training Corps

150: DEPARTMENT OF AEROSPACE STUDIES

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

The program is designed to prepare students to become officers who are: dedicated and responsible; critical and creative in their thinking; able to communicate clearly; and skilled in effective management.

Both the Four-Year Program and Two-Year Program described below are open to full-time male and female students who will have completed at least a baccalaureate degree at commissioning.

PROGRAMS:

THE FOUR-YEAR PROGRAM

All full-time day students of The University of Akron may pursue the Four-Year Program. Enrollment procedures for the first two years of Air Force ROTC, known as the General Military Course (GMC), are the same as for any other university course. The GMC consists of one hour of classroom work and one hour of Aerospace Studies Lab (Leadership Lab) each week, and provides 1.5 hour/quarter of credit.

Credit for portions of the GMC may be given for completion of two or more years of high school Junior ROTC, participation in Civil Air Patrol, military school training, or prior service in any branch of the U.S. Armed Forces.

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

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 level or the graduate level, or a combination of the two. Entry into the Professional Officer Course is competitive in nature. Two-Year Program applicants must meet the qualifications described below. Students in the POC receive a non-taxable monthly subsistence allowance of \$100. Applications for the Two-Year Program should be made as early in the academic year as possible so that all requisites may be completed in time for summer field training.

FIELD TRAINING

In the summer prior to entering the Professional Officer Course, all Four-Year Program AFROTC cadets and student applicants for the Two-Year Program must attend field training at an Air Force base where they will learn and make use of training and leadership techniques in close contact with other cadets.

Four-Year Program students spend four weeks at their encampment, while field training

for Two-Year Program applicants lasts six weeks. The additional two weeks for the Two-Year Program applicants are used to cover the academic work taken by cadets who completed the General Military Course (GMC). Uniforms, lodging, and meals are provided without charge, and travel pay is authorized to and from the individual's home or school. In addition, cadets and applicants receive pay at approximately half the rate of a second lieutenant.

FLIGHT TRAINING

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

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

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

BASE VISITS

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

Requirements for Admission:

GENERAL QUALIFICATIONS

General qualifications for entry into Air Force ROTC:

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

be able to complete all commissioning requirements prior to age 26^{1/2}.

c. 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

Additional qualifications for admittance to the Professional Officer Course:

1. Be at least 17 years of age.
2. For the Four-Year Program cadet, complete the General Military Course or receive credit for Junior ROTC, Civil Air Patrol, military school training, or prior service.
3. For the Two-Year student applicant, complete the six-week Field Training Course.
4. Receive a satisfactory score on the Air Force Officer Qualifying Test (AFOQT).
5. Qualify on the Air Force physical evaluation.
6. Be interviewed and selected by a board of Air Force officers.
7. Enlist in the Air Force Reserve prior to entry into the Professional Officer Course.

REQUIREMENTS FOR COMMISSIONING

1. Successfully complete the Professional Officer Course and Field Training.
 2. Earn at least a baccalaureate degree.
 3. Agree to accept, if offered, a commission in the United States Air Force.
 4. Agree to serve for a period of not less than four years on active duty after commissioning; or, if accepted for a flying training program, agree to serve for a period of not less than five years of active duty as a flying officer after completion of pilot or navigator training.
- Scholarships, Financial Allowances, Uniforms and Texts:

SCHOLARSHIPS

Air Force ROTC college scholarships are available to qualified applicants in both the Two and Four-Year AFROTC Programs covering periods of four, three, and two years. Each scholarship provides full tuition, laboratory and incidental fees, and full reimbursement for curriculum-required textbooks. In addition, all scholarship cadets receive \$100 monthly non-taxable subsistence allowance.

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

CEEB Scholastic Aptitude Test (SAT) or the American College TEST (ACT) results.
High School academic record.

Extracurricular and athletic activities.

Air Force Officers Qualifying Test scores.

Passing an Air Force medical examination.

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

Air Force Officers Qualifying Test.

Collegiate grade point averages.

Extracurricular and athletic activities.

Screening and nomination board rating.

Academic major and potential active duty career field.

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

FINANCIAL ALLOWANCES

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

UNIFORMS AND TEXTBOOKS

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

160: DEPARTMENT OF MILITARY SCIENCE

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

Students enrolled in Army ROTC have an unusual opportunity to study and participate in leadership and management experiences which are unique to the college curriculum. Leadership, self discipline, responsibility and physical

stamina are stressed as students learn to plan, organize, motivate and lead others. Program goals are to develop decision making capabilities through 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 U.S. Army.

THE FOUR-YEAR PROGRAM

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

Students who complete the Basic military course may apply for enrollment in the Advanced Course which is described below.

THE TWO-YEAR PROGRAM

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

CADET ACTIVITIES

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

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

QUALIFICATIONS FOR ENROLLMENT

1. United States citizenship. (Alien students may be enrolled under special circumstances).
2. Full time student (Advance course students must be enrolled in baccalaureate degree course)
3. Good moral character
4. Age requirements as follows:
 - a. Be at least 17 for enrollment in the basic course
 - b. Be under 28 years old by time of commission (Waiverable for veterans)
 - c. Scholarship students must be under 25 by commissioning date
5. Mentally and physically fit.

QUALIFICATIONS FOR ADVANCE COURSE

1. Basic qualifications for enrollment above
2. Completion of Basic Course, Basic Summer Camp, or Veteran
3. Qualify on the Army physical evaluation
4. Permission of the Professor of Military Science
5. Be in good academic standing with the university

REQUIREMENTS FOR COMMISSIONING

General requirements for a commission include:

1. Completion of a Baccalaureate or Advanced degree
2. Completion of the Advanced Army ROTC Course

3. Agreement to incur a maximum active service obligation as follows:

	<i>Active Service</i>
Basic Program (Freshman & Sophomore)	None
Advanced Program (Junior and Senior)	3 years
Scholarship Program	4 years

SCHOLARSHIPS

In addition to four-year scholarships offered to high school seniors, the Army offers three, two, and one year scholarships on a competitive basis to men and women enrolled in the program. These scholarships provide free tuition, fees, text materials and a non-taxible monthly stipend of \$100 per month for the period of the scholarship. Army scholarship students who qualify as Distinguished Military Graduates may apply for a Regular Army commission. All scholarship students must agree to spend four years on active duty.

UNIFORM AND TEXTBOOKS

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

FINANCIAL ALLOWANCES

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

FLIGHT PROGRAM

Army ROTC students selected for Aviation Training may, during their senior year, enroll in the Army Flight Instruction Program which offers, in addition to ground instruction, up to 41 hours of flight instruction at a local FAA approved flying school. All flight instruction, textbooks, equipment, flight clothing and transportation to and from the flying school is provided at no cost to the student. A private pilot's license may be obtained if the student completes FAA requirements.

Community and Technical College

Robert C. Weyrick, M.S., *Dean*
 David T. Dolan, Ph.D., *Assistant Dean*
 Frederick J. Sturm, M.A., *Assistant to the Dean*

BACCALAUREATE PROGRAMS

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

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

The programs are available in Electronic Technology and Mechanical Technology. It is intended that graduates will find employment in manufacturing, technical sales and service, application engineering, inspection and testing, and the more standardized aspects of engineering design.

The requirements for the Bachelor of Science in Electronic Technology degree or the Bachelor of Technology in Mechanical Technology degree are:

1. Compliance with the general University requirements for a baccalaureate degree as listed in the University Bulletin.
2. Compliance with the requirements of the General Studies program as outlined in the University Bulletin.
3. Completion of the requirements for the Associate Degree in a related engineering technology at The University of Akron or other accredited institution.
4. Successful completion of a minimum of 202 credits including Associate Degree program, General Studies courses, and the following course requirements:

BACHELOR OF SCIENCE IN ELECTRONIC TECHNOLOGY

For the first and second years, see Associate Program in Electronic Technology

<i>Third Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:317 Western Cultural Traditions		4
202:336 Math. Tech. Applications		4
110:111 English Composition		4
284:101 Introductory Chemistry I		4
		—
		16
<i>Second Quarter</i>		
110:112 English Composition		4
110:318 Western Cultural Traditions		4
286:350 Circuit Analysis		4
445:206 Fortran Prog. For Engineers		3
347:251 Intro. To Statistics I		3
		—
		18
<i>Third Quarter</i>		
110:319 Western Cultural Traditions		4
110:205 Types of Literature		4
286:360 Network Analysis		3
110:33 Eastern Civilization		3
110:108 Effective Speaking		4
		—
		18
<i>Fourth Year</i>		
<i>First Quarter</i>		
286:351 Indust. Electrical Systems		3
292:310 Econ. of Technology		5
286:400 Data Acquisition		4
286:353 Control Systems		4
286:402 Inspection Trips		1
		—
		17
<i>Second Quarter</i>		
110:33 Eastern Civilization		3
650:361 Production & Systems Mgmt. Technical Electives		5 7
		—
		15
<i>Third Quarter</i>		
286:352 Digital Systems		4
286:406 Communications Systems		4
650:362 Production & Operations Mgmt.		5

286:410 Technology Project	Credits	202:247 Survey of Basic Economics	Credits
General Elective	1	292:346 Mechanical Design III	5
	2		5
	<hr/>		<hr/>
	16		17
Total credits (including Associate Degree Program)	202		
		<i>Fourth Year</i>	
<i>Technical Electives</i>		<i>First Quarter</i>	
284:102 Intro. Chemistry II	4	110:317 Western Cultural Traditions	4
292:249 Applied Thermal Energy	4	292:310 Economics of Technology	5
292:251 Elem. Fluid Mechanics	4	445:206 Fortran Prog. for Engrs.	3
298:125 Statics	5	650:372 Management Organization & Behavior	3
298:241 Strength of Materials	5	650:348 Quantitative Business Analysis I	4
440:345 Illumination	3		<hr/>
445:306 Intro. To Assembly			19
Language Programming	3		
		<i>Second Quarter</i>	
		110:3 Eastern Civilization	3
		110:318 Western Cultural Tradition	4
		292:347 Production Machinery & Processes	5
		650:349 Quantitative Business Analysis II	4
		or	
		650:361 Production & Systems Management	5
			<hr/>
			16 or 17
		<i>Third Quarter</i>	
		110:319 Western Cultural Traditions	4
		286:410 Technology Project	1
		292:401 Inspection Trips	1
		650:350 Personnel Management	3
		or	
		650:405 Quality Control	3
		*Electives	6
			<hr/>
			15
		Total Credits (including Associate Degree Program)	202
		<i>*Electives</i>	
		650:362 Production & Operations Management	5
		650:351 Personnel Function	3
		650:352 Management Training & Development	3
		650:372 Management Organization & Behavior	3
		650:404 Production & Planning Control	3
		Other electives as agreed on by counselor	

BACHELOR OF TECHNOLOGY IN MECHANICAL TECHNOLOGY

For First & Second Years, see Associate Program in Mechanical Tech.

Third Year

<i>First Quarter</i>	<i>Credits</i>
110:111 English Composition	4
202:336 Mathematics For Technical Applications	4
284:101 Introductory Chemistry I	4
286:310 Electromechanical Devices & Circuits	4
	<hr/>
	16

Second Quarter

110:112 English Composition	4
284:102 Introductory Chemistry II	4
286:311 Electronic Devices & Circuits	4
290:230 Control Principles	5
	<hr/>
	17

Third Quarter

110:205 Types of Literature	4
110:3 Eastern Civilization	3

AN UPPER COLLEGE

The Buchtel College of Arts and Sciences

Robert A. Oetjen, Ph.D., *Dean*
 Paul S. Wingard, Ph.D., *Associate Dean*

OBJECTIVES

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

1. 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, that College requires the student to study ideas and experiences that are the subject matter of a variety of disciplines;

2. The nature of civility — those actions whereby virtue, the advancement of society, and wise and humane government are encouraged;

3. 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 doctor's degree in accordance with his level of accomplishment.

The Buchtel College of Arts and Sciences is one of six upper colleges at The University of Akron. Its name truthfully implies that its traditions date back farther than those of the other five undergraduate colleges, since the University

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

When Buchtel College became a Municipal University, 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 he can prosper in life and sustain a creative appreciation of the arts and sciences.

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

I. THE 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.

II. THE NATURAL SCIENCES DIVISION

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

III. THE SOCIAL SCIENCES DIVISION

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

REQUIREMENTS FOR ADMISSION

To be admitted to the Buchtel College of Arts and Sciences the student must have completed satisfactorily at least 45 credits of work, and have the approval of the Dean of the college.

DEGREES GRANTED

Humanities Division: Bachelor of Arts

Social Sciences Division: Bachelor of Arts,
Bachelor of Science in Labor Economics

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

REQUIREMENTS FOR BACCALAUREATE DEGREES

1. A student transferring into the Buchtel College of Arts and Sciences must have completed the equivalent of, or take, *English* 110:111, 112, 205, 4 credits of *Modern University Mathematics* and the remainder of the *General Studies Program*.

The requirements for the Bachelor's Degree in the Buchtel College of Arts and Sciences must include, in addition to courses used to meet General Studies and language requirements, a minimum of 70 credits consisting of:

a. 300 and 400 level courses; and

b. courses outside the major department as specified and approved by the student's major advisor and the department (or division) head.

2. All candidates, except for those in the Labor Economics, Natural Sciences Division major and the Medical Technology curricula must have demonstrated the ability to use two languages.

If the candidate is a native-born speaker of English, this ability will be shown by the completion of a second year of an approved foreign language on the University level.

If the candidate is not a native-born speaker of English, this ability will be shown by the completion of the General Studies sequence of English 110:111, 112, 205.

3. Completion of requirements in a major field of study (see Divisions of Instruction) and the recommendation of the student's major department.

4. The general University requirements for a baccalaureate degree are set forth on pages 31-33 of this *General Bulletin*.

THE 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. The major will consist of at least 36 credits in addition to the required General Studies and 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 year when the student is still under the guidance of the Office or Student Services.

Ordinarily a student will select a department in which to major. The exact requirements for each such major will be found on the following pages in the section headed "Departments 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. As soon as the student is promoted to the College, the head of his major department becomes his academic adviser.

Students who desire a broader education than the departmental major offers may elect a divisional major and qualify in the general area of the humanities or the natural sciences. Such students meet only the requirements of the chosen divisional major as described on the following pages in the section headed "Divisions of Instruction." As soon as the student contemplating a divisional major is promoted to the College, the chairman of his major division becomes his academic adviser.

PREPARATION FOR HIGH SCHOOL TEACHING

Students interested in a teaching career on the high school level may qualify for secondary school certification by the 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. 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 192 credits necessary for graduation. Such a program is particularly recommended for students who, as part of their preparation for teaching, plan to go to graduate school and earn an advanced degree through specialization in their field of major interest.

The number of credits in a teaching field required for certification may be determined by reference to the section entitled *Teaching Fields* located in the College of Education section of this Bulletin.

1. In addition to meeting the requirements in a teaching field a student must also take the

following courses in psychology and in the College of Education.

	<i>Credits</i>
375:141 General Psychology	5
510:156 Education in American Society	3
510:157 Human Development and Learning	4
530:200 Exploratory Experiences in Secondary Schools	1
530:310 Principles of Secondary Education	3
530:311 Instructional Techniques in Secondary Schools	4
510:350 Tests and Measurements	3
510:401 Problems in Education	4
530:402 Student Teaching	12
530:403 Student Teaching Seminar	2

Buchtel College students preparing for high school teaching must signify their intention to the College of Education near the end of the sophomore year.

DIVISIONS OF INSTRUCTION

310: BIOLOGY

The Bachelor of Science, The Bachelor of Arts and the Bachelor of Science in Medical Technology degrees are offered.

Requirements for the B.S. degree with a major in Biology and the B.S. in Medical Technology degree.

The General Studies and the second year of a foreign language. Biology students must obtain 54 credits in biology 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 B.S. degree in biology take the following sequence of courses which will provide an understanding of the fundamentals of modern biology. During the first year, students intending to major in Biology should consult a member of the Biology Faculty.

First Year: 310:121-3 Principles of Biology; 315:132, 133, 134 Principles of Chemistry, (or with permission 315:121, 122, 123 Inorganic Chemistry); 345:115-116 Elementary Functions I, II.

Second Year: 310:246 General Genetics; 310:271 General Ecology; 310:272 Organic Evolution; 315:263-268 Organic Chemistry; or, with permission, 315:201, 202, 203, Organic and Biochemistry.

Third Year: 310:301 Cell Biology

The student would then be expected to specialize during the third and fourth years in one of the areas listed below.

AREAS OF SPECIALIZATION WITH RECOMMENDED COURSES

BOTANY

310:307 Microbiology; 310:313 Fall Flora or 310:314 Plant Taxonomy or 310:315 Spring Flora; 310:411, 412 Plant Physiology; 310:415 Plant Anatomy; 310:416 Mycology; 310:417 Phycology; 310:418 Plant Morphology; 310:419 Plant Morphology.

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

ECOLOGY

310:313 Fall Flora or 310:315 Spring Flora; 310:341 Invertebrate Zoology; 310:344 General Entomology; 310:411, 412 Plant Physiology; 310:416 Mycology or 310:417 Phycology; 310:418-419 Plant Morphology; 310:421 Environmental Conservation; 310:425 Population Ecology; 310:427 Limnology; 310:436 Comparative Physiology; 310:458 Vertebrate Zoology.

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

HIGH SCHOOL TEACHING

For State Certification see "Preparation for High School Teaching," on previous page.

310:191 Introductory Human Physiology; 310:228 Techniques in Biology; 310:307 Microbiology; 310:313 Fall Flora or 310:315 Spring Flora; 310:341 Invertebrate Zoology; 310:416 Mycology or 310:417 Phycology; 310:418, 419 Plant Morphology; 310:458 Vertebrate Zoology.

Advisers: J. L. Frola, J. H. Olive, L. W. Macior.

MEDICAL TECHNOLOGY

A three year program (144 credits) at The University of Akron. (A foreign language is not required.)

310:228 Techniques in Biology; 310:307, 308, Microbiology; 310:444 Immunology; 310:343 Parasitology; 310:361, 362 Human Anatomy and Physiology; 315:335, 336, 337 Analytical Chemistry for Laboratory Technicians.

The three year University Curriculum is followed by 12 months of Medical Technology instruction in an approved School of Medical Technology. The University is affiliated with the following Hospital Schools: Akron City Hospital, Akron General Medical Center, Barberton Citizens Hospital, Canton Aultman Hospital, Cleveland Metropolitan General Hospital, Mt. Sinai Hospital of Cleveland, St. Alexis Hospital (Cleveland), St. Thomas Hospital, The Children's Hospital of Akron. The student must apply to a Hospital School for a separate admission: The University cannot guarantee placement. Students may train at other approved schools after obtaining special permission from the Head, Department of Biology. Students majoring in medical technology in this university are not required to have their transcripts evaluated by NAACLS before entering the clinical (laboratory/hospital) phase of their program. This exemption by NAACLS from the transcript evaluation requirement does not imply any approval or accreditation of the medical technology curriculum in this institution.

The University grants the B.S. in medical Technology after receipt of evidence of satisfactory completion of the hospital instructional program.

Advisers: R. F. Keller, D. Nunn, L. Higbee.

MICROBIOLOGY

310:307, 308, 309 Microbiology; 310:416 Mycology; 310:417 Phycology; 310:440, 441 Bacterial Physiology; 310:443 Pathogenic Bacteriology; 310:444 Immunology;

310:446 Virology; 310:480 Radiation Biology; 315:401, 402, 404, 405 Biochemistry.

Advisors: D. Nunn, E. Flaumenhaft, N. Ledinko, D. Ott, L. Watson.

PHYSIOLOGY AND PRE-PROFESSIONAL

Including pre-medical pre-dental, pre-veterinary medical, pre-pharmacy students.

310:328 Histology; 310:453, 454, 455 Developmental Anatomy; 310:480 Radiation Biology; 310:491, 492 Human Physiology; 315:423, 424 Analytical Chemistry; 315:426, 427 Analytical Chemistry Laboratory; 345:231, 232, 233, 234, 235, Analytic Geometry — Calculus I, II, III, IV, V; 365:261, 262, 263 Physics.

Advisers: R. F. Keller, R. Nokes, R. Mostardi, J. Gwinn, B. Richardson.

ZOOLOGY

310:228 Techniques in Biology; 310:313 Fall Flora or 310:315 Spring Flora; 310:341 Invertebrate Zoology; 310:343 Parasitology or 310:344 General Entomology; 310:453, 454, 455 Developmental Anatomy; 310:458 Vertebrate Zoology; 310:491, 492 Human Physiology.

Advisers: D. L. Jackson, W. A. Sheppe, S. Orcutt, B. Richardson.

Requirements for the B.A. degree with a major in Biology:

The General Studies requirements and the second year of a foreign language. At least 26 credits in the humanities or social sciences, including at least two of the following 340:478, 340:479 History of Western Science & Technology, 360:464 Philosophy of Science. At least 36 credits in the biological sciences which must include 310:121-3 Principles of Biology, 310:246 General Genetics, 310:271 General Ecology, 310:272 Organic Evolution and 310:301 Cell Biology or, with permission, 310:207 Principles of Microbiology. At least one year of chemistry, including, preferably, some biological chemistry (315:129, 130, 131 General Chemistry is suggested).

315:CHEMISTRY

Requirements for a B.S. degree with a major in Chemistry:

The General Studies and the second year of German.* The required chemistry courses are:

	<i>Credits</i>
315:132-133 Principles of Chemistry	8
315:134 Principles of Chemistry and Qualitative Analysis	5
315:263-264-265 Organic Chemistry, Lecture	9
315:266-267-268 Organic Chemistry, Laboratory	6
315:313-314-315 Physical Chemistry, Lecture	9
315:316-317-318 Physical Chemistry, Laboratory	6
315:423-424-425 Analytical Chemistry, Lecture	9
315:426-427-428 Analytical Chemistry, Laboratory	6
315:463-464 Advanced Organic Chemistry	5
315:472-473 Advanced Inorganic Chemistry	5
	68

The mathematics requirement is:

Completion of 345:236. Differential Equations I. 4

Credits

The required physics courses are:

365:291-292-293, Elementary Classical Physics. 12

* Certain other languages may be substituted with the approval of the chemistry faculty. Approval should be sought prior to the completion of 90 credit hours.

320: CLASSICS

(320: Classics, 321: Greek, 322: Latin)

Requirements for a B.A. degree with a major in Classics, Greek or Latin:

The General Studies and at least 36 in the department including:

	<i>Credits</i>
320:161-162-163 Comparative Literature	9
320:313-314-315 Classical Archaeology	9
	Total 18
	Classics Electives 18

Language courses must be above the 200 level in order to be included in this total. In the case of a Latin major, six (6) credits in this language (preferably in Latin Grammar and Idiom) must be taken during the senior year.

Certification requirements:

Students wishing to be certified for public school teaching with Latin as the principal teaching field must complete 39 credits in that language. In addition they must complete the required credits in a second academic teaching field. See Teaching Fields section under the College of Education.

325: ECONOMICS

Requirements for a B.A. degree with a major in Economics:

1. The General Studies and the second year of a foreign language.
2. At least 44 credits in the department including:

	<i>Credits</i>
325:201-202 Principles of Economics	8
325:400 Macro-Economics	4
325:410 Micro-Economics	4
	Total 17
	Economics Electives 28

Requirements for a B.S. degree in Labor Economics:

1. The General Studies.
2. At least 44 credits in the department including:

	<i>Credits</i>
325:201-202 Principles of Economics	8
325:330 Labor Problems and two the following:	4
325:333 Labor Economics	4
325:431 Labor and Government	4
325:432 The Economics and Practice of Collective Bargaining	4

3. Statistics: One of the following:

650:348-349 Quantitative Business Analysis I, II	7
347:251-252 Introduction to Statistics I, II	6
347:471-472 Applied Statistics I, II	6

4. At least 12 credits in Upper College Sociology, History, Psychology, Geography or Political Science.

Total 25
Economics Electives 20

330: ENGLISH

Requirement for a B.A. degree with a major in English:

The General Studies and the second year of a foreign language. At least 48 credits in the Department including:

	<i>Credits</i>
330:240 Shakespeare	5
330:246 Appreciation of Poetry	4
330:265 English Literature	4
330:266 English Literature	4
330:267 English Literature	4
Total 21	

At least four courses totaling at least fifteen credits on the 400 level (including two 400-level courses in English Literature and one 400-level course in American Literature — none of these three courses to be chosen from 330:450-451-452.)

335: GEOGRAPHY

Requirements for a B.A. degree with a major in Geography:

The general studies and the second year of a foreign language. At least 39 credits in Geography including:

	<i>Credits</i>
335:210 Physical Geography	4
335:220 Economic Geography	3-4
335:230 Rural & Urban Settlement	4
335:240 Maps and Map Reading	4
335:380 Cartography	4
335:481 Introduction to Geographic Research	3
335:483 Introduction to Spatial Analysis	3
335:484 Field Research Methods	4
Total 24	

At least one course from the following:	<i>Credits</i>
335:350 Anglo-America	4
335:353 Northern Latin America	3
335:354 Southern Latin America	3
335:356 Europe	3
335:358 U.S.S.R.	3
335:360 East Asia	4
335:361 South and Southeast Asia	3
335:362 Middle East	3
335:363 Africa South of the Sahara	3

337: GEOLOGY

Requirements for a B.S. degree with a major in Geology:

The General Studies and the second year of a foreign language. At least 52 credits in Geology, including:

	<i>Credits</i>
337:101 Introductory Physical Geology	5
337:102 Introductory Historical Geology	5
337:210 Geomorphology	4
337:215 Structural Geology	5
337:216 Crystallography and Mineralogy	4
337:217 Crystallography and Mineralogy	4
337:260 Introductory Invertebrate Paleontology	5
337:313 Field Methods in Geology	3
337:413 Geology Field Camp	9
337:417 Optical Mineralogy	4
337:418 Petrography	4

Total Required in Geology 52

Non-Geology courses required for majors:

310:121, 122, 123 Principles of Biology	12
315:132, 133 Principles of Chemistry	8
315:134 Principles of Chemistry and Qualitative Analysis	5
345:115, 116 Elementary Functions	6
345:231 Analytic Geometry - Calculus I	4
365:231, 232, 233 Concepts of Physics I, II, and III or	12
365:291, 292, 293 Elementary Classical Physics	12

Total 47

Depending upon a student's major field of interest with-in Geology, additional work in a supporting science will be strongly recommended. During the first year, students intending to major in Geology should consult a member of the Geology Faculty.

Requirements for a B.S. degree with an option in Geophysics

1. The General Studies and a second year of a foreign language.
2. At least 45 credits in Geology including:

	<i>Credits</i>
337:101 Introductory Physical Geology	5
337:102 Introductory Historical Geology	5
337:215 Structural Geology	5
337:441 Fundamentals of Geophysics	4

337:446 <i>Exploration Geophysics</i>	4
337:413 <i>Geology Field Camp</i>	9
Geology Electives	13
	45

Recommended Geology Electives:
337:211, 216, 217, 404, 415, 434, 435, 470.

3. Non-Geology courses required (Physics credits to total a minimum of 25 including those available as science electives):

315:132, 133 <i>Principles of Chemistry</i>	8
345:321-235 <i>Analytic Geometry-Calculus I-V</i>	20
345:236 <i>Differential Equations</i>	4
365:291-293 <i>Elementary Classical Physics I-III</i>	12
365:431, 432 <i>Mechanics I, II</i>	6
365:441 <i>Electricity and Magnetism I</i>	3
Science Electives	7

Recommended Science Electives:
365:301, 410, 411-413, 433, 442, 443, 491-493
445:206

340: HISTORY

Requirements for a B.A. degree with a major in history:

The General Studies and a second year of a foreign language (French, German, or Russian suggested). A minimum of 45 credits in History, although up to 9 credits in cognate fields may be substituted with the advisor's approval. These credits in history must include 340:499 Historical Methods and some distribution of courses in American and European history. A suitable pattern would be:

340:201-202-203, U.S. Survey	12 credits
340:207-208-209, Modern Europe	12 credits

plus 21 additional hours and may include 340:489 Colloquium in History, highly recommended for history majors.

345: MATHEMATICS

Requirements for a B.S. degree or a B.A. degree with a major in mathematics:

The General Studies and the second year of French, German, or Russian. At least 60 credits in the department including:

	<i>Credits</i>
345:231-232-233-234-235 Analytic Geometry-Calculus. 4 credits each.	20
345:236 Differential Equations	4
345:311 Abstract Algebra	3
345:312-313 Linear Algebra I, II. 3 credits each.	6
345:413 Introduction to Topology	3
345:481-482 <i>Advanced Calculus I, II, III</i> 3 credits each	9
483	
A minimum of 15 additional credits of approved 300 and/or 400-level courses in the department.	<u>15</u>
	Total 60

The courses 110:211 *Numbers Communications*; 345:120-199 *Modern University Mathematics*; 115-116 *Elementary Functions*; 118 *Pre-Calculus Mathematics*; 206 *Actuarial Mathematics*; 301 *History of Mathematics*; 406 *Concepts in Algebra*; 407 *Concepts in Analysis*; 410 *Matrices and Linear Algebra* do not meet major requirements.

For the B.S. degree: complete 26 credits of course work outside the department and beyond the General Studies in a suitable area of concentration as approved by the department.

For the B.A. degree: complete 26 credits of humanities or social sciences beyond the General Studies and the second year of a foreign language. The 26 credits are to be from more than one department.

Requirements for a B.S. degree or a B.A. degree with a major in applied mathematics:

The General Studies and the second year of French, German, or Russian. At least 60 credits in the department including:

	<i>Credits</i>
345:231-232- <i>Analytic Geometry-Calculus</i> 4 credits each	20
233-234- 235	
345:236 <i>Differential Equations</i>	4
345:312-313 <i>Linear Algebra I, II</i> 3 credits each	6
345:481-482- <i>Advanced Calculus I, II, III</i> 3 credits each	9
483	
345:427 <i>Numerical Analysis I</i>	3
345:439 <i>Mathematical Models</i>	3
347:451 <i>Theoretical Statistics I</i>	3
A minimum of 12 additional credits of approved 300 and/or 400-level courses in the department.	<u>12</u>
	Total 60

The courses 110: 211 *Numbers Communications*; 345:120-199 *Modern University Mathematics*; 115-116 *Elementary Functions*; 118 *Pre-Calculus Mathematics*; 206 *Actuarial Mathematics*; 301 *History of Mathematics*; 406 *Concepts in Algebra*; 407 *Concepts in Analysis*; 410 *Matrices and Linear Algebra* do not meet major requirements.

For the B.S. degree: complete 26 credits of course work outside the department and beyond the General Studies in a suitable area of concentration as approved by the department.

For the B.A. degree: complete 26 credits of humanities or social sciences beyond the General Studies and the second year of a foreign language. The 26 credits are to be from more than one department.

Requirements for a B.S. degree or a B.A. degree with a major in statistics:

The General Studies and the second year of French, German, or Russian. At least 60 credits in the department including:

	<i>Credits</i>
345:231-232- <i>Analytic Geometry-Calculus</i> 4 credits each	20
233-234- 235	
345:236 <i>Differential Equations</i>	4
345:312 <i>Linear Algebra I</i>	3
345:481-482- <i>Advanced Calculus I, II, III</i> 3 credits each	9
483	

347:451-452- <i>Theoretical Statistics I, II, III</i>	3 credits each	9
453		
347:471-472 <i>Applied Statistics I, II</i>	3 credits each	6
347:473 <i>Experimental Design I</i>		3
A minimum of 6 additional credits of approved 300 and/or 400-level courses in the department.		<u>6</u>
Total		60

The courses 110:211 *Numbers Communications*; 345:120-199 *Modern University Mathematics*; 115-116 *Elementary Functions*; 118 *Pre-Calculus Mathematics*; 206 *Actuarial Mathematics*; 301 *History of Mathematics*; 406 *Concepts in*

Algebra; 407 *Concepts in Analysis*; 410 *Matrices and Linear Algebra*; 347:200 *Statistical Laboratory*; and 250:299 *Introduction to Statistics* do not meet major requirements.

For the B.S. degree: complete 26 credits of course work outside the department and beyond the General Studies in a suitable area of concentration as approved by the department.

For the B.A. degree: complete 26 credits of humanities or social sciences beyond the General Studies and the second year of a foreign language. The 26 credits are to be from more than one department.

COMPUTER SCIENCE CERTIFICATE PROGRAM

I. Entrance Requirements

To qualify for the computer science certificate program, a student must be in good academic standing in his major department, must have completed four credits in mathematics in the Department of Mathematics and Statistics, and must submit to the Director of the Computer Science Certificate Program a written request for admission to the program. The request will outline the student's reasons and goals for enrolling in the program. Students undertaking the program must have prior consultation with the Director. The student will major in one of the traditional academic disciplines, but the area of concentration is meant to add a further dimension of depth in both mathematics and computer science. Although this program does not lead to the award of a degree, successful completion is recognized by awarding a certificate at graduation and the inclusion of a statement of completion on the student's Academic Record.

II. Curriculum Requirements

The undergraduate student will have the opportunity to enroll in the science-oriented program or the information systems-oriented program. The student will take the mathematics and computer science core courses, as indicated below, with a selection of certain courses being permitted in order to attain his individual goals and objectives. The student's plan of study for the certificate will be developed in consultation with his Computer Science Adviser and will be approved by the Director.

An interdisciplinary computer science practicum is required of all students in the program.

<i>Science Oriented Option Credits</i>		<i>Information Systems Option Credits</i>	
Mathematics	39	Mathematics	29
Computer Science	33	Computer Science	39
	72		68

III. Mathematics and Statistics Requirement

A. <i>Science Oriented Option</i>	<i>Credits</i>
345:231-235 <i>Analytic Geometry-Calculus I-V</i>	20
345:236 <i>Differential Equations</i>	4
345:312 <i>Linear Algebra</i>	3
347:450 <i>Probability</i>	
or	
347:451 <i>Theoretical Statistics</i>	3
345:427-428 <i>Numerical Analysis I, II</i>	6
345:484 <i>Topics in Mathematics — Discrete Structures</i>	<u>3</u>
	Total 39
B. <i>Information Systems Option</i>	
345:140-199 <i>Modern University Mathematics</i>	14
345:140 <i>Basic Language</i>	
345:145 <i>Functions and Graphing</i>	
345:150 <i>Combinatorics and Variation</i>	
345:157 <i>Introduction to Trigonometry I</i>	
345:158 <i>Introduction to Trigonometry II</i>	
345:160 <i>Analytic Geometry</i>	
345:165 <i>Differential Calculus</i>	
345:170 <i>Integral Calculus</i>	
345:171 <i>Differential Calculus-Trigonometry</i>	
345:172 <i>Integral Calculus-Trigonometry</i>	
345:180 <i>Matrices</i>	
345:185 <i>Systems of Equations and Inequalities</i>	
345:190 <i>Linear Programming</i>	
347:250-299 <i>Introduction to Statistics (or equivalent)</i>	6
347:250 <i>Descriptive Statistics and Probability</i>	
347:255 <i>Probability Distributions</i>	
347:260 <i>Hypothesis Testing I</i>	
347:265 <i>Hypothesis Testing II</i>	
347:270 <i>Regression and Correlation</i>	
347:275 <i>Experimental Design</i>	
345:424 <i>Topics in Applied Mathematics- Numerical Methods</i>	6
345:484 <i>Topics in Mathematics- Discrete Structures</i>	<u>3</u>
	Total 29

IV. *Computer Science Requirement**Introduction to Computing*

[Course to be developed; requirements can be met now by 620:355]

*Programming Language*445:201 *Fortran Programming*445:202 *Cobol Programming*445:205 *PL/I Programming* [to come]445:206 *Fortran Programming for**Scientists & Engineers*650:340 *Introduction to Computer Applications for Business**Science Oriented Option*

3

Information Systems Option

3

9 (445:206 plus
6 other Elective Credits
in Programming Language
Courses)12 (445:201 plus
9 other Elective Credits
in Programming Language
Courses)

4

[Note: It is intended that courses in interactive languages & statistical packages to be added to list of programming languages courses in future.]

445:306 *Introduction to Assembly Language Programming*

or

445:493 *Seminar in Computer Science-Mini Computer Programming and Applications*

3

3

*Electives to be selected from the following:*445:407 *Introduction to Systems Programming*

3

9 (Not to include
Information Systems Design)12 (To include
3 credits of
Operations Research)445:432 *Introduction to Systems Simulation*445:493 *Seminar in Computer Science-Discrete Systems and Simulation*

3

620: *Information Systems Design*
[to be added in future]

6

445:493 *Seminar in Computer Science-Computer Architecture*

3

445:493 *Seminar in Computer Science-Switching Theory-Logic Design*

3

Operations Research [to be added in future]

3

345:484 *Topics in Mathematics—Data Structures*

3

3

*Computer Science Practicum*345:490 *Independent Reading*

or

445:493 *Seminar in Computer Science*

or

Seminar Course in Business Admin.

or

Other 400-level courses approved by
Director

6

6

Total

3339

347: STATISTICS

Requirements for a B.S. degree or a B.A. degree with a major in statistics:

The General Studies and the second year of French, German, or Russian. At least 60 credits in the department including:

345:231-233-234-235 *Analytic Geometry-Calculus*
4 credits each.*Credits*

20

345:236 *Differential Equations I*

4

345:312 *Linear Algebra I*

3

345:420 *Advanced Calculus I*

3

345:422-423 *Applied Advanced Calculus II, III.*
3 credits each.

6

347:451-453 Theoretical Statistics I, II, III. 3 credits each.	9
347:471-472 Applied Statistics I, II. 3 credits each.	6
347:473 Experimental Design I A minimum of 6 additional credits of 400-level courses in the department.	3 <hr/> 6
Total	60

The courses 110:211 Numbers Communications; 345:101, 102, 103 Finite Mathematics; 115, 116 Elementary Functions; 206 Actuarial Mathematics; 406 Concepts in Algebra; 407 Concepts in Analysis; 410 Matrices and Linear Algebra; and 347:200 Statistical Laboratory; 251, 252 Introduction to Statistics I and II do not meet major requirements.

For the B.S. degree: complete 26 credits of course work outside the department and beyond the General Studies in a suitable area of concentration as approved by the department.

For the B.A. degree: complete 26 credits of humanities or social sciences beyond the General Studies and the second year of a foreign language. The 26 credits are to be from more than one department.

350: MODERN LANGUAGES

352: French, 353: German, 355: Italian, 357: Russian, 358: Spanish

Requirements for a B.A. degree with a major in French, German or Russian:

1. The General Studies.
2. Completion of 36 credits above the second year (200) level including at least 15 hours in 300 and 400 numbered language skill courses and at least 15 hours in literature and/or culture and/or Linguistics courses.

3. Certification Requirements:

Students to be certified in foreign language teaching must complete at least six of the required credits in language skills during their senior year.

Requirements for a B.A. degree with a major in Spanish:

1. The General Studies.
2. Completion of 36 credits above the second year (203) level.

360: PHILOSOPHY

Requirements for a B.A. degree with a major in Philosophy:

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

Philosophy Courses: A minimum of 44 credits to include:

360:101 Introduction to Philosophy
360:120 Introduction to Ethics
360:170 Introduction to Logic
360:211 History of Ancient Philosophy
360:212 History of Medieval Philosophy
360:213 History of Modern Philosophy

Twelve hours must be earned in 300-400 level courses in philosophy.

Electives planned in a selective concentration of from 20-24 credits. A comprehensive examination in the history of Philosophy is required for departmental recommendation.

365: PHYSICS

Both the Bachelor of Science degree and the Bachelor of Arts degree are offered. The B.S. degree is intended for persons seeking the most detailed and quantitative preparation in physics available in an undergraduate curriculum; students preparing for graduate study in physics or another physical science should usually satisfy all the requirements for the B.S. degree. The B.A. degree, by contrast, is provided primarily for persons desiring a useful background in physics, but whose professional objectives may not require graduate study in physics or a related physical science.

Requirements for a B.S. degree with a major in Physics:

1. The General Studies and the second year of a foreign language, 68 credits.
2. Physics courses: A minimum of 60 credits. Included should be:

	<i>Credits</i>
365:291-292-293 Elementary Classical Physics	12
365:405-406-407 Structure of Matter	12
365:410 Electronic Devices and Circuits	4
365:411-412-413 Intermediate Laboratory	6
365:430 Kinetic Theory and Thermodynamics	4
365:431-432 Mechanics	6
365:441 Electricity & Magnetism	3
365:451-452-453 Advanced Laboratory	6

Total 53
Physics Electives 7

Notes:

- (a) Additional physics courses are usually necessary to satisfy the admission requirements of graduate schools for advanced work in physics or certain other physical sciences.
- (b) Courses 110:224, 365:130, 365:133, and 365:137 are not applicable toward the required 60 credits of physics courses.

3. Mathematics:

	<i>Credits</i>
345:231-232-233-234-235 Analytic Geometry-Calculus	20
345:236 Differential Equations I	4

4. Chemistry:

315:132-133-134 Principles of Chemistry and Qualitative Analysis	13
--	----

5. Computer Science:

445:206 Fortran Programming for Scientists and Engineers	3
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6. Electives:

24

Total: 192

Requirements for a B.A. degree with a major in Physics:

1. The General Studies and the second year of a foreign language, 68 credits.

2. Physics courses: A minimum of 36 credits.

Included should be:

	<i>Credits</i>
365:291-292-293 Elementary Classical Physics	12
365:410 Electronic Devices and Circuits	4
365:411-412-413 Intermediate Laboratory	6

Total 22
Physics Electives 14

Courses 110:224, 365:130, 133, and 137 are not applicable toward the required 36 credits of physics courses without special permission.

3. Mathematics courses:

345:231-232-233-234-235 Analytic Geometry-Calculus	20
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4. Electives 68

Total: 192

Comment on Degree Programs

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

Some physics students may consider it important in their bachelor's degree programs to prepare themselves in greater depth in other science areas (besides physics and mathematics) than may usually be possible within the traditional four-year departmental degree curricula. These students may therefore prefer to work toward the B.S. in Natural Science degree, which in effect allows the substitution of 24 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 the Natural Sciences Division Major section of the General Bulletin, or contact the Department of Physics.

Areas of Specialization in Physics with recommended Courses:

1. Applied Physics/Engineering Physics Option (B.S. degrees recommended). A total of 41 credits to include: 365:420, 470; 420:305; 430:304, 305; 440:233, 234, 335, 336; 460:125, 305, 310.

2. Biophysics Option (B.S. or B.A. degrees).

A total of 41 credits to include: 310:121, 122, 123, 246, 272, 301, 480; 315:263, 264, 265; 365:420.

3. Chemical Physics Option (B.S. degrees recommended). A total of 34 credits to include: 315:263, 264, 265, 313, 314, 315, 316, 317, 318; 365:420, 471, 490.

4. Computer Physics Option (B.A. or B.S. degrees). A total of 25 credits to include: 440:233, 234, 335, 336; 445:306, 320, 407, 461.

5. Geophysics Option (B.S. or B.A. degrees). A total of 27 credits to include: 337:101, 102, 215, 216, 434, 435.

6. Polymer Physics Option (B.S. degrees recommended). A total of 42 credits to include: 315:263, 264, 265, 313, 314, 315; 365:420, 433, 471; 394:401, 402, 403, 411, 412, 413.

7. Physics/Astrophysics/Astronomy Pre-Graduate School Option (B.S. degrees recommended). A total of 49 credits to include: 315:263, 264, 265, 313:365:331, 332, 333, 420, 433, 442, 443, 491, 492, 493, 397, 398, 399.

370: POLITICAL SCIENCE**Requirements for a B.A. with a major in Political Science:**

The General Studies and the second year of a foreign language. At least 45 credits in the Department, including:

	<i>Credits</i>
370:100 Government or Politics	5
OR	
370:150 Introduction to Political Science	5
370:200 Comparative Politics	5
370:303 Development of Political Thought	5
370:310 International Politics	5
370:461 Supreme Court and Constitutional Law	5
370:395 Proseminar in Political Science	4
Total 29	
Political Science Electives 16	

The electives must include at least one 400-level course in Political Science.

**SPECIAL CURRICULAR TRACKS
IN POLITICAL SCIENCE**

The Political Science Department offers three special curricular tracks for students interested in *Pre-Law*, the *International Service*, or *National, State, or Local Government Service*. In addition to the requirements for the major, each of these tracks includes electives appropriate for preparation for careers in law, government service or International Service.

Information about these curricular tracks may be obtained from the Head of the Department of Political Science.

Option for Bachelor of Science in Political Science/Criminal Justice — Requirements:

1. The student must complete all requirements for the Associate degree in Criminal Justice Technology established by the Community and Technical College.

2. The student must complete at least 45 credit hours in Political Science, including the following courses:

- Government and Politics in the United States* (370:100)
- State and Local Government and Politics* (370:210)
- The American Congress* (370:341)
- The Judicial Process* (370:360)
- Public Administration* (370:370)
- Metropolitan Politics* (370:380)
- Internship in Government and Politics* (370:391)
- The Supreme Court and Constitutional Law* (370:461)
- The Administrative Process* (370:470)
- Urban Policy Problems* (370:480)

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

3. The student must complete all General Studies requirements.

4. The student must complete at least 70 credit hours of 300 or 400 level courses in addition to the General Studies requirements.

5. Each student must complete at least 9 hours of course work which will introduce him to foreign culture. Such courses shall be selected by the student with the approval of his advisor in the Department of Political Science. Courses may be chosen from among those offered in any of the following Departments: Classics, Modern Languages, History, Political Science, Anthropology, and Geography.

375: PSYCHOLOGY

Requirements for a B.A. with a major in Psychology:

The General Studies and the second year of a foreign language (French, German, Russian, or Spanish suggested). At least 45 credits in the department including:

	<i>Credits</i>
375:141 Introduction to Psychology	5
375:145 Quantitative Methods in Psychology	4
375:147 Introduction to Experimental Psychology	5
Total	14
Psychology Electives	31

Students should consult with their faculty advisor to plan a program of psychology electives geared to their educational objectives.

385: SOCIOLOGY

(385: Sociology, 387: Anthropology)

Requirements for a B.A. degree with a major in Sociology:

The General Studies and the second year of a foreign language. Minimum of 45 credits in Sociology courses including:

	<i>Credits</i>
385:100 Introduction to Sociology	5
385:304, 305 Methods of Social Research	8
385:414 The History of Sociological Thought	4
385:415 Contemporary Sociological Theories	4
Total	21
Additional courses in Sociology (387:150 can be counted as part of these hours)	24

The credits beyond the 21 required hours are to be arranged in consultation with the faculty advisor in relation to the student's interests.

Requirements for a B.A. degree with a major in Sociology/Anthropology:

The General Studies and the second year of a foreign language. Minimum of 46 credits in the Department including:

	<i>Credits</i>
385:100 Introduction to Sociology	5
385:304, 305 Methods of Social Research	8
385:414 The History of Sociological Thought	4
385:415 Contemporary Sociological Theories	4
	21
387:150 Cultural Anthropology	5
387:151 Physical Anthropology	4
387:256 New World Prehistory	4
387:461 Language and Culture	4
	17

A minimum of 8 additional hours of credit to be selected from the following courses:

	<i>Credits</i>
387:257 Indians of South America	4
387:357 Magic, Myth and Religion	4
387:455 Culture and Personality	4
387:459 Facts and Values in Culture	4
387:463 Types of Kinship and Social Organization	4
	Total 46

HUMANITIES DIVISION MAJOR

The Humanities Division consists of the Departments of Classics, English, Modern Languages, and Philosophy. The divisional major must include the following, in addition to the General Studies and the second year of a foreign language:

1. At least 72 credits in the division, at least 36 credits of which must be in courses on the Upper College level. The minimum of 72 credits must include at least nine credits in each of any five of the following: the Classics, English, French, German, Greek, Italian, Latin, Philosophy, Russian and Spanish.

2. At least nine credits in the Department of History.

NATURAL SCIENCES DIVISION MAJOR

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

1. The General Studies.
 2. At least 35 credits from one of the departments of the Natural Sciences Division.

3. At least 24 credits from another of the following disciplines: Biology, Chemistry, Engineering, Geology, Mathematics and/or Statistics, Physics, or Polymer Science.

4. At least 24 credits from a third of these disciplines; or alternatively, at least 12 credits in each of two other of these disciplines.

A foreign language is strongly recommended.

The courses for the Natural Science Division Major must be selected from those courses eligible for inclusion in the major of these disciplines.

AN UPPER COLLEGE

The College of EngineeringColeman J. Major, Ph.D., *Dean*Joseph A. Edminister, M.S.E., J.D., *Assistant to the Dean*Donald R. Burrowbridge, M.S., *Director Cooperative Program***OBJECTIVES**

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

To offer sound basic instruction in the engineering disciplines,

To develop in students the ability to apply engineering principles to the economic and technological progress of society,

To promote in students a high sense of ethics and professional responsibility, and

To foster in students an appreciation of the need to further the role of the engineering profession in society.

At the undergraduate level the College has coursework leading to the following degrees: Bachelor of Science in Engineering, in Chemical, Civil, Electrical and Mechanical Engineering and the Bachelor of Construction Technology.

At the graduate level the degrees awarded are the Master of Science in Engineering, the Master of Science in Chemical, Civil, Electrical and Mechanical Engineering and the Doctor of Philosophy in Engineering.

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

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

Graduates are prepared to either go on to masters and doctoral level study in engineering or to obtain employment in the engineering profession directly upon receipt of the baccalaureate degree.

THE COOPERATIVE PLAN

The optional cooperative plan provides for a coordinate sequence of alternate periods of classroom instruction and industrial employment during the cooperative phase of the five-year course.

The Cooperative plan provides simultaneously 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 he can best apply his individual ability. He gains an appreciation of the problems of labor and management by first-hand experience. He develops mature judgement by coping with the everyday problems of the industrial world. The employer of cooperative students has the opportunity to select and train students whose abilities and aptitudes can be adapted to the needs of his technical staff requirements.

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

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

**REQUIREMENTS FOR
ADMISSION**

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

Algebra 1 $\frac{1}{2}$ units
Plane Geometry 1 unit
Solid Geometry or
Trigonometry $\frac{1}{2}$ unit
Chemistry or Physics 1 unit

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

All beginning students register in the General College. Those admitted in Engineering will be eligible for transfer to the College of Engineering after satisfactory completion of 45 credits of work and the approval of the Dean.

DEGREES

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

For the Master's and Doctor's degree programs in Engineering, see the Graduate School Section.

REQUIREMENTS FOR GRADUATION

1. Compliance with University requirements, chapter 3, this BULLETIN.
2. All incoming freshmen shall complete the credit requirements listed in the appropriate schedule of required courses.
3. The recommendation of the student's department.

Any Junior or Senior Engineering student with a quality point ratio of 2.500 over-all and 2.750 Engineering or better may substitute not more than two approved Upper College courses in mathematics, science or engineering for an equal number of certain required engineering courses.

420: CHEMICAL ENGINEERING

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

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

Chemical engineers find satisfying and rewarding careers in all walks of life, but mainly in the chemical process industries. Usually they become involved with inorganic and organic chemicals, rubber and plastics, detergents, petroleum products, metals, pharmaceuticals, dyestuffs and food products.

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

CHEMICAL ENGINEERING CURRICULUM

<i>Mathematics</i>	<i>Credits</i>	<i>Engineering Design</i>	<i>Credits</i>
345:231, 232, <i>Analytic Geometry-Calculus I, II,</i>	20	420:210 <i>Process Synthesis</i>	3
233, 234 <i>III, IV, V</i> 4 credits each		420:351 <i>Fluid Flow Systems</i>	3
235		420:352 <i>Thermal Transfer Processes</i>	3
345:236 <i>Differential Equations</i>	4	420:353 <i>Mass Transfer Processes</i>	4
		420:440 <i>Process Economics</i>	3
<i>Basic Science</i>		420:441 <i>Process and Equipment Design</i>	3
315:132-133 <i>Principles of Chemistry</i>	4	420:442 <i>Plant Design</i>	3
315:134 <i>Principles of Chemistry and Qualitative Analysis</i>	5	Design Elective	6
365:291-292- <i>Elementary Classical Physics I, II and III</i>		<i>Engineering Science</i>	
293 4 credits each	12	420:200 <i>Material Balances</i>	3
		420:201 <i>Energy Balances</i>	4
		420:305 <i>Materials Science</i>	3

<i>Engineering Courses</i>	<i>Credits</i>		<i>Credits</i>
420:321 <i>Introduction to Transport Properties</i>	4	110:317-318- <i>Western Cultural Traditions</i>	4 credits each 12
420:322 <i>Interphase Transport</i>	3	319	
420:323 <i>Multicomponent Transport</i>	3	110:33- <i>Eastern Civilizations</i>	3
420:430 <i>Chemical Reaction Engineering</i>	4	325:244 <i>Introduction to Economic Analysis</i>	4
420:435 <i>Process Control</i>	4	Social Science Elective	5
430:201 <i>Statics</i>	4		
440:331 <i>Circuit Fundamentals</i>	3	<i>Other Required Non-Technical Courses</i>	
445:206 <i>Fortran Programming for Scientists and Engineers</i>	3	110:111-112 <i>English Composition</i>	4 credits each 8
420:325 <i>Chemical Engineering Thermodynamics</i>	3	110:105 <i>Intro to Public Speaking</i>	4
420:426 <i>Phase and Reaction Equilibria</i>	3	OR	
		110:106 <i>Oral Communication</i>	4
<i>Advanced Chemistry</i>		EFFECTIVE	
315:263-264- <i>Organic Chemistry</i>	3 credits each 9	110:1-- <i>Physical Education</i>	2
265			
315:266 <i>Organic Chemistry Laboratory</i>	2	<i>Other</i>	
315:314-315 <i>Physical Chemistry</i>	3 credits each 6	420:120 <i>Engineering Design: Chemical Engineering</i>	2
315:425 <i>Analytical Chemistry</i>	3	460:125 <i>Engineering Graphics I</i>	3
315:428 <i>Analytical Chemistry Laboratory</i>	2		
315:472-473 <i>Advanced Inorganic Chemistry</i>	5 credits each 10	<i>Electives</i>	
		Electives and ROTC	9
<i>Humanities and Social Sciences</i>		(Electives must be approved by the faculty adviser of the Chemical Engineering Department.)	
110:205 <i>Types of Literature</i>	4		

430: CIVIL ENGINEERING

The Civil Engineer is dedicated to making our environment more attractive. He works with others to eliminate or renovate slum areas; to develop new housing systems; to plan community facilities; to build new water storage systems; to design new plants for solid 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 Engineer plans, designs and builds.

The Civil Engineering curriculum at The University of Akron is divided into two options:

Design and Construction. The Design Option allows specialization in (1) environmental engineering, (2) foundation engineering, (3) hydraulic engineering, (4) structural engineering and (5) transportation engineering. The Construction Option includes introductory work in the five areas above but specializes in the engineering and financial aspects of construction. Each option contains a group of elective courses.

Civil Engineering graduates work for consultants, manufacturers, construction companies, utilities and for government bodies at all levels. More Civil Engineers than any other type own their own businesses.

CIVIL ENGINEERING CURRICULUM

<i>General College Courses</i>	<i>Design</i>	<i>Construction</i>	<i>Natural Science Courses</i>		
110:111,112 <i>English Composition</i>	8	8	315:132,133 <i>Principles of Chemistry</i>	8	8
110:105 <i>Intro. to Public Speaking</i>	4	4	337:101 <i>Introductory Physical Geology</i>	5	5
OR			345:118 <i>Pre-Calculus Mathematics</i>	4	4
110:106 <i>Effective Oral Communication</i>	4	4	345:231,232,233,234,235 <i>Analytic Geometry — Calculus I, II, III, IV, V</i>	20	20
110:215 <i>Types of Literature</i>	4	4	345:236 <i>Differential Equations</i>	4	4
110: <i>Physical Education</i>	2	2	347:471 <i>Applied Statistics I</i>		
110: <i>Social Science Requirement</i>	9	9	Prerequisite, 345:235		
110:317,318,319 <i>Western Cultural Traditions</i>	12	12	<i>Analytic Geometry and Calculus V</i>		3
110:3 <i>Eastern Civilizations</i>	3	3	365:291,292,293 <i>Elementary Classical Physics I, II, III</i>	12	12
	—	—		56	53
	42	42	<i>Engineering Courses</i>		
			420:305 <i>Materials Science</i>	3	3
			430:130 <i>Engineering Design</i>	2	2
			430:201 <i>Statics</i>	4	4
			430:202 <i>Introduction to Mechanics of Solids</i>	4	4

430:230 <i>Surveying</i>	5	5	460:322 <i>Dynamics</i>	4	4
430:306 <i>Theory of Structures</i>	4	—	430: <i>Civil Engineering Electives</i>	12	—
430:311 <i>Soil Mechanics</i>	4	4	<i>Engineering Electives</i>	—	9
430:312 <i>Foundations</i>	4	4			
430:341 <i>Hydraulic Engineering</i>	4	4		—	—
430:342 <i>Water Resources</i>	3	—			
430:343 <i>Water Supply and Wastewater Disposal</i>	4	—		95	73
430:350 <i>Urban Planning</i>	3	—	<i>Business Courses</i>		
430:351 <i>Transportation Engineering</i>	4	—	620:221,222 <i>Principles of Accounting</i>	—	8
430:380 <i>Engineering Materials Laboratory</i>	1	1	620:290 <i>Cost Accounting</i>	—	4
430:401 <i>Steel Design I</i>	3	—	640:321,322 <i>Business Law I, II</i>	—	9
430:403 <i>Reinforced Concrete Design I</i>	3	—	640:371 <i>Business Finance</i>	—	5
430:424 <i>Water-Wastewater Laboratory</i>	1	—	650:350 <i>Personnel Management</i>	—	3
430:471 <i>Construction Administration</i>	3	3			
430:472 <i>Construction Engineering</i>	—	4			
430:473 <i>Construction Materials</i>	—	3	<i>Electives</i>	11	7**
430:482 <i>Hydraulics Laboratory</i>	1	—	<i>Summary</i>		
430:491 <i>C.E. Systems Design</i>	3	3	General Courses	42	42
440:331 <i>Circuit Fundamentals</i>	3	3	Natural Science Courses	56	53
440:381 <i>Electrical Machinery Fundamentals</i>	—	3	Engineering Courses	95	73
445:206 <i>Fortran Programming for Scientists and Engineers</i>	3	3	Business Courses	0	29
460:125 <i>Engineering Graphics I</i>	3	3	Elective Courses	11	7**
460:305 <i>Thermal Science</i>	3	—			
460:310 <i>Fluid Mechanics</i>	4	4			
			Total	204	204

**9 credits of ROTC may be applied to electives

440: ELECTRICAL ENGINEERING

The many branches of electrical engineering include: production and distribution of electrical energy; research, development, manufacture, and operation of electrical and electronic products; and systems for instrumentation, automation, tracking, and telemetry.

The growth of electronic research and manufacturing has been accelerated by the space age. There is hardly a segment of the American economy which has not been influenced by electronics. The high speed digital computer has found its way into virtually all aspects of modern life. Students wishing to

specialize in Computer Science will find a set of appropriate electives available to them.

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

Students wishing to continue their education in Graduate School or in Law or Medical School will find specialized programs of preparation available within the framework of the Electrical Engineering Department.

ELECTRICAL ENGINEERING CURRICULUM

<i>General Studies</i>		<i>Credits</i>
110:111,112 English Composition		8
110:108 Effective Speaking		4
110:205 Types of Literature		4
110: Social Science Requirement*		9
110:317,318, 319 Western Cultural Traditions		12
110:3 Eastern Civilizations		3
110: Physical Education		2
	Total	42
<i>Natural Science Courses</i>		
315:132,133 Principles of Chemistry		8
345:118 Pre-Calculus Mathematics		4
345:231,232, 233, 234, 235 Analytic Geometry & Calculus		20
345:236 Differential Equations		4
365:291, 292, 293 Elementary Classical Physics		12
365:301 Modern Physics		4
	Total	52

<i>Engineering Core Courses</i>	
440:140 Engineering Design: Electrical Engineering	2
420:305 Materials Science	3
430:201 Statics	4
430:202 Mechanics of Solids	4
445:206 Fortran Programming for Scientists and Engineers	3
460:125 Graphics I	3
460:305 Thermal Science	3
	Total
	22

*Engineering students are required to take 325:244 Introduction to Economic Analysis, 4 credits, as part of their Social Science requirement. The remaining 5 credits may be satisfied by courses listed under the option shown in the General College section of this Bulletin.

<i>Electrical Engineering Courses</i>	
440:233, 234, 335, 336 Circuits	13
440:321 <i>Physical Electronics I</i>	3
440:340, 341 Measurements	6
440:351, 352 Fields	6

440:353,354 Machines	8	Electrical Engineering Electives	22
440:359 Transmission Lines	4	Free Electives	11
440:365,366 Electronics	8		
440:371 Control Systems I	3		Total 60
440:373 Control Systems I Lab	1		Total 209
440:385 <i>Energy Conversion</i>	3		
440:461 <i>Computer Circuitry I</i>	4		
	Total 60		

450: BACHELOR OF SCIENCE IN ENGINEERING

This degree program was established to introduce wide flexibility into the College of Engineering. Within the 100 credit hours of the Option portion of the program, the student can study business administration, industrial management, environmental, pre-medical, or any other field he may choose along with his engineering studies. The program of study may be very narrow as in the case of a student wishing to specialize in structural design, foundations and soil mechanics. For another student interested in patent law, the program may be broad, touching on chemical, mechanical and electrical engineering subjects. Each student's program is designed to meet his announced goals.

Entrance to this program is restricted. The student requests admission by letter to the Dean of Engineering, outlining in some detail his particular objective and how the BSE program may enable him to prepare for this career goal. The mathematics, physics and chemistry requirements are identical to those of the four departments of the College of Engineering.

	<i>Credits</i>
General Studies and Science Core	90
Program Options - Engineering	60
Program Options - may be any college	40
Free Electives	14
	Total 204

460: MECHANICAL ENGINEERING

Mechanical engineering is concerned with the design and analysis of physical systems. A high level of professional competence in this field can only be achieved through an extensive study of mathematics, mechanics, fluid flow and the thermal sciences. Among the many subtopics included in these major headings are stress analysis, vibrations, compressible and incompressible fluid flow, thermodynamics, energy conversion, environmental control, heat transfer, and automatic controls. The typical mechanical engineering design problem may involve any one or possibly all of these areas in the design of a complex system.

Mechanical engineers are employed in a variety of jobs by a large number of companies. The jobs include management, design, analysis, safety, production, and plant engineering. The types of companies include automotive, petroleum, power, aerospace, tire, consulting, publishing, insurance, and manufacturers in general.

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

MECHANICAL ENGINEERING CURRICULUM

<i>General Studies</i>	<i>Credits</i>
110:1 <i>Physical Education</i>	2
110:105 or 106 <i>Speaking</i>	4
110:111-112 <i>English Composition</i> 4 credits each	8
110:205 <i>Types of Literature</i>	4
110:317-318 <i>Western Cultural Traditions</i> 4 credits each	12
319	

	<i>Credits</i>
110:33- <i>Eastern Civilizations</i>	4
325:244 <i>Introduction to Economic Analysis</i>	4
Social Science Elective	5
<i>Mathematics</i>	
345:231, 232, <i>Analytic Geometry—Calculus I, II, III, IV, V</i>	
233, 234. 4 credits each	20
235	
345:236 <i>Differential Equations</i>	4
<i>Natural Science</i>	
315:132-133 <i>Principles of Chemistry</i> 4 credits each	8
365:291-292- <i>Elementary Classical Physics I, II and III</i>	
293 4 credits each	12
365:297-298- <i>Physics Computations I, II, and III</i>	
299 1 credit each	3
<i>Required Engineering</i>	
430:201 <i>Statics</i>	4
430:202 <i>Introduction to Mechanics of Solids</i>	4
430:380 <i>Engineering Materials Laboratory</i>	1
440:331 <i>Circuit Fundamentals</i>	3
440:368 <i>Electronic Fundamentals</i>	3
440:381 <i>Electrical Machinery Fundamentals</i>	3
445:206 <i>Fortran Programming for Scientists and Engineers</i>	3
460:125 <i>Engineering Graphics I</i>	3
460:126 <i>Engineering Graphics II</i>	2
460:160 <i>Engineering Design: Mechanical Engineering</i>	2
460:300-301 <i>Thermodynamics I and II</i> 4 credits each	8
460:310 <i>Fluid Mechanics</i>	4
460:315 <i>Heat Transfer</i>	4
460:320 <i>Kinematic Analysis of Mechanisms</i>	4
460:322 <i>Dynamics</i>	4

460:336 <i>Analysis of Mechanical Components</i>	4
460:337 <i>Design of Mechanical Components</i>	4
460:360-361 <i>Engineering Analysis I and II</i> 3 credits each	6
460:380 <i>Mechanical Properties of Materials</i>	3
460:400 <i>Design of Energy Systems</i>	3
460:401 <i>Thermal System Components</i>	3
460:411 <i>Compressible Fluid Mechanics</i>	3
460:431 <i>Vibrations</i>	4
460:440-441 <i>Automatic Controls I and II</i> 3 credits each	6
460:460-461 <i>Mechanical Design I and II</i> 3 credits each	6
460:493 <i>Mechanical Engineering Measurements Laboratory</i>	2
460:494 <i>Mechanical Engineering Laboratory</i>	2

Approved Electives

Must include two of 460:410, 415, 432, 442, 462 or appropriate design-oriented Special Topics, e.g., Nuclear Engineering, Computerized Design, and 3 credit hours of Basic Science Elective.

- a) For all students graduating after January 1, 1978:
460:401 *Thermal System Components* or equivalent
460:493 *Mechanical Engineering Measurements Laboratory*. Within his elective package each student must select two of the following courses: 460:410, 415, 432, 442, 462 or appropriate Design oriented Special Topics, e.g., Nuclear Engineering, Computerized Design.
- b) For all students graduating after January 1, 1979, also:
460:494 *Mechanical Engineering Laboratory*
Each student must select a Basic Science elective to be approved by his Advisor.
- c) For all students graduating after January 1, 1981, also:
365:297, 298, 299 *Physics Computations* 1

498: CONSTRUCTION TECHNOLOGY

The curriculum in Construction Technology is designed to produce a graduate with a strong fundamental knowledge of technology, combined with management ability and a familiarity with business, economics and personnel management. The program is designed to provide graduates for positions in field supervision and estimating for the construction industry.

The program is a "two-plus-three" arrangement with one full year of on-the-job experience obtained in two 6-month periods. All students must complete the Associate Degree Program in Surveying and Construction Technology before entry into this baccalaureate program. Transferees from other two-year programs where the course content compares favorably will be admitted as candidates for the degree Bachelor of Construction Technology.

Outline of Program

<i>General Studies</i>	<i>Credits</i>
110:111-112 <i>English Composition*</i>	8
110:205 <i>Types of Literature</i>	4
110:105 <i>Intro. to Public Speaking</i>	4
OR	
110:106 <i>Effective Oral Communication</i>	4
110:1 <i>Physical Education</i>	2
110:3 <i>Eastern Civilization</i>	3
110:317, 318 <i>Western Cultural Tradition</i> and 319	12
202:240 <i>Human Relations</i>	4
202:247 <i>Survey of Basic Economics</i>	5
202:242 <i>American Urban Society</i>	4
	<hr/>
	46
<i>Basic Courses</i>	
202:131 <i>Math Analysis I</i>	3
202:132 <i>Math Analysis II</i>	4
202:133 <i>Math Analysis III</i>	4
202:234 <i>Math Analysis IV</i>	4
292:151 <i>Physics</i>	4
292:1 <i>Physics</i>	3
292:121 <i>Technical Drawing I</i>	3
292:122 <i>Technical Drawing II</i>	3
202:122 <i>Technical Report Writing</i>	3
	<hr/>
	31

<i>Construction Technology</i>	
298:125 <i>Statics</i>	5
298:241 <i>Strength of Materials</i>	5
298:235, 236 <i>Materials Testing Lab</i> and 239	6
298:232 <i>Construction</i>	4
298:245 <i>Cost Analysis & Estimating</i>	3
298:231 <i>Building Construction</i>	4
298:234 <i>Elements of Structures</i>	4
298:233 <i>Construction Administration</i>	4
298:250 <i>Structural Drafting</i>	3
298:122 <i>Basic Surveying</i>	4

*English 202:118-120 (7 credit hour total) may satisfy the English Composition 110:111 requirement. Placement examination is also available.

298:222 <i>Construction Surveying</i>	4
498:461 <i>Construction Form Work</i>	4
498:352 <i>Field Management</i>	4
498:354 <i>Foundation Construction Methods</i>	4
430:491 <i>Civil Engineering Systems</i>	3
498:462 <i>Mechanical Service Systems</i>	4
498:463 <i>Electrical Service Systems</i>	4
<i>Technical Electives</i>	11
	<hr/>
	80

<i>Business</i>	
620:221,222 <i>Principles of Accounting</i>	8
640:371 <i>Business Finance</i>	5
650:350 <i>Personnel Management</i>	3
	<hr/>
	16

Course selections from the following four groups can be made to meet the minimum credit hours:

<i>Group 1. Business and Management</i>	
650:351 <i>Personnel Functions</i>	3
325:330 <i>Labor Problems</i>	4
325:333 <i>Labor Economics</i>	4
325:432 <i>Economics & Practice of Collective</i> <i>Bargaining</i>	4
640:318 <i>Risk Management & Insurance</i>	4
640:321, 322 <i>Business Law I & II</i>	5,4
	<hr/>
	Min 11
<i>Group 2. Accounting</i>	
620:270 <i>Managerial Accounting</i>	4
620:317, 318 <i>Intermediate Accounting</i>	8
620:290 <i>Cost Accounting</i>	4
620:460 <i>Controllorship Problems</i>	5
	<hr/>
	Min 4

<i>Group 3. Statistics</i>		<i>Technical Elective List</i>	<i>Credits</i>
347:251 <i>Introduction to Statistics I</i>	3	430:311 <i>Soil Mechanics</i>	4
650:348 <i>Quantitative Business Analysis</i>	4	430:312 <i>Foundations</i>	4
	Min 3	430:414 <i>Design of Earth Structures</i>	4
	—	430:418 <i>Engineering Geophysics</i>	3
<i>Group 4. Economics</i>		430:350 <i>Urban Planning</i>	3
292:310 <i>Economics of Technology</i>	5	430:492 <i>Special Projects</i>	3
440:401 <i>Engineering Economy</i>	3	498:351 <i>Construction Quality Control</i>	3
325:202 <i>Principles of Economics</i>	4	498:353 <i>Legal Aspects of Construction</i>	4
	Min 3	337:101 <i>Introductory Physical Geology</i>	5
	—	337:210 <i>Geomorphology</i>	5
<i>Free Electives</i>	10	337:215 <i>Structural Geology</i>	5
	—	337:411 <i>Pleistocene Geology</i>	4
		337:434 <i>Ground Water Hydrology</i>	4
		555:211 <i>Red Cross First Aid</i>	2
Degree Total	204		

AN UPPER COLLEGE:

The College of Education

H. Kenneth Barker, Ph.D., *Dean*
 Marion A. Ruebel, Ph.D., *Assistant Dean*

OBJECTIVES

The purpose of the College of Education is to further the objectives of The University of Akron by providing quality undergraduate and graduate programs for students of Education and by helping them attain the following:

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 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. An appreciation of the values and feelings essential for working with young people and with colleagues *and* the ability to develop emphatic relationships in a wide variety of professional and social roles in the school and community.

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.

To accomplish these objectives, this Upper College offers a variety of programs for the preparation of elementary and secondary teachers, counselors, school administrators and other educational personnel. The baccalaureate degrees, Bachelor of Arts and Bachelor of Science in Education and Bachelor of Science in Techni-

cal Education are offered. Graduate degrees include the Master of Arts and Master of Science in Education, the Master of Science in Technical Education and the Ph.D. and Ed.D. degrees.

Programs leading to each degree include a balanced offering of a foundation in general education; an intensive study in depth of the teaching and/or administration area; and those professional courses and other learning experiences which attempt to combine theory and practice.

In addition to the regular degree programs, special courses and related services such as institutes and workshops are regularly offered with the planning assistance of public school personnel.

Throughout its history, the College of Education has maintained a close relationship with the Akron Public Schools. Perkins Normal School, which was founded by the Akron Board of Education, became the Teachers College of the University in 1921, expanding into the College of Education in 1935. Today, the public school administration of Akron and surrounding school districts cooperate in advisory capacities to the College of Education. Their schools are used widely for observation and for the assignment of student teachers. Approximately one-half of the teachers in the Akron Public Schools are former students of the University.

REQUIREMENTS FOR ADMISSION

To be admitted to the College of Education, the student must be able to meet the following criteria:

1. Completion of at least 45 credits with at least a 2.0 quality point average.

2. Demonstration of those qualities of character and personality deemed essential for a professional person in education. This determination is made by instructors conducting the education courses in the general college; by the staff in the Office of Student Services; and if necessary, by measuring performance by means of standardized evaluation instruments.

3. Demonstrated evidence of the ability to attain a 2.5 quality point average in his choice of major fields.

All students preparing for certification may be evaluated by the College of Education Undergraduate Committee, subject to review by the Dean. Such evaluation will occur whenever there is reason to believe the student does not measure up to criteria for professional development established by the faculty of the College. This committee can recommend to the Dean of the College of Education any one of the following actions;

1. That the student's admission to or retention in the program for certification be confirmed with no other action suggested.

2. That the student's admission to or retention in the program for certification be confirmed but that he be apprised that he has certain weaknesses which must be corrected before he will be approved for student teaching.

3. 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 correctible.

STUDENT ADVISERS

Students should confer with the following persons, depending upon the fields in which they expect to teach. Students should also feel free to consult with the Dean or Assistant Dean of the College of Education.

Art	Mr. Bayless
Business Education	Mr. Eley Mrs. King
Elementary	Mr. Arms, Mrs. Atwood, Mrs. Badger, Mr. Barr, Miss Bruno, Mr. Christman, Mrs. Clegg, Mr. Esporite, Mr. Ferguson, Mr. Hoch, Miss Leyden, Miss Lombardini, Mr. McKnight, Mr. Meconi, Mrs. Noble, Mrs. Seifert, Mr. Sovchik, Mrs. Spencer, Mr. Steinen, Mrs. Stoodt, Mr. Williams
Secondary	Mr. Biondo, Mr. Bradley, Miss Cook, Mr. Eley, Mr. Hembree, Mr. Hirschbuhl, Mrs. King, Mrs. Lindbeck, Mr. Ocasek, Mr. Ruebel, Mr. Yoder
Home Ec. & Family Ecology	Mrs. Sullivan
Music	Mr. MacDonald, Mr. Nolin

Physical Education	Mr. Maluke
Special Education	Mr. Arn, Mr. Kovacevich, Myers
Speech and Theatre Arts	Mr. Dunlap
Speech and Hearing Therapy	Mr. Davis
Technical Education Graduate	Mr. Sugarman, Mr. Frye Mr. Adolph, Mr. Bradley Mr. Ferguson, Mr. Hayes, Mr. Hoedt, Mr. Rich, Mr. Sugarman

REQUIREMENTS FOR BACHELOR'S DEGREE

Students prepare to teach any one of the following areas or fields: Nursery School, Kindergarten-Primary, Elementary; the conventional academic fields found in junior and senior high schools; and 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 192 credits with a grade point ratio of 2.0 must be completed to qualify for the Bachelor's degree.

The specific subjects required for degrees in certain fields are set forth in subsequent pages. In all cases, the requirements include courses in the general studies, subject matter areas, and professional sequences.

The B.A. in Education degree is granted to those whose major is in one of the academic fields or in Speech and Hearing Therapy. The B.S. in Education is granted to those whose major is in the other special fields or in elementary education. The B.S. in Technical Education is awarded to those who complete the requirements of that program.

A physical examination is required each year of all students who are preparing for certification as teachers.

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. Each student must teach all day, every day for a full quarter. When arranging his University schedule for this quarter, the student may not register for any other course.

In order to qualify for student teaching a student must maintain a 2.5 average in his teaching field. Satisfactory work also must be

done in other teaching fields and in professional education to warrant recommendation for a teaching certificate.*

RECOMMENDATIONS FOR CERTIFICATION

Every teacher in Ohio public schools is required to have a certificate covering the fields in which he is teaching. This certificate is issued by the State Department of Education upon recommendation of the Dean of the College of Education. The student must make out an application form which may be obtained in the office of the Dean. This form should be filled out about one month before the student plans to complete all of his requirements for teaching.

Students are expected to receive their recommendation for certification from the institution granting the degree. Students who expect to receive degrees from other institutions but who wish to qualify for certification at The University of Akron will be expected to meet all of the certification requirements of The University of Akron.

STUDENTS ENROLLED IN OTHER COLLEGES AT THE UNIVERSITY OF AKRON

Some students who receive degrees from other colleges in the University may also wish to qualify for teaching. They will be recommended for certification after completing their major and minor requirements and the pre-professional and professional courses included in the RECOMMENDED SEQUENCE FOR SECONDARY EDUCATION listed later in this chapter. Such students must be closely advised during the last two years.

Any student in the University who is not enrolled in the College of Education and who wishes to teach should register with the Dean of the College of Education by completing the form "Admission to Teacher Education" at the time of promotion to Upper College or two years prior to the time he expects to be eligible to teach.

ELEMENTARY EDUCATION

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:

	<i>Credits</i>
A. <i>General Studies Courses</i>	58
(Consult pages 86-87 for specific course requirements and alternatives.)	

B. <i>Pre-Professional Education Courses:</i>		<i>Credits</i>
710:191 Design		3
375:141 Introduction to Psychology		5
335:100 Introduction to Geography		4
335:350 Anglo-America		4
One of the following four courses:		
370:100 Government and Politics in the United States		5
340:201 United States History to 1815		4
340:202 United States, 1815-1898		4
340:203 United States, 1989-Present		4
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		20-21

C. *Professional Education Courses:*

1. <i>Basic: (14 credits)</i>		
510:156 Education in American Society		3
510:157 Human Development and Learning		4
510:350 Tests and Measurements		3
510:401 Problems in Education		4
2. <i>Elementary Education: (55 credits)</i>		
520:333 Science for the Elementary Grades		5
520:336 Teaching of Elementary School Mathematics		5
520:335 The Teaching of Reading		5
520:339 Principles of Diagnostic Teaching of Reading		5
520:337 Teaching the Language Arts		7
520:338 The Teaching of Social Studies		5
520:365 Comprehensive Musicianship for Elementary Classroom Teachers I		3
520:366 Comprehensive Musicianship for Elementary Classroom Teachers II		3
520:141 Handicrafts in Elementary School		3
520:321 Art for the Grades		3
520:286 Children's Literature		5
555:334 Games and Rhythms for Elementary Grades		3
555:103 Personal Health		3
3. <i>Laboratory Experience: (17 credits)</i>		
520:100 Student Participation		1
520:200 Student Participation		1
520:300 Student Participation		1
520:402 Student Teaching		12
520:403 Seminar in Student Teaching		2
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		86

D. <i>Area of Specialization:</i>	18-30
An area of specialization must be selected by the student with approval of his advisor. The student is urged to select an area of specialization which he believes will contribute to his success as a teacher. The number of hours required (18-30 credits) is above and beyond the number of hours required in any other part of the program (A, B, or C above).	

E. <i>Electives:</i>	10
Total Credits Required:	192-205

KINDERGARTEN-PRIMARY

The Kindergarten-Primary program is for students preparing to teach in the kindergarten through the third grade. Any elementary certificate will be validated for kindergarten teaching provided the ap-

*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.

applicant submits evidence of completion of the following 24 hours of course work:

<i>Required</i>	<i>Credits</i>
740:265 Child Development	5
520:330 Early Elementary Education I	3
520:331 Early Elementary Education II	3
520:332 Early Elementary Education III	3

Electives (choose 10 hours from the following)

555:211 Red Cross First Aid	2
780:360 Creative Dramatics	4
561:461 Prin. of Tch. Exc. Children	3
515:410 Audio Visual Education	3
515:4050 Independent Study	1-4
375:151 Developmental Psychology	5
375:412 Psychology of Learning	4

By taking the following courses, students in the Elementary program may also receive University recommendations as Director or Teacher in Nursery Schools:

<i>Required</i>	<i>Credits</i>
740:265 Child Development	5
520:310 Intro. To Early Childhood Educ.	3
520:311 Curr. for Preschool Learning Ctrs.	3
520:360 Nursery School Laboratory	4

Electives (Choose 9 hours from the following)

740:460 Org. & Supv. of Ctrs. for Young Child	3
555:211 Red Cross First Aid	2
740:401 Fam. Life Pat. in Cult. Deprived Home	3
520:409 Independent Study	1-4
561:461 Prin. of Tch. Exc. Children	4

	<i>Credits</i>
740:275 Theory & Guidance of Children's Play	3
510:410 Audio Visual Education	3
740:285 Cr. Exp. Prog. For Child Care Ctrs.	3
375:151 Developmental Psychology	5
740:295 Administration of Child Care Centers	5

OTHER AREAS OF SPECIALIZATION

Elementary majors may choose other areas of specialization from an approved list developed by the department. Included are: mathematics, reading, inner city education, music, geography, learning disorders, special education, science, physical education, visual arts, world of work, and others.

Students are urged to consult department advisors for details and requirements.

CERTIFICATION FOR TEACHING FOREIGN LANGUAGE IN THE ELEMENTARY SCHOOL

Persons desiring certification to teach modern foreign language on the elementary level must meet the regular requirements for certification on the secondary level, plus these Ohio State requirements:

A. Child Psychology or Human Growth and Development.

B. Purposes and Practices of Elementary Education, or equivalent.

C. Methods of Teaching the Modern Foreign Language.

PROGRAM FOR CERTIFICATION OF NON-PROFESSIONAL DEGREE HOLDERS FOR ELEMENTARY SCHOOL

To qualify for a Provisional Elementary Certificate, the holder of a baccalaureate degree in fields other than Education should complete a program of course work equivalent to that required for a major in Elementary Education.

Requirements

- I. *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 the heading Elementary Education.
- II. *Professional Education*
- | <i>A. Basic</i> | <i>Credits</i> |
|--|----------------|
| 510:156 Education in American Society | 3 |
| 510:157 Human Development and Learning | 4 |
| 510:350 Tests and Measurements | 3 |
| 510:401 Problems in Education | 4 |
| <i>B. Elementary Education</i> | |
| 520:333 Science for the Elementary Grades | 5 |
| 520:336* Teaching of Elementary School Mathematics | 5 |
| 520:335 The Teaching of Reading | 5 |

520:339 Principles of Diagnostic Teaching of Reading	5
520:337 Teaching the Language Arts	7
520:338 The Teaching of Social Studies	5
520:365 Comprehensive Musicianship for Elementary Classroom Teachers I	3
520:366 Comprehensive Musicianship for Elementary Classroom Teachers II	3
520:141 Handicrafts in Elementary School	3
520:321 Art for the Grades	3
520:286 Children's Literature	5
555:334 Games and Rhythms for Elementary Grades	3
555:103 Personal Health	3
520:300 Student Participation	1
520:402 Student Teaching	12
520:403 Seminar in Student Teaching	2

*If a time period for four (4) years has lapsed since taking this course, or its equivalent, a basic mathematics or mathematics education course must be completed.

III. If certification for teaching Kindergarten is desired, the following courses must be scheduled:

	<i>Credits</i>
520:330 Early Elementary Education I	3
520:331 Early Elementary Education II	3
520:332 Early Elementary Education III	3
740:265 Child Development	5

RETAINING FROM SECONDARY TO ELEMENTARY CERTIFICATE

The holder of a Provisional, Professional, or Permanent High School or Special Certificate may obtain a Provisional Elementary Certificate valid for elementary teaching (grades 1-8) upon submitting evidence of the satisfactory completion of the following credits:

	<i>Credits</i>
520:451 Elementary Education	4
520:335 The Teaching of Reading	5
520:336 Teaching of Elementary School Mathematics	5
510:157 Human Development and Learning (or equivalent)	4

Such a certificate shall be designated as a RE-TRAINING certificate and shall be made standard upon evidence of the completion of the following course work in elementary education:

520:286 Children's Literature	5
520:365 Comprehensive Musicianship for Elementary Classroom Teachers I	3
520:366 Comprehensive Musicianship for Elementary Classroom Teachers II	3
520:141 Handicrafts in Elementary Schools	3
520:321 Art for the Grades	3
555:334 Games and Rhythms for Elementary Grades	3
520:333 Science for the Elementary Grades	5
520:337 Teaching the Language Arts	7
520:338 The Teaching of Social Studies	5
520:339 Principles of Diagnostic Teaching of Reading	5
520:300 Student Participation	1
555:103 Personal Health	3

If additional hours are needed in the Social Sciences, a choice should be made from the following:

370:100 Government and Politics in the U.S.	5
OR 4 credit hours from the following:	
340:201 United States History to 1815	4
340:202 United States, 1815-1898	4
340:203 United States, 1898-Present (If no previous geography credits are recorded)	4
335:100 World Cultural Geography	4

If the student desires certification for teaching Kindergarten, the following nine credit hours must be scheduled:

520:330 Early Elementary Education I	3
520:331 Early Elementary Education II	3

	<i>Credits</i>
520:332 Early Elementary Education III	3
740:265 Child Development	5

Student teaching is required in this program if evidence of teaching experience under the original certificate is lacking or it is deemed advisable by the Dean of the College of Education, the Director of Student Teaching, and the Head of the Department of Elementary Education. A 2.5 grade point average in professional course work is required to enroll in student teaching.

Completion of the above credits does not necessarily constitute qualification for the B.S. degree in Elementary Education at The University of Akron. To qualify for the degree, certain additional requirements in The University of Akron's program which exceed state 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.*

	<i>Credits</i>
750:107 Class Voice I	2
OR	
752:124 Private Voice	2
750:151-153 Music Theory I, II, III	9
750:154-156 Music Literature I, II, III	6
750:160 Sight Singing and Ear Training I	2
750:260-261 Keyboard Harmony I, II	4
750:254 String Instrument Techniques I	2
OR	
750:354 Woodwind Instruments Techniques	2
OR	
750:355 Brass- Percussion Instrument Techniques	3
751: Music Organizations	3
520:323 Music Teaching in the Elementary Schools	3
520:324 Field Experience in Elementary School Music	3
520:402 Student Teaching (in music)	3

Total 37-38

DUAL CERTIFICATION PROGRAM ELEMENTARY AND SECONDARY

This curriculum prepares teachers for both elementary and secondary schools. Students completing this curriculum will receive the four-year provisional certificate to teach in the secondary school and a certificate which will qualify them to teach in grades 1 through 8 of the elementary school.

*Such certificates may also be validated in the following fields: visual arts, educational media, languages and physical education. Consult the Department of Elementary Education for details.

Students in this program must meet the requirements for Elementary Education; must complete 530:310, Principles of Secondary Education (3 credits), and 530:311. Instructional Techniques in Secondary Schools (4 credits); and must meet the requirements in the field or fields of teaching at the secondary level in which certification is requested. For advisement in this area, contact the Head of the Department of Elementary Education.

SECONDARY EDUCATION

The secondary program is for students preparing to teach in junior and senior high schools. A list of the specific requirements for the various teaching fields will be provided for the student by his College of Education adviser or by the Head of the Department of Secondary Education.

The general requirements for a major in Secondary Education are as follows:

	<i>Credits</i>
1. <i>General Studies Courses:</i>	58
(Consult pages 70-71 for specific course requirements and alternatives.)	
2. <i>General Professional and Pre-Professional Courses:</i>	
375:141 Introduction to Psychology	5
510:156 Education in American Society	3
510:157 Human Development and Learning	4
530:200* Exploratory Experiences in Secondary Education	1-3
510:350 Tests & Measurements	3
530:310 Principles of Secondary Education	3
530:311** Instructional Techniques in Secondary Education	4
530:402 Student Teaching	12
530:403 Student Teaching Seminar	2
510:401 Problems in Education	4
	—
	41-43
3. <i>Courses in Teaching Field(s) and Electives:</i>	93
Total Required for Degree:	192

TEACHING FIELDS

Each student preparing for secondary school teaching must have at least two academic teaching fields. One field shall be at least nine credits more than the minimum required by the State Department of Education, except where the state requirement in the teaching field is 45 credits or more. However, if a student chooses one of the special teaching fields or one of the comprehensive teaching fields, as listed below, he will not be required to prepare in a second field.

For selection of required courses for a teaching field and the recommended sequence for his second

dary education program, a student should consult the Head of the Department of Secondary Education who will appoint an advisor.

STATEMENT OF MINIMUM NUMBER OF CREDITS REQUIRED FOR APPROVAL IN VARIOUS TEACHING FIELDS AS SPECIFIED BY THE UNIVERSITY OF AKRON

COMPREHENSIVE SUBJECTS

<i>Field:</i>	<i>Hours</i>
Art (K-12)	71
Business Education (with shorthand)	68
Business Education (without shorthand)	68
Communications	92
Consumer Homemaking & Multi-area Vocational	80
Data Processing	68
Family Life Education	90
Sales Communication	68
Science	92
Social Studies	90

SPECIFIC SUBJECTS

<i>Field:</i>	<i>First Teaching Field: Hours</i>	<i>Second Teaching Field: Hours</i>
Biology	77	48
Bookkeeping Basic Business		33
Chemistry	81	40
Consumer Homemaking Vocational	74	
Earth Science	71	62
Economics		33
English	56	45
General Science	55	39
Geography		30
Health Education (K-12)		45
Health Education (7-12)		32
History	46	45
Home Economics		46
Home Economics — Non-Vocational	67	
Foreign Languages	45	45
Latin and Greek	39	30
Mathematics	40	30
Outdoor Education		23-26
Physical Education (Men & Women)		45
Physics	80	68
Political Science		41
Sales Communication		33
Social Psychology		30
Sociology		30
Special Education (EMR)		34
Special Education (Learning Disorders)		25
Speech & Theatre (K-12)	60	
Speech and Theatre Arts	52	45
Stenography and Typing		34
Visual Art		54

SPECIAL FIELDS

Art — As determined by Art Department
 Music — As determined by Music Department
 Physical Education (Men & Women) — As determined by

*Not required for those PROMOTED to upper college prior to Sept. 1, 1972.

**Students with the following teaching majors substitute courses indicated for 530:311 - Art (K-12 comprehensive) 520:334 and 530:316; Music (K-12) 520:323, 520:324, 530:325, and 530:326; Home Economics 530:351; Physical Education 557:193, 557:194, Speech and Hearing Therapy 770:470.

Physical Education Department
Speech & Hearing Therapy — As determined by Speech &
Hearing Department.

**SPECIAL EDUCATION
COMPREHENSIVE SPECIAL
EDUCATION MAJOR**

This program provides, within graduation requirements (192 cr. hrs.), for an in-depth preparation in the areas of mental retardation, learning disabilities, and proposed training in the area of educating children suffering orthopedic handicap.

The course of study incorporates vital courses from the areas of Secondary Education, Elementary Education, Counseling and Educational Foundations. The program components include the General Studies, General Professional Education, Special Education Studies (the major field) including full-time 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 IN SPECIAL EDUCATION — GUIDELINES FOR STUDY

PLAN "A": DUAL CERTIFICATION — LEARNING DISABILITIES & EDUCABLE RETARDED

PLAN "B": MENTAL RETARDATION CERTIFICATION — EDUCABLE & TRAINABLE MENTALLY RETARDED

PLAN "C": DUAL CERTIFICATION — EDUCABLE RETARDED AND ORTHOPEDICALLY HANDICAPPED

General Studies (Req. 60 hrs.)

110:105 Introduction to Public Speaking/or	4
110:106 Effective Oral Communication	4
110:111 English Composition	4
110:112 English Composition	4
110:205 Types of Literature	4
110:317 Western Culture Traditions	4
110:318 Western Culture Traditions	4
110:319 Western Culture Traditions	4
*110:115 Institutions of the U.S.	3
*110:116 Institutions of the U.S.	3
*110:117 Institutions of the U.S.	3
*For options see catalog or advisor	
110:33 Eastern Civilizations	3
110:33 Eastern Civilizations	3
110:211 Numbers Communication	4
**110:221 Natural Science-Biology	3
**110:222 Natural Science-Chemistry	3
**110:223 Natural Science-Geology	3
**110:224 Natural Science-Physics	3
**Select 3 of these 4 courses or optional program	
110: Physical Education	1
110: Physical Education	1
: 300 or 400 level elective	2

Professional Education Studies

Plan "A" requires 45 hrs. (Eliminate OH Teaching Area)
Plan "B" requires 32 hrs. (Eliminate LD & OH Teaching Areas)
Plan "C" requires 45 hrs. (Eliminate LD Teaching Area)

510:156 Education in American Society	3
510:157 Human Development and Learning	4
530:310 Principles of Secondary Education	3
510:350 Tests and Measurements	3
510:401 Problems in Education	4
561:201 Participation (EMR)	1
561:202 Participation (LD)	1
561:203 Participation (OH)	1
561:204 Participation (TMR)	1
561:402 Student Teaching (LD)	12
561:402 Student Teaching (EMR)	12
561:402 Student Teaching (OH)	12
561:403 Student Teaching Seminar	2

Related Competency Studies (Req. 40-41 hrs.)

375:141 Introduction to Psychology	5
520:321 Art for the Grades	3
520:335 The Teaching of Reading	5
520:336 Teaching of Elem. School Mathematics	5
520:337 Teaching the Language Arts	7
555:103 Personal Health/or	3
555:211 Red Cross First Aid	2
555:334 Games and Rhythms for Elem. Grades	3
520:365 Comp. Musicianship for Elem. Class. Teach.	3
770:430 Aspects of Normal Language Development	4
560:410 Personnel Serv. in School and Social Work	3

*Special Education Studies (Req. 36 hrs.)
(listed in preferred order)*

561:440 *Dev. Char. of Excep. Individuals	4
561:441 *Dev. Char. of EMR Individuals	4
561:442 (Plan B) Dev. Char. of TMR Individuals	4
561:443 Dev. Char. of LD Individuals	4
561:445 (Plan C) Dev. Char. of OH Individuals	4
561:446 (Plan A) Dev. Char. of BD Individuals	4
561:450 Ed Adj: Pre/Pri Level Ex. Individuals	4
561:451 Ed Adj: Inter. Level Ex. Individuals	4
561:452 Ed Adj: Secondary Level Ex. Individuals	4
561:456 Classroom Beh. Mpt: Exceptional Children	4
561:457 No. Clin Teaching Practicum: Learn Problems	4

*Entry courses No. Final course, advanced permission required

Electives

Plan "A": Choose 10-11 hrs.	
Plan "B": Choose 23- 24 hrs. including 561:442 and 561:454	
(See advisor for suggested course groupings)	
Plan "C": Choose 10-11 hrs.	
375:151 Developmental Psychology	5
385:100 Introduction to Sociology	5
385:428 Subculture Personality Development	4
510:410 Audio-Visual Education	3
520:286 Children's Literature	5
520:333 Science for the Elementary Grades	5

520:338 The Teaching of Social Studies	5
520:366 Comp. Musicianship for Elem. Class. Teach. II	3
555:315 Adaptive Physical Education	3
555:335 Movement Exp. for Elementary Children	3
555:436 Adapted Phys. Educ. Tasks for the LD Child	3
561:305 Field Experience	1-4
561:405 Independent Study	1-4
561:442 Developmental Characteristics-TMR Individuals	4
561:444 Developmental Char.-Intellectually Gifted	4
561:453 Recreation Program: Exceptional Children	4
561:454 Educational Adjustment: TMR	4
561:455 Educational Adjustment: Intellect. Gifted	4
561:459 Invitational Seminar: Special Education	2
740:265 Child Development	5
740:401 Family Life Patterns in the Econ. Depr. Home	3
750:201 Fundamentals of Music	3

Suggested Course emphasis groupings:

Block 1 Social Emphasis

740:265 Child Development	5
740:401 Family Life Patterns in the Econ. Depr. Home	3
385:430 Social Structures and Personality	4

Block 2 Physical Educational Emphasis

740:265 Child Development	5
555:436 Adapted Phys. Edc. Tasks for the LD Child	3
555:315 Adaptive Physical Education	3
555:335 Movement Exp. for Elementary Children	3
561:453 Recreation Programs: Exceptional Children	4

Students enrolling in the comprehensive preparation program in Special Education will complete 192 quarter hours of study to include two (2) full-time student teaching assignments in special education classes under Plans "A" and "C" and one (1) full-time student teaching assignment in EMR classes under Plan "B". The above requirements fulfill the Ohio State requirements for certification in the fields of Educable Mental Retardation, Learning Disabilities, and Orthopedic Handicap. Plans "A" and "C" yield two teaching certificates. Plan "B" yields only the EMR certificate and complete the requirements for TMR certification. The above program is subject to change due to changes in state certification requirements, General College requirements, or changes in the department program.

COMBINATION SPECIAL EDUCATION —
ELEMENTARY EDUCATION PROGRAM

The addition of 25 to 49 special education credit hours including student teaching, to the standard elementary education program in lieu of elementary education elective hours 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 proposed 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 following special education courses may comprise the second teaching field at the secondary level.* Completion of these courses in addition to the professional education courses required of secondary teachers and a modification of the student teaching requirement comprise this program of study. The additional teaching field can be any of the several recognized subject matter areas of preparation. Completion of this program leads to a teaching certificate valid for teaching in the regular and educable mentally retarded classrooms.

<i>Prerequisites:</i>	<i>Credits</i>
375:141 <i>Introduction to Psychology.</i>	5
510:157 <i>Human Development and Learning.</i>	4

Required Courses:

561:440/540 <i>Developmental Characteristics of Exceptional Individuals.</i>	4
561:441/541 <i>Developmental Characteristics of Educable Mental Retarded Individuals.</i>	4
561:443/543 <i>Developmental Characteristics of Learning Disabled Individuals.</i>	4
561:451/551 <i>Educational Adjustment for Intermediate Level Exceptional Children.</i>	4
561:452/552 <i>Educational Adjustment for Secondary Level Exceptional Children.</i>	4
561:456/556 <i>Classroom Behavior Management for Exceptional Children.</i>	4
561:457/557 <i>Clinical Teaching Practicum: Children with Learning Problems.</i>	4
520:335 <i>Teaching of Reading</i>	5
561:201 <i>Student Participation-Educable Mentally Retarded.</i>	1
561:402 <i>Student Teaching (EMR).</i>	12

*A second teaching field in the secondary level can also be constructed so as to lead to certification in the area of learning and/or behavior disorders and in the proposed area of the education of the orthopedically handicapped. The credit hour requirement is of similar number.

Students enrolling in the Secondary Education-Educable Mental Retardation Program will complete 46 hours of special education classes including student teaching on a two quarter basis, one quarter to be in the regular classroom and the other in a special classroom.

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 detail can be obtained from the Department of Special Education and/or the Department of Speech Pathology and Audiology.

TECHNICAL EDUCATION

The undergraduate program in Technical Education is designed to prepare instructors for technical institutes, community colleges and university branches. 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 mathematics, physics, chemistry, English or instructors for other general education offerings. Graduates of this program would be awarded the degree of Bachelor of Science in Technical Education.

The program is divided into the following three major classifications:

1. Engineering and Industrial Technology
2. Business and Office Technologies
3. Sales and Merchandising Technologies.

Students may elect other areas so long as the courses are available and their advisors approve.

The Technical Education program includes work in four areas: General Studies; the technical specialty; Professional Education; and occupational experience. Specific course requirements may be secured from the Department of Secondary Education or from the advisors in Technical Education.

Requirements for graduation. In addition to the general requirements of the College of Education, a student in Technical Education must obtain at least a 2.0 average in (A) all major departmental professional courses (540), (B) all professional education courses, and (C) a 2.5 average in all technical courses directly related to the student's teaching field.

AN UPPER COLLEGE

The College of Business AdministrationJames W. Dunlap, Ph.D., *Dean*

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.

OBJECTIVES

The purpose of the College of Business Administration is to further the objectives of The University of Akron by providing a quality program of collegiate education in business to prepare students for professional careers in commerce, industry and government. Specific objectives of the College in terms of student achievement include the following:

Competence in the basic functional areas of business enterprise;

Analytical ability and balanced judgment in the solution of business problems;

Understanding of human behavior and the impact of social, political and economic forces in the decision-making process;

Facility in the use of management tools of accounting, quantitative techniques and communications;

Development of a business code of ethics; and,

Desire to continue the pursuit of knowledge and the achievement of excellence in the area of administration.

Additional objectives of the College of Business Administration are: to act as a service division by offering courses to students in other colleges; to serve the business community of the state and region by sponsoring conferences, short courses and management development programs; to foster and encourage research in business; to offer graduate instruction and opportunities for research to students at the

master's level; to prepare students for entering law school; and to prepare students for advanced research and study in business and economics.

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

The College of Business Administration offers, through the Graduate School, advanced professional business study leading to the degree of Master of Business Administration with concentrations in Accounting, Finance, Management, Marketing, and International Business. In addition, the Master of Science in Accounting and the Master of Science in Management are offered.

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.

REQUIREMENTS FOR ADMISSION

The College will accept students who have completed sufficient course work to indicate

possession of the necessary ability and desire to earn a Business Administration degree. The number of credits to have been completed will vary from student to student, but will be at least 45 credits at the time of acceptance.

*Enrollment in upper college business courses is limited to students who have:

1. Applied for promotion or transfer
2. Successfully completed at least 90 credits
3. Earned at least a 2.0 inclusive grade average and at least a 2.0 grade average in Business Administration and Economics courses.
4. Successfully completed the following courses or equivalents:**

<i>Second Quarter</i>		<i>Credits</i>
325:202 Principles of Economics		4
620:222 Principles of Accounting		4
110:221-224 Natural Science		3
Electives		5-6
		—
		16-17

<i>Third Quarter</i>		
110:221-224 Natural Science		3
620:270 Managerial Accounting or*		
620:290 Cost Accounting		4
Electives**		9-10
		—
		16-17

SCHEDULE OF REQUIRED COURSES

First Year

<i>First Quarter</i>		<i>Credits</i>
110:111 English Composition		4
110:115 Institutions in the U.S.***		3
110: Physical Education		1
Electives or Mathematics****		8
		—
		16

<i>Second Quarter</i>		
110:112 English Composition		4
110:116 Institutions in the U.S.***		3
375:141 General Psychology/or		
385:100 Introduction to Sociology		5
110: Physical Education		1
Electives or Mathematics****		4
		—
		17

<i>Third Quarter</i>		
110:117 Institutions in the U.S.***		3
110:108 Effective Speaking		4
375: Psychology (second course)/or		
385: Sociology		4
Electives or Mathematics****		4
		—
		15

Second Year

<i>First Quarter</i>		
110:221-224 Natural Science		3
325:201 Principles of Economics		4
620:221 Principles of Accounting		4
110:205 Types of Literature		4
		—
		15

**TRANSFER OF COURSES AND
ADVANCED STANDING**

In order for courses taken outside of the General College or the College of Business Administration to be accepted as part of an approved program of study in lieu of College and departmental requirements, the courses to be transferred must be of an equivalent level. The College of Business Administration will consider the 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.

REQUIREMENTS FOR GRADUATION

1. A minimum of 192 credits, including the work in the General College. Not more than two credits of physical education activities may be included.
2. Other requirements, including the residence requirement, listed in this Bulletin.
3. At least 2.0 quality point average in (a) all major departmental courses, (b) all business and economics courses, and (c) all courses undertaken here and elsewhere.
4. Recommendation of the student's department head.

CORE PROGRAM

All students enrolled in the College of Business Administration must successfully complete the following business core program:

*Exception to any or all of these may be granted by the Dean.

**Equivalence is to be determined by the Dean of the General College for all courses identified as part of the General Studies program and by the Dean of the college of Business Administration in consultation with the department heads, for all other courses.

***See page 71 for alternative courses for 110:115-116-117.

****Required mathematics courses are 345:140-145-150-160-165-170-180-185-195, Modern University Mathematics.

<i>Number</i>	<i>Course Title</i>	<i>Credits</i>
620:221-222	Principles of Accounting	8
620:270	Managerial Accounting/or	4
620:290	Cost Accounting	4
660:300	Marketing Principles	4
640:320	The Legal Environment of Business (For undergraduate non-accounting majors)/or	5
640:321	Business Law (For undergraduate accounting majors)***	5
640:371	Business Finance	
650:340	Intro. to Computer Applications for Business	4
650:348-349	Quantitative Business Analysis I, II	7
650:372	Management - Organization and Behavior	3
650:473	Business Policy	5
325:	Economics (upper division)	4

DEPARTMENTS OF INSTRUCTION

620: 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 to all three. Accounting graduates who choose public accounting may become seniors, managers, principals or partners in public accounting firms. A student who chooses an accounting career in private industry may hold the position of accountant, cost accountant, senior accountant, budget director, internal auditor, treasurer or controller. Federal, state and local governments provide a wide variety of job opportunities at the professional level for well-educated accountants. There are exceptional opportunities for professional advancement regardless of the type of institution graduates may choose.

The accounting curriculum is designed to prepare the student for professional service, including sitting for the uniform certified public accounting examination and to prepare the student to undertake advanced study leading to the Master's degree. In recognition of the fact that both public and private accounting rest on the same foundation, the following courses, in addition to those listed on the previous page, are required of all undergraduate accounting majors:

<i>Number</i>	<i>Course Title</i>	<i>Credits</i>
620:317-318	Intermediate Accounting	10
620:355	Introduction to Electronic Data Processing	5
620:430	Taxation I	5
620:440	Auditing	5
620:460	Controllorship Problems	5
640:322	Business Law	4

The upper-division Economics course elected by Accounting majors should be 325:380 Money and Banking; a different course may be elected with permission.

In addition to the accounting courses required in the above program, students preparing for a career in public accounting are advised to take 620:420 (Advanced Accounting) and 620:431 and 620:431 (Taxation II). Majors preparing for careers in industrial accounting should take elective courses in Management.

Because of the increasing demand for accountants with a knowledge of computer theory and practice, majors are advised to elect 620:454 (Accounting Systems). Courses in mathematics beyond finite mathematics are also strongly recommended.

The degree of Bachelor of Science in Accounting will be awarded to those students who complete the prescribed work.

640: FINANCE

The Department of Finance offers demanding courses which try 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 into some of these areas, but on-the-job training is required in allied fields. It is for this reason our suggested preparation is broad in scope.

In addition to 325:380 Money and Banking, the student majoring in Finance must take the following courses:

<i>Number</i>	<i>Course Title</i>	<i>Credits</i>
640:338	Financial Intermediaries	5
640:343	Investments	5
640:479	Problems in Finance	5

In order to round out the Finance major's training, it is recommended that he take the following two courses to complete his major requirement:

640:436	Commercial Bank Management	5
640:447	Security Analysis	5

Electives should be considered especially by those students who aim for careers in Financial Management from the following four courses:

	<i>Credits</i>
640:314 Credits and Collections	3
640:318 Principles of Insurance	4
640:400 Investing in Real Estate	5
640:425 Business and Society and the substitution of	5
640:321-322 Business Law	9
for	
640:320 The Legal Environment of Business	5

The degree of Bachelor of Science in Business Administration will be awarded to students who complete the prescribed work.

650: 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. He 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.

The Management major must complete all of the following courses:

	<i>Credits</i>
650:350 Personnel Management (two behavioral science courses prerequisite)	3
650:361 Production & Systems Management (348 & 325:202 prerequisites)	5

	<i>Credits</i>
650:362 Production & Operations Management (361, 372, & computer course prerequisites)	5
650:456 Management Problems (An individual analysis and problem-solving project, which should be preceded by all but one of the departmental requirements. Work normally extends over two quarters).	—
	Total 17

In addition to the above, the Management major selects either the Production concentration or the Personnel concentration. The Production concentration consists of courses 364, Business Operational Planning, 3 credits, (301 & 349 prerequisites); 404, Production Planning and Control, 3 credits (349 prerequisite); & 405, Quality Control, 3 credits, (349 prerequisite). The Personnel concentration consists of courses 351, Personnel Functions, 3 credits (350 prerequisite); 352, Management Training and Development, 3 credits (350 prerequisite); & 469, Personnel Relations, 3 credits, (350 prerequisite). Additional electives in the department include Industrial Plants & Advanced Statistics, (349 prerequisite).

The degree of Bachelor of Science in Industrial Management will be awarded to those students who complete the prescribed work.

INDUSTRIAL ACCOUNTING EMPHASIS

The Industrial Accounting emphasis jointly administered by the Accounting Department and the Management Department 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 degree, Bachelor of Science in Industrial Management.

The student selecting the Industrial Accounting emphasis must successfully complete the following courses:

<i>Number</i>	<i>Course Title</i>	<i>Credits</i>
620:290	Cost Accounting	4
620:355	Introduction to Electronic Data Processing	5
620:460	Controllership Problems	5
650:350	Personnel Management	3
650:361	Production & Systems Management	5
650:362	Production & Operations Management	5
650:405	Quality Control and two of the following	3
650:364	Business Operational Planning	3

	<i>Credits</i>
650:404 Production Planning and Control	3
650:405 Quality Control	3

Recommended electives for the student selecting the Industrial Accounting emphasis include:

<i>Course Title</i>	
<i>Number</i>	
620:430 Taxation I	5
620:440 Auditing	5
620:454 Accounting Systems	5
650:364 Business Operational Planning	3
650:447 Advanced Statistics	3
650:456 Management Problems	5

660: MARKETING

The chief marketing executive in the firm is responsible for sustaining customer acceptance of his firm's products and services, and for finding new opportunities for his firm through the developments 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. He is also responsible for organizing the various functions involved in the marketing effort. He attempts to allocate the resources of his firm for maximum impact in the markets which he feels are most profitable in order to provide the firm with a high and continuing flow of money income.

The Marketing curriculum is designed to provide the student with a clear understanding of the nature and uses of marketing techniques and their varying combinations in a total marketing plan. The

student is also given a sound basis for further scholarly research in such areas as consumer and buyer behavior, operational and symbolic aspects of products and services, the communications techniques and theory, and organizational behavior as these relate to the objectives of the firm. Thus, the student becomes aware of current practices in the marketing discipline as well as the latest theoretical developments.

In addition to 660:330 (Marketing Principles), he must complete a minimum of 24 credits in his major, including 660:478 (Sales Administration); 660:480 (Marketing Cases and Problems); and 660:490 (Marketing Research), plus 12 hours of other marketing courses at the 300-400 level.

Recommended electives for the student majoring in Marketing may be selected from the following courses:

<i>Course Title</i>	
<i>Number</i>	<i>Credits</i>
325:380 Money and Banking	4
325:400 Macro-Economics	4
335:220 Economic Geography	3
335:324 Geography of World Manufacturing	3
375:315 Social Psychology	4
385:320 Population	4
385:336 Social Change	4

The degree of Bachelor of Science in Business Administration will be awarded to those students who complete the prescribed work.

AN UPPER COLLEGE

***The College of Fine And
Applied Arts***Ray H. Sandefur, Ph.D., *Dean***OBJECTIVES**

The purpose of the College of Fine and Applied Arts is to further the objectives of The University of Akron by providing a quality program of undergraduate and graduate education in the artistic, technological, clinical and studio experience in speech, the dramatic arts, music, the visual arts and the family life arts, and

To maintain curricula for the preparation of student majors in these areas.

To prepare such students for graduate study and career opportunities on the level of professional competence.

To provide instruction designed to meet specific curricular needs of all the Colleges of the University.

To serve the elective interests of students seeking diversity and enrichment in their academic programs,

To encourage the development of technical knowledge and professional skills which underlie the communicative functions of human expression, and

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 his level of accomplishment.

REQUIREMENTS FOR ADMISSION

To be admitted to the College of Fine and Applied Arts the student must have completed satisfactorily at least 45 credits of work with at least a 2.0 G.P.A. and have the approval of the Dean. Students transferring to the University's Art Department from another institution must submit a portfolio of their work for approval prior to admission. Students transferring from

another college or institution into the Music Department must submit to a departmental placement examination.

**REQUIREMENTS FOR
BACCALAUREATE DEGREES**

1. Electives included in the 192 credits of total work required for the degree 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, twelve of applied music, or six of music organizations are included. (Credit limitations on applied music and music organizations do not apply to the Bachelor of Music degree.) While credits from another institution or college may be accepted, their application toward graduation will depend upon the nature of the student's intended program of study.

2. The recommendation of the Head of the student's major department.

3. All candidates for a Bachelor of Arts degree in the College of Fine and Applied Arts must have demonstrated their ability to use English and one other language.

4. Other requirements as set forth in the section on "Requirements for Graduation" in Chapter 3 and on the following pages.

DEGREES

The following baccalaureate degrees are granted in the College of Fine and Applied Arts:

Bachelor of Arts
 Bachelor of Arts in Dietetics
 Bachelor of Arts in Foods and Nutrition
 Bachelor of Arts in Textiles and Clothing
 Bachelor of Arts in Family and Child Development
 Bachelor of Arts in Speech Pathology and Audiology
 Bachelor of Arts in General Speech
 Bachelor of Arts in Theatre Arts

- Bachelor of Arts in Mass Media Communication
- Bachelor of Arts in Communication/Rhetoric
- Bachelor of Arts in Ballet
- Bachelor of Music
- Bachelor of Fine Arts

THE MAJOR FIELD

To qualify for graduation, a student must concentrate or earn a major in the work of a department of the college. The major will consist of from 36 to 96 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 end of the second year when the student is ready for transfer to the College of Fine and Applied Arts.

A student will select a department in which to earn a major. The exact requirements for each such major will be found on the following pages in the section headed "Departments 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. When a student has selected his major, he should consult with the head of that department. As soon as the student is transferred to the College, the head of his major department becomes his adviser.

DEPARTMENT OF INSTRUCTION

710: ART

Requirements for a bachelor of Arts degree with emphasis in either Studio Art or History of Art are:

- General Studies requirements.
 - Completion of a second year of an approved foreign language.
 - Completion of requirements in either Studio Art Emphasis or History of Art Emphasis.
- 33-37 hours of open electives bringing total to 192 credit hours for graduation.
- Studio Art Emphasis: A minimum of 60 credits in Studio Art coursework including one course in each of six different areas of emphasis; i.e., Printmaking, Sculpture, etc. Survey of History of Art I and II (710:200, 201) plus two additional advanced level art

history courses.

History of Art Emphasis: A minimum of 55 credits in the History of Art or approved equivalents. (201 is recommended.) A minimum of one History of Art Seminar, one Special Problems in History of Art course, and one Special Topics in History of Art course. A minimum of 20 credits in Studio Art coursework to include at least four different areas of emphasis; i.e., Painting, Photography, etc.

Requirements for a Bachelor of Fine Arts degree are:

- General Studies requirements.
- Minimum of 40 hours in at least one area of major emphasis (except in Graphic Design emphasis).
- Minimum of 40 elective credits in Art Studio (except in Graphic Design emphasis).
- Survey of History of Art I and II plus two additional advanced level art history courses (except in the Graphic Design emphasis).
- 34-38 hours of open electives bringing total to 192 credit hours for graduation.
- Senior Exhibition.

Emphasis in Printmaking:	<i>Credits</i>
Prerequisite: 701:131 Drawing I	5
Emphasis Courses Required:	
A minimum of two of the four Introductory Printmaking courses.	
710:213 Printmaking I: Lithography	3 or 5
710:214 Printmaking I: Serigraphy	3 or 5
710:215 Printmaking I: Relief	3 or 5
710:216 Printmaking I: Intaglio	3 or 5
A minimum of two printmaking processes through the Intermediate level.	
710:317 Printmaking II	3 or 5
710:418 Advanced Printmaking	3 or 5
Other Required Courses:	
710:144 Two-Dimensional Design	5
710:275 Photography I	5
710:434 Comprehensive Drawing	3 or 5

Emphasis in Sculpture:	
Prerequisite: 710:122 Sculpture I	5
Emphasis Courses Required:	
710:222 Sculpture II	5
710:322 Sculpture III	5
710:422 Sculpture IV	5
Emphasis in Drawing:	
Prerequisite: 710:131 Drawing I	5
Emphasis Courses Required:	
710:231 Drawing II	3 or 5
710:232 Instrument Drawing	5
710:233 Life Drawing	3
710:333 Advanced Life Drawing	3
710:434 Comprehensive Drawing	3 or 5

Emphasis in Painting:

Prerequisite: 710:131 Drawing I 5

Emphasis Courses Required:

710:144 Two-Dimensional Design	5
710:245 Painting I: Polymer Acrylic	3 or 5
710:246 Painting I: Water Color	3 or 5
710:247 Painting I: Oil Painting	3 or 5
710:348 Painting II	3 or 5
710:449 Advanced Painting	3 or 5

Emphasis in Ceramics:**Prerequisite, a choice of one:**

710:122 Sculpture I	5
710:131 Drawing I	5
710:144 Two-Dimensional Design	5

Emphasis Courses Required:

710:254 Ceramics I	3 or 5
710:354 Ceramics II	3 or 5
710:454 Advanced Ceramics	3 or 5
710:455 Clay-Fibre-Metal Seminar	3

Emphasis in Metalsmithing:**Prerequisite, a choice of one:**

710:122 Sculpture I	5
710:131 Drawing I	5
710:144 Two-Dimensional Design	5

Emphasis Courses Required:

710:266 Metalsmithing I	3 or 5
710:268 Enameling on Metal	3 or 5
710:366 Metalsmithing II	3 or 5
710:466 Advanced Metalsmithing	3 or 5

Emphasis in Photography:**Prerequisite, a choice of one:**

710:122 Sculpture I	5
710:144 Two-Dimensional Design	5

Emphasis Courses Required:

710:275 Photography I	5
710:375 Photography II	3 or 5
710:475 Advanced Photography	3 or 5

Choice of one required:

710:213 Printmaking I Lithography	3 or 5
710:214 Printmaking I Serigraphy	3 or 5

Additional Required Courses:

710:317 Printmaking II	3 or 5
710:300 Art Since 1945	5

30 hours of the elective credits in art studio must be taken in studio areas other than photography. Studio requirements, listed above, may be used as part of these 30 hours.

Emphasis in Graphic Design:

76 to 80 credits in required studio courses.

Prerequisites:

710:131 Drawing I	5
710:232 Instrument Drawing	5
710:275 Photography I	5
710:375 Photography II	3 or 5

Choice of one required:

710:231 Drawing II	3 or 5
710:144 Two-Dimensional Design	5
710:233 Life Drawing	3
740:245 Painting I: Polymer Acrylic	3 or 5
710:246 Painting I: Water Color	3 or 5
710:247 Painting I: Oil	3 or 5

Emphasis Courses Required:

710:283 Drawing Techniques	5
710:284 Introduction to Graphic Design	5
710:286 Commercial Design Theory	5
710:288 Letter Form and Typography	5
710:387 Advertising Design I	5
710:388 Advertising Design II	5
710:389 Advertising Design III	5
710:480 Advanced Graphic Design	5
710:488 Portfolio Design	5

A choice of 10 credits from the following:

710:475 Advanced Photography (taken twice to total 10 credits).	5
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or:

710:484 Illustration	5
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and

710:486 Packaging Design	5
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Other Required Courses:

Minimum of 15 credits of History of Art.

HONORS PROGRAM

As a participant in the honors program, the student must complete a minimum of eighteen credits of honors work, to be divided in such a way that not more than twelve credits are received in either course work (710:499) or research project 710:405, 409, 490. Thus, the maximum number of credits possible would be 24.

The student must complete some written or studio project, and earn an average grade of B or better in all honors work attempted.

ART EDUCATION

Students wishing to earn a B.F.A. or a B.A. degree and be certified to teach art should contact the Art Department for certification requirements and curriculum outlines. General requirements are as follows:

For a B.F.A. with an emphasis in all areas except Graphic Design:

General College Courses	60 credits
Professional Education Courses	43 credits
Art Courses for major & certification	89 credits
	192 credits total

For a B.F.A. with an emphasis in Graphic Design:

General College Courses	60 credits
Professional Education Courses	43 credits
Art Courses for major & certification	102 credits
	205 credits total

For a B.A.:

General College Courses	60 credits
Foreign Language	21 credits
Professional Education Courses	43 credits
Art Courses for major & certification	75 credits
	199 credits total

Students wishing to earn a B.S. in Education degree with a major in art should contact either the Art Department or the College of Education for certification requirements and curriculum outlines.

740: HOME ECONOMICS AND FAMILY ECOLOGY

The following are requirements for all majors in Home Economics and Family Ecology:

The General Studies

The second year of a foreign language (an optional requirement for the Bachelor of Arts in Dietetics)

740:147, 201, 265, 301, and 362. Additional requirements for specific degrees are as follows:

For the Bachelor of Arts in Textiles and Clothing: Business Option

Art: 710:191
 Chemistry: 315:129, 130, 131, or Natural Science 110:221, 222, 224
 Economics: 325:100
 Psychology: 375:141
 Sociology: 385:100
 Accounting: 620:221, 222
 Marketing: 660:300, 340, 350
 Home Economics & Family Ecology: 740:121, 123, 133, 141, 158, 159, 304, 305, 306, 311, 317, 419, or 449, 422, 439, 450, 458, 470

Communication Option

Substitute following courses for Accounting and Marketing:

Sales & Merchandising: 252:103, 104, 202, 210
 Journalism: 780:203
 Speech: 780:175, 281, 282, 283, 288
 Home Economics & Family Ecology: 740:485

For the Bachelor of Arts in Family and Child Development:

Chemistry: 315:129, 130, 131
 Government & Politics: 370:100
 Psychology: 375:141, 151
 Social Science: 385:100
 Social Welfare: 775:276
 Home Economics: 740:133, 141, 159, 204, 218, 255, 342, 401, 422, 470, 485
 Workshops or Seminars: Drug Education, Family Life and Sex Education
 For emphasis in Child Development and Preschool Programming Add:
 Home Economics & Family Ecology: 740:275, 285, 295, or 460/560
 Emphasis with appropriate courses in education meets requirements toward Family Life Education Certification.

For the Bachelor of Arts in Dietetics:

Program leads to a bachelor of arts degree and eligibility for an internship or traineeship program certified by the American Dietetic Association. A coordinated undergraduate program in clinical dietetics is currently being developed and implemented in affiliation with area hospitals to provide opportunity for student dietitians to meet requirements for membership in the American Dietetic Association.

Biology: 310:191, 207
 Chemistry: 315:129, 130, 131
 Data Processing: 244:120
 Economics: 325:100
 Food Service Mgmt.: 228:135, 236, 243
 Management: 650:350
 Sociology: 385:100
 Home Economics & Family Ecology: 740:245, 246, 316, 340, 412, 416, 420, 421 (Dietetic Field Experience), 426, 450, 480, (Seminar in Dietetics)

For the Bachelor of Arts in Foods and Nutrition:

Chemistry: 315:129, 130, 131
 Data Processing: 244, 120
 Economics: 325:100
 Food Service Mgmt.: 228:236, 243
 Marketing: 660:300, 340
 Social Science: 385:100
 Speech: 780:203, 281, 282, 283, 288
 Home Economics & Family Ecology: 740:204, 245, 246, 316, 340, 412, 44., 416, 420, 422, 450, 470

Home Economics Education:

Requirements for majors in Home Economics Education leading to a B.S. Degree in Education may be obtained through the College of Education. The following options are available.

- Home Economics Non-Vocational Education
- Home Economics-Vocational Consumer-Home-making
- Home Economics-Vocational Job Training
 1. Child Care Services
 2. Community and Home Services

3. Fabric Services

4. Food Service

Certification requirements and curriculum outlines for all options are available in the College of Education and in the Department of Home Economics and Family Ecology.

750:MUSIC

A written and aural/oral examination in the fundamentals of music and an audition in a performance area is administered prior to entrance to the University to those students who intend to follow a musical degree program. Students must contact the office of the Department of Music to arrange for the examination.

Requirements for a major leading to the Bachelor of Arts degree:

The General Studies and the second year of a foreign language. At least 45 credits in the department including courses 750:151, 152, 153, 154, 155, 156, 251, 252, 253, 351, 352, 353, participation in a music organization (751 courses) for six quarters. A study of class or private piano until passage of jury examination in functional piano, Keyboard Harmony III (750:262). Participation in Student Recital (750:157) for six quarters. No more than six credits in music organizations (751 courses) and no more than twelve credits in piano and/or other applied music (752 courses) may be included in the minimum 192 credits required for the degree. It is recommended that students attend the weekly Student Recital, participate in music organizations and continue their private study of applied music beyond these minimum requirements. Further courses in music may be taken as electives, subject to above credit limits.

The Bachelor of Arts music major is intended as a cultural course or as preparation for graduate study but not as professional preparation for a musical or teaching career.

Requirements for a major leading to the Bachelor of Music degree:

Performance Major:

The General Studies. 48 credits in a primary area of applied music and 6 credits in a secondary area in applied music (752 courses), minimum of 12 credits earned over 12 quarters in music organizations (751 courses), participation for 12 quarters in Student Recital (750:157 and 357), 63 credits in 750:151, 152, 153, 154, 155, 156, 160, 161, 162, 251, 252, 253, 260, 261, 262, 351, 352, 353, 361, 451, 452, 453, 454, 455, 9 credits in elective courses, passage of the General Membership examination, and presentation of a senior recital. A junior recital is recommended but not required. Passage to the "500" level in his primary performance area is required prior to graduation.

Theory-Composition Major:

The General Studies. 24 credits in a primary area and 6 credits in a secondary area of applied instrumental or vocal music, 12 credits in private lessons in composition (752 courses), minimum of 12 credits earned over 12 quarters in music organizations (751 courses), participation for 12 quarters in Student Recital (750:157 and 357), 66 credits in 750:151, 152, 153, 154, 155, 156, 160, 161, 162, 251, 252, 253, 260, 261, 262, 351, 352, 353, 361, 362, 371, 374, 451, 452, 453, 454, 455, 471, 472, 9 credits in elective courses, successful completion of minimum vocal and keyboard proficiencies, and presentation of a senior recital (of original compositions). Students choosing this option must also demonstrate to a jury prior to promotion to upper college a keyboard proficiency equivalent to the "300" level of study. Prior to graduation the student must pass by jury examination to the "300" level in his primary instrumental or vocal medium.

By extending either the B.A. or B.M. programs to five years, the student may, with careful planning, take the courses necessary to qualify for teaching certification. Both the B.A. and B.M. degrees may be earned in a combination five-year program.

Degree requirements for a music major leading to B.S. in Music Education (administered through the College of Education) include the following musical requirements:

24 credits in a declared primary area of applied music (752 courses), 12 credits in musical organization (751 courses), participation in Student Recital (750:157 and 357) for 12 quarters, 59 credits in 750:151, 152, 153, 154, 155, 156, 160, 161, 162, 251, 252, 253, 254, 255, 260, 261, 262, 351, 352, 353, 354, 455, 361, 454. In addition, Voice and Piano majors must take 750:360, 520:324, and 6 hours of departmental electives (listed below); instrumental majors (not string nor piano) must take 750:455, 530:326, and 6 hours of departmental electives; string majors must take 750:256, 455, 530:326, and 3 hours of departmental electives. All music education majors must take 520:323 and 530:325, and they must successfully demonstrate general vocal, keyboard and conduction proficiencies before assignment to Student Teaching. A half recital is required during the 12 months prior to graduation.

Departmental electives for music education majors include: 750:256, 305, 306, 362, 460, 461, 462, 463, and 464.

CORE CURRICULUM IN MUSIC

The first two years of the Bachelor of Music and the Bachelor of Science in Education (Music Education) programs are essentially the same. Thus, a student who is acceptable to both programs has time to prepare for both degrees or to make an unhurried choice between them.

A suggested quarter-by-quarter schedule of courses can be obtained for the following degree pro-

grams and their options from the Department of Music:

- Bachelor of Arts (Music Major)
- Bachelor of Music
 - Performance Major
 - Theory-Composition Major
- Bachelor of Science in Education (Music Major)
 - Vocal Option
 - Instrumental Option
- Master of Music
(Performance of Music Education Options)

**MINIMUM STANDARDS
OF ACHIEVEMENT**

For the B.S. in Ed. (Music major) degree:

1. Primary performance area.**
 - a. At least 12 quarters of private study.
 - b. Completion of the 200 level as determined by jury exam.
 - c. Performance in Student Recital (or sectional) each quarter.
 - d. Performance of at least a half-recital in senior year.
 - e. Private study is required during every quarter the student is enrolled as a music major.
 - f. Participation on the student's primary instrument in a major musical organization for 9 quarters plus 3 other quarters additionally at student's choice of organization (guitar majors must enroll for 12 quarters in string ensemble, keyboard majors for 12 quarters in Keyboard Ensemble).
2. Piano Proficiency (Students for whom piano is the primary performance area will meet requirements under "1" above, and "d" below).
 - a. At least three quarters of class or private study.

AND

- b. Completion of the 100 level is determined at jury exams.

OR

- c. Study of "Class or Private Piano" as necessary, until entrance examination for "Keyboard Harmony" can be passed.
- d. Successful completion of Keyboard Harmony III (750:262).
3. Voice Proficiency (Students for whom voice is the primary performing area will meet requirements under "1", above).

Non-voice majors may achieve minimum voice proficiency, roughly parallel to the "200" level, in one of the following ways:

- a. Three quarters of Class Voice (I, II, III).

- b. Less than three quarters of Class Voice if minimum voice proficiency is verified in writing by the instructor.

- c. Through regular jury examination to verify that the "200" level has been reached following: pre-collegiate vocal experience and/or training; or private instruction at collegiate level.

For the B.M. (Performance major) degree:

1. Primary performance area.**
 - a. At least 12 quarters of private study at four credits per quarter.
 - b. Completion of the 400 level as determined at jury exams.
 - c. Performance in Student Recital (or sectional) each quarter.
 - d. Performance of a senior recital (junior recital optional).
 - e. Private study required every quarter a student is enrolled as a music major.
 - f. Participation in a major musical organization on the student's primary instrument.
2. Piano Proficiency (Students majoring in piano meet requirements under "1" above, and "d" below).
 - a. At least three quarters of class or private study.
 - b. Completion of the 100 level as determined at jury exams.
 - c. Study of "Class or Private Piano" as necessary, until the entrance examination for "Keyboard Harmony" can be passed.
 - d. Completion of the courses in "Keyboard Harmony."
3. Voice Proficiency (Students for whom voice is the primary performing area will meet requirements under "1" above).

Non-voice majors may achieve minimum voice proficiency, roughly parallel to the "200" level, in one of the following ways:

- a. Three quarters of Class Voice (I, II, III).
- b. Less than three quarters of Class Voice if minimum voice proficiency is verified in writing by the instructor.
- c. Through regular jury examination to verify that the "200" level has been reached following: pre-collegiate vocal experience and/or training; or private instruction at collegiate level.

For the B.M. (Theory/Composition major):

1. Primary performance area.**
 - a. Applied music, instrumental (752:---).
 - (1). Private study for a minimum of 24 credits.
 - (2). Completion of the 200 level as determined by jury exams.
 - (3). Performance in Student Recital.
 - b. Applied music, private studies in composition (752:442).
 - (1). Performance of a senior recital of student's original compositions (junior recital optional).

**NOTE: Entering students declare their primary performing medium at the time of audition for entrance; it may be changed later to another instrument, for example, but the minimum standards as given must be met in the new instrument. At the time of the entrance audition, it will be determined whether entering students are qualified to enter "Keyboard Harmony" and/or "Sight Singing and Ear Training," whether they are prepared to commence private study of piano and/or voice, or should enter "Class Piano" and/or "Class Voice."

(2). Minimum of 12 credits of private lessons in music composition not preceding upper college standing.

c. Organizational participation.

Participation in a major musical organization on the student's primary instrument for six quarters and six additional quarters in organizations as selected in consultation with Theory/Composition advisor.

2. Piano proficiency.

a. Successful completion of Keyboard Harmony III (750:262) before upper college recognition.

b. Successful completion of 200 level as determined by jury exams.

3. Voice proficiency. Minimum voice proficiency, roughly parallel to the 200 level, may be achieved in one of the following ways:

a. Three quarters of Class Voice (I, II, III).

b. Less than three quarters of Class Voice if minimum voice proficiency is verified in writing by the instructor.

c. Through regular jury examination to verify that the 200 level has been reached following: pre-collegiate vocal experience and/or training; or private instruction at collegiate level.

760: MASS MEDIA COMMUNICATION

Requirements for the Bachelor of Arts degree:

1. Completion of the General Studies.
2. Demonstrate ability to use English and one other language.
3. Complete the "Core" courses.
4. Complete the requirements of one of the following Areas of Concentration: General Speech; Mass Media Communications; Communication and Rhetoric.

Requirements for the Bachelor of Arts in General Speech, the Bachelor of Arts in Mass Media Communications, and the Bachelor of Arts in Communication and Rhetoric degrees:

1. Completion of the General Studies.
2. Complete the "Core" courses.
3. Complete the requirements of the appropriate Area of Concentration — General Speech, Mass Media Communications, or Communication and Rhetoric.
4. Complete a total of 21 additional credits, approved by student's advisor, carefully selected from among "Area" course offerings within the Department of Mass Media Communications or from some selected combination of such "Area" courses and offerings from other departments.

CORE PROGRAM

The following "Core" courses are required of all majors and minors in the Department 760:190 or 252, 3 credits, 780:175, 261, 760:281, 351 4 credits each, for a total of 18 credits.

General Speech

This program is designed for the student who wishes to become a speech communication "generalist", for one who wishes to teach speech and theatre arts on the secondary school level, or one who is initially uncertain of an area of concentration within the Department and who later may choose to concentrate in one of the other areas.

In addition to the "Core" courses (19 credits) the student must complete a minimum of three courses, with a range from 9 to 12 credits, from each of the following three areas of concentration: Communication and Rhetoric, Mass Media Communications, and Theatre Arts. The remaining courses of the General Speech program will be carefully chosen from the curriculum in Speech and Theatre Arts with the consent of the student's adviser.

Completion of the following departmental courses is recommended during the student's first two years: 780:175*, 251, 261*, 275, 760:190* or 252*, 245, 281*, 282, 283, 288 and a Theatre elective.

During the third and fourth years the student should plan to complete a minimum of 30 or more credits in Departmental offerings as well as the remaining "core" requirement, 780:434 (4 credits).

Mass Media Communications

Professional broadcasting and journalism in its many forms is the end goal for the student pursuing this area of concentration. A related area of organizational communication may well be an application for the skills learned in Mass Media Communications.

Completion of the following departmental courses is recommended during the student's first two years 780:175*, 760:190* or 760:252*, 780:261*, 760:281*, 282, 283, 288, 201, and 203.

The following are third and fourth year "Area" requirements:

1. The remaining "core" course, 760:351, (4 credits).
2. Mass Media Communication courses — select a range of 36-40 credits from the following departmental courses: 780:250, 251, 262, 275; 760:245, 344, 384, 392, 410, 454, 439, 481, 483, 488.
3. Theatre Arts: two additional courses.
4. Electives — 17-19 credits. Suggested areas include: English, philosophy, political science, psychology, sociology, management, marketing, speech pathology and audiology, and theatre arts & dance.

Communication and Rhetoric

A major in Communication and Rhetoric allows the student the opportunity to examine all aspects of oral communication in theory and practice. Course work is available in communication theory, group dynamics, interpersonal communication, persuasion and propaganda analysis, classical through contemporary rhetoric, argumentation, and public address. Course work is geared toward critical analysis and understanding of each dimension of the communication process. Students in the area of communication

and rhetoric often are preparing for careers in teaching, administration, public relations, politics, law, business, and industrial communication.

Completion of the following departmental courses is recommended during the student's first two years: 760:145, 245, 251, 281*; 780:175*, 190* or 252*, 261*, 344, 392.

The following are third and fourth year "Area" requirements:

1. The remaining "core" course, 780:434 (4 credits).

2. Speech courses — 39 credits from the following:

a. If the following were not taken during the first two years they must be taken at this time: 760:145, 245, 251; 780:190, 252, 344, 392.

b. The requirement may be completed by selecting from the following: 760:141, 283, 384, 410, 439, 440, 445, 454, 481, 490; 780:250, 275.

3. Electives — 32 credits from the following departments: Economics, English, History, Philosophy, Political Science, Psychology, Sociology, Management, Speech Pathology and Audiology, and Speech and Theatre Arts.

770: SPEECH PATHOLOGY AND AUDIOLOGY

Requirements of all majors:

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

Required Departmental courses in the undergraduate, pre-professional program in Communicative Disorders:

770:135, 136, 137, 270, 276, 278, 353, 355, 457, 471, 472, 473, 474, 475, 476.

As soon as a student has decided to major in any area of Communicative Disorders (Speech Pathology, Language Disorders, or Audiology), he should consult with his adviser to identify requirements related to his goals.

There are required courses in the departments of psychology and biology.

If the student is planning to become a public school speech therapist, with a degree from the College of Fine and Applied Arts, he should consult with his adviser about the required courses.

775: SOCIAL WORK

Requirements for Bachelor of Arts Degree with a Major in Social Work (66 or 67 credits)

I. Completion of all the General College and College of Fine and Applied Arts requirements. In meeting the General Studies requirements the student must complete 110:221 or some other human biology course as part of the Natural Science requirement, and 385:100 as part of the Social Science requirement.

II. Completion of the following courses:

Social Work

775:276 Introduction to Social Welfare. 5

775:270 Poverty in the United States. 4

775:401-402 Social Work Practice I and II.	4 credits each	8
775:403 Community Organization.		4
775:421 Field Experience in a Social Agency.		10
775:422 Field Experience Seminar.		6
775: Elective in Social Work.		4
775: Elective in Social Work.		4

Courses in Other Departments

(21/22) Research/statistics requirement may be met by completing one of following or sets:

385:304 Methods of Social Research.		4
375:145 Quantitative Methods in Psychology.		4
347: (Three of the modular courses)		3

Racial and Intergroup Relations requirement may be met by completing one of following or sets:

485:427 Racial and Cultural Intergroup Relations.		4
202:253 Intergroup Relations.		2
202:254 The Black American.		2
340:413 A History of Black Social and Intellectual Thought.		4
370:342 Minority Group Politics.		4

And the following:

385:415 Contemporary Sociological Theories.		4
375:151 Developmental Psychology.		5
375:400 Abnormal Psychology.		5

780: DEPARTMENT OF THEATRE ARTS AND DANCE

Requirements for the Bachelor of Arts degree:

1. Completion of the General Studies.
2. Demonstrate ability to use English and one other language.

3. Complete the "Core" courses (except for those in Ballet).

4. Complete the requirements of one of the following Areas of Concentration: Theatre Arts or Ballet.

Requirements for the Bachelor of Arts in Theatre Arts:

1. Completion of the General Studies.
2. Complete the "Core" courses.
3. Complete the requirements of the concentration in Theatre Arts.

4. Complete a total of 21 additional credits, approved by student's advisor, carefully selected from among the course offerings within the Department of Theatre Arts and Dance or from some selected combination of courses and offerings from other departments.

Requirements for the Bachelor of Arts in Ballet degree:

1. Completion of the General Studies.
2. Demonstrate ability to use English and one other language.

3. Complete the requirements in the Ballet Area of Concentration.

CORE PROGRAM

The following "Core" courses are required of all majors and minors in the Department (with the exception of Ballet): 780:190 or 252, 3 credits, 780:175,

261, 434, and 760:281, 4 credits each, for a total of 19 credits.

Ballet

The Ballet Major is designed for the student who wishes to continue professional training in dance with the added security of the Bachelor of Arts degree. Upon completion of the degree, it is expected that the student will be able to work as a performer or teacher on a professional level.

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 quarter they are enrolled and to successfully complete three quarters 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.

The ballet area also offers courses for students with little or no previous dance experience who intend to major in other fields. Introduction to Ballet, 780:124, gives the student three quarters of introductory technique, and completion of these three quarters entitles the student, if he so wishes, to enter the ballet program on a diminished level.

The following is a suggested four year schedule. It is understood that depending on progress and previous training the time needed to complete the degree may be longer or shorter. Please see the area director of Ballet for further explanation.

Four-Year Course Outline in Ballet

Majors should attempt to earn a minimum of 96 hours in the first two years. The following courses should be completed by the end of the sophomore year.

<i>Major Area Requirements</i>	<i>Credits</i>
780:122, 222 <i>Ballet Technique I and II</i>	30
780:126-127-	
128 <i>Choreo: Improvisations I, II, III</i>	6
780:226-227-	
228 <i>Choreo: Sound and Movement I, II, III</i>	6
780:116, 117 <i>Ballet Analysis I, II</i>	6
780:229 <i>Contemporary Dance Technique</i>	6
	<u>Subtotal 54</u>

<i>General Studies Requirements</i>	<i>Credits</i>
110:105 <i>Introduction to Public Speaking</i>	4
or	
110:106 <i>Effective Oral Communication</i>	
110:205 <i>Types of Literature</i>	4
110: <i>Physical Education</i>	2
110:111-112 <i>English Composition</i>	8
110:115-116-	
117 <i>Institutions in the U.S.*</i>	9
110:211 <i>Numbers Communication</i>	4

110:221-224 <i>Sciences(3)</i>	9
<i>Electives</i>	<u>2</u>
	Subtotal 42

Total 96

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

*Alternative course options available.

In addition to the lower division courses, these must be completed for graduation:

<i>Major Area Requirements</i>	
780:261 <i>Introduction to Theatre</i>	4
780:322, 422 <i>Ballet Technique III and IV</i>	30
780:320 <i>Dance Notation</i>	3
780:326-327 <i>Choreography: Traditional Forms I, II</i>	4
780:423 <i>Dance History</i>	3
780:424 <i>Modern Dance Seminar</i>	3
780:425 <i>Development of Ballet</i>	3
780:426 <i>Techniques of Teaching Ballet</i>	3
	<u>Subtotal 53</u>

<i>General Studies and Other Requirements</i>	
110:317-318-	
319 <i>Western Cultural Traditions</i>	12
750:301, 302,	
303 <i>Music Appreciation</i>	6
110:330-335 <i>Eastern Civilizations</i>	6
<i>Electives</i>	<u>19</u>
	Subtotal 43
	Total 96

Grand Total Minimum	
Requirement for Graduation	192

Certification to Teach Speech and Theatre Arts — Secondary Education.

a. Courses Required of Majors and Minors

	<i>Credits</i>
760:190 <i>Public Speaking</i>	3
760:252 <i>Ethical Persuasion</i>	3
780:175 <i>Oral Interpretation I</i>	4
780:261 <i>Introduction to Theatre</i>	4
760:245 <i>Argumentation and Debate</i>	3
760:281 <i>Introduction to Radio & TV</i>	4
780: <i>Electives (to be selected from courses in department of Speech and Theatre Arts)</i>	7
770:135 <i>Introduction to Phonetics</i>	4
770:136 <i>Bases of Speech</i>	4
	<u>36</u>

b. Required of Majors

760:434 <i>Speech Seminar</i>	3
780:468 <i>Children's Theatre Workshop</i>	3
or	
780:361 <i>Play Directing</i>	4
	<u>7</u>

c. Recommended for Majors (Elect a minimum of eight credits):

760:145 <i>Oral Argument</i>	3
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780:265 Basic Stagecraft	4
760:344 Public Discussion	3
770:270 Introduction to Speech Disorders	4
	16
Grand Total	59

d. Required Education Courses:

510:156 Education in American Society	3
510:157 Human Development and Learning	4
530:200 Exploratory Experiences in Secondary Schools	1
530:310 Principles of Secondary Education	3
530:311 Instructional Techniques in Secondary Schools	4
510:350 Tests and Measurements	3
510:401 Problems in Education	4
530:402 Student Teaching	12
530:403 Student Teaching Seminar	2

e. Other Required Courses:

375:141 Introduction to Psychology	5
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THEATRE ARTS

The Theatre Arts 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

he/she can acquire the skills to teach theatre courses, to undertake graduate work in theatre or to undertake professional post-baccalaureate work in the hope of entering the professional theatre.

Completion of the following departmental courses is recommended during the student's first two years: 780:129, 175*, 261*, 262, 265, 266, 760:190* or 252*, 281.

The following are third and fourth year "Area" requirements:

1. 780:367, 368, 369.

2. The remaining "core" course: 780:434 (4 credits).

3. Theatre Courses — 45 credits from the following: 780:263, 275, 360, 361, 362, 364, 365, 366, 370, 379, 460, 462, 463, 464, 466, 467, 468; 760:439.

4. Electives — 18 credits from the following departments: English, History, Philosophy, Psychology, Marketing, Art, Home Economics and Family Ecology, Music, Speech Pathology and Audiology, or Speech and Theatre Arts.

Through consultation with his/her adviser, the student may wish to follow a program in Acting/Directing, Technical Theatre, or History/Criticism.

AN UPPER COLLEGE

The College of NursingLillian J. DeYoung, Ph.D., *Dean***OBJECTIVES**

The purpose of the College of Nursing is to further the objectives of The University of Akron by providing a quality program of collegiate education in nursing. The specific objectives of the program are to develop a person who is able to

command the segments of a variety of fields and types of knowledge basic to a rational approach to the whole ambit of human life and living,

acquire the functional knowledge and skills necessary to assess, to plan, to give, and to evaluate professional nursing care in a variety of situations including the hospital, the home, and the community,

assume the responsibilities of a nurse practitioner in beginning positions in nursing,

integrate fields of knowledge which may serve as a core for further growth and graduate study in a specialized area of nursing.

The College recommends each student for the bachelor's degree in accordance with his level of accomplishment.

The first four-year basic collegiate program leading to a Bachelor of Science Degree with a major in Nursing was established in 1966. In 1967, the Department of Nursing was elevated to a College of Nursing.

The Program in nursing is approved by the State of Ohio Board of Nursing Education and Nurse Registration. The College of Nursing is accredited by the National League for Nursing.

Graduates of the College of Nursing are prepared to enter all essential areas of professional nursing, including community health nursing. Graduates are eligible for state examination for licensing as Registered Nurses.

The curriculum is designed to include a balance of general and professional education so coordinated that the contributory general studies courses are prerequisite to or concurrent with the professional nursing courses. The courses in nursing follow a logical sequence, each utilizing all previous learning, synthesizing and focusing this learning through applications

in clinical nursing practice. The curriculum is complete with experiences that prepare graduates for competencies in professional nursing. The program of studies provides a foundation for continuous personal development and for graduate study in nursing.

**REQUIREMENTS FOR ADMISSION
AND CONTINUATION IN THE
NURSING PROGRAM**

1. Applicants are expected to meet the general University admissions requirements.

2. Transfer students may receive credit for quality work earned in approved colleges. Enrollment of transfer students is contingent upon University facilities.

3. Registered nurses who received their preparation in hospital or associate degree programs are evaluated individually. R.N. students are expected to meet the same course requirements as the generic student and those of The University of Akron. It is expected that the registered nurse will want to validate by examination, and receive credit for, the following courses: *General Nursing* (820:273, 274 and 275); *Adult Nursing Theory and Practice*; *Nursing of Children Theory and Practice*; and *Maternal and Newborn Theory and Practice*.

4. Prior to enrolling in *General Nursing* (820:273) for the fall quarter of the sophomore year, a student in the track of Nursing must have completed a minimum of 44 quarter hours of credit during the freshman year with an accumulative grade point average of 2.5 for the fall and winter quarters of the freshman year in order to be tentatively enrolled for the fall quarter of the sophomore year for *General Nursing*.

At the time of programming for the sophomore year the Advisers in the Counseling and Advising Division will prepare a request for intercollege transfer for qualified students who are tentatively enrolled in *General Nursing*. When spring grades are available for these students, their transcripts containing their academic performance for the three quarters

during their freshman year will be forwarded along with the intercollege transfer to the College of Nursing. Action on these intercollege transfers will take place by the College of Nursing during the summer, and final acceptance into the *General Nursing* course for the sophomore year will be contingent upon acceptance by the College of Nursing of the intercollege transfer request.

5. Students must achieve a grade point average of 2.5 or higher on a 4.0 scale in the nursing major. Students receiving a "D" or "F" in any clinical nursing course (theory and/or practice) will be required to repeat the course. Students may repeat the course once only.

6. Acceptance of the student in the College of Nursing is the responsibility of the Dean, in consultation with the Dean of the General College and the admission committee of the College of Nursing.

7. Students are responsible for their transportation to and from the institutions and agencies used for education experiences. A valid driver's license and the use of an automobile are essential during the senior nursing courses.

Requirements for Graduation

1. File an application with the Registrar in the final academic year. (Refer to current Schedule of Classes Bulletin for date.)

2. Complete a minimum of 196 credits toward the degree and earn a minimum of 2.5 grade point average in the nursing major (820:---), and a 2.0 grade point average for all collegiate work attempted at The University of Akron.

3. Other institutional requirements including residence requirements are listed elsewhere in this Bulletin.

PROGRAM OF STUDIES

<i>Freshman Year</i>		
<i>First Quarter</i>		<i>Credits</i>
110:111 English Composition		4
345:140-145-150-155 Modern University Mathematics		4
110:115 Institution in U.S.		3
315:129 General Chemistry		4
110: Physical Education		1
		—
		16
<i>Second Quarter</i>		
110:112 English Composition		4
375:141 Introduction to Psychology		5
110:116 Institutions in U.S.		3
315:130 General Chemistry		4
110: Physical Education		1
		—
		17

<i>Third Quarter</i>		
385:100 Introduction to Sociology		5
110:117 Institutions in U.S.		3
315:131 General Chemistry		4
110:108		
Effective Speaking		4
		—
		16
Total Credits for Freshman Year		49

<i>Sophomore Year</i>		
<i>First Quarter</i>		<i>Credits</i>
375:151 Developmental Psychology		5
310:361 Human Anatomy and Physiology		4
310:207 Principles of Microbiology		4
820:273 General Nursing		4
		—
		17
<i>Second Quarter</i>		
110:205 Types of Literature		4
820:274 General Nursing		6
310:362 Human Anatomy and Physiology		4
		—
		14
<i>Third Quarter</i>		
360:170 Introduction to Logic		4
820:275 General Nursing		6
310:448 Human Genetics		3
Elective (Social Science)		4
		—
		17
Total Credits for Sophomore Year		48

<i>Junior Year*</i>		
<i>First Quarter</i>		<i>Credits</i>
110:317 Western Cultural Traditions		4
820:321 Adult Nursing		7
820:331 Maternal-Child Nursing		7
		—
		18
<i>Second Quarter</i>		
110:318 Western Cultural Traditions		4
820:322 Adult Nursing		7
820:332 Maternal-Child Nursing		7
		—
		18
<i>Third Quarter</i>		
110:319 Western Cultural Traditions		4
820:323 Adult Nursing		7
820:333 Maternal-Child Nursing		7
		—
		18
Total Credits for Junior Year		54

<i>Senior Year</i>		
<i>First Quarter</i>		<i>Credits</i>
110: Eastern Civilizations		3
820:341 Community Nursing (Psychiatric Aspects)		10
Elective		3
		—
		16

*Adult Nursing and Maternal-Child Nursing are corequisites.

	<i>Credits</i>
<i>Second Quarter</i>	
110: Eastern Civilizations	3
820:451 Community Nursing (Health and Welfare Teams)	10
Elective	2
	—
	15
<i>Third Quarter</i>	
Elective	2
820:461 Issues in Nursing	3
820:471 Seminar in Nursing	8
	—
	13
Total Credits for Senior Year	44
Total Credits	195

AGENCIES

The agencies cooperating in providing the laboratory experiences for students in the courses in nursing are:

- Akron City Hospital
- Akron General Medical Center
- Barberton Citizens Hospital
- Fallsview Mental Health Center
- Green Cross General Hospital
- Portage Path Community
- Mental Health Center
- The Children's Hospital of Akron
- The City of Akron, Department of Public Health
- Visiting Nurse Service of Summit County

Interdisciplinary and Certificate Programs of Study

(Non-Degree)

In order to add to the dimensions of the traditional disciplines, the University has established six interdisciplinary and interdepartmental programs of study. In addition to his 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 or Real Estate.

Although these programs do not lead to the award of a degree, successful completion is recognized by awarding a certificate at graduation and/or the inclusion of a statement of completion on the student's Academic Record.

Further information may be obtained from the following:

Dr. Lascelles F. Anderson, Director of Afro-American Studies

Dr. William Beyer, Head, Department of Mathematics and Statistics (regarding Computer Science)

Dr. James Jackson, Assistant Professor of Geology, Director of Environmental Studies.

Dr. Warren Kuehl, Director of the Center for Peace Studies

Dr. Theodore Mackiw, Program Coordinator of Soviet Area Studies

Dr. Donald Metzger, Program Coordinator of Latin American Studies

Mr. James Nolte, Coordinator of Real Estate Program.

Dr. Allen Noble, Head of the Department of Geography (regarding both Cartographic Specialization and Planning Programs).

CERTIFICATE PROGRAM IN AFRO-AMERICAN STUDIES

CERTIFICATE REQUIREMENTS

To satisfy the requirements for the Certificate in Afro-American Studies a regularly enrolled student at The University of Akron must complete at least 16 quarter credits and at least four courses successfully (2.0 grade point average or better) from the list of courses published as acceptable and from other courses identified by the Director of Afro-American Studies as appropriate to the subject, among which four courses must be 340:220 *History of the Black People of the United States* and 1010:401 *General Seminar in Afro-American Studies* in which a research paper in

Afro-American Studies will be written. The Certificate in Afro-American Studies will be awarded at the time a student earns a baccalaureate degree.

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, and shall be one quarter 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.

CONSULTATION WITH THE DIRECTOR

Students undertaking the Afro-American Studies Certificate Program must have prior consultation with the Director of Afro-American Studies.

ACCEPTABLE COURSES

The following is a list of courses acceptable for the Certificate in Afro-American Studies:

	<i>Credits</i>
110:335 Eastern Civilizations: Africa	3
202:254 The Black American	2
325:486 Ghetto Economic Development	4
330:338 Black American Literature	4
340:220 History of the Black People of the United States	4
370:327 African Politics	4
385:427/527 Racial and Cultural Intergroup Relations	4
386:270 Poverty in the Inner City	4
386:276 Introduction to Social Welfare	5
1010:401 General Seminar in Afro-American Studies	4

STUDENT'S MAJOR

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 the Afro-American experience.

CERTIFICATE PROGRAM IN CARTOGRAPHIC SPECIALIZATION

This specialized program of professional and scientific education is intended to enhance cartographic training in data handling, analysis, and graphic communication of simple and complex geographic data and information. The program is not limited to geography majors, and is designed to introduce automated and traditional cartographic skills to students in a wide spectrum of disciplines.

The University of Akron through its Laboratory for Cartographic and Spatial Analysis housed in the

Department of Geography offers training opportunities for specialized study in the rapidly changing and significant area of cartography as a method of graphic communication. The program is designed to include flexibility to meet the varied backgrounds and interests of the individual student.

In addition to cartographic courses in the Department of Geography many courses useful to such a specialized program are found in other departments. The curriculum leading to a certificate in Cartographic Specialization 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, it 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 their 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.

PROGRAM REQUIREMENTS:

Requirements for candidacy and course requirements in the certificate program are proposed by the faculty of the Department of Geography in accordance with the educational policies of The University of Akron. The requirements are:

- I. Completion of *Core Courses*.
- II. Completion of *Elective Courses*.
- III. *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.
- IV. Successful completion of an *Oral Defense* of Student's Cartographic Work—judged by Department Committee.

CORE COURSE REQUIREMENTS FOR THE CERTIFICATE

All participants are required to complete successfully at least five of the following basic courses:

	<i>Credits</i>
335:240 <i>Maps and Map Reading.</i>	4
335:380 <i>Cartography</i>	4
335:444 <i>Map Compilation and Reproduction</i>	3
335:447 <i>Remote Sensing of the Environment</i>	5
335:448 <i>Statistical Mapping</i>	3
335:480 <i>Thematic Cartography</i>	4
335:489 <i>Automatic Computer Mapping</i>	4
<i>Civil Engineering</i>	
430:231 <i>Surveying I.</i>	3
430:232 <i>Surveying II.</i>	3

<i>Mechanical Engineering</i>	<i>Credits</i>
460:125 <i>Engineering Graphics I.</i>	3
460:126 <i>Engineering Graphics II.</i>	2
<i>Art</i>	
710:131 <i>Drawing I.</i>	5
710:191 <i>Design.</i>	3
710:284 <i>Introduction to Graphic Design.</i>	5
<i>Computer Science</i>	
445:201 <i>Introductory Fortran Programming.</i>	3
<i>Education</i>	
515:410 <i>Audio-Visual Education</i>	3
<i>Business</i>	
620:355 <i>Introduction to Electronic Data Processing.</i>	5
<i>Commercial Art (C&T)</i>	
710:131 <i>Drawing I.</i>	5
224:140 <i>Typography and Lettering.</i>	3
224:222,223 <i>Photography (sequential)</i>	3 (each)
<i>Data Processing (C&T)</i>	
244:120 <i>Introduction to Information Processing.</i>	3
244:299 <i>Special Topics in Data Processing.</i>	1-4
<i>Instrumentation Technology (C&T)</i>	
290:120 <i>Instrumentation Drafting.</i>	2
<i>Mechanical Technology (C&T)</i>	
292:121 <i>Technical Drawing I.</i>	3
<i>Surveying and Construction Technology (C&T)</i>	
298:224 <i>Land Surveying</i>	4
<i>Geology</i>	
337:313 <i>Field Methods in Geology.</i>	3

FINAL EXAMINATION AND DEFENSE OF CARTOGRAPHIC WORKS

After the completion of all course work associated with the program, each student will arrange a time for an oral defense of samples of his/her cartography. The examination would be conducted by two members of the Department and one from the elective area. The student will be asked questions on their specific projects and any topics covered in the course work completed specifically for the program. One week before the scheduled examination, the student will submit samples of what he/she considers to be his/her best cartographic work. The works must be judged 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.

QUALITY OF STUDENT WORK

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.

CERTIFICATE AWARDS

The certificate will be awarded by The University of Akron upon successful completion of the program's requirements and a baccalaureate degree.

ELECTIVE COURSES

In addition to the five core courses, each student's program, with regards to the student's background and career interests and subject to the approval of the Program's Director, is to include at least ten credit hours taken from the following professional, technical and research offerings. In consultation with the Program's Director, elective courses will be selected from the current University offerings from the list below. 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 cartographic skill and prospective which is significant and useful for a person who will be or is already engaged in work with duties such as data systems management, urban planning and environmental impact studies. To be truly effective and comprehensive in his or her chosen career, the program candidate must have academic acquaintance with a variety of professional and technical approaches which can be used for graphic communication 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.

CERTIFICATE PROGRAM IN ENVIRONMENTAL STUDIES

ENTRANCE REQUIREMENTS

To qualify for the Certificate Program, a student must be in good academic standing with his major department and submit to the director a written request for admission to the program. The request will outline the student's reasons and goals for enrolling in the program.

COURSE REQUIREMENTS

The undergraduate student will take a minimum of six courses from a list approved by the Committee on Environmental Studies. Two of these courses will be 1030:201 and 1030:401.

The student will be required to select courses from areas other than his major since the purpose of the program is to broaden his background. It is ex-

pected that he will select courses from at least two disciplines.

The student's plan of study for this certificate will be developed in consultation with his Environmental Studies Adviser and if the adviser is other than the Environmental Studies Director, will be approved by the Director.

An interdisciplinary research paper or project is required of all students in the program. The paper or project will be undertaken in conjunction with the Environmental Seminar.

Courses for the Environmental Studies Certificate

	<i>Credits</i>
310:271 General Ecology	4
310:421 Environmental Conservation	4
310:425 Population Ecology	4
310:427 Limnology	4
310:428 Applied Aquatic Ecology	4
335:415 Geography of Water Resources	3
335:314 Climatology	3
335:418 Geography of Vegetation and Soils	3
335:336 Urban Land Use Analysis	3
335:435 Geography of Recreational Resources	3
337:434 Ground Water Hydrology	4
337:200 Geology and the Environment	3
337:465 Urban Geology	4
375:450 Environmental Psychology	4
385:320 Population	4
385:321 Population Trends and Demographic Analysis	4
385:435 Sociology of Urbanization	4
420:463 Air Pollution Control	3
420:464 Water Pollution Control	3
430:321 Environmental Engineering I	3
430:322 Environmental Engineering II	3
430:425 Environmental Engineering Lab	3
430:426 Environmental Engineering Design	3
580:439 Workshop in Physical Science	1-4
1030:201 Man and the Environment	3
1030:401 Seminar in Environmental Studies	3

CERTIFICATE PROGRAM IN PEACE STUDIES

CERTIFICATE REQUIREMENTS

To satisfy the requirements for a Certificate in Peace Studies, a regularly enrolled undergraduate student at The University of Akron must complete at least 22 credits from the list of courses approved as acceptable. These must be distributed so that work will be included from three separate departments. The courses 340:340 *Peace, War and Mankind* and 1060:301 *Value Concepts on Peace and War* are required for everyone in the program. 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.

RESEARCH PAPER OR PROJECT

A paper or project is to be completed. This will be done in conjunction with one of the 300 or 400 level courses chosen and in consultation with the instructor involved.

CONSULTATION WITH THE DIRECTOR

Students undertaking the Peace Studies Certificate Program must have prior consultation with the Director of the Center for Peace Studies.

ACCEPTABLE COURSES

The following courses are acceptable for the Certificate in Peace Studies:

	<i>Credits</i>
325:460/560 Economic Development and Planning for Underdeveloped Countries	4
325:450 Comparative Economic Systems	4
325:461 Principles of International Economics	4
335:100 Introduction to Geography	4
340:340 Peace, War and Mankind	3
340:407/507 Diplomatic History of the United States 1776-1919	4
340:408/508 Diplomatic History of the United States 1914-Present	4
340:412/512 History of International Organization	3
340:412/512 History of International Organization	3
340:494/594 U.S. Latin American Relations	5
370:220 American Foreign Policy	4
370:310 International Politics	5
370:312 International Organizations	3
370:410/510 International Law	3
370:415/515 Comparative Foreign Policy	3
387:150 Cultural Anthropology	5
660:330 International Marketing	4
1060:301 Value Concepts on Peace and War	4
1060:350 Independent Study	1-5

STUDENT'S MAJOR

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.

**CERTIFICATE PROGRAM IN
PLANNING WITH AN
EMPHASIS ON CITY OR
REGIONAL RESOURCE STUDIES**

This specialized program of professional education is intended to enhance understanding of the planning function and to increase the research and analytical abilities of persons who are preparing for work in, or who are currently engaged in, city, urban, regional, environmental, and resource planning. The program is open to undergraduates, as well as persons with baccalaureate degrees, employed in local agencies doing related work, e.g. Model Cities, Urban Renewal, community redevelopment, community action environmental protection, and private industry. Persons with degrees could enroll as post-baccalaureate or special students in order to participate in the program. The certificate program consists of five core courses, a number of elective courses covering aspects of planning technology, theory, conceptualization, and practice, and the required planning seminar.

ADMISSION PROCEDURES

The requirements are:

1. 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.

2. A statement by the applicant giving his or her reason for wishing to participate in the planning certificate program.

**CORE COURSE REQUIREMENTS
FOR THE CERTIFICATE**

Five of the following courses listed below are required:

325:244 Introduction to Economic Analysis
370:380 Metropolitan Politics
340:436 History of the American City
385:435 Sociology of Urbanization
430:350 Urban Planning (Civil Engineering)
335:422 Geographic Aspects of Transportation
335:433 Geographic Aspects of Planning
335:438 Comparative Analysis of Metropolitan Areas

ELECTIVE COURSES

In addition to the five core courses, 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's Director, elective courses will be selected from The University of Akron offerings from one of the list below 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 prospective 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.

I. *Professional Background Courses for City Planning Emphasis*

(At least three of the following must be taken.)

325:490 <i>Seminar in Economics</i>
325:486 <i>Ghetto Economic Development</i>
325:405 <i>Public Finance</i>
385:320 <i>Population</i>

- 385:327 *Social Stratification*
- 385:436 *Sociology of Education*
- 335:230 *Rural and Urban Settlement*
- 335:428 *Industrial and Commercial Site Selection*
- 337:200 *Geology and the Environment*
- 370:480 *Urban Policy Problems*
- 640:400 *Investing in Real Estate*

II. Technical Courses for City Planning
(At least *three* of the following must be taken.)

- 335:240 *Maps and Map Reading*
- 335:380 *Cartography*
- 335:336 *Urban Land Use Analysis*
- 335:346 *Geographic Aspects of Air Photo Interpretation*
- 335:447 *Remote Sensing of the Environment*
- 335:448 *Statistical Mapping*
- 335:438 *Introduction to Spatial Analysis*
- 335:484 *Field Research Methods*
- 335:444 *Map Compilation and Reproduction*
- 370:391 *Internship in Government and Politics*
- 385:304 *Methods of Social Research I*
- 385:305 *Methods of Social Research II*
- 385:321 *Population Trends and Demographic Analysis*
- 385:440 *Urban Research Methods I (Sociology)*
- 430:311 *Soil Mechanics (Civil Engineering)*
- 620:470 *Governmental & Institutional Accounting (Business)*
- 224:248 *Presentation Techniques (C & T)*
- 226:279 *Technical Experience in Community & Social Services (C & T)*
- 298:224 *Land Surveying (C & T)*
- 385:442 *Computer Applications in Social Science*
- 775:373 *Methods and Concepts of Social Work*

III. Professional Background Courses for Regional Resources Planning Emphasis
(At least *three* of the following must be taken.)

- 325:460 *Economic Development and Planning for Underdeveloped Countries*
- 325:490 *Seminar in Economics*
- 325:461 *Principles of International Economics*
- 325:425 *Statistical Applications in Economics*
- 385:320 *Population*
- 385:327 *Social Stratification*
- 335:230 *Rural & Urban Settlement*
- 335:314 *Climatology (new course description including Air Pollution)*
- 335:414 *Geography of Water Resources*
- 335:326 *Geography of Mineral and Power Resources*
- 335:418 *Field Studies in Soils Geography (Vegetation & Soils)*
- 335:422 *Geographic Aspects of Transportation*
- 335:428 *Industrial & Commercial Site Selection*
- 335:435 *Geography of Recreation Resources*
- 337:200 *Geology and the Environment*
- 337:434 *Ground Water Hydrology*
- 370:480 *Urban Policy Problems*
- 310:182 *Conservation of Natural Resources*
- 310:421 *Environmental Conservation (Biology)*
- 640:400 *Investing in Real Estate*

IV. Technical Courses for Regional Resource Planning Emphasis

(At least *three* of the following must be taken.)

- 335:240 *Maps & Map Reading*
- 335:380 *Cartography*
- 335:346 *Geographic Aspects of Air Photo Interpretation*
- 335:447 *Remote Sensing of the Environment*
- 335:448 *Statistical Mapping*
- 335:438 *Introduction to Spatial Analysis*
- 335:484 *Field Research Methods*
- 335:444 *Map Compilation & Reproduction*
- 385:321 *Population Trends & Demographic Analysis*
- 430:311 *Soil Mechanics (Civil Engineering)*
- 430:321 *Environmental Engineering I*
- 430:341 *Water Resources (Civil Engineering)*
- 620:470 *Governmental & Institutional Accounting (Business)*
- 224:248 *Presentation Techniques (C & T)*
- 298:224 *Land Surveying (C & T)*

SEMINAR IN PLANNING

Upon completion of the core and elective course requirements the student will take 335:335 *Planning Seminar* (4 credits). 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.

TIME LIMIT

Participants who wish to apply for candidacy after completion of one or more core courses must apply within *two* years of completing the first course in order for that course to be applicable toward the certificate.

QUALITY OF STUDENT WORK

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.

CERTIFICATE AWARDS

The certificate will be awarded by the University of Akron upon successful completion of the program's requirements and a baccalaureate degree. The certificate will indicate the area of specialization — City Planning or Regional Resource Planning.

LATIN AMERICAN STUDIES PROGRAM

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

In addition to the requirements of their major, they will take 18 credits in three separate disciplines with a concentration in the area of Latin American Studies.

POLITICAL SCIENCE

370:325 Latin American Politics	<i>Credits</i> 4
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HISTORY

340:490/590 Colonial Latin American	3
340:491/591 Latin America, Nineteenth Century	3
340:492/592 Republics of Latin America, Twentieth Century	4
340:494/594 U.S.—Latin American Relations	5
340:496/596 History of Mexico	5

GEOGRAPHY

335:353 Northern Latin America	3
335:354 Southern Latin America	3

SOCIOLOGY (Anthropology)

387:256 New World Prehistory	4
387:257 Indians of South America	4

ECONOMICS

325:460/560 Economic Development and Planning for Underdeveloped Countries	4
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They will also study three years of Spanish or the equivalent.

At the completion of the program there will be recorded on the student's permanent record a statement that he has a concentration in the area of Latin American Studies.

The Certificate in Latin American Studies will be awarded at the time the student earns a baccalaureate degree.

COMPUTER SCIENCE PROGRAM

See program description under Department of Mathematics and Statistics.

SOVIET AREA STUDIES PROGRAM

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

In addition to the requirements of their major, they will take 17 credits in three or more separate disciplines with a concentration in the area of Soviet Studies.

ECONOMICS

325:450 Comparative Economic Systems	<i>Credits</i> 4
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GEOGRAPHY

335:358 USSR.	3
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HISTORY

340:458/558 Russian to 1725	3
340:459/559 Russia in the Eighteenth and Nineteenth Centuries	3
340:460/560 Russia in the Twentieth Century	3

POLITICAL SCIENCE

370:200 Comparative Politics	5
370:322 Soviet and East European Politics	5

They will also study 3 years of Russian or the equivalent.

At the completion of the program there will be recorded on the student's permanent record a statement that he has a concentration in the area of Soviet Studies.

The Certificate in Soviet Area Studies will be awarded at the time a student earns a baccalaureate degree.

REAL ESTATE PROGRAM

See program description under Community & Technical College.



Advanced Study

THE GRADUATE SCHOOL AND THE SCHOOL OF LAW

Qualified students who have completed their baccalaureate programs with sufficiently high standings may continue their studies through the University's Graduate School in programs leading to the Master's degree as well as to the Doctor's degree. Undergraduate students who qualify may enroll in certain graduate level classes and apply the credits earned to the total required for the baccalaureate degree. To receive Graduate credit for the courses, however, students must be admitted to the Graduate School.



The Graduate School

Claibourne E. Griffin, Ph.D.,
Dean of Graduate Studies and Research
 Joseph M. Walton, Ph.D.,
Assistant Dean of Graduate Studies
 Robert G. Corbett, Ph.D.
Coordinator of Research

OBJECTIVES

The purpose of the Graduate School is to further the objectives of The University of Akron by providing a quality program of graduate education and to pursue the following aims:

To offer advanced courses in various fields of knowledge beyond the baccalaureate level.

To offer students opportunities to develop and apply research techniques and to use the resources appropriate to their graduate programs.

To contribute to the advancement of knowledge for the benefit of mankind through the efforts of its faculty and students.

The Graduate Faculty recommends students who have been nominated by the student's college faculty for the appropriate master's or doctor's degree.

HISTORY OF THE GRADUATE SCHOOL

Graduate study at The University of Akron began a few years after Buchtel College opened its doors, and the first earned Master's Degree was conferred in 1882. The College of Education awarded its first Master's Degree in 1924, and the Colleges of Engineering and Business Administration in 1959. The first earned Doctor's Degrees were also conferred in 1959. Professor Charles Bulger was appointed first Dean of Graduate Work in 1933, and he continued in that capacity until 1950. Professor Ernest H. Cherrington, Jr., served as Director of Graduate Studies from 1955 to 1960 and as Dean of the Graduate Division from its establishment in 1960 to 1967. Dr. Arthur K. Brintnall was appointed Dean of Graduate Studies and Research in 1967, being succeeded in 1968 by Dr. Edwin L.

Lively. Dr. Claiborne E. Griffin succeeded Dr. Lively in 1974.

The Graduate School offers programs of advanced study leading to the degrees of Doctor of Philosophy in Chemistry, History, Polymer Science, Psychology (Experimental or Industrial), Sociology, Education (Elementary, Secondary, and Guidance and Counseling), and Engineering. The Doctor of Education degree is offered in Educational Administration. The Doctor of Philosophy program in Sociology is a joint program with Kent State University.

The Graduate School also offers programs of study leading to the Master's Degree with majors in the following areas: Accounting, Biology, Business Administration, (Accounting, Finance, International Business, Management and Marketing), Chemical Engineering, Chemistry, Civil Engineering, Earth Science, Economics, Education, (Elementary, Secondary, Elementary or Secondary School Principal, School Supervisor, Local Superintendent, Guidance, Counseling, Special Education, Visiting Teachers, Reading Specialist, Teaching Culturally Disadvantaged, and Employment Counseling), Electrical Engineering, Engineering, English, French, Geography, History, Management, Mathematics, Mechanical Engineering, Music, Philosophy, Physics, Political Science, Polymer Science, Psychology, Sociology, Spanish, Speech and Theatre Arts and Speech Pathology and Audiology, Statistics, Technical Education and Urban Studies. In addition, the College of Education provides sixth year programs offering a year of study beyond the Master's degree in School Supervision, Guidance, and School Psychologist.

Several other departments offer a limited amount of work which may be taken on the graduate level. Such courses may supplement the

major program of study and may constitute the minor subject for students who do not devote their entire attention to one field.

The administrative functions of the Graduate School include establishment of suitable entrance requirements, admission of qualified students, maintenance of high-quality instruction, and provision of minimum requirements for advanced degrees.

GRADUATE FACULTY

The Graduate Faculty is comprised of those members of the faculty who hold full-time appointments at the rank of assistant professor or above and teach graduate courses, supervise theses and dissertations, and are generally responsible for the graduate programs 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:

- a. Quality and experience in upper-level and graduate-level teaching.
- b. Possession of terminal degree in field.
- c. Scholarly publication record.
- d. Activity in research.
- e. 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 scholarship throughout the University.

THE GRADUATE COUNCIL

Academic programs and policies of the University's Graduate School are recommended by the Graduate Council which 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, and two members from the College of Fine and Applied Arts. 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, recommenda-

tion of persons for membership in the Graduate Faculty and advising and counseling the Dean in administrative matters.

THE NATURE OF GRADUATE EDUCATION

The Graduate School provides properly qualified students with the graduate education which they may require for the full development of their scholarly and professional capacities, subject to the criteria that all such programs are determined to be feasible.

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

GRADUATE SCHOOL REGULATIONS

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

Applications for Admission to the Graduate School shall be filed in the office of the Dean not less than six weeks before registration. Each application must be accompanied by an application fee of \$20.00 (unless previously paid). This fee not refundable under any circumstances. Payment must 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. No follow-up procedures are undertaken by the Graduate School.

All records, including academic records from other institutions, become part of the official file and cannot be returned for any purpose. A student should obtain an additional copy of his official credentials to keep for advisory purposes and other personal requirements.

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 that can be accepted will vary with departments and from term to term. With the exception of foreign students, an accepted applicant may begin his graduate work in the fall, winter, spring, or summer. 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 and transcript(s) to be reconsidered for admission.

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

Every person who desires to enroll in or audit any graduate course or receive any graduate credit must be admitted or approved by the Graduate School. The admitted status of all students is continued at the discretion of the major professor, the department of program director, and the Graduate School. No student will be admitted without the approval of and acceptance into a department of the University. This does not necessarily imply admission to or candidacy for any graduate degree program of that department. Admission for graduate study in any pro-

gram can only be granted by the Dean of Graduate Studies and Research and his staff.

CLASSIFICATION

Students are identified by the Graduate School as being in one of the following categories. Any change must be arranged through the Graduate School.

Full Admission may be given to any applicant who desires to work for a graduate degree and has a baccalaureate degree from an accredited college or university with an overall grade-point average of 2.75 or better or 3.0 for the last two years (96 quarter credits or equivalent) or; holds an advanced degree from an accredited college or university in or appropriate to the intended field, or; holds a baccalaureate or master's degree from a foreign college or university with First Class standing or its equivalent, plus satisfactory evidence of competence in English, or; has Special Admission and has completed at least 18 credits at The University of Akron at the graduate level with a grade-point average of 3.00 or better in intended major field, or; has been Deferred and has completed a specified program in the intended major at the post-baccalaureate level with a 3.00 or better grade-point average.

Special Admission may be given to persons who do not qualify for full admission under the criteria above but for whom there is reason to believe they can successfully complete a graduate program. Department Heads may recommend persons for special admission by attaching a statement to their recommendation elaborating their reasons. Persons admitted as Special Students must reapply for change in status and must be judged in accordance with the requirements for a new status.

Special Non-Degree Admission may be given to persons seeking to take particular courses but not working toward a degree. Each request for this category shall be judged on an individual basis. If a person accumulates 15 credits while in this category, he must be reevaluated and recommended by the admitting department for each additional course or program. Persons admitted as Special Non-degree Students must reapply for any other status and be judged in accordance with the requirements for that status.

Special Workshop is for persons permitted to take workshops for graduate credit *without being admitted to Graduate School*. Such permission is granted by the Workshop Director upon receipt of a signed statement of possession of a baccalaureate degree by the applicant, and terminates upon completion of Workshop. Students admitted as Special Workshop must apply through regular channels for any other category. Workshop courses may be applied to degree work at a later date, if applicant is given full admittance to the Graduate School.

Transient Status may be given to persons who are regularly enrolled graduate students in Good Standing in a degree program at another accredited university and have written permission to enroll at The University of Akron. Such permission is valid only for the courses and quarter specified, with a maximum of 15 credits allowable, and is subject to the approval of the Instructor, Department Head, and Graduate School. Transient students are subject to same rules and regulations as regularly enrolled students of The University of Akron.

Undergraduate. This status is for an undergraduate student who may be granted permission to take one or more graduate level courses if all the following conditions are met:

1. Senior standing.
2. Overall grade-point average of 2.75 or better through preceding quarter. (If a student does not have a 3.0 or better in his major field, special justification will be required).
3. Written approval is given by the Instructor of the course and the student's adviser.

These courses may later be applied to a degree program if not used to satisfy baccalaureate degree requirements.

Post-Doctoral. This status is divided into three categories:

1. Fellows are those persons holding an earned doctorate who are engaged in advanced research. They shall be considered guests of the University and provided space and use of facilities within the limits of practical needs of the undergraduates and graduate programs. Tuition and fees shall be collected if allowed under sponsoring contract for any courses the Fellow may choose to take.

2. Specials are those persons holding an earned Doctor's Degree who desire an additional graduate degree. They may be admitted to any program upon submission of matriculation and application forms, application fee (if new student) and an official transcript from the institution awarding their doctorate. This student

will be treated as a regular student, subject to registration, fees, and degree requirements for his program.

3. Guests are those persons holding an earned doctorate who desire to attend courses and seminars relevant to their work or interests without registering or receiving grades. A written application should be submitted to the Dean of Graduate Studies for each course taken, and he shall obtain approval of the Instructor, Department Head and College Dean. They shall then be welcome to any course or seminar provided space is available. Normally space and facilities for research cannot be provided for Post-doctoral Guests but special requests will be considered. They should be submitted, in writing, to the Dean of Graduate Studies who will review them with the appropriate Dean and Department Head.

STANDARDS

FOREIGN STUDENTS

Entrance: Foreign students are normally admitted only in the fall and all credentials must be received by the Graduate School by June 1. Inasmuch as The University of Akron, as a state institution, has an obligation to the residents of Ohio, only the best qualified foreign applicants can be admitted. No foreign student seeking admission should plan to leave his country until he has received notice of admission from the Graduate School.

English Proficiency: Entering graduate students from countries other than the United States and those in which English is the major language in daily life are required to demonstrate high-level competence in the use of the English language, including reading, writing, speaking, and listening. This competence can best be established by achieving a score of at least 550 on the TOEFL (The Test of English as a Foreign Language) and submitting it by June 1 for September admission. Because TOEFL is given only four times a year in various parts of the world, the applicant should make arrangements to take the test as soon as he contemplates study at The University of Akron. (TOEFL is administered by Educational Testing Service, Box 899, Princeton, New Jersey 08540, U.S.A.). If TOEFL is not available, the applicant should contact the Foreign Student Adviser, The University of Akron, for other arrangements.

Personal letters certifying English competence are not acceptable as substitutes for test scores.

Foreign students coming to The University of Akron in good standing from an accredited American college or university may have this requirement waived upon written request.

NON-ACCREDITED AMERICAN SCHOOL GRADUATES

Students holding a baccalaureate degree from a non-accredited American college or university, if otherwise qualified, are normally required to complete at least 15 credits of post-baccalaureate work at a 3.0 level before they can be admitted to the Graduate School. The accreditation status of the school at the time of the student's graduation shall apply. Students should consult with the Department Head in their major field to develop a post-baccalaureate program.

GRADES

A student admitted to graduate study under any status at The University of Akron is expected to maintain a minimum of a 3.0 average (4.0=A) at all times. A grade-point average of 3.0 or better is required for graduation. Any student whose average falls below 3.0 is no longer in good standing in the Graduate School and considered on probation. In computing cumulative averages, "D" grades are treated as "F" grades. The Dean of Graduate Studies and Research, with the approval of the Department Head, may dismiss any student who fails to make satisfactory progress toward his declared goals or who accumulates nine hours of "C" or below. The accumulation of six hours of "F" will result in mandatory dismissal. Students dismissed from the Graduate School for academic reasons may not be readmitted for one calendar year, and then only if evidence to support reasons 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 quarter and there is a good reason for such failure. An Incomplete must be completed during the next quarter a student is enrolled or it is converted to an F grade.

The grade of IP (In Progress) is given in Research and Thesis courses where the work is on a continuing basis. At the time work is completed, a single grade is given for all courses taken as IP.

TRANSFER STUDENTS

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

COURSE LOAD

A full load of course work at the graduate level is normally 9-15 credits including Audit. Students who are employed in addition to their graduate courses work should reduce their academic load proportional to the extent and obligations of such employment.

REGISTRATION

The responsibility for being properly registered lies with the student. For each registration, the student should consult with his adviser in preparing his program of courses and/or research. A schedule of courses, hours, class location, and registration procedures is obtainable from the Registrar.

ENTRANCE AND QUALIFYING EXAMINATIONS

The use of examinations to determine admissibility to enter a graduate program or eligibility to continue in one is the prerogative of the departments offering graduate programs. The department has the right to select the examination and minimum acceptable performance. Information and procedure may be obtained from the head of the appropriate department.

GRADUATE FEES

(All fees are subject to change without notice.)

Application Fee	
This fee is not refundable under any circumstances	\$20.00
Tuition Fees	
Resident student per credit	24.00
Non-resident student per credit	30.00
(Auditors pay same fees)	
Other Fees	
General Service	
9 or more credits per quarter	15.00
8½ or fewer credits per quarter	5.00
Late Registration Fee	20.00

Parking Permit Fee	
9 or more credits per quarter	20.00
8 ¹ / ₂ or fewer credits per quarter	10.00
One Summer Session	10.00
Workshop participants	8.00
Graduation Fees	
Each Degree	12.00
In Absentia (additional)	2.00
Late Application Charge	5.00
Thesis and Binding	
(Payable at time of application for	
Degree.) Binding per volume	7.00
Microfilming (Ph.D. only)	
(Payable at time of application for	
Degree.)	31.00
Change of Schedule Fee	4.00
Transcripts	2.00
Health and Accident Insurance	25.00

REFUNDS

Regulations regarding refunds are the same as for undergraduate students.

COMMENCEMENT

Students earning graduate degrees are expected to participate in the Commencement exercises. Degree candidates who have legitimate reasons for graduating "In Absentia" should make a written request to the Registrar within the established dates and pay the designated fee.

FINANCIAL ASSISTANCE

The University annually awards a number of Graduate Assistantships to qualified students. These assistantships provide a stipend of \$2,600 to \$4,000, plus remission of tuition and fees, and are available in all departments with graduate degree programs. Graduate Assistants render service to the University through teaching, research, and other duties and are expected to carry a reduced academic load. 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 \$4,500. For information, contact the head of the department.

Information about Student Loans can be obtained from the Student Financial Aids Office.

Master's Degree Requirements

The following Master's degrees are conferred by The University of Akron: Master of Arts, Master of Science, Master of Science in Engineering, Master of Science in Chemical Engineering, Master of Science in Civil Engineering, Master of Science in Electrical Engineering, Master of Science in Mechanical Engineering, Master of Arts in Education, Master of Science in Education, Master of Science in Nursing, Master of Science in Technical Education, Master of Business Administration, Master of Science in Accounting, Master of Science in Management, Master of Music and Master of Arts in Speech.

ADMISSION

A student may meet the degree requirements of the Graduate School and the department through either full or part-time study. After a student is admitted to graduate study, he should confer with the head of his major department concerning the appointment of an adviser. A student who is academically qualified in general but deficient in course preparation may be required to make up the deficiencies at the post-baccalaureate level. This may be recommended prior to beginning graduate work, or in some cases, can be done simultaneously.

GRADE-POINT AVERAGE

A minimum grade-point average of 3.00 is required for graduation of all Master's degree candidates. (See Section on Standards.)

RESIDENCE REQUIREMENTS

There are no formal residence requirements.

TIME LIMIT

All requirements must be completed within six years after beginning graduate level course work at The University of Akron or elsewhere. Extension *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 45 credits of graduate credit is required in all master's degree programs. This

includes thesis credit. Some departments require more (See Section on Department Requirements). A minimum of $66\frac{2}{3}$ percent of the total graduate credits required in any master's program must be completed at The University of Akron.

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

No graduate credit may be received for courses taken by examination or for 500-numbered courses previously taken as an undergraduate. No graduate credit may be received for courses taken in extension unless approved in advance by the Department Head and Dean of Graduate Studies and Research.

TRANSFER

Up to $33\frac{1}{3}$ percent of the total graduate credits required may be transferred from an accredited college or university. All transfer credit must be at the "A" or "B" level in graduate courses. They must be relevant to the student's program and fall within the six-year time limit. Students already admitted to The University of Akron must receive prior approval to take courses elsewhere for transfer into their program.

Students seeking to transfer credits must have full admission and be in good standing at The University of Akron and the school in which the credits were achieved. Transfer credit shall not be recorded until a student has completed 18 credits at The University of Akron with a grade-point average of 3.0 or better.

OPTIONAL DEPARTMENT REQUIREMENTS

Each department may determine its 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 he has completed one-half of the credits required for the degree in his program but no later than January 15 for the June Com-

mencement or July 15 for the December Commencement. Advancement to Candidacy forms are available in the Graduate School Office 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 course work with a minimum average of 3.0; have been Advanced to Candidacy; filed an Application for Graduation with the Registrar; paid all applicable fees; and met any other department and university requirements applicable.

If a thesis is required, two copies, properly prepared, are due in the Graduate School Office two weeks prior to commencement. These copies are final and must be signed by the adviser, faculty reader, department head, and college dean. Mimeographed information is contained in "Instructions For Writing a Master's Thesis" available in the Graduate School Office.

Doctor's Degree Requirements

The following doctor's degrees are conferred by The University of Akron: Doctor of Philosophy in Chemistry, History, Polymer Science, Psychology, Sociology, Elementary Education, Secondary Education, Guidance and Counseling, Engineering, and Doctor of Education in School Administration.

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 completed constitutes a doctoral program or assures attainment of the degree. It consists of such a combination of courses, seminars, and individual study and research as meets the minimum requirements of the Graduate School and those of the committee for each individual student.

ADMISSION

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

Normally a student is not officially considered as a doctoral student until (a) he has completed a master's program or its equivalent,

and (b) has been approved for further graduate study. Departments offering doctor's degree programs review each candidate intensively before recommending admission.

GRADE-POINT AVERAGE

A minimum grade-point average of 3.0 is required for graduation of candidates for all doctoral degrees.

RESIDENCE REQUIREMENTS

The minimum residency in all programs is that the doctoral candidates devote at least three consecutive quarters to full-time study. No student holding a full-time job is considered as fulfilling this requirement. Departments vary on expectations beyond the minimum, e.g., credits or courses to be completed, proper time to fulfill residency requirement, and acceptability of part-time employment.

TIME LIMIT

All doctoral requirements must be completed within ten years of starting course work at The University of Akron or elsewhere. This refers to graduate work after receipt of a master's degree or the completion of 45 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 (1) the satisfactory completion of a prescribed period of study and research, (2) the preparation of a dissertation based on independent research, and (3) 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.

No graduate credit may be received for courses taken by examination or for 500-numbered courses previously taken as an undergraduate. No graduate credit may be received for courses taken in extension unless approved in

advance by the Department Head and the Dean of Graduate Studies and Research.

TRANSFER

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. They must be relevant to the student's program and fall within the ten-year time limit if beyond the master's level. Students already admitted to The University of Akron must receive prior approval to take courses elsewhere for transfer into their program.

Students admitted with a master's degree or equivalent will have their work evaluated in relation to their program to determine transfer credit. Credit transferable for master's degree holders may be up to 45 credits.

Students seeking to transfer credits must have full admission and be in good standing at The University of Akron and the school in which the credits were achieved. Transfer credit shall not be recorded until a student has completed 18 credits at The University of Akron with a grade point average of 3.0 or better.

LANGUAGE REQUIREMENTS

The Foreign Language Requirement in all Ph.D. programs may be fulfilled by either of the following:

Plan A: Reading knowledge, with aid of a dictionary, of two approved foreign languages. At the discretion of the major department (1) 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; (2) English may be considered as one of the approved foreign languages for students, whose first language is not English; and (3) demonstrated competence in a research technique (e.g., statistics and/or computers) may be substituted for one of the two foreign languages. Under option (3), each department should define competence and publicize.

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

In certain doctoral programs (Counseling and Guidance, Engineering, Psychology) 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 doctoral students 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 January 15 for the June Commencement or by July 15 for the December 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 major sub-

ject. It should represent a significant contribution to knowledge, be presented in a scholarly manner, reveal 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. The final examination is open to the Graduate Faculty. The dissertation and oral examination must be approved by the committee before the student is recommended to the Graduate School by presenting two copies of the dissertation to the Dean of Graduate Studies and Research. These copies must conform to "Instructions For Writing a Doctoral Dissertation" and be signed by director, reader, department head and college dean.

GRADUATION

To be cleared for graduation, a candidate must have completed his academic program with a grade-point average of at least 3.0; have been Advanced to Candidacy; submitted an approved Dissertation and passed an oral examination; filed an Application for Graduation with the Registrar; paid all applicable fees; and met any other department and University requirements applicable.

Buchtel College of Arts and Sciences

The Doctor Of Philosophy Degree

The following programs leading to the Doctor of Philosophy Degrees are offered in the Buchtel College of Arts and Sciences: The Doctor of Philosophy Degree in Chemistry, the Doctor of Philosophy Degree in History, the Doctor of Philosophy Degree in Psychology, and Doctor of Philosophy Degree in Polymer Science.

DOCTOR OF PHILOSOPHY IN CHEMISTRY

In addition to satisfying the general requirements of the Graduate School, students working toward the Doctor of Philosophy Degree in Chemistry must meet the following requirements:

1. Must take proficiency exams in Organic, Inorganic, Physical and Analytical Chemistry. Results of these exams will be used by the department for diagnostic purposes.
2. Satisfactory completion of 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 his designated area of chemistry, and shall consist of a minimum of 36 credits in graduate courses. Eight credits a quarter shall be considered a normal load. At least 18 credits of graduate work, and all dissertation credits, must be completed at The University of Akron.
3. Earn credit for a dissertation, to be established by enrollment in 315:865, such that course credits plus dissertation credits total at least 126 credits (exclusive of M.S. dissertation credit).
4. Pass cumulative examinations given approximately monthly. The candidate is urged to begin to take these examinations early in his graduate program, and must pass seven cumulative exams, six written and one oral, for the degree requirement.
5. Pass an oral examination upon completion of the research dissertation.
6. 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

1. Fulfill the admission requirements of the Graduate School.

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

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

After a student has completed at least 15 credits beyond the master's degree at The University of Akron, 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 he wishes to offer for the comprehensive examinations and any additional research skills which may be needed. At this point he will be assigned a major professor who shall direct his dissertation. His doctoral committee, to be chaired by the major professor, will also be appointed.

2. Satisfactorily complete a course of study selected by the student in consultation with an advisory committee. This will include (a) completion of 90 credits beyond M.A. degree requirements, including dissertation credit; (b) demonstration of competency in four fields of study selected from the following areas: Ancient, Medieval, Modern Europe to 1815, Modern Europe Since 1789, England and the Empire, U.S. to 1865, U.S. Since 1865, Latin America, Far East, (one of the four fields may be in a cognate area outside of History); (c) satisfactory performance in written and oral comprehensive examinations; (d) defense of the dissertation in an oral examination.

3. A reading knowledge of two languages will be required, normally French and German. At the discretion of the student's doctoral committee, he may substitute for French or German either another language or computer techniques or statistics as outlined in the Graduate School requirements. An instructor may require specific language proficiencies before permitting a graduate student to enroll in any course for which credit is to be granted. An instructor may require additional languages before permitting a candidate to write a dissertation under his supervision.

4. Complete all general requirements for the Doctor of Philosophy degree.

DOCTOR OF PHILOSOPHY IN POLYMER SCIENCE

An Interdisciplinary Program leading to the Doctor of Philosophy in Polymer Science is administered by the Department in Polymer Science. Graduates from the three main disciplines (Chemistry, Physics and Engineering) are guided into the appropriate courses of study and research under the supervision of a departmental staff member in their own field. Research facilities of the Institute of Polymer Science are available for thesis research.

In addition to satisfying the general requirements of the graduate School, students working toward the Doctor of Philosophy Degree in Polymer Science must meet the following requirements:

1. Satisfactory completion of a course of study prescribed by the student's advisory committee, based on their judgment of his background, and on the result of any special examinations that they might impose. This course of study will consist of a minimum of, but usually more than, 54 credits in graduate courses, as outlined below, or their equivalent. At least 18 credits of graduate course work, and all dissertation credits must be completed at The University of Akron.

2. Credit for a dissertation, to be established by enrollment in 394:791, such that course credits plus dissertation credits total 126 credits (exclusive of M.S. thesis credit).

3. Pass eight cumulative examinations which are given at intervals during the academic year. The candidate is urged to begin these examinations early in his graduate program.

4. The passing of an oral examination upon completion of the research dissertation.

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

DOCTOR OF PHILOSOPHY IN PSYCHOLOGY

The Department of Psychology offers a Ph.D. degree in Psychology with specialization in In-

dustrial/Organizational Psychology or Experimental/Developmental Psychology.

Degrees will be awarded to students who, besides fulfilling the general requirements, have met the following specific requirements:

I. ENTRANCE REQUIREMENTS

1. Fulfill admission requirements of the Graduate School and Psychology Department requirements.

- a. Completion of Master's Degree including 45 graduate credits.
- b. Completion of Master's core courses or equivalent.
- c. 3.25 Graduate GPA.
- d. GRE Exam-Verbal, Quantitative and Advanced Psychology Test.
- e. Miller Analogies Test (MAT).
- f. Three letters of recommendation.
- g. Successful performance on Psychology Department Ph.D. Qualifying Examination.

II. Ph.D COURSE REQUIREMENTS

1. 135 minimum total graduate credits including a 45 credit master's program. A student may be required to complete additional credits beyond the 135 minimum credit requirement.

2. Completion of Ph.D. core courses in either Industrial/Organizational Psychology or Ph.D. core courses in Experimental/Developmental Psychology. Core courses are specified in the Psychology Department Graduate Student Manual. Students are required to maintain at least a 3.00 GPA average in core courses.

3. Completion of additional required and elective courses to be planned in conjunction with the student's faculty advisor and subject to approval by the Department Industrial/Organizational Ph.D. Committee or the Experimental/Developmental Ph.D. Committee.

III. WRITTEN COMPREHENSIVE EXAMINATIONS

1. Satisfactory performance on Ph.D. written and oral comprehensive examinations in the major area of either Industrial/Organizational Psychology or Experimental/Developmental Psychology. (Refer to Psychology Department Graduate Student Manual).

IV. DISSERTATION RESEARCH

1. Satisfactory completion of 375:800 Dissertation Research.

2. Satisfactory performance on final oral examination and defense of dissertation research.

V. OTHER REQUIREMENTS

1. Refer to the Department of Psychology Graduate Student Manual for other requirements or guidelines.

2. Complete and fulfill general Doctoral degree requirements of Graduate School.

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

- F. Additional course work selected in conjunction with the student's advisory committee, plus dissertation research, to equal 90 quarter hours of credit.
- G. Complete all other requirements for the Doctor of Philosophy degree including 1) demonstrated foreign language skill or its equivalent, 2) candidacy examination, and 3) final oral examination in defense of the dissertation.

The student may complete the language or equivalent requirement in the following ways:

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

or

2. Comprehensive knowledge of *one* of the following (Computer Science, Statistics, or Philosophy) as demonstrated by the *successful completion* of one of the following course sequences listed as options:

- A. Computer Science (Taken at Akron, except as indicated):

445:206 *Fortran Programming for Scientists and Engineers* (or Kent equivalent)

445:631 *Systems Simulation on Digital Computers*

445:692 *Special Problems*

- B. Statistics (At Akron, open to all):

347:673 *Advanced Behavioral Statistics III*

347:661 *Regression and Correlation* or 347:675 *Factor Analysis* (Select one with approval of advisory committee)

347:665 *Advanced Topics in Statistics-Stochastic Processes*

or

- At Kent, open to all:

63011 *Advanced Statistics I*

63012 *Advanced Statistics II*

63013 *Advanced Statistics III*

- C. Philosophy (At Akron, Open to all):

630:562 *Theory of Knowledge*

360:564 *Philosophy of Science*

360:676 *Logical Theory*

or

- At Kent, open to all:

51035 *Philosophy of Science*

51040 *Theories of Knowledge*

61075 *Seminar in Logical Theory*

General requirements for the degree are listed on preceding pages.

Additional requirements in effect in the several departments offering graduate programs follow:

THE MASTER'S DEGREE

Programs of advanced study leading to the Master's degree are offered by the Departments

DOCTOR OF PHILOSOPHY IN SOCIOLOGY AKRON-KENT JOINT PH.D. PROGRAM IN SOCIOLOGY

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 Ph.D. program are for all intents and purposes regarded as one single graduate department. Course work is offered at both campuses and faculty and students interchange freely. Students may enter the program at either Akron or Kent. Applicants holding the baccalaureate degree who desire to enter the joint Ph.D. program must first enter the Master's program at either Akron or Kent. Generally, applications to the Ph.D. program are accepted from students who hold the Master's degree or equivalent in Sociology or a related field.

The general objective of the Akron-Kent Ph.D. program is to educate generalists in sociology with a special emphasis on social change in the context of urban systems.

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

- A. Two four-hour courses in Research Methodology.
- B. Two four-hour courses in Theory and Theory Construction.
- C. One four-hour course in Urban Sociology. (388:657)
- D. One two-quarter seminar in Social Change. It should be noted that this seminar focuses on the effects of urbanization on contemporary society and includes such topics as: integrative theories of social change including accommodation to deviance and protest, conflict theories of social change, and value bases of social change in urban systems. (388:620-21)
- E. One additional two-quarter seminar selected from the following:
- Social Psychology (388:630-31)
 - Social Organization (388:640-41)
 - Human Ecology (388:655-56)
 - Deviance and Disorganization (388:665-66)

of Biology, Chemistry, Economics, English, Geography, Geology (Earth Science), History, Mathematics and Statistics, 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 he has:

1. Met the general requirements for admission to the Graduate School.

2. Met the standard requirements for an undergraduate major in the area of proposed graduate speciality or that he has performed work which the department head approves as equivalent to an undergraduate major.

BIOLOGY

Requirements for the Master of Science degree:

Two options are available:

1. *Research option:* This program is designed primarily for students who will pursue a research career, including those who intend to enter a doctoral program in the biological sciences. Research and thesis, nine credits. A minimum of 36 credits total course work approved by the student's advisory committee is required. A minor may be taken in approved graduate courses including education. Participation in seminars and demonstration, prior to last quarter of enrollment, of reading proficiency in a foreign language appropriate to the field of study are required. Summer study at a biological station is recommended.

2. *Non-thesis option:* The curriculum is oriented to the needs of students for whom the M.S. degree will probably be a terminal scientific degree and who do not need extensive research experience.

The requirements are the same as option 1, except that no thesis and research is undertaken, but a total of 54 credits of approved course work is required.

CHEMISTRY

Requirements for the Master of Science degree:

Research and Thesis, nine credits. A minimum of 36 credits of course work as approved by the student's advisory committee is required. With permission of the student's advisory committee a maximum of 18 credits may be taken in mathematics or physics. Attendance and participation in seminar-type discussions scheduled by the department are required. Demonstration, prior to the last quarter of enrollment, of reading proficiency in a foreign language appropriate to the field of study is required.

ECONOMICS

Requirements for the Master of Arts degree:

Option I: A minimum of 45 credits of course work including a thesis equivalent to 8 credits of the 45 credits.

Option II: A minimum of 45 credits of course work with no thesis required.

At least 30 of the 45 credits under each option must be at the 600-level in economics. The following courses are required: 325:520-526-602-611, plus a minimum of 8 credits in a single approved area of concentration, a list of which is available from the department. 325:520 may be waived for students with adequate preparation in mathematics. 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 his area of concentration.

ENGLISH

Requirements for the Master of Arts degree:

Forty-five credits of course work are required, with at least 23 on the 600 level. The program will include the following courses, unless previously taken:

330:501 (Chaucer)

330:562 (History of the English Language) or

330:689 (Modern Linguistics)

330:619 (Shakespearean Drama)

330:697 (Bibliography and Literary Research)

A thesis (330:699) or two thesis essays are required. Prior to the last quarter of enrollment, demonstration of reading proficiency in a foreign language appropriate to the field of study is required, except that completion of one junior or senior course in a foreign language will exempt the student from examination, provided the course was taken no more than five years before he begins his graduate work.

FRENCH

Requirements for the Master of Arts degree:

Option I: Completion of 50 credits of graduate course work, no thesis required.

Option II: Completion of 45 credits of graduate work, including a thesis equivalent to 3-9 of the 45 credits required.

I. CORE REQUIREMENTS:

32 credits at the 500 level distributed as follows: Literature, nine credits; Linguistics, nine credits; Culture and Civilization, nine credits; Advanced Language Skill, five credits.

II. ELECTIVES:

Option I-18; Option II-9. With approval of the departmental graduate committee, up to nine elective credits may be taken in another discipline.

*Amount of credit allowed for dissertation decided by faculty at time of approval of prospectus.

III. ADDITIONAL REQUIREMENTS:

A. *Admission Requirement* — Proficiency level in the four competencies (listening comprehension, speaking, reading, and writing) will be evaluated by applicable parts of the MLA proficiency tests.

B. *Second Language Requirement* — At some time prior to the beginning of his last graduate quarter, 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 his adviser.

C. *Final Comprehensive Examinations* — The candidate will be required to pass both a written and oral final examination covering all areas of study included in his program.

GEOGRAPHY

Requirements for the Master of Arts degree:

1. Completion of a minimum of 45 credits of which at least 36 must be course work and of which 24 credits (exclusive of research), must be in Geography courses and must include: 335:581, 583, and 687. A minimum of 20 credit hours at the 600 level will be required, exclusive of thesis. Courses taken outside the department of Geography must be approved by the department prior to enrollment.

2. A thesis, carrying six to nine credits, must be approved by a committee of the department.

3. Successful completion of a comprehensive examination administered by the departmental committee.

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

Requirements for the Master of Science degree:

1. Completion of a minimum of 45 credits of course work of, which at least 24 (exclusive of research) must be in Geography courses and must include: 335:581, 583, and 687. A minimum of 20 credit hours at the 600 level will be required, exclusive of thesis.

2. Courses taken outside the department must be approved by the department.

3. Completion of 12 credits of graduate level statistics courses approved by the department.

4. Successful completion of a comprehensive examination administered by the departmental committee.

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

GEOLOGY: EARTH SCIENCE

Requirements for a Master of Science degree:

1. The student must earn a minimum of 45 credits and maintain a "B" (3.00) average.

2. The student must take a proficiency examination at the beginning of his program. The examination will test competencies in the following areas: (1) The Solid Earth, (2) Earth History, (3) The Atmosphere and Hydrosphere, and (4) Earth-Space Relationships. The student who demonstrates a lack of basic knowledge in one or more of these areas will be required to successfully complete appropriate undergraduate courses. The student's program will be closely guided by an adviser appointed at the beginning of his program.

3. The program of the student must include thesis (337:692), geology field camp (337:413/513), either seminar 335:610 or 337:690, and a minimum of one graduate course in each of the four areas listed under item 3 above.

Courses in the Departments of Geography and Geology that are appropriate to the four areas include:

a. The Solid Earth — 335:418/518, 337:415/515, 337:416/516, 337:631, 337:665, 337:470/570.

b. Earth History — 337:411/511, 337:432/532, 337:660, 337:463/563, 337:625.

c. The Atmosphere and Hydrosphere — 335:415/515, 335:615, 337:434/534.

d. Earth-Space Relationships — 335:444/544, 337:404/504.

4. The student must successfully pass a written comprehensive examination after the completion of 28 graduate credits and before the formal beginning of work on a thesis. The department head will appoint a three-man thesis committee. The written comprehensive examination may be attempted two times only.

5. The student must complete, present, and orally defend his thesis (337:692) of eight credits.

6. The program of the student may include as many as eight graduate credits in allied fields of other departments plus other graduate courses in the Departments of Geography and Geology as listed in the *General Bulletin*.

7. The program of the student who is a teacher or will become a teacher of earth science must also include a minimum of three credits in Seminar in Secondary Education: Earth Science (530:780).

HISTORY

Requirements for the Master of Arts degree:

I. *Entrance Requirements:*

Must have had at least 15 semester or 22 quarter credits in undergraduate history courses. Persons who have not taken Historical Methods or its equivalent must complete this course in addition to the 45 credit hour degree requirements.

II. Foreign Language Requirement:

Students who plan to do Ph.D. work must demonstrate a reading knowledge of one foreign language within the first year of residency or on completion of 27 hours. The thesis advisor, or the director of master's studies, or both may require a student to have a reading knowledge or a specific language or mastery of a particular research skill if pertinent to the student's field of study. In other cases, a reading knowledge of one foreign language is desirable but not mandatory.

III. Programs:

Option A: A minimum of 45 credits which must include a research seminar, a satisfactory thesis, and field examinations. A board of at least three faculty members will conduct a final oral examination which will include a defense of the thesis and the relationship of the thesis to the major field.

Option B: A minimum of 45 credits which must include a research seminar, at least two pro seminars, and field examinations. The seminar paper must be read, approved, and awarded no less than a grade of B by the seminar adviser and at least one other faculty member to be designated by the director of master's studies.

IV. Fields of Study:

In consultation with the advisor, students select three fields of study from the following: Ancient; Medieval; Europe, Renaissance to 1815; Europe, 1815 to present; England and the Empire; United States to 1865; United States since 1865; Latin America and Far East. A third field may be selected from a cognate discipline such as Political Science or Economics. If all three fields are taken in History, one of the fields must be unrelated to the first two. Credit hours will be distributed among the three fields according to each person's needs. At least 16 of the minimum 45 hours must be at the 600 level, excluding individual reading.

V. Examinations:

Comprehensive written examinations, appropriate to the level of scholarship expected in major and minor fields are required. If the student does not pass these examinations unconditionally, the examining faculty may reexamine the student orally or require him to retake a written examination or examinations after a lapse of three months.

VI. Other Requirements:

If the candidate has not had a course in Historiography it must be included in his minimum program of 45 credits.

MATHEMATICS AND STATISTICS*Requirements for the Master of Science degree:**In Mathematics*

Option I: 45 credits of graduate work, no thesis required.

Option II: 45 credits of graduate work, including a thesis equivalent to 6 credits of the 45 credits required.

1. Core Requirements

345:611-612-613 *Algebraic Theories I, II, III* 3 credits each 9
 345:621-622-623 *Functions of a Real Variable* 3 credits each 9
 345:698 *Mathematics and Statistics Seminar.* 3
 plus 9 graduate credits of additional courses in a single approved area of concentration in mathematics or statistics.

2. Electives

Option I: 15 additional credits in 500-level or 600-level Mathematics or Statistics courses.

Option II: 12 additional credits in 500-level or 600-level Mathematics or Statistics courses, and 3 credits in 345:699.

With the consent of the Department of Mathematics and Statistics, up to 9 credits of approved graduate level electives outside the department may be substituted in Option I or Option II.

3. Additional Requirements

A comprehensive exam, taking the form suggested by the department, will be required.

*Requirements for the Master of Science degree:**In Statistics*

Option I: 45 credits of graduate work, no theses required.

Option II: 45 credits of graduate work, including a thesis equivalent to 6 credits of the 45 credits required.

1. Core Requirements

345:610 *Matrix Algebra.* 3
 345:698 *Mathematics and Statistics Seminar.* 3
 347:574 *Experimental Design II.* 3
 347:650 *Advanced Probability.* 3
 347:651-652-653 *Mathematical Statistics I, II, III* 3 credits each 9
 347:661 *Regression and Correlation.* 3
 347:662 *Linear Models I.* 3

2. Electives.

Option I: 18 additional credits in 500-level or 600-level Mathematics or Statistics courses.

Option II: 15 additional credits in 500-level or 600-level Mathematics or Statistics courses, and 3 credits in 345:699.

With the consent of the Department of Mathematics and Statistics, up to 9 credits or approved graduate level electives outside the department may be substituted in Option I or Option II.

3. Additional Requirements

A comprehensive exam, taking the form suggested by the department, may be required.

PHILOSOPHY*Requirements for the Master of Arts degree:*

Complete at least 45 credits in approved courses with a B average.

Complete at least three seminars in 360:615 (Seminar in History of Philosophy) and one course in Value Theory, one in Logic, on the graduate level.

Pass a comprehensive examination in the History of Philosophy and two others from the following fields:

(1) Logic, Philosophy of Science, and Methodology.

(2) Value Theory, including Ethics, Aesthetics, and Social and Political Philosophy.

(3) Epistemology and Metaphysics.

In addition to English, demonstrate mastery of another language by written translation.

Complete a thesis under departmental supervision after passing the comprehensive examinations.

PHYSICS

Requirements for the Master of Science degree:

The following courses should normally be included in the graduate program: 365:601-602-603 and 651-652-653, and 681.

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 eight credits may be earned in 365:697 upon the satisfactory completion of a graduate research project. One additional credit may, upon approval by the department, be permitted in 365:698 for the completion of a master's thesis based on such research. A successful thesis may thus account for up to nine of the total of 45 graduate credits required.

POLITICAL SCIENCE

Requirement for the Master of Arts degree:

Option I: 45 credits of Graduate Work, at least 27 credits of which (including Thesis) must be at the 600-level in Political Science. Nine credits for thesis. Thesis topic and completed thesis must be approved by student's thesis committee.

Option II: 45 credits of Graduate Work, at least 27 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.

Additional Requirements:

A. Each candidate must pass a comprehensive examination covering two fields to be determined in conjunction with a departmental adviser.

B. Each student will be required to take 370:640 and either 370:503 or 370:600. In addition, each student must take one course or seminar in each of the three subfields of Comparative Politics, American Politics, and International Politics."

C. In certain cases, at the discretion of the Department Head candidates may be asked to take

undergraduate courses to overcome serious deficiencies.

POLYMER SCIENCE

Requirements for the Master of Science degree:

A minimum of 36 credits in appropriate courses in Biology, Chemistry, Mathematics, Physics, Polymer Science, and Engineering as prescribed by the student's advisory committee. The research project (enrollment in 394:691) and resulting thesis provide the nine additional credits required for the degree. Attendance at and participation in seminar-type discussions scheduled by the Department are required.

PSYCHOLOGY

Requirements for the Master of Arts degree:

Option I: Completion of 45 credits of graduate work. Thesis required.

Option II: Completion of 45 credits of graduate work with no thesis required. Completion of course work, practicum and examinations in either Personnel Psychology, Clinical-Counseling Psychology, or Developmental Psychology.

I. Entrance Requirements

1. Fulfill admission requirements of the Graduate School and the following departmental requirements:

- a. Equivalent of psychology undergraduate major including a General or Introductory course, Statistics course and Experimental psychology course.
- b. 3.00 GPA in psychology courses.
- c. Graduate Record Examination (GRE) Verbal, Quantitative and Advanced Psychology Test.
- d. Miller Analogies Test (MAT).
- e. Two letters of recommendation.

II. Course Requirements

1. Completion of 45 credits graduate psychology courses including M.A. core courses or equivalents, M.A. required courses and electives as specified in Psychology Department Graduate Student Manual.

- a. M.A. Core Courses — Students are required to maintain at least a 3.00 GPA in core courses.

Option I Thesis

	<i>Credits</i>
375:600 Advanced General Psychology	4
375:601 Industrial/Organizational Psychology	4
375:602 Personality & Social Psychology	4
375:603 Perceptual & Sensory Processes	4
375:604 Methods and Theories Human Devel.	4
375:605 Clinical Psychology	4

Option II Non-Thesis

375:600	Advanced General Psychology	4
375:601	Industrial/Organizational Psychology	4
375:602	Personality & Social Psychology	4
375:604	Methods and Theories Human Devel.	4
375:605	Clinical Psychology	4

b. Required Courses — Option I (Thesis)

347:671	Advanced Behavioral Stat. I	3
347:672	Advanced Behavioral Stat. II	3
375:606	Thesis Research*	2-6
375:753	Organizational Psychology	4

(Industrial/Organizational MA only)

*An M.A. student who has passed the Ph.D. Qualifying Examination may petition the Industrial/Organizational or Experimental/Developmental Ph.D. Committees for faculty approval of waiving the Master's Thesis under Option I. The faculty will vote on these petitions, taking into consideration the student's past academic performance, research experience equivalent to the M.A. thesis, and potential for successful completion of all Ph.D. requirements.

Required Courses — Option II (Non-Thesis)

347:671	Advanced Behavioral Stat. I	3
347:672	Advanced Behavioral Stat. II	3
375:607	Practicum in Psychological Assessment and interpretation	6
375:753	Organizational Psychology (Personnel Specialty Only)	4
375:780	Graduate Seminar in Clinical Counseling (Clinical specialty only. Register for seminar each quarter of 375:607 Practicum Registration)	2

III. *M.A. Examinations*

Option I: Qualifying Examination covering core course subject areas.

Option II: Written and oral Comprehensive Examinations in the specialty area.

IV. *Other Requirements*

1. Refer to Psychology Department Graduate Student Manual for additional guidelines and details.

2. Complete and fulfill general master's degree requirements of Graduate School.

SOCIOLOGY

Requirements for the Master of Arts degree:

A minimum of 48 credits, at least 36 of which (including thesis) must be at the 600 level in the department (385: Sociology; 386: Social Work; and 387: Anthropology). Required courses are 385:600, 601, 603, 614, 650. Each candidate is required to pass a written examination in which he demonstrates his competence in sociological research methods and his general mastery of Sociology; and an oral examination covering a defense of his thesis and relevant aspects of Sociology.

SPANISH

Requirements for the Master of Arts degree:

Option I: 50 credits of graduate work, no thesis required.

Option II: Completion of 45 credits of graduate work, including a thesis equivalent to 3-9 credits of the 45 credits required.

1. *Core Requirements:*

32 credits covering essential areas in Literature, Culture, Linguistics, and Language Skills, including at least 18 credits at the 600 level. Thesis candidates are required to enroll in the Seminar in Hispanic Bibliography and in Research Methods (358:607-608).

2. *Electives:*

With the approval of the departmental graduate committee, up to nine elective graduate credits may be taken in another discipline.

3. *Additional Requirements:*

A. *Admission Requirement* — Proficiency level in the four competencies (listening comprehension, speaking, reading, and writing) will be evaluated by applicable parts of the MLA proficiency tests.

B. *Second Language Requirement* — At some time prior to the beginning of his last graduate quarter, 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 his adviser.

C. *Final Comprehensive Examinations* — The candidate will be required to pass both a written and oral final examination covering all areas of study included in his program.

URBAN STUDIES

Requirements for the Master of Arts degree:

Urban Studies:

Completion of 50 credits, which must include the following:

1. Urban Studies Core 27 credits: 398:600 (4 credits) and 640 (3 credits) required. Credits taken in an academic department other than Urban Studies, may, if approved by the Department of Urban Studies core requirement.

2. Statistics: A minimum of 3 credits required from 335:680, 347:671-672, 385:600, 398:641 or other approved course.

3. Urban Related Courses (20 credits): This requirement may be fulfilled by taking urban related courses in a specific department, several academic departments, or by taking additional urban studies core courses.

Courses taken by the student to fulfill the Urban Studies requirement must be approved by the Urban Studies Department.

Urban Studies —
Public Administration:

1. 60 credit hours of Course work plus Internship where applicable.
2. Complete all requirements for the M.A. in Urban Studies.
3. A minimum of 40 credits in Core Curriculum with a balance of course work to be taken from Recommended Courses.
4. 3 to 6 credits of Internship for students without professional public employment experience. The specific study program will be planned by the student and his advisor upon entry into the program.

Urban Studies — Urban Planning

1. 72 credit hours of course work plus Internship where applicable.
2. Complete all requirements for the M.A. in Urban Studies.
3. A minimum of 44 credits in Core Curriculum with a balance of course work to be taken from Recommended Courses.
4. 3 to 6 credits of Internship for all students without professional planning experience.
A study design will be developed by the student and his advisor upon admission to the program.

The College of Engineering

In addition to the general requirements for admission to the Graduate School, an applicant for graduate study in Engineering must either (1) hold a bachelor's degree in a curriculum accredited by the Engineers' Council for Professional Development at the time of his graduation, or (2) 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 345:236 Differential Equations, 365:293 Elementary Classical Physics, 315:133 Principles of Chemistry, and demonstrate proficiency at the undergraduate levels in courses related to the area of intended study.

THE DOCTOR OF PHILOSOPHY IN ENGINEERING

Interdisciplinary programs in environmental engineering, materials science, mechanics, systems engineering, and transport processes are offered through the College of Engineering. In addition to the general requirements of the Graduate School, a student must:

1. Successfully complete a qualifying examination before completing either 15 credits of course work after admission in the program or within two quarters after admission into the program. The examination shall cover graduate courses that the student has completed and basic undergraduate topics.
2. Complete courses in the plan of study developed on the basis of the qualifying examination by the student advisory committee. A minimum of 135 credits of graduate work, generally 90 for course work and 45 for dissertation, must be earned.
3. Pass a candidacy examination which may be taken after ninety percent of the course work specified in the plan of study has been completed.
4. Register for dissertation credits according to the schedule available from the Dean of Engineering.
5. Pass an oral examination in defense of the dissertation.

The student advisory committee shall determine the student's language requirements.

A copy of the Ph.D., in Engineering Program Procedures is available from the Dean of Engineering.

*Students without a B.S. in Engineering but with a baccalaureate degree in a related field may be accepted for graduate studies but the student will be required to make up the undergraduate deficiencies for which the student will not receive credit.

THE 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.

Requirements:

Chemical Engineering

The candidate for a Master of Science in Chemical Engineering degree must successfully complete the graduate course work and other criteria, including Plan A or B, which is outlined below:

Chemical Engineering Course Work	Credits
420:604 Transport Phenomena	3
420:615 Reaction Engineering	3
420:620 Classical Thermodynamics	3
Electives*	12
Approved Electives	9
Approved Mathematics	6
	36

*The elective Chemical Engineering Course work may not include more than 3 credits of 500-level Chemical Engineering courses.

Plan A:

A formal engineering research thesis, representing at least nine additional credits and satisfactory performance in an oral defense-of-thesis examination.

Plan B:

A minimum of an additional 18 credits of approved course work.

All candidates for the M.S.Ch.E. degree must pass a Comprehensive Examination.

All graduate students are expected to attend and participate in the seminars conducted by the Chemical Engineering Department.

<i>Civil Engineering</i>	Credits
Thesis Option	
Civil Engineering Course Work	21
Approved Mathematics or Science	6
Approved Electives (Including a 6-9 credit thesis)	18
	Total 45

Non-Thesis Option

Civil Engineering Course Work	21
Approved Mathematics or Science	6
Approved Electives	18
Special Problem (430:691 or 430:692)	3
	Total 48

Electrical Engineering

Special Problems 460:695

3

Total 48

At the beginning of their program, students are required to take a comprehensive proficiency examination on six undergraduate topics. These topics are circuit theory, circuit applications, electronics, electromagnetic fields, machines and power, and controls. The student who demonstrates a lack of basic knowledge in one or more areas will be required to successfully complete appropriate undergraduate courses. Topic outlines are available from the department office.

Candidates for the M.S.E.E. degree, who have completed approximately 36 credits, must pass a comprehensive graduate-level oral examination or (optionally) perform satisfactorily in an oral defense of their thesis. A thesis represents either six or nine credits.

Course work is outlined below:

440:630 Linear Circuit Analysis	3
440:653 Electromagnetic Fields	3
440:643 Signal and Data Analysis	3
365:591, 2, 3 Meth. of Math. Physics I, II, III	<u>9</u>
	18
Electrical Engineering Electives*	12
Approved Electives (Thesis Optional)	<u>15</u>
Total	45

*The elective Electrical Engineering course work may not include more than three credits of 500-level courses.

*Mechanical Engineering**Credits**Thesis Option*

Mechanical Engineering Course Work	21
Approved Mathematics	6
Approved Electives	9
Thesis	9
Total	<u>45</u>

Non-Thesis Option

Mechanical Engineering Course Work	21
Approved Mathematics	6
Approved Electives	18

**MASTER OF
SCIENCE IN ENGINEERING***Purpose*

This program is intended for those students whose educational objectives can not be met by one of the four departmental programs.

*Degree Requirements**Thesis Option*

Engineering Coursework	18
Approved Mathematics or Science	6
Approved Electives	12
Thesis	9
Total	45

Successful oral defense of the thesis.

Nonthesis Option

Engineering Coursework	27
Approved Mathematics or Science	6
Approved Electives	12
Special Problems	3
Total	48

Administration

The overall program will be administered by the Dean of the College of Engineering. Students should declare their intention to study toward the M.S.E. degree before the completion of 15 graduate hours; this intention must be indicated in writing to the Dean of the College of Engineering. 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 selection and final report must receive the approval of the Advisory Committee.

The College of Education

The Miller Analogies Test is required of all students seeking admission to graduate programs in the Departments of Secondary Education, Physical Education, Elementary Education and Counseling and Special Education. Students seeking admission to the graduate program in Educational Administration must take the Bernreuter Scale, Watson Glaser, and Guilford-Zimmerman examinations. It is the applicant's responsibility to make arrangements with the Testing and Counseling Bureau to take the appropriate examination or examinations.

THE DOCTOR OF PHILOSOPHY DEGREE

Programs leading to the Doctor of Philosophy Degree in Elementary Education, Secondary Education, and Guidance and Counseling are offered through the College of Education. The degree will be awarded to students who, besides fulfilling the general requirements of the Graduate School, have met the following specific requirements:

1. A minimum of 135 graduate credits (including a 45-credit Master's program where applicable), including the doctoral dissertation. Students considered deficient in any area may be required to take additional courses.

2. The completion of a foundation studies program designed to prepare the student generally before he begins to specialize.

3. The completion of preliminary examinations on the foundation studies areas and the major field of concentration.

4. Successful completion of an examination in a language judged not to be the student's native tongue.

a. Students in the Department of Counseling and Special Education may elect to develop appropriate research skills prescribed by their advisor in lieu of the foreign language requirement.

b. Students in the Department of Elementary Education may elect to develop appropriate alternative research skills prescribed by their advisor, subject to review by the department head, depending upon the career goal of the student, and upon the academic and/or scientific requirement of his dissertation in lieu of the foreign language requirement.

c. Students in the Department of Secondary Education may elect to develop appropriate research skills prescribed by their advisor, subject to review by the department head in lieu of the foreign language requirement.

5. The completion of at least 18 credits beyond the Master's degree level in a cognate area.

6. The completion of final written and oral examinations in the student's major field of concentration.

7. The completion of a dissertation comprising not more than 22 credits. The oral examining committee must be constituted of at least five full-time staff members, one of whom must be from outside the College of Education.

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

THE DOCTOR OF EDUCATION DEGREE

A program leading to the Doctor of Education degree in School Administration is also available.

The admission procedures and requirements for this degree are the same as outlined above in the Doctor of Philosophy degree program, except the language requirement is waived.

FOUNDATION STUDIES IN EDUCATION

<i>Behavioral Studies</i>	<i>Credits</i>
565:602 Behavioral Bases of Education	4
OR	
565:620 Seminar in Human Development and Education	4
565:701 Learning Processes	4
OR	
565:710 Teacher Behavior and Instruction	4
 <i>Humanistic Studies</i>	
<i>Historical</i>	
510:701 History of Education in American Society	4
OR	
510:709 Seminar: History and Philosophy of Higher Education	4
 <i>Social and Philosophical</i>	
510:600 Philosophies of Education	4
OR	
510:611 Topical Seminar in the Cultural Foundations of Education	4
 <i>Two of the following:</i>	
510:603 Education and Social Trends	3
510:702 Seminar: Modern Theories of Education	3
510:705 Interdisciplinary Seminar	4
 <i>Research</i>	
590:603 Techniques of Research	5
590:711 Statistics in Education	4
5 :899 Dissertation	15-30

Information regarding specific course requirements in each of the major areas of concentration may be obtained in the office of the College of Education.

THE MASTER'S DEGREE

Programs of advanced study leading to the degree of Master of Arts in Education, Master of Science in Education and Master of Science in Technical Education are offered.

Students who expect to earn the Master's Degree for advancement in the field of teaching must have met the general requirements for admission to the Graduate School and must be qualified to hold a standard teaching certificate. Exceptions to this latter requirement will be made for qualified students who do not wish to teach or perform duties in the public schools, provided they present or acquire an appropriate background of study or experience. Students who expect to earn the Master's Degree in guidance and administration also should have some 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.

Credits refer to number of quarter credits assigned to various courses.

In addition to the general requirements for the Master's listed on the preceding pages, the specific requirements for each major field of concentration are listed on the following pages. A number of these programs indicate a requirement of 13 credits in "Foundation Studies Courses". These are:

510:600 Philosophies of Education	Credits 4
OR	
510:611 Topical Seminar in the Cultural Foundations of Education	4
565:602 Behavioral Bases of Education	4
OR	
565:620 Seminar in Human Development and Education	4
590:603 Techniques of Research	5
Total	13

ELEMENTARY EDUCATION

<i>Required:</i>	
Foundation Studies Courses	13
520:630 Elementary School Curriculum and Instruction	3
520:780 Seminar in Elementary Education	6-12
520:699 Research in Education	3

25-31	
<i>Electives:</i>	14-20

Total Credits for Degree 45

Electives may be any combination of courses to meet the minimum of 45 credits which may include up to 18 credits in pertinent course offerings outside the College of Education. Elective courses should be planned with the graduate adviser.

This program is intended primarily for the student who expects to progress as a teacher in elementary schools.

SECONDARY EDUCATION

I. Educational Foundations: Select a minimum of one in the Humanistic Studies and one in the Behavioral Studies and one in the Research and Evaluation area. All course selection must be approved by the advisor.

A. Humanistic Studies (suggested courses):

	<i>Credits</i>
510:600 <i>Philosophy of Education.</i>	4
510:606 <i>Comparative Education.</i>	3
510:611 <i>Topical Seminar: Cultural Foundations of Education.</i>	4

B. Behavioral Studies (suggested courses):

510:602 <i>Behavioral Bases of Education.</i>	4
510:620 <i>Seminar in Human Development</i>	

C. Research and Evaluation:

510:603 <i>Techniques of Research.</i>	5
560:623 <i>Evaluation and Diagnosis of Learning Problems.</i>	4
510:711 <i>Statistics in Education.</i>	4
340:599 <i>Historical Methods.</i>	3

II. Secondary Education:

A. Required:

530:780 <i>Seminar in Secondary Education: Improvement of Instruction in the area of Concentration.</i>	3
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B. Select 15 quarter hours for the following graduate courses:

530:619 <i>Secondary Curriculum and Instruction</i>	3
530:721 <i>Supervision of Instruction.</i>	3
530:525 <i>Reading Programs in Secondary Education.</i>	3
*530:780 <i>Seminar in Secondary Education:</i>	3
<i>Topics: Senior High</i>	
<i>Junior High</i>	
<i>Computer Assisted Instruction</i>	
<i>Individualized Instruction.</i>	
530:613 <i>Field Experience.</i>	1-3
530:614 <i>Field Experience.</i>	1-3
530:615 <i>Field Experience.</i>	1-3
540:505 <i>Vocational Education for Youth and Adults.</i>	3
530:699 <i>Research in Education.</i>	1-6

*Only two seminars for this option may be counted toward the degree.

III. Area of Concentration(s):

A. Select 15 quarter hours of courses of 500 level or above.

IV. Electives:

A. Select one elective graduate course. 3

This program is intended to prepare the teacher of grades seven through twelve for the following areas: master teacher, department head, supervisor, and resource teacher. (Students planning to major in physical education should consult their advisors for alternate course requirements.) This program may also serve as preliminary preparation for those who wish to apply for the Doctor of Philosophy Degree in Secondary Education.

ELEMENTARY SCHOOL PRINCIPAL

<i>Required:</i>	<i>Credits</i>
Foundation Studies Courses	13
520:630 Elementary School Curriculum and Instruction	3
570:631 Elementary School Administration	3
520:732 Supervision of Instruction in the Elementary School	3
560:603 Guidance in the Elementary School	3
570:601 Principles of Educational Administration	4
570:610 Principles of Educational Supervision	5
570:661 Field Experience for the Elementary Administrator	3
570:699 Research in Education	3
	<hr/>
	40
<i>Electives:</i>	5
	<hr/>
Total Credits for Degree 45	

Elective courses should be planned with the graduate advisor. This program is intended primarily for the student who expects to progress as a principal or administrator in the elementary schools.

SECONDARY SCHOOL PRINCIPAL

<i>Required:</i>	<i>Credits</i>
Foundation Studies Courses	12
570:621 Field Experience for the Secondary School Administrator	3
560:602 Orientation to Guidance Services	3
530:619 Secondary School Curriculum and Instruction	3
570:620 Secondary School Administration	3
570:610 Principles of Educational Supervision	5
570:601 Principles of Educational Administration	4
570:607 Legal Basis of Education	3
530:721 Supervision of Instruction in the Secondary School	3
530:780 Seminar: Secondary Education: The Junior High School	3
530:780 Seminar: Secondary Education: Senior High School	3
540:505 Vocational Education for Youth and Adults OR	3
570:710 Principles of Curriculum Development	4
	<hr/>
Total Credits for Degree 49 or 50	

SUPERVISOR
REQUIRED COURSES

<i>Core</i>	
510:600 Philosophies of Education OR	4
510:611 Topical Seminar in the Cultural Foundations of Education	4
565:602 Behavioral Bases of Education OR	4
565:620 Seminar in Human Development and Education	4
590:603 Techniques in Research	5
	<hr/>
	13
<i>Curriculum</i>	
570:710 Principles of Curriculum Development	4

520:630* Elementary School Curriculum and Instruction	3
530:619** Secondary School Curriculum and Instruction	3
	<hr/>
	7
*Required only of Elementary Students	
**Required only of Secondary Students	
<i>Supervision</i>	
570:610 Principles of Educational Supervision	5
520:732 Supervision of Instruction - Elementary School	3
530:721* Supervision of Instruction - Secondary School	3
570:651** Field Experience for Supervisors	3
	<hr/>
	11

ELECTIVES

With the approval of his advisor, the student will select at least one of the following courses and other electives which may include up to six pertinent electives from course offerings outside the College of Education:

<i>Electives</i>	
510:701 History of Education in American Society	4
590:711 Statistics in Education	4
570:740 Theories of Supervision	3
570:699 Research in Education	3
	<hr/>
	14
Total Required 45	

LOCAL SUPERINTENDENT

<i>Required:</i>	<i>Credits</i>
Foundation Studies Courses	13
570:601 Principles of Educational Administration	4
570:605 Decision-making Theory and Practice in Education Administration	4
570:606 Evaluation of Educational Institutions	4
570:607 Legal Basis of Education	3
570:608 Principles of School Finance	3
570:610 Principles of Educational Supervision	5
570:710 Principles of Curriculum Development	4
570:604 School and Community Relations	3
570:641 Field Experience for the Superintendent	3
570:699 Research in Education	3
	<hr/>
Total Credits for Degree 49	

COUNSELING

<i>Departmental Core:</i>	
560:617 The Interview	3
561:540 Developmental Characteristics of Exceptional Individuals	4
561:543 Developmental Characteristics of Learning Disabled Individuals	4
561:571 Classroom Behavior Management for Exceptional Children	4
560:625 Seminar in Counseling and Special Education	3
	<hr/>
Total 14 or 15	

Options
(Student chooses one)

	<i>Credits</i>
<i>Elementary Counseling</i>	
560:603 Guidance in the Elementary School	3
560:600 Seminar in Guidance	3
560:616 Career Guidance: Theory and Practice	4
560:618 Counseling: Theory and Philosophy	3
560:619 Techniques of Counseling	3
560:620 Group Counseling	3
560:621 Practicum in Counseling	5
560:623 Evaluation and Diagnosis of Learning Problems	4
	28

<i>Secondary Counseling</i>	
560:602 Orientation to Guidance Services	3
560:600 Seminar in Guidance	3
560:616 Career Guidance: Theory and Practice	4
560:618 Counseling: Theory and Philosophy	3
560:619 Techniques of Counseling	3
560:620 Group Counseling	3
560:621 Practicum in Counseling	5
560:623 Evaluation and Diagnosis of Learning Problems	4
	28

<i>College Adult Counseling</i>	
560:601 Student Personnel Services in Higher Education	3
560:600 Seminar in Guidance	3
560:616 Career Guidance: Theory and Practice	4
560:618 Counseling: Theory and Philosophy	3
560:619 Techniques of Counseling	3
560:620 Group Counseling	3
560:621 Practicum in Counseling	5
560:623 Evaluation and Diagnosis of Learning Problems	4
	28

Electives:

Select three (3) credits of electives. The following are recommended:

560:624 Consultant: Counseling and Special Education	4
560:616 Career Guidance: Theory and Practice	4
560:701 Organization and Administration of Guidance Services	3
590:711 Statistics in Education	4
520:630 Elementary School Curriculum and Instruction	3
520:630 Elementary School Curriculum and Instruction	3
530:619 Secondary School Curriculum and Instruction	3
560:699 Research in Education	3

SUMMARY

Foundation Studies:	13
Departmental Core:	14 or 15
Counseling Core:	28
Electives:	3
	Total 58

**SPECIAL EDUCATION —
GRADUATE PROGRAM**

A program of studies for the candidate seeking graduate degree status in Special Education will be selected from the following course listings. Students in special education who hold certification prior to enrollment in Graduate School must choose a program focus emphasizing one of the following areas: supervision, clinical practice, early childhood, developmental disabilities, school educational consultant or other focus identified to meet an individual's educational need. Elective options within the graduate program 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. Certification as a Special Education Supervisor may also be pursued in combination with other departments.

MINIMUM PROGRAM — 52 hours

At least one-half of program must be 600 level courses.

At least 30 hours within Special Education.

Master's program can be completed with or without meeting requirements for Special Education certification depending on program selection.

A certification program as a part of Master's study may require an extended program.

Foundation Courses: Required of all candidates.

	<i>Credits</i>
510:600 Philosophies of Education/or	4
510:611 Seminar: Cultural Foundations of Education	4
510:602 Behavioral Bases of Education/or	4
510:620 Seminar: Human Development	4
510:603 Techniques of Research	5

Departmental Core: Required of all candidates

	<i>Credits</i>
560:617 The Interview	3
561:540 Developmental Characteristics of Exceptional Individuals/or	4
561:543 Developmental Characteristics of Learning Disabled Individuals	4
561:556 Classroom Behavior Management for Exceptional Children	4
560:625 Seminar in Counseling and Special Education	3

Department Option: Masters Paper (Candidate required to choose one)

561:699 Research in Special Education/or	3
561:600 Seminar in Special Education	3

<i>Program Core: Required of all candidates</i>	
561:604 Assessment in Special Education	3
561:607 Program Development in Special Education	3
561:608 Comparative Program Models and Service Delivery Systems in Special Education	<u>3</u>
	9

Students must elect a program direction from one of the following or specify a major focus area for program planning.

- *Supervisor — Special Education
- *Clinical Practice — Special Education
- Special Education — Early Childhood Developmental Disabilities
- *School Educational Consultant
- Other Foci (to be identified)

*Requires prior or concurrent special education certification.

<i>Supervisor — Special Education</i>	
570:610 Principles of Educational Supervision	5
570:710 Principles of Curriculum Development	4
561:601 Seminar in Special Education Curriculum Planning	3
561:602 Supervision of Instruction — Special Education	3
570:651 Field Experience — Supervision	<u>3</u>
	18

<i>Clinical Practice — Special Education</i>	
561:606 Educational and Management Strategies for Parents of Exceptional Children	3
561:613 Field Experience	3
561:614 Field Experience	
561:615 Field Experience	

Suggested Electives:

561:605 Program Management for Exceptional Individuals	
770:622 Communicative Disorders in Mental Retardation	

<i>Special Education-Early Childhood</i>	
561:550 Educational Adjustment: Preschool and Primary Level Exceptional Children	4
561:613 Field Experience	3
561:614 Field Experience	
561:615 Field Experience	

Suggested Electives:

561:606 Educational and Management Strategies for Parents of Exceptional Children	3
555:536 Adapted Physical Education Tasks for the Learning Disabled Child	3
740:665 Development in Infancy	3
770:530 Aspects of Normal Language Development	4

Electives to Complete Program

<i>Developmental Disabilities</i>	
561:542 Developmental Characteristics Trainable Mentally Retarded Individuals	4
561:605 Program management for Exceptional Individuals	3
561:613 Field Experience	3
561:614 Field Experience	
561:615 Field Experience	

Suggested Electives:

561:545 Developmental Characteristics of Orthopedically Handicapped Individuals	4
561:609 Special Education and Social Change	3
561:554 Educational Adjustment of Trainable Mentally Retarded Individuals	4

Electives to Complete Program

<i>School Educational Consultant</i>	
561:609 Special Education and Social Change	3
561:613 Field Experience	3
561:614 Field Experience	
561:615 Field Experience	

Suggested Electives:

561:605 Program Management for Exceptional Individuals	3
561:606 Educational and Management Strategies for Parents of Exceptional Children	3

Electives to Complete Program

Other Foci (to be identified)
Program to be developed to meet individual needs

Electives:

Select credits from the following course offerings or related electives in consultation with an advisor

	<i>Credits</i>
561:540 Developmental Characteristics of Exceptional Individuals	4
561:541 Developmental Characteristics of Educable Mentally Retarded Individuals	4
561:542 Developmental Characteristics of Trainable Mentally Retarded Individuals	4
561:543 Developmental Characteristics of Learning Disabled Individuals	4
561:544 Developmental Characteristics of Intellectually Gifted Individuals	4
561:545 Developmental Characteristics of Orthopedically Handicapped Individuals	4
561:546 Developmental Characteristics of Behaviorally Disordered Individuals	4
561:550 Educational Adjustment: Pre-school and Primary Level Exceptional Children	4
561:551 Educational Adjustment: Intermediate Level Exceptional Children	4
561:552 Educational Adjustment: Secondary Level Exceptional Children	4
561:553 Recreational Programs for Exceptional Children	4
561:554 Educational Adjustment of Trainable Mentally Retarded Individuals	4
561:555 Educational Adjustment of Intellectually Gifted Individuals	4
561:556 Classroom Behavior Management for Exceptional Children	4
561:557 Clinical Teaching Practicum: Children with Learning Problems	4
561:559 Seminar: Invitational Studies in Special Education	1-3
561:601 Seminar in Special Education	3
561:602 Supervision of Instruction - Special Education	3
561:604 Assessment in Special Education	3
561:605 Program Management for Exceptional Individuals	3
561:606 Educational and Management Strategies for Parents of Exceptional Children	3

561:607 Program Development in Special Education	3
561:608 Comparative Program Models and Service Delivery Systems in Special Education	3
561:609 Special Education and Social Change	3
561:613 Field Experience - Special Education	1-3
561:614 Field Experience - Special Education	1-3
561:615 Field Experience - Special Education	1-3
561:670 Independent Study in Special Education	1-4
561:790 Research Projects in Special Areas	1-3
525:681 Diagnosis of Reading Problems	5
530:780 Seminar in Secondary Education: Instruction	3
530:780 Seminar in Secondary Education: Curriculum	3
555:536 Adapted Physical Education Tasks for the Learning Disabled Child	5
560:619 Techniques of Counseling	3
560:623 Evaluation and Diagnosis of Learning Problems	4
563:581 Sociological Foundations of Inner City School Problems	5
563:582 Characteristics of Inner City Youth	5
563:686 Seminar: Educating the Disadvantaged	4
740:501 Family Life Patterns in Culturally Deprived Homes	3
740:560 Organization and Supervision of Child Care Centers (Permission of Instructor)	3
740:660 Programming for Child Care Centers (Pre-requisite 740:560)	3
740:616 Infant and Child Nutrition	3
740:665 Development in Infancy	3
740:683 Individual Investigation: Child Development	3
770:530 Aspects of Normal Language Development	4
770:622 Communicative Disorders in Mental Retardation	3
770:623 Communicative Disorders in Cerebral Palsy	3
375:500 Abnormal Psychology	5
375:505 Psychopathology of Childhood (Prerequisite 375:500)	4
375:512 Psychology of Learning	4
385:523 Juvenile Delinquency	4
385:536 Sociology of Education	4
385:638 Seminar in the Sociology of Deviance	4
385:640 Seminar in Criminology and Juvenile Delinquency	4

560:625 Seminar in Counseling and Special Education	
561:561 Teaching Exceptional Children	4
III. The Education Setting:	
One course required from each section	
A. 510:603 Education and Social Trends	3
510:702 Seminar: Modern Theories of Education	3
B. 570:631 Elementary School Administration	3
570:620 Secondary School Administration	3
570:704 Administrative Organization in Education	3
561:560 Developmental Characteristics of Slow Learning Children	5
C. 563:581 Sociological Foundation of Inner-City School Problems	5
563:582 Characteristics of Inner-City Youth	5
IV. Sociology Courses Required:	
386:673 Seminar in Social Work Methodology	4
385:533 Social Organization	4
V. The Sociological Foundation:	
One course required from each section	
A. 385:504 The Family	4
385:523 Juvenile Delinquency	4
385:524 Probation and Parole	4
385:640 Seminar in Criminology and Juvenile Delinquency	4
B. 385:527 Racial and Cultural Inter-group Relations	4
385:532 The Sociology of Socialization	4
385:535 Sociology of Urbanization	4
398:621 Social Service Planning in an Urban Society	3
Total Credits 53-56	

**READING SPECIALIST OR
READING CONSULTANT**

To qualify as a reading specialist or consultant, the student must meet the following requirements:

1. Have a minimum of three years of successful teaching experience.
2. Earn a Master's Degree or its equivalent in credits, which includes the following program:

Foundation Studies Courses in Master's Program 13 credits.

Reading Instruction 29 credits

	<i>Credits</i>
520:699 Research in Education	1-6
520:780 Seminar in Elementary Education	3
525:681 Diagnosis of Reading Problems	5
525:682 Correction of Reading Problems	5
525:683 Clinical Practice in Reading I	4
525:692 Advanced Study and Research in Reading Instruction	5
525:693 Supervision and Curriculum Development in Reading Instruction	3

Minimum of 4 credit hours from the following courses:

520:630 Elementary School Curriculum	3
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**VISITING TEACHER or
SCHOOL SOCIAL WORKER**

The undergraduate prerequisites for these programs are 386:276, Introduction to Social Welfare (5 credits), and 386:373, Methods and Concepts of Social Work (5 credits).

I. Foundation Studies:	<i>Credits</i> 13
II. Departmental Courses Required:	
560:617 The Interview	3
560:623 Evaluation and Diagnosis of Learning Problems	4

520:780 Seminar in Elementary Education — Reading	3
570:610 Principles of Education Supervision	5
530:619 Secondary School Curriculum	3
525:684 Clinical Practices in Reading II	4

A total of 45 credits are required.

Students in graduate programs with other areas of concentration may elect any specialized course in reading, provided they meet the prerequisites.

TEACHING THE CULTURALLY DISADVANTAGED

The serious need for many more specially trained people for schools enrolling culturally disadvantaged is generally recognized by the experts in the field and is considered by many to be the most pressing of our current educational problems. Consequently, we need to make special efforts to find ways of getting more persons interested in making a commitment to teach in inner city schools.

Among the objectives of this program would be to help each student:

1. Acquire the basic knowledge and understanding of the American city with special emphasis on the unique characteristics of the "core" areas:

2. Acquire a knowledge of the developmental characteristics of culturally disadvantaged children and an understanding of how cultural deprivation, deteriorating neighborhoods, racial discrimination, and poor home conditions affect the youngsters' attitudes toward school and society — his level of aspiration, his self-image and other personal characteristics;

3. Develop a true sensitivity and empathy for disadvantaged children and their unique problems;

4. Develop an understanding of the impact which the special nature and characteristics of the inner city and its inhabitants have on the school curriculum, organization, instructional processes, guidance program, etc.;

5. Develop some insight into what action teachers, administrators, and supervisors might take to mobilize all the resources of the school and neighborhood it serves to help each child achieve at the level of his real ability especially through special relationships;

6. Develop skill in the selection of those instructional devices and materials likely to prove useful in teaching the culturally disadvantaged child.

The program is designed both for students already certified as well as those with no professional background.

Program of Required Courses

	<i>Credits</i>
563:581 Sociological Foundations of Inner-City School Problems	5
563:582 Characteristics of Inner-City Youth	5
563:686 Seminar: Educating the Disadvantaged	4

530:780 Seminar in Secondary Education: Instruction	<i>Credits</i> 3
530:780 Seminar in Secondary Education: Curriculum	3
560:623 Evaluation and Diagnosis of Learning Problems	4
510:603 Techniques of Research	5
510:690-691:692 Internship Teaching & Seminar	12
OR	
Electives in Education, Urban Studies, Sociology or Political Science for students with teaching experience in inner-city schools.	12
Electives in Teaching Field in Special Fields in Education	9

Total Credits for Degree 50

EMPLOYMENT COUNSELOR

This program has been designed to meet the needs of Ohio State Employment Service Counselors and those who counsel in related or similar agencies. It may lead to a Masters degree if all requirements listed below are met.

Three different disciplines are represented: Education and Counseling, Management, and Sociology. Students must take the required Counseling courses and courses in at least one of the other two fields. Students may elect courses in all three fields. The required research paper may be done in any one of these three areas.

The listed prerequisites are not all essential. However, it is assumed that the candidate has a baccalaureate degree within which he has strength in one of these areas: Business, Economics, Psychology or Sociology. If he lacks a background in these areas, a selection among the following suggested prerequisites should provide helpful preparation for the graduate program. The candidate should make his choices in consultation with his academic adviser.

<i>Suggested Prerequisites:</i>	<i>Credits</i>
325:243 Survey of Economic Analysis	4
325:330 Labor Problems	4
375:141 Introduction to Psychology	5
375:160 Industrial Psychology	4
375:315 Social Psychology	4
385:100 Introduction to Sociology	5
775:270 Poverty in the Inner City	4
385:336 Social Change	4
650:350 Personnel Management	3
650:372 Management-Organization and Behavior	3

1. Courses Required in the College of Education

560:600 Seminar in Guidance	3
560:616 Career Guidance: Theory and Practice	4
560:617 The Interview	3
560:618 Counseling: Theory and Philosophy	3
560:619 Techniques of Counseling	3
560:620 Group Counseling	3
560:621 Practicum in Counseling	5
560:623 Evaluation and Diagnosis of Learning Problems (Group Testing)	4
561:568 Occupational Orientation and Job Training for Exceptional Children	3

II. Research option in the College of Education

510:603 Techniques of Research	3
510:711 Statistics in Education	4
560:699 Research in Education	3

Elective Program in Management and/or Sociology. In consultation with an academic advisor, the student must select courses from one of these areas and may select courses from both.

III. Courses Required in the College of Business Administration
(or a selection from these)

640:655 Government and Business	5
650:663 Industrial Relations	3
650:668 Administrative Behavior and Methods	3
650:669 Leadership Role in Organization	3
650:670 Organizational Theory and Policy Formulation	3

IV. Research option in the College of Business Administration

650:547 Advanced Statistics	3
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All required courses listed above must be completed before the student registers for

650:698 Graduate Seminar in Management	3
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V. Courses Recommended in Sociology

385:530 Social Structures and Personality	4
385:531 Social Interaction	4
385:535 Sociology of Urbanization	4
385:538 Industrial Sociology	4
385:606 Sociology of Work	3
385:611 Seminar in Personality and Social Systems	4
385:620 Population Theory	4

VI. Research option in Sociology

385:600 Sociological Research Methods	4
385:650 Thesis	3

The Master's degree requires a minimum of 50 quarter hours selected in consultation with an academic advisor in the College of Education.

PHYSICAL EDUCATION

Required:

Foundation Studies Courses	13
555:699 Research in Education	3
OR	
555:613, 614 or 615 Field Experience	3
555:536 Adapted Physical Education Tasks for the Learning Disabled Child	3
555:601 Administration of Health, Physical Education, Recreation and Athletics	5
555:603 Curriculum Planning in Health and Physical Education	3
555:605 Physiology of Muscular Activity and Exercise	3

555:606 Measurement and Evaluation in Physical Education	3
555:608 Supervision of Physical Education	3
	36

Electives: Agreed on by the Advisor to meet Special Student Needs 9

Total Credits for Degree 45

The program is designed to provide the teacher with more advanced knowledge in the analysis and understanding of physical skill and human movement. It is also intended to provide inservice education for the teacher and administrator through knowledge, techniques and application of current practices in Physical Education.

**OUTDOOR EDUCATION —
GRADUATE PROGRAM**

<i>Elementary Education Option*</i>	<i>Credits</i>
556:450/550 Application of Outdoor Education to the School Curriculum	5
556:452/552 Methods, Materials, and Resources for Teaching Outdoor Education	5
556:656 Practicum in Outdoor Education	5
	Total 15
<i>Secondary Education Option*</i>	
556:450/550 Application of Outdoor Education to the School Curriculum	5
556:452/552 Methods, Materials, and Resources for Teaching Outdoor Education	5
556:656 Practicum in Outdoor Education	5
	Total 15

*In addition to other requirements peculiar to Elementary and Secondary Programs.

**MASTER OF SCIENCE DEGREE
IN TECHNICAL EDUCATION**

A. Foundation Studies Courses: (13 Credits)

	<i>Credits</i>
510:600 Philosophies of Education	4
565:602 Behavioral Bases of Education	4
590:603 Techniques of Research	5

B. Professional Technical Education: (11 credits)

540:510 Postsecondary Technical Education	3
540:521 Instructional Techniques in Technical Education	5
540:530 Course Construction in Technical Education	3

For students selecting the Vocational Home Economics Option 540:551, Vocational Home Economics, 3 credits, may be taken in place of 540:530. Students selecting this option must also take an additional 3 credits in a course emphasizing the adult in Vocational Education.

C. Field of Specialization: (One option is selected for a total of 13-14 credits)

1. *Teaching Option:* An approved schedule of technical courses selected from the offerings of The Graduate School. Course selections will be determined on the basis of the student's academic and professional background.

2. *Guidance Option A:* (Must be followed in sequence)

	<i>Credits</i>
560:617 The Interview	3
560:618 Counseling: Theory & Philosophy	3
560:619 Techniques of Counseling	3
560:620 Group Counseling	3
560:621 Practicum in Counseling	5

3. *Guidance Option B:* (No sequence)

560:617 The Interview	3
560:616 Career Guidance: Theory & Practice	4
560:623 Evaluation & Diagnosis of Learning Problems	4
Elective (as approved by advisor)	2-3

4. *Curriculum and Supervision Option:*

570:610 Principles of Educational Supervision	5
570:710 Principles of Curriculum Development	4
Elective	5

5. *Vocational Home Economics Option — Family Life:*

Select 13-14 credits from the following courses:

740:501 Family Life Patterns in the Culturally Deprived Home	3
740:601 Family in Transition	3
740:602 Family: Establishment and Adjustment	3
740:603 Family: Middle and Later Years	3
740:651 Family Law	3
740:682 Individual Investigation in Family Life	2-5

6. *Vocational Home Economics Option — Child Care and Development:* (job training specialization)

Select 13-14 credits from the following courses:

740:501 Family Life Patterns in the Culturally Deprived Home	3
740:560 Organization and Supervision of Child Care Centers	3
740:616 Infant and Child Nutrition	3
740:660 Programming for Child Care Centers	3
740:665 Development in Infancy	3
740:683 Individual Investigation in Child Development	2-5

D. *Teaching Internship:*

Students that enter the program without teaching experience are required to take a teaching internship at a cooperating two-year institution.

540:690 Internship Teaching (Application required) 4

Students in the Vocational Home Economics programs without teaching experience must take a teaching internship at a cooperating two-year institution under the Ohio Board of Regents. Students who already hold a four-year provisional certificate in Home Economics and who desire certification in

Vocational High School Home Economics may select the internship experience in a Vocational High School Program.

E. *Electives:* (2-10 credits)

These hours may support the student's field of specialization, add to the student's general education, or be professional education courses.

F. *Total Credits Required:* 47

G. *Other Requirements:*

Work experience in a technical occupation is also required, the number of years being determined by the student's other qualifications.

ADMINISTRATIVE SPECIALIST SCHOOL AND COMMUNITY RELATIONS

<i>Foundation Studies Courses</i>	<i>Credits</i>
510:600 Philosophies of Education	4
565:602 Behavioral Bases of Education	4
590:603 Techniques of Research	5
570:699 Research in Education	3
	<hr/>
	Subtotal 16

Required Courses

570:601 Principles of Educational Administration	4
570:604 School and Community Relations	3
570:605 Decision-making Theory and Practice in Educational Administration	4
570:606 Evaluation of Educational Institutions	4
570:607 Legal Basis of Education	3
570:608 Principles of School Finance	3
570:610 Principles of Educational Supervision	5
570:710 Principles of Curriculum Development	4
570:732 Organizational Communication and the School Administrator	4
780:685 School Administration Communication Design in the Mass Media	4
780:686 Studies in Communication Media	4
780:687 Studies in Communication Media	4
780:688 Studies in Communication Media	4
5 :613 Field Experience-Masters	3
	<hr/>
	Subtotal 53
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	Total 69

MASTER'S PROGRAM* SCHOOL PSYCHOLOGY

<i>College Requirements:</i>	<i>Hours</i>
510:721 Learning Processes	4

OR

375:512 Psychology of Learning	4
510:600 Philosophies of Education	4
510:603 Techniques of Research	5
562:699 Research in Education	3

Departmental Requirements:

560:625 Seminar in Counsel. & Special Education	3
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*The additional program requirements to gain University recommendation for Ohio Department of Education certification are noted below.

561:540 Dev. Char. of Exceptional Individuals	4
OR	
561:543 Dev. Char. Of Learning Dis. Individuals	4
560:617 The Interview	3
OR	
560:618 Counseling: Theory and Philosophy	4
OR	
375:700 Theories of Psychotherapy	4
561:556 Classroom Behavior Management for Exceptional Children	4
<i>Program Requirements:</i>	
510:711 Statistics in Education	4
560:623 Evaluation & Diag. of Learning Prob.	4
OR	
375:507 Psych. Tests & Measurements	4
375:503 Personality	4
OR	
375:701 Theories of Personality	4
375:604 Methods and Theories of Human. Dev.	4
OR	
562:602 Cognitive Function Models: Princ. Ed. Planning	4
375:622 Princ. and Practices of Indiv. Intell Testing	5
375:621 Survey of Projective Techniques	3
562:601 Seminar: Role & Function of Sch. Psych.	3
562:604 Ed. Diag. for the Sch. Psych.	4
562:679 Pract. in School Psych. (8 hrs. required — registration for 2 quarters)	4
Total Credit Hours 69-70	

The student completing the beforelisted program of study, who holds a valid Ohio teaching certificate must additionally complete a full-time nine months internship in a school setting and concurrently complete the associated seminar experiences. The registration requirements for these experiences are as follows:

562:680 School Psychology Internship Fall Qtr.	3
562:683 Field Seminar I (Low Incident Handicap- Criterion Referenced Assessment) Fall Qtr.	2
562:681 School Psychology Internship Wntr. Qtr.	3
562:684 Field Seminar II (Observational Assessment) Wntr. Qtr.	2
562:682 School Psychology Internship Spr. Qtr.	3
562:685 Field Seminar III (Consultation- Training Strategies) Spr. Qtr.	2

The student completing the beforelisted program including the internship experiences, who does not hold a valid Ohio teaching certificate must additionally complete the following course pattern:

520:630 Elementary School Curriculum	3
570:631 Elementary School Administration	3
525:681 Diagnosis of Reading Problems	5
562:613-614-615 Field Experience	3
*510:600 Philosophies of Education	4

*This course previously listed as a master's degree requirement.

SIXTH YEAR PROGRAM

In addition to the foregoing Graduate Programs which lead to the Masters Degree, the College of Education offers one year of study beyond the Master's Degree in the area of School Superintendent.

SCHOOL SUPERINTENDENT

Required:

	<i>Credits</i>
570:601 Principles of Educational Administration (1)	4
570:605 Decision-Making Theory and Practice in Educational Administration	4
570:606 Evaluation of Educational Institutions (2)	4
570:604 School and Community Relations	3
570:607 Legal Basis of Education	3
570:608 Principles of School Finance	3
570:701 School Buildings and Construction	3
570:703 Administration of Staff Personnel	3
780:631 Speech-Communication for the Educational Administrator	4
570:610 Principles of Educational Supervision	5
570:710 Principles of Curriculum Development	4
510:703 Educational and Social Trends	3
510:600 Philosophies of Education	4
510:701 History of Education in American Society	4
565:602 Behavioral Bases in Education	4
565:701 Learning Processes	4
590:603 Techniques of Research	5
590:711 Statistics in Education	4
570:699 Research in Education*	3
570:641 Field Experience for the Superintendent	3

Total Required Hours 74

Cognate Area Courses

Acceptable Fields: Sociology, Urban Studies, Political Science, Economics, Business Administration, Psychology, and History.

Minimum Required	12
<i>Elective Courses</i>	
570:702 School Business Administration	3
570:704 Administration Organization in Education	3
570:730 Seminar in School Administration	4
570:731 Seminar: Problems of the School Administrator	3
570:732 Organizational Communications and the School Administrator	4
570:733 The Educational Administrator and Planned Change	4
780:685 School Administrator Communication Design in the Mass Media	4
570:850-851-852 Educational Administrative Internship	9
Minimum Required	4

Grand Total Required Hours 90

Other Requirements

The candidate will engage in a period of full-time study for at least one quarter. This requirement may be fulfilled during one full summer session.

The College of Business Administration

ADMISSION REQUIREMENTS — GRADUATE PROGRAMS IN BUSINESS

To be considered for admission into the Master of Business Administration, Master of Science in Accounting, or Master of Science in Management programs in the College of Business Administration, the applicant must meet *one* of the following three requirements:

1. hold a domestic baccalaureate degree from a regionally accredited college or university and have a total score of 1,000 or more points based upon the overall undergraduate grade (A=4.0) point average (GPA) times 200 plus the Graduate Management Admissions Test (GMAT) score.

or

2. hold a domestic or baccalaureate degree from a regionally accredited college or university and have a total of 1,050 or more points based upon the Junior-Senior (i.e. last 64 semester or 96 quarter hours) GPA (A=4.0) years times 200 plus the GMAT score.

or

3. hold a degree from outside the United States and have an academic standing of first or second class, satisfactory evidence of competence in English, and a score of at least 450 on the GMAT.

Those applicants who meet requirements 1 or 2 and have a GMAT score of at least 450 are recommended for admission with the classification "Full Graduate Status" under the Graduate School regulations of the University provided that they have a 2.75 overall undergraduate GPA (A=4.0) or a 3.0 GPA for the Junior-Senior years. Those applicants who meet requirements 1 or 2 but do not have a GMAT score of at least 450 and a 2.75 overall undergraduate GPA (A=4.0) or a 3.0 GPA for the Junior-Senior years are recommended for admission with "Special Graduate Status". Those meeting requirement 3 are recommended for admission with "Special Graduate Status". All individuals admitted with "Special Graduate Status" who have not attained an overall 3.0 GPA upon the completion of 18 graduate credit hours will be dismissed from the program.

In rare instances applicants who do not meet requirements 1, 2, or 3 can be considered for admission. For consideration to be given, the applicant must petition, in writing, the Director of Graduate Business Programs giving forth those reasons relevant to his situation which demonstrate the likelihood of "high promise of success".

College of Business Administration

The College of Business Administration offers graduate programs which lead to the degrees of Master of Business Administration (MBA), Master of Science in Accounting (MS), and Master of Science in Management (MS). 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. During its long tradition, the college has sought to fulfill the educational and professional needs of its students, the community, and area businesses.

Housed within the College of Business Administration are the *Akron Business and Economic Review* and its editor along with the Bureau of Organizational Development. Both have been instrumental in enabling the college to pursue its objectives of instructional excellence, basic research, and community service. The general goal of the Bureau of Organizational Development is to update the organizational skills of area managers in all types of organizations and at all levels. The Bureau is prepared to cooperate with business, government, professional and service groups in evaluating and analyzing their specific needs, designing programs, and coordinating these programs to meet the particular needs of these groups.

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 as well as some concentration in one of those areas. The five MBA areas of concentration are: Accounting, Finance, Management, Marketing, and International Business.

There are three phases of coursework, (Phase I — preparatory; Phase II — core; and Phase III — major concentration) in the MBA program which consists of 75 to 83 quarter hours of graduate credit depending upon the area of concentration chosen and whether the paper option is elected. For those having previous Business Administration and Economics undergraduate coursework, advanced standing can result in the waiver of up to 27 Phase I course hours, thus leaving the student with a graduate program of 48 to 56 hours depending upon the concentration selected and whether the paper option is elected. The time limit for completing the MBA degree is five years and a minimum of a 3.0 grade point average for all coursework must be attained.

Phase I: MBA Preparatory Courses.

Those students not having a Business Administration undergraduate degree will be required to take Phase I courses. However, any student with undergraduate course work equivalent to Phase I courses can be awarded advanced standing and some or all of Phase I courses can be waived. The Phase I preparation course requirements (or equivalents) are:

	<i>Credits</i>
325:600 Foundation of Economic Analysis	4
620:601 Financial Accounting	5
640:602 Managerial Finance	5
650:601 Quantitative Decision-Making	5
650:600 Management Concepts, Practice, and Theory	4
660:600 Managerial Marketing	4
Phase I Total	27

Phase II: MBA Core Courses

The Phase II courses listed below are required of all students seeking the MBA degree.

620:610 Accounting Management and Control	5
640:650 Administering Costs and Prices	5
640:655 Government and Business	5
640:674 Financial Management and Policy	5
650:640 Quantitative Methods in Operations Mgmt.	4
660:660 Marketing Management and Policy	4
650:658 Organizational Behavior	4
650:684 Business Strategy and Policy	4
Phase II Total	36

Phase III: Area of Concentration Courses

There are five areas of concentration in the MBA program from which the student must select one. The course and credit hour requirements vary by area of concentration and each has a Master's report (paper) option. Prior to the selection of the paper non-paper option, the student is required to consult with the appropriate department chairman or his designate. Generally, those who have a previous Business Administration background will be requested to follow the paper option. The Phase III areas of concentration and respective requirements follow:

I. MBA Accounting Concentration — elect A or B.

	<i>Credits</i>
<i>A. Paper option</i>	
620:637 Advanced Accounting Theory	5
Approved Electives	5
620:698 Seminar in Accounting	5
Total	15

B. Non-paper option

620:637 Advanced Accounting Theory	5
Approved Electives	15
Total	20

II. MBA Finance Concentration — elect A or B

	<i>Credits</i>
<i>A. Paper option</i>	
Approved Electives	10
640:698 Seminar in Finance	5
Total	15

B. Non-paper option

Approved Electives	20
Total	20

III. MBA Marketing Concentration — elect A or B

	<i>Credits</i>
<i>A. Paper option</i>	
Approved Electives	8
660:699 Seminar in Marketing	4
Total	12

B. Non-paper option

Approved Electives	16
Total	16

IV. MBA Management Concentration — elect A or B

	<i>Credits</i>
<i>A. Paper option</i>	
650:670 Organization Theory & Policy	3
Approved Electives	5
650:698 Seminar in Management	5
Total	13

B. Non-paper option

650:670 Organization Theory & Policy	3
Approved Electives	13
Total	16

V. MBA International Business Concentration — elect A or B

	<i>Credits</i>
<i>A. Paper option</i>	
Reading and conversational proficiency in one language other than English	
Approved Electives	8
660:689 Seminar in International Business	4
Total	12

B. Non-paper option

Reading and conversational proficiency in one language other than English	
Approved Electives	16
Total	16

**MASTER OF SCIENCE IN
MANAGEMENT**

The Master of Science in Management program is designed to provide those students with strong quantitative backgrounds an opportunity to pursue

advanced study utilizing their previously acquired knowledge; specifically, students with undergraduate training in engineering, mathematics, and the physical sciences will have the opportunity to apply their skills to management problem solving and decision making along quantitative lines. There are three phases of course work. Phase I consists of the MBA preparatory courses. Those students having equivalent Phase I undergraduate course work can be awarded advanced standing and some or all of the Phase I requirements can be waived. Phase II consists of select electives and Phase III is comprised of required courses. Those students desiring to earn the MS in Management must complete the program within a five-year period with at least a 3.00 grade point average.

	<i>Credits</i>
<i>Phase I: MBA Preparatory Courses (or equivalent)</i>	
All MBA Phase I Courses	Phase I Total 27
<i>Phase II: MS in Management Elective</i>	
2 of 3 Required:	
620:610 Accounting Management and Control	5
640:674 Financial Management and Policy	5
660:660 Marketing Management and Policy	4
	<hr/>
	Phase II Total 9-10
<i>Phase III: MS in Management Required Courses</i>	
325:611 Micro-Economic Theory	4
650:547 Advanced Statistics	3
650:663 Industrial Relations	3
650:665 Executive Decisions	3
650:666 Operations Research	3
650:667 Manufacturing and Operation Analysis	3
650:668 Administrative Behavior and Methods	3
650:669 The Leadership Role in Organization	3
650:670 Organizational Theory and Policy Formulation	3
650:675 Applied Industrial Statistics I	3
650:676 Applied Industrial Statistics II	3
650:698 Seminar in Management	5
	<hr/>
	Phase III Total 39

MASTER OF SCIENCE IN ACCOUNTING

The Master of Science in Accounting program is designed to give the student a limited exposure to the functional areas of business and a detailed concentration in Accounting. There are three phases of course work. Phase I consists of the MBA and other specialized preparatory courses. Any student with equivalent undergraduate course work can be awarded advanced standing and some or all of the requirements can be waived. Phase II consists of the Accounting Core Courses and all are required. Phase III is the elective phase where the student can elect the paper option or non-paper option. Those students desiring to earn the MS in Accounting must complete the program within a five-year period with at least 3.00 grade point average/or all course work taken.

	<i>Credits</i>
<i>Phase I — Preparatory Courses (or equivalent)</i>	
All MBA Phase I courses	27
	plus
620:290 Cost Accounting	4
620:318 Intermediate Accounting I	5
620:318 Intermediate Accounting II	5
640:321 Business Law I	5
640:322 Business Law II	4
	<hr/>
	Phase I Total 50
<i>Phase II — MS in Accounting Core Courses</i>	
620:610 Accounting Management & Control	5
620:637 Advanced Accounting Theory	5
620:655 Information Systems	5
640:650 Administering Costs & Prices	5
640:674 Financial Management & Policy	5
	<hr/>
	Phase II Total 25
	plus
<i>Phase III Electives — elect A or B</i>	
<i>A. Paper option</i>	
620 :698 Seminar in Accounting	5
Approved Electives	15
	<hr/>
	Total 20
<i>B. Non-paper option</i>	
Approved Electives	25
	<hr/>
	Total 25

The College of Fine And Applied Arts

THE MASTER'S DEGREE

HOME ECONOMICS AND FAMILY ECOLOGY

A program of study leading to the Masters of Arts in Home Economics and Family Ecology degree with emphasis in Family Development or Child Development. Prior to acceptance in the program the student must meet the following requirements:

1. the general requirements for admission to the Graduate School.
2. 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 requirements, the student will be expected to complete:

1. The course of study, as outlined below, with a minimum of 48 credit hours.

2. A thesis of 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. It may be a creative, historical or experimental design. The *internship* option includes the design, development, implementation and evaluation of original and creative programming, resource material or experimental methodology pertinent to a community related program which emphasizes the managerial aspects of the individual, family or family and child.

3. Twelve hours must be selected in a cognate field outside the major area. These courses, selected in consultation with the advisory committee, must represent a cohesive focus pertaining the student's area of preparation and professional goals. Suggested cognate areas include counseling and guidance, mass media, psychology, sociology or special education.

4. Upon completion of approximately twenty-five hours of graduate study, the candidate must submit a written proposal for either the thesis or internship option.

5. Upon completion of at least thirty hours of study, the student will be expected to pass a written and oral comprehensive examination over both major and minor areas. The examination will be administered by the student's advisory committee.

6. The student should apply for Admission to Candidacy upon successful completion of a) thirty

hours of study, b) one oral and written comprehensive examination and c) an approved perspective for a thesis or internship.

EMPHASIS IN CHILD DEVELOPMENT

<i>Core Program</i>	<i>Credits</i>
740:501 Family Patterns in Economically Deprived Home	3
740:560 Org. and Supr. of Child Care Centers	3
740:585 Seminar: Parent/Child Relations	3
740:616 Infant and Child Nutrition	3
740:660 Programming Child Development Centers	3
740:665 Development in Infancy	3
740:682 Seminar: Analysis and Interpretation of Family Research	5

<i>Thesis Option</i>	
740:699 Thesis (Student must have background in research design and statistical analysis appropriate for research proposal.)	8

<i>Internship Option</i>	
740:690 Internship (Student must have 740:342 (Community Involvement) or equivalent.)	8

Electives in a Field Outside of Home Economics and Family Ecology 12

Free Electives 5

Minimum Total Hours of Credit 48

EMPHASIS IN FAMILY DEVELOPMENT

<i>Core Program</i>	<i>Credits</i>
740:501 Family Patterns in Economically Deprived Home	3
740:585 Seminar: Parent/Child Relations	3
740:601 Family in Transition	3
740:602 Family: Establishment and Adjustment	3
740:603 Family: Middle and Later Years	3
740:651 Family Law	3
740:682 Seminar: Analysis and Interpretation of Family Research	5

<i>Thesis Option</i>	
740:699 Thesis (Student must have background in research design and statistical analysis appropriate for research proposal)	8

<i>Internship Option</i>	
740:690 Internship (Student must have 740:342 (Community Involvement or equivalent)	8

D. Cognate Elect 6-7*

Cognate electives are selected by the student in consultation with his or her advisor. Students are encouraged to elect non-music graduate course offerings which have relevance or special interest to the candidate.

Up to seven hours of Applied study may be applied to the elective requirements.

Total 49

A program of study leading to the Master of Arts degree in Speech Pathology and Audiology is offered by the Department. The program may lead to certification by the American Speech and Hearing Association in speech pathology and/or audiology.

Before admission to any of the programs within the department, the student must:

1. Meet the general requirements for admission to the graduate school.

	<i>Credits</i>
Electives in a Field Outside of Home Economics and Family Ecology	12
Free Electives	5
Minimum Total Hours of Credit	48

MUSIC

The degree Master of Music is offered by the Department of Music with options for Music Education, Performance, Composition, and Music History and Literature. Before undertaking such a program, the student must show that he has:

1. met the general requirements for admission to the Graduate School.

2. met the standard requirements for an undergraduate major in the area of proposed graduate specialty or that he has performed work which the department head approved as equivalent to an undergraduate major, and that he has maintained a 2.75 or better grade point average or 3.0 for the last two years, and a 3.0 average or better in his major field.

He is to demonstrate in an entrance examination satisfactory knowledge and ability in music history and literature, theory, aural skills, keyboard and major instrument performing skills. Remedial courses are to be taken if indicated by this examination.

For the Performance option in Voice, French, Italian and German are required. If a student has lack of background in any of these language requirements, auditing of undergraduate courses is required.

After completion of all course work, the student must pass a comprehensive examination covering the materials of his graduate program. The following are specific requirements for each option: a thesis for the Music Education option, a recital and document for the Performance option, a composition for the Composition option, and a thesis for the Music History and Literature option. Recital and document, composition, or thesis must be submitted to the candidate's committee for approval.

Prospective students are to consult with the Coordinator of Graduate Studies in Music.

I. *Music Education Option*

	<i>Credits</i>
A. Music Core Courses	18
750:605 Seminar: Music in the Middle Ages and Renaissance	3
606 Seminar: Music in the 17th and 18th Centuries	3
607 Seminar: Music in the 19th and 20th Centuries	3
555 Advanced Conducting	3
752:5 Applied Music	6
751: Ensemble (three quarters)	0

	<i>Credits</i>
B. Major Required Courses	19
750:614 Measurement and Evaluation in Music	3
611 Foundations and Principles of Music Education	4
612 Practices and Trends in Music Education	4
510:603 Techniques of Research	5
750:648 Masters Thesis	3

	<i>Credits</i>
C. Music Electives	6-7*
750:551 Introduction to Musicology	3
560/561/562/563/564 Repertoire and Pedagogy	4
601 Choral Literature	3
604 Development of Opera	3
608 Seminar: Music of the Western Hemisphere	3
609 Techniques of 20th Century Composition	4
613 Music in the Urban Community	4
640 Advanced Problems in Music	2-7
752:642 Applied Composition	6

	<i>Credits</i>
D. Cognate Electives	6-7*

Note: Cognate electives should be satisfied generally with courses selected outside the field of music, and may be in Education (510-590), Sociology (385), or other areas for which the student has adequate prerequisite training or interest.

Total 49

* Elective hours are determined by the student and his advisors.

II. *Performance Option*

	<i>Credits</i>
A. Music Core Courses	24
750:605 Seminar in the Music of the Middle Ages and Renaissance	3
606 Seminar in the Music of the 17th and 18th Centuries	3
607 Seminar in the Music of the 19th and 20th Centuries	3
555 Advanced Conducting	3
752:5 Applied Music	12
751: Ensemble (three quarters)	0
B. Major Required Courses	11
750:560/561/562/563/564 Repertoire and Pedagogy	4
609 Techniques of 20th Century Composition	4
649 Masters Recital	3

	<i>Credits</i>
C. Music Electives	6-7*
750:551 Introduction to Musicology	3
601 Choral Literature	3
604 Development of Opera	3
608 Seminar in Music of the Western Hemisphere	3
614 Measurement and Evaluation in Music	3
611 Foundations and Principles of Music Education	4
612 Practices and Trends in Music Education	4
510:603 Techniques of Research	5
750:640 Advanced Problems in Music	2-7
752:642 Applied Composition	2-7

D. Cognate Electives

Credits
6-7*

Cognate electives are selected by the student in consultation with his or her advisor. Students are encouraged to elect non-music graduate course offerings which have relevance or special interest to the candidate.

Up to seven hours of Applied music study may be applied to the elective requirement.

Total 49

*Elective hours are determined by the student and his advisor.

III. Composition Option

A. Music Core Courses

Credits
24

750:605 Seminar in Music of Middle Ages and Renaissance	3
606 Seminar in Music of 17th and 18th Centuries	3
607 Seminar in Music of 19th and 20th Centuries	3
555 Advanced Conducting	3
752:642 Applied Composition	12
751: Ensemble (three quarters)	0

B. Major Required Courses

11

750:601 Choral Literature	3
609 Techniques of 20th Century Composition	4
648 Masters Thesis	3
647 Masters Chamber Recital	1

C. Music Electives

6-7*

750:551 Introduction to Musicology	3
604 Development of Opera	3
608 Seminar: Music of the Western Hemisphere	3
560/561/562/563/564 Repertoire and Pedagogy	4
613 Music in the Urban Community	4
614 Measurement and Evaluation in Music	3
611 Foundations and Principles of Music Education	4
612 Practices and Trends in Music Education	4
510:603 Techniques and Research	5
750:640 Advanced Problems in Music	2-7
752:5 Applied Music	2-7

D. Cognate Elect

6-7*

Cognate electives are selected by the student in consultation with his or her advisor. Students are encouraged to elect non-music graduate course offerings which have relevance or special interest to the candidate.

Up to seven hours of Applied study may be applied to the elective requirements.

Total 49

*Elective hours are determined by the student and his advisor.

IV. Music History and Literature Option

Credit

A. Major Core Courses

24

750:605 Seminar in Music of Middle Ages and Renaissance	3
606 Seminar in Music of 17th and 18th Centuries	3
607 Seminar in Music of 19th and 20th Centuries	3
555 Advanced Conducting	3
640 Advanced Problems in Music	12
751: Ensemble (three quarters)	0

B. Major Required Courses

13

750:551 Introduction to Musicology	3
553 Bibliography and Research	3
609 Techniques of 20th Century Composition	4
648 Masters Thesis	3

C. Music Electives

6-7*

750:601 Choral Literature	3
604 Development of Opera	3
608 Seminar: Music of the Western Hemisphere	3
614 Measurement and Evaluation in Music	3
611 Foundations and Principles of Music Education	4
612 Practices and Trends in Music Education	4
560:561/562/563/564 Repertoire and Pedagogy	4
752:642 Applied Composition	2-7
752:5 Applied Music	0

D. Cognate Electives

6-7*

Cognate electives are selected by the student in consultation with his or her advisor. Students are encouraged to elect non-music graduate course offerings which have relevance or special interest to the candidate.

Up to seven hours of Applied study may be applied to the elective requirements.

Total 49

*Elective hours are determined by the professional needs of the individual student.

SPEECH PATHOLOGY AND
AUDIOLOGY

A program of study leading to the Master of Arts degree in Speech Pathology and Audiology is offered by the Department. The program may lead to certification by the American Speech and Hearing Association in speech pathology and/or audiology.

Before admission to any of the programs within the department, the student must:

1. Meet the general requirements for admission to the graduate school.
2. Meet the requirements for an undergraduate major in the area of proposed graduate specialty or

complete undergraduate work within a calendar year of application.

The student must complete a course of study with a minimum of 48 credits, including thesis — or a minimum of 45 credits plus the non-thesis option outlined below.

The student must prepare a written thesis approved by the candidate's committee or select a non-thesis option to consist of 12 credits beyond the 45 previously indicated. It may be recommended that this option include up to 24 credits for those students anticipating dual ASHA certification; that is, clinical certification in both the areas of speech pathology and audiology.

Academic requirements within the department include: (1) All students are required to take 770:611 and either 770:612 or 770:694; (2) All students must take six credits of 770:656, one credit of 770:650, and an additional three credits from among the following: 770:651, 770:652, 770:653, 770:654, or 770:655; (3) audiology majors must take six credits in speech pathology; and speech pathology majors must take six credits in audiology. It is recommended that speech pathology majors elect 770:639 as the first of their audiology courses.

SPEECH, THEATRE ARTS AND MASS MEDIA- COMMUNICATION

Programs of study leading to the Master of Arts Degree in the following fields are offered by the Department of Theatre Arts and Dance and by the Department of Mass Media-Communication, respectively:

1. General Speech
2. Communication and Rhetoric
3. Mass Media
4. Theatre Arts

Before undertaking any of these programs, the student should consult with the appropriate department. The following are common requirements:

1. the general requirements for admission to the Graduate School;
2. the standard requirements for an undergraduate major in the area of proposed graduate work, or that he has performed work with which the department head approved as equivalent to an undergraduate major.

In addition to the general requirements for the degree listed in the preceding pages, a course of study of a minimum of 45 credits must be completed. Thesis credit, ranging from 3 to 9 credits, must be earned while preparing the Master's thesis. A written thesis (creative, historical, critical, or experimental) must be approved by the candidate's committee.

There is no *foreign language* required for these Master of Arts degrees. To fulfill the *residence requirement*, work must be completed within a five-year period from the date of undertaking initial course work. This period will include at least three consecutive quarters in residence.

The student, before he applies for *advancement to candidacy*, must complete a comprehensive written and oral examination on his course work. The student, upon completion of his Master's thesis, must satisfactorily pass an oral examination on that thesis to be administered by his graduate committee.

I. *General Speech Concentration: Course of Study*

A. Required Courses	<i>Credits</i>
780:600 Introduction to Graduate Studies	3
699 Research and Thesis	3-9

(Typically, one may expect six quarter hours of credit to be earned in Research and Thesis)

B. The Remaining courses shall be chosen from among the offerings in the areas of Communication and Rhetoric, Mass Media, and Theater Arts. The candidate and his adviser shall make the following options: (1) a minimum of 12 credit hours from each of the three areas of concentration; (2) more credit hours may be taken about the minimum from any one of the areas that best fits the interests and talents of the candidate; (3) selected cognate courses may be taken at the option of the candidate and his adviser.

C. It shall be understood by the prospective candidate in General Speech that 45 quarter hours is the *minimum* that must be earned beyond the *required courses* cited above.

II. *Communication and Rhetoric Concentration: Course of Study*

An emphasis in Communication and Rhetoric coupled with selected electives will allow the student significant depth and latitude toward vocational pursuit. Among those vocational endeavors may be listed teaching in the high school and university, public relations and advertising, communication consultant work, personnel management, and related business occupations.

Departmental required courses:

	<i>Credits</i>
780:600 Introduction to Graduate Studies	3
780:699 Research and Thesis	3-9

(Typically, one may expect six quarter hours to be earned in Research and Thesis.)

The following internal areas of emphasis may be selected by the student commensurate with vocational interest. In instances where a course appears in more than one emphasis category it is understood that the content may have multiple application. The

student's program in Communication and Rhetoric will consist of courses in the area of emphasis, electives, and required Departmental courses. This combination should equal 53 credit hours.

<i>Educational Theory</i>	<i>Credits</i>
760:540 Direction of Forensic Activities	3
760:545 Theory of Argument	3
760:554 Group Processes and Conference Leadership	4
760:605 Graduate Research in Mass Media-Communication (may be repeated for 9 credit hours — student's option)	3-9
760:606 Communication Problems in the Basic Speech Course (required of all students teaching 110:108 Effective Speaking)	1
760:610 Seminar in Communication Problems (may be repeated for 6 credit hours)	3-6
760:631 Speech-Communication for the Educational Administrator Electives*	3

Communication Theory and Research Methods

760:554 Group Processes and Conference Leadership	4
760:601 Introduction to Quantitative Research in Speech Communication	4
760:605 Graduate Research in Mass Media Communication (may be repeated for 9 credit hours — student's option)	3-9
760:610 Seminar in Communication Problems (may be repeated for 6 credit hours)	3-6
760:680 Special Problems in Communication and Mass Media (may be repeated for 6 credit hours — student's option)	3-6
760:681 Advanced Persuasion and Propaganda Analysis	3
760:684 Survey of Communication Theory Electives*	3

Criticism

760:545 Theory of Argument	3
760:590 Introduction to the Analysis of Public Discourse	4
760:591 Introduction to Rhetorical Theory	3
760:605 Graduate Research in Mass Media Communication (may be repeated for 9 credit hours — student's option)	3-9
760:610 Seminar in Communication Problems (may be repeated for 6 credit hours)	3-6
760:681 Advanced Persuasion and Propaganda Analysis	3
780:690 Classical Rhetorical Theory	3
780:691-692 Critical Studies in American Public Address I, and II (3 credit hours each)	6
760:695 Seminar in Rhetorical Criticism (may be repeated for 8 credit hours — the student may take either 695 or 691-692) Electives*	4-8

*Electives include other courses from the area of Communication and Rhetoric not listed in the chosen area of emphasis, offerings from other Departmental areas, and related courses from outside the Department.

III. *Mass Media Concentration: Course of Study*

A. Required Courses	<i>Credits</i>
780:600 Introduction to Graduate Studies	3
699 Research and Thesis	3-9

(Typically, one may expect six quarter hours of credit to be earned in Research and Thesis)

B. The remaining courses shall be chosen by the candidate under the direction of his adviser from (1) the Mass Media courses cited in the catalogue descriptions, (2) appropriate Communication and Rhetoric courses, or (3) appropriate Theatre Arts courses. A minimum of 45 credit hours must be earned beyond thesis credit.

C. Cognate field courses from outside the department may be chosen if they are appropriate to the special interest of the candidate and meet the approval of the candidate's adviser.

D. Thesis options (see the general description).

IV. *Theatre Arts Concentration: Course of Study*

A. Required Courses	<i>Credits</i>
780:600 Introduction to Graduate Studies	3
699 Research and Thesis	3-9

(The Graduate Faculty will assign the actual number with approval of prospectus. Typically, six credits are earned for a thesis.)

B. A minimum of 45 additional credits shall be earned from the following courses or from approved courses in cognate fields:

780:560 Dramatic Criticism	4
566 Advanced Problems in Lighting	3
567 Contemporary Theatre Styles	4
568 Children's Theatre Workshop	4-8
605 Graduate Research in Speech and Theatre Arts	9**
636 Special Problems in Oral Interpretation	4
641 Problems in Directing	4
642 Problems in Contemporary Acting	4
780:660 Advanced Technical Theatre	3
663 Seminar in American Theatre	3
664 Seminar in <i>commedia dell' Arte</i>	3
665 Seminar in Theatre Audience	3
667-69 Studies in Dramatic Practice (3 credits each)	9

**This course may be used, in addition to an approved individual research project, for a group study of a designated, specialized topic, such as a seminar on Brecht, the Irish Theatre, Black Theatre, *et cetera*.

C. There is no specific number of courses in cognate fields required. Students may elect related graduate courses in the department or in English, psychology, art, or music.

The College of Nursing

THE MASTERS DEGREE

THE MASTER OF SCIENCE IN NURSING DEGREE PROGRAM

A. *Summary of Program Characteristics*

1. Objectives and Philosophy

The Master of Science in Nursing Degree Program is a joint venture between The University of Akron and Kent State University. The goal of the program will be to prepare nurses in a clinical major, e.g., Nursing of the Adult, Psychiatric Mental Health Nursing, or Family Health Nursing. The graduate will be prepared either for a teaching, administrative or advanced clinical specialist nursing position.

The focus of the program will be on the advancement of nursing theories by defining the parameters of nursing at the graduate level and by the generation, application, and testing of knowledge to promote improved health care through the practices and research of faculty and students within the framework of current and emerging health care systems.

a. Objectives

- 1) Expertise in a concentrated area of clinical nursing practice. Clinical majors will be available in: Nursing of the Adult, Psychiatric Mental Health Nursing, Family Health Nursing, Nursing of Children, Nursing of the Elderly, Community Health, and Maternity Nursing.
- 2) Competence in the practice of family and community health nursing within the context of a clinical major.
- 3) Competence in a functional area: teaching, administration, or advanced clinical specialization.
- 4) Competence in the use of scientific methods and/or scientific nursing theory to study problems relevant to nursing.
- 5) Ability to collaborate with consumers and health care providers in planning and implementing care.

6) Ability to be innovative, flexible and individualized in the pursuit of knowledge.

7) Ability to value social consciousness, inquisitiveness, diversity, and the examination of existing norms.

b. Philosophy

The faculty believe that graduate education is predicated on baccalaureate preparation in nursing. Although the primary emphasis of the program is to prepare a practitioner in nursing, it will also provide a basis for doctoral study for those who wish to pursue further graduate work.

The faculty also believe that advanced study in nursing should be designed to promote the capabilities of individuals, families, and populations and to encourage their knowledgeable participation in the management of their own health problems.

A. *Summary of*

Program Characteristics. continued

b. Philosophy, continued

The perspective of health care settings are eclectic, pluralistic and complex, and acknowledge the individual, the family, and the community as the focus of care and study. They embrace the ecological approach toward achieving a high level of health for community members whereby each individual must be studied in terms of his total environment to assist him in sustaining that quality of life which enables him to survive and prevail.

The faculty believe that the highest quality of graduate nursing education is that which enables individuals, families, and communities to become self-sustaining through the development of human potential and human environmental resources. This requires that the unit and its individual members maintain a dynamic balance and purposeful direc-

tion within the environment wherein they function.

The core content of graduate education would then include theoretical and clinical constructs about man's physiological, psychological, cultural and social responses to life processes, life experiences, and aspirations toward optimal health. Graduate study in nursing would prepare a scholarly, specialized nurse capable of assessing and implementing leadership responsibilities in current and emerging health care systems.

2. Major Components of the Curriculum

The program will be two academic years in length and provide instruction in five major areas: (a) clinical concentration in a specialty area, (b) research, (c) the functional areas of teaching, administration and advanced clinical specialization, (d) cognate courses, and (e) the theoretical basis for nursing practice.

a. Clinical Concentrations

The program will provide opportunities for students to develop competence in specialized areas of nursing practice. Students will select their specialization within the framework of one of the following areas: Nursing of the Adult (Part-time), Psychiatric Mental Health Nursing, or Family Health Nursing. Each clinical major will be implemented through four courses (20 credits), which span both years of the curriculum. Theoretical content and intensive related and supervised clinical experiences will be provided.

b. Research

The research component fosters inquiry directed toward the solution of clinical nursing problems. This component will be comprised of two courses in Clinical Inquiry taught by the nursing faculty and taken by all students regardless of clinical major and one Statistics course (Cognate) provided by other selected university departments. Additionally, each student will elect a thesis or non-thesis option in the second year. (15-16 credits.)

c. Functional Area

Options will be provided for study of

a functional area, either teaching, administration or advanced clinical specialization. The schools of nursing will develop the applied component of the functional area, and these courses will include supervised clinical opportunities through which students will gain expertise. There will be ten credits allocated to the functional option which includes the equivalent of two courses and one practicum in the second year. The clinical specialist functional option will be developed to include clinical practice in each of these three courses. In addition, six-eight credits in related cognates will support this area.

A student may choose to use the ten-credit (or more) allocation in the second year to pursue a special area of interest, for example, advanced study in a science related to nursing, further preparation in research or independent clinical study.

d. Cognates

Students will select courses (totaling 19-21 credits) from natural, behavioral, or medical science areas. One of these courses will be Statistics, two courses will be related to the clinical major, two related to the functional area, and one will be elective.

e. Theoretical Basis for Nursing Practice

Two courses (eight credits) will be offered by the nursing faculty in the first year of the curriculum that are taken by all students regardless of clinical major. These courses will reflect such widely applicable theoretical constructs as: appraisal of physical, emotional, social, and cultural needs:

A. Summary of

Program Characteristics, continued

nursing diagnosis and the decision-making process; growth and development; man's adaptation to life crises and environmental forces; family and group dynamics; therapeutic communication; cultural needs; nursing diagnosis; health care education

through problem-solving for families and individuals to encourage self help; continuity and coordination of nursing care to clients and families; and application of research in clinical practice and use of epidemiologic methods in identifying researchable problems having implications for nursing. These courses will provide the framework for the integration of physiological, psychosocial, economic, political and cultural theoretical concepts applicable to clinical practice.

A student will be required to take the minimum credits in each major component area.

Additionally, electives in nursing will provide opportunities to individuals and strengthen the clinical nursing major. Examples of electives in nursing might be such topics as: Economics of Nursing Care, History of Nursing, Staffing Health Facilities, Legal Aspects of Nursing, Advanced Health Appraisal, Advanced Intensive Care Nursing, Trauma Nursing, and The Problem of Substance Abuse.

B. *Admission Criteria*

The joint graduate committee delineated the following admissions requirements for graduate program candidates:

1. Eligible for licensure by the State of Ohio Board of Nursing Education and Nurse Registration. (Licensure in the State of Ohio is required

before a student begins the clinical practicum in the first quarter.)

2. Baccalaureate degree in upper division nursing from an N.L.N. accredited school of nursing.
 3. A grade point average of 3.0 on a four-point scale from the under-graduate program.
 4. Satisfactory completion of an under-graduate statistics course and an elementary course in research methodology or equivalent. Individuals who do not meet the above criteria will be considered by an admissions committee, which may recommend evaluation by examination, further undergraduate study, or direct admission by waiver of criteria.
- C. *Student Advisement*

An advisor will assist students in selection of courses and evaluate undergraduate and/or transfer credits. A student will be assigned an advisor at the university to which he is admitted.

A student will be expected to select an advisor for the thesis or nonthesis option. Students who elect thesis are required to select a review committee. The thesis committee will be composed of three faculty, two (including the chairperson) from the university in which the student is enrolled and the third from the other university.

The School of Law

Stanley A. Samad, J.S.D., *Dean*
Albert S. Rakas, J.D., *Associate Dean*

OBJECTIVES

The purpose of the School of Law is to further the objectives of The University of Akron by providing a quality program of university education for Law and to pursue the following aims:

To prepare students for a career in the profession of law by imparting information concerning legal institutions, basic principles of the substantive and procedural law, and jurisprudential thought concerning the role of law in society.

To help to develop in students an active and critical attitude rather than a passive approach toward the rules of law and their social implications.

To develop in students a high sense of professional responsibility in terms of technical competency, appreciation of professional standards and the responsibility of the lawyer to achieve a more nearly perfect system of civil and criminal justice.

The School recommends each student for the Juris Doctor degree upon satisfactory completion of the requirements.

The School of Law was established on September 1, 1959 as the successor to the Akron Law School. Founded in 1921 as an independent evening law school, the Akron Law School produced two generations of successful members of the bench and bar, and 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 continued to offer a plan of part-time study of law with all classes scheduled during the evening hours. The completion in 1965 of a modern, new building to house the School of Law and College of Business Administration, and a realization by the University

of an impending shortage of opportunities for the study of law on a full-time basis, led to a decision to offer both day and evening programs in law.

The schedule of courses for full-time students is designed so that the Juris Doctor degree may be earned in nine quarters or three academic years. Attendance at the summer sessions is optional.

The schedule of courses for part-time evening students is designed so that the Juris Doctor Degree may be earned in four academic years consisting of four fall quarters, four winter quarters, four spring quarters, and three summer sessions. The normal academic load in the evening program is nine credits. And the summer sessions are an integral part of the program.

The schedule of courses has been designed by the faculty to provide a logical progression of subject matter, as well as reasonable freedom in the selection of elective courses. Students are encouraged to observe this schedule in planning their programs so that they can continue their advantageous progression of subject matter.

The primary purpose of students enrolling in the School of Law is to accrue fundamental knowledge of law and the role of law in society, interlaced with a grasp of the public responsibilities of the lawyer, enabling them to become attorneys and counsellors 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 presentation of their individual, corporate, or governmental clients, but who will also serve as architects of the future of society.

Students are trained to develop their powers of legal analysis and synthesis, to develop the technical skills of legal advocacy and legal draftsmanship, and to learn practical skills of research and the management of litigation.

PRE-LEGAL EDUCATION

A student expecting to enter the School of Law must hold a baccalaureate degree which has been granted by an accredited institution of higher learning. His undergraduate courses

should have developed his ability in expression and comprehension of the English language, afforded him basic information about human institutions and cultivated his ability to think creatively and critically, with thoroughness and intellectual curiosity.

Requirements are flexible for undergraduate study preceding legal education. However, it is generally recommended that students have a liberal arts background with majors in any of these fields: English, economics, history, mathematics, philosophy, political science, psychology, sociology or a science. Also, acceptance is granted to students with degrees in areas of business administration, education and engineering.

REQUIREMENTS FOR ADMISSION

An applicant for admission to the School of Law desiring to become a candidate for the degree of Juris Doctor must:

1. Be of good moral character.
2. Show evidence of the award of 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 degree.
3. Have taken, prior to admission, the Law School Admission Test and earned a satisfactory score.
4. Register with the Law School Data Assembly Service (LSDAS).

ADMISSION PROCEDURES

The School of Law accepts beginning students only in the fall quarter.

The procedures for securing admission are as follows:

1. Obtain an application form from the School of Law. It is recommended that both day and evening applicants apply and complete their applications (with LSAT and LSDAS) as soon as possible after October 1. Students will be admitted until the classes are filled. After that time, acceptable applicants will be placed on a waiting list. The School *estimates* that the day class will be filled by February 1; the evening class by March 1. Because the School considers each application as it is completed, there is no way of knowing whether classes will be closed before or after the above dates. During the past few years, the day class has been filled early in January. 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.

2. Submit to the School of Law, The University of Akron, an application fee of \$20 if never previously enrolled for credit courses at The University of Akron.

3. Arrange to take the Law School Admission Test (LSAT), which is given at the University and elsewhere, by making application to the Law School Admission Test, Educational Testing Service, Box 944, Princeton, New Jersey 08540.

4. Register with the Law School Data Assembly Service (LSDAS) by making application to the Law School Data Assembly Service, Educational Testing Service, Box 944, Princeton, New Jersey 08540. (An LSDAS registration form is contained in the Educational Testing Service packet of materials on the Law School Admission Test.)

File with the Law School Data Assembly Service a copy of the transcript of record from each college or university attended. (The LSDAS provides the School of Law an analysis of transcripts and forwards to the School of Law such analysis, copies (unofficial) of transcripts and LSAT scores.)

5. A personal interview with the Associate Dean of the School of Law may be required as a condition of admission; otherwise, the personal interview is optional.

6. IF ACCEPTED FOR ADMISSION TO THE JURIS DOCTOR DEGREE PROGRAM, the student must file with the School of Law *a final, official* (bears the raised Seal of the institution and the signature of the Registrar) *transcript of record showing the award of the baccalaureate degree*, mailed from the institution awarding the baccalaureate degree.

A "Certificate of Completion of Degree Requirements" is filed by the student with the School of Law *temporary* in lieu of an official transcript for those students satisfactorily completing baccalaureate degree requirements during summer sessions, but the formal award of the degree is conferred 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 of Law at the earliest time such transcript becomes available from the institution awarding the baccalaureate degree.

The official transcript, or, in cases where ap-

plicable, the "Certificate," should be received by the School of Law at least one week prior to the official registration period published in the University Calendar.

Students admitted to the Juris Doctor degree program are requested to file the official transcript *only after* receiving the authorized, signed Admissions Advisement form indicating actual admission to Juris Doctor degree candidacy of the School of Law.

The unofficial copy of transcript forwarded to the School of Law by the LSDAS does NOT constitute filing of transcript with the School of Law.

7. The School of Law reserves the right to refuse registration if registration forms are not filed by the announced deadlines as established by the Universitys. A late fee penalty is assessed if an exception is made and late registration permitted.

All inquiries and correspondence pertaining to admission should be sent to:

Associate Dean
School of Law
The University of Akron
Akron, Ohio 44325

ADMISSION TO ADVANCED STANDING

A law student who has completed part of his law course at a school on the approved list of the Section of Legal Education and Admissions to the Bar, American Bar Association, and who is eligible for readmission to his former law school, may be admitted to advanced standing. A student desiring admission to advanced standing shall (1) obtain from the Dean of his former law school a letter setting forth the fact that he is eligible for further instruction, and consent to the transfer; (2) submit evidence of meeting the admission requirements of The University of Akron School of Law; (3) present an official transcript of all work completed at his previous law school. Credit to be given for the prior law school work shall be that determined by the Dean of the School of Law.

AUDITORS

Members of the Bar and graduates of law schools who are not yet members of the Bar may, with the permission of the Dean of the School of Law, enroll for a course without credit. The auditor is required to do all the work prescribed for the regular student enrolled for credit except taking examinations. The fee for the auditor is the same as for a regular student.

STANDARDS OF ACADEMIC WORK

The following system of grades is used in recording the quality of a student's academic work:

Grade	Quality Points Per Credit
A Excellent	4
B Good	3
C Satisfactory	2
D Poor	1
F Failed	0

Grade	Quality Points Per Credit
I Incomplete	0
IP In Progress	0
PI Permanent Incomplete	0
CR Credit	*
NC No Credit	0

*Not calculated in cumulative average.

Academic averages are computed by dividing the quality points achieved by the credits attempted. When a course is failed and repeated, the credits and the quality points involved each time are included in the computation as if the repeated course were an independent course.

A quality point ratio of less than 2.0 is unsatisfactory. A law student whose scholarship is unsatisfactory may be placed on probation, suspended for a definite period of time or dropped from the School at any time by the Dean.

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 permission of the Dean or is dropped from any course by the Dean, he is given a failing grade in the course and it is counted as work attempted.

REQUIREMENTS FOR A DEGREE

The Juris Doctor degree is conferred upon students of good moral character who have been recommended by the Dean and faculty of the School of Law and who have:

1. Completed satisfactorily all required courses, seminars and electives to earn at least 126 credits.
2. Attained at least a 2.0 average for all courses taken and at least a 2.0 average for the senior year.
3. Spent their last year in residence at the University unless excused by the Dean.

FEES AND EXPENSES

Fees are as Follows:

Application fee, nonrefundable; \$20.00

Fees for residents of Ohio, per credit;	\$24.00
Fees for nonresidents of Ohio, per credit;	\$30.00

Students taking less than nine credits in any quarter pay a General Fee of \$5.00 for that quarter. Students taking nine or more credits pay \$15.00.

For those students living in University housing, the cost is \$1,476 for three quarters. This fee includes room (two students per room), bed linen, and twenty meals per week for three quarters.

Books (new) will cost approximately \$140 per year for full-time students and about \$95 per year for part-time students.

LOAN FUNDS

University loans by which tuition and maintenance fees may be paid over the quarter in periodic installments may be requested through the Cashier's Office. Normally, these loans do not exceed one-half the fees due in a quarter.

Law students may apply for the following loans: National Defense Student Loans, the Philip H. Schneider Scholarship Loan Fund, Ohio Higher Educational Assistance Commission Loans (available to full-time students who are residents of Ohio), and the American Bar Association Fund Federally-insured Loan for Legal Education.

Application for loans should be obtained from the Student Financial Aids Office, The University of Akron, well in advance of the beginning of the quarter.

Loans for emergency purposes will be considered during the academic year.

LIBRARY

The law library is the laboratory of the School of Law and is most important in providing the law student with materials for research and study. The law library contains approximately 109,000 volumes. University libraries comprising more than 655,000 books, tapes, publications and other items are available to law students.

— Credits refers to number of quarter credits assigned to various courses.

ENROLLMENT IN OTHER SCHOOLS

A student who is enrolled in the program leading to the Juris Doctor degree may not take work in any other school, college or course of instruction, unless he first obtains the written consent of the Dean. No student may attend a course designed as a review for the bar examination until he has completed all course requirements for the Juris Doctor Degree.

BAR ADMISSION REQUIREMENTS

Each student entering the School of Law is encouraged to read Rule XVII of the Supreme Court of Ohio, Admission to the Practice of Law, or the comparable rule of court in the jurisdiction wherein he desires to take the bar examination and practice law.

The Supreme Court of Ohio requires that each student entering a law school and who intends to practice law in Ohio shall file within 120 days from the beginning day of the fall quarter an application for registration as a law student, evidence of his meeting the pre-legal educational requirements established by the Rule, a legible set of fingerprints on a prescribed form and filing fee of \$20.00. As a condition for taking the bar examination, the applicant must file an application not less than 90 days prior to the date of the bar examination, a certificate of the School of Law that the student has completed or will complete all courses required by the Rule and a filing fee of \$40.00. The Rule requires that a student be tested in the following courses: Business Associations (including Agency, Partnerships and Private Corporations), Constitutional Law, Contracts, Criminal Law, Equity (including Trusts), Evidence, Federal Taxation, Negotiable Instruments, Pleading and Practice, Property (Real and Personal), Torts and Wills. Further, the student must be certified as having had instruction in Legal Ethics.

The appropriate forms may be obtained from the School of Law on request. It is the responsibility of the student to initiate a request for, to execute properly, and to file timely, the requisite forms.

THE HONOR SYSTEM

Consistent with the aim of training professionally responsible lawyers, and in recognition of the importance of honor and integrity of the individual lawyer, the faculty has placed the responsibility of honorable conduct on the individual student, and the administration of the honor system on a council of students composed of Student Bar Association officers and class representatives.

One noteworthy feature of the honor system is that each examination is unproctored. Entering students are urged to familiarize themselves with the Honor Code.

LAW STUDENT ASSOCIATIONS

The Student Bar Association is designed to introduce law students to the professional re-

sponsibilities and problems they will face upon admission to the bar, to provide closer integration among the future lawyers and present-day leaders of the legal profession, promote professional responsibility and to acquaint law students with the opportunities and obligations to improve the administration of justice through the organized bar. In addition, the Student Bar Association provides a form of student government and promotes good fellowship.

The Grant Chapter, Phi Alpha Delta Law Fraternity was established in 1962. This fraternity has as its objectives the advancement of the legal profession, the attainment of a high standard of scholarship and the development of a spirit of good fellowship among its members. Law students in good standing may become pledges after the first quarter and active members after the second quarter.

The Judge Florence E. Allen Chapter, Phi Delta Delta Legal Fraternity (International) for women was established in 1965. The objectives of this fraternity are to promote the highest professional standards among women law students and women in the legal profession and to promote the achievement of its members.

An appellate moot court program known as BRACON'S INN is offered to all students. BRACON'S INN has as its purpose the development of skills in legal research, brief writing and oral advocacy before a moot appellate tribunal. BRACON'S INN is student-managed.

The wives of law students have established an organization called Law Wives. This association holds social events and provides services for wives of entering students, for the Student Bar Association, and for the School.

THE AKRON LAW REVIEW ASSOCIATION

A board of student editors prepares and edits, with the advice of the faculty, *The Akron Law Review*, a semi-annual legal periodical devoted to legal research and commentary on the law. Membership on the board is limited to those students of superior academic achievement who desire to engage in legal research, analysis, writing, and editorship. Membership on the board of student editors is indicative not only of scholarship, but of uniquely valuable training in skills important to the profession of law.

SCHOLARSHIPS, HONORS AND AWARDS

Applications for scholarships may be obtained from the Assistant Dean of the School of Law. These applications should be submitted not later than May 1. No awards will be made until the student is accepted by the School of Law. Grants up to the equivalent of one year's fees may be made for an academic year, and may be considered for renewal, provided the student's performance is superior.

Tuition remission scholarships in the sum of \$15,000 are available for entering law students. These scholarships are renewable from year to year, on superior performance.

The Akron Bar Association Auxiliary Scholarship, established by the Akron Bar Association Auxiliary, provides an annual scholarship from principal and income not to exceed \$1,000 to an entering student in a full-time program of law study. The University Scholarship Committee, on the basis of scholarship, legal aptitude, character and need, and with the advice of the Dean of the School of Law shall make the selection, giving first preference to a resident of Summit County, Ohio. A recipient may apply for an annual renewal of the scholarship.

The Akron National Bank and Trust Company 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 American Law Book Company has authorized the West Publishing Company to award four titles of *Corpus Juris Secundum* to students of all classes who have made the most significant contribution to overall legal scholarship.

The W. H. Anderson Company, Publisher, awards to the highest ranking student in Corporations each year a copy of ANDERSON'S OHIO CORPORATION DESK BOOK, and to the highest ranking student in wills a copy of ADDAMS AND HOSFORD: OHIO PROBATE PRACTICE.

The Banks-Baldwin Law Publishing Company awards annually a copy of BALDWIN'S OHIO CIVIL PRACTICE MANUAL to the graduating law student displaying scholarship in the study of Code Pleading.

The Bracton's Inn Award is a fund established in 1971 by the Law Wives Club of the School of Law, of which the principal and income is to be used to support the program of Bracton's Inn (the Case Club of the School of Law) for awards, expenses of competition on the

local, regional and national level, and in any other way to promote competition and recognition of superior performance in the moot court program.

Mr. and Mrs. Evan B. Brewster have established an annual award in the sum of \$130.00, half of which is to assist a deserving law student who ranks in the upper half of his class to obtain the use of assigned case and text books, and half for the expansion of the Law Library collection.

The Bureau of National Affairs, Inc. awards a year's complimentary subscription to THE UNITED STATES LAW WEEK to a graduating student who, in the judgement of the faculty, has made satisfactory progress in his senior year.

The Robert Crafts Memorial Scholarship is a fund established in 1969 by Mrs. Robert Crafts in memory of her husband, Robert Crafts, Esq., of which the income of principal or both will be used to assist worthy students in the School of Law who enter under the Council on Legal Education Opportunity program, and students similarly situated, on the recommendation of the Dean of the School of Law.

The Fellows of the Ohio State Bar Association Foundation award annually two \$245 scholarships. One scholarship is awarded to a sophomore law student with the highest academic average and the second to a junior law student with the highest academic average.

The Goodyear Tire & Rubber Company Fund For Council on Legal Education Opportunity (CLEO) Students is a fund established in 1969 by the Goodyear Tire & Rubber Company Fund, of which the principal and income will be used for living expenses, during the academic year, of students admitted to the School of Law under the Council on Legal Education Opportunity program, on the recommendation of the Dean of the School of Law. The fund is administered by The University of Akron Development Foundation.

The William S. Hein Law Book Company Award of \$200 and law books is presented annually to a student (or students), who in the judgment of the Dean, has excelled in scholarship and student leadership.

The Law Wives Club Award of \$50 is presented annually to a law student displaying scholarship and leadership in student affairs, as determined by the Dean of the School of Law.

The Lawyers Co-operative Publishing Company and Bancroft-Whitney Company, joint publishers of AMERICAN JURISPRUDENCE,

award to top ranking students in about twenty courses a specially bound copy of the equivalent title from their multi-volume publication.

The Judge W. E. Pardee Memorial Award of \$150 (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 advocacy skill and professional decorum.

The Judge and Mrs. W. E. Pardee Memorial Scholarship in an amount not to exceed \$500 is awarded annually to a deserving student who has demonstrated scholarship.

The Phi Delta Delta Legal Fraternity (Women's International) Beta Xi Chapter Award of \$25 is awarded annually, in memory of Judge Florence E. Allen, to a graduating women law student excelling in the study of law, as determined by the Dean of the School of Law.

Prentice-Hall, Inc. provides annually a complimentary subscription to its Federal Tax Guide, Edition "A", to the graduating senior who has excelled in the study of taxation, as determined by the Dean of the School of Law.

The Charles and Ada H. Sacks Scholarship is a fund established in 1969-70, the Centennial Year of the University, in honor of Mr. 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 of the School of Law.

The West Publishing Company annually awards suitable law books to students with the highest first year average, highest second year average, highest third year average and to a student who had displayed leadership and scholarship.

CLINICAL TRAINING

The School offers, under the supervision of its Director of Clinical Training, opportunities to its students to serve in the program of legal aid and legal services to the poor sponsored by the Summit County Legal Aid Society (or a comparable program in the county in which the student resides), in the office of the Summit County Prosecutor, and in the offices of corporate counsel and in private law offices. The aim of the program is both to develop skills in interviewing, counseling, drafting, negotiating and advocacy that are associated with the management of the affairs of a client, and to develop a critical

awareness of the lawyer's responsibility to improve the administration of civil and criminal justice.

Students who have completed 42 credits may, with the permission of the instructor, undertake a credit course in Legal Aid, and may, on successful completion thereof, enroll for a second (advanced) course.

Students who have completed 84 credits toward the Juris Doctor degree and who are enrolled as candidates for the Ohio bar examination may be admitted to the limited practice of law in Ohio as Legal Interns.

CURRICULUM
FULL-TIME PROGRAM

(These courses are offered during the day.)

First Year, Required

	Credits
<i>First Quarter</i>	
920:603 Legal Process	4
920:605 Contracts I	4
920:614 Property I	4
920:641 Civil Procedure I	4

<i>Second Quarter</i>	
920:606 Contracts II	4
920:617 Torts I	4
920:623 Legal Research & Advocacy I	1
920:625 Property II	3
920:642 Civil Procedure II	3

<i>Third Quarter</i>	
920:618 Torts II	4
920:624 Legal Research & Advocacy II	1
920:626 Property III	3
920:638 Criminal Law	4
920:643 Civil Procedure III	3

Second and Third Year, Required

<i>First Quarter</i>	
920:628 Legal Profession I	1
920:633 Evidence I	3
920:685 Constitutional Law I	3

<i>Second Quarter</i>	
920:629 Legal Profession II	1
920:634 Evidence II	3
920:686 Constitutional Law II	3

<i>Third Quarter</i>	
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PART-TIME PROGRAM

(These courses are offered during the evening.)

First Year, Required

<i>First Quarter</i>	
920:603 Legal Process	4
920:605 Contracts I	4
920:623 Legal Research & Advocacy I	1

<i>Second Quarter</i>	
920:606 Contracts II	4
920:617 Torts I	4
920:624 Legal Research & Advocacy II	1

<i>Third Quarter</i>	Credits
920:618 Torts II	4
920:628 Legal Profession I	1
920:638 Criminal Law	4

Second Year, Required

<i>First Quarter</i>	
920:614 Property I	4

920:641 Civil Procedure I	4
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<i>Second Quarter</i>	
920:625 Property II	3
920:642 Civil Procedure II	3

<i>Third Quarter</i>	
920:626 Property III	3
920:629 Legal Profession II	1
920:643 Civil Procedure III	3

Third and Fourth Year, Required

<i>First Quarter</i>	
920:633 Evidence I	3
920:685 Constitutional Law I	3

<i>Second Quarter</i>	
920:634 Evidence II	3
920:686 Constitutional Law II	3

Credits refers to number of credits assigned to various courses.

Electives

920:601 Legislation	4
920:602 Development of Law and Legal Institutions	4
920:604 Moot Court	2
920:607 Insurance Law I	2
920:608 Insurance Law II	2
920:609 Government Contacts	4
920:610 Law Review Internship I	1
920:611 Law Review Internship II	1
920:612 Law Review: Staff	1
920:613 Law Review: Editorial Board	1
920:619 Basic Business Association I	2
920:620 Basic Business Associations II	2
920:621 Injuries to Relations	4
920:622 Administrative Process	4
920:630 Modern Real Estate Transactions	4
920:631 Commercial Transactions: Negotiable Instruments	4
920:632 Commercial Transactions: Sales	3
920:639 Seminar in Corrections and Prisoners' Remedies	3
920:640 Administration of Criminal Justice	4
920:644 Federal Jurisdiction and Procedure	4
920:645 Problems in Trial Advocacy	2
920:646 Lawyer as Negotiator	3
920:647 Air Law	4
920:649 Law of Consumer Credit	3
920:650 Seminar in Product Liability	4
920:651 Securities Regulation	4
920:652 Creditors' Rights	4
920:653 Local Government Law	3
920:654 Domestic Relations	3
920:655 Individual Studies and Research	1-5
920:657 Seminar in Pension & Profit Sharing	3
920:658 Seminar in Business Planning I	3

	<i>Credits</i>		<i>Credits</i>
920:659 Seminar in Business Planning II	2	920:678 Seminar in International Transactions and Relations	4
920:660 Seminar in Selected Legal Problems	1-4	920:679 Commercial Transactions: Secured Transactions	4
920:661 Seminar in Political and Civil Rights	3	920:680 Law and Social Change	3
920:662 Seminar in Estate Planning	4	920:681 Seminar in Judicial Administration	3
920:663 Patent, Trademark and Copyright Law	3	920:682 Accounting For Lawyers	3
920:664 Financing State and Local Government	4	920:683 Conflict of Laws I	3
920:665 Land Use Planning	3	920:684 Conflict of Laws II	3
920:666 Seminar in Jurisprudence	4	920:687 Federal Income Taxation I	4
920:667 Seminar in Comparative Legal Systems	3	920:688 Federal Income Taxation II	4
920:668 Labor Law	4	920:689 Federal Estate and Gift Taxation	4
920:669 Labor Arbitration and Collective Bargaining	4	920:690 Antitrust Law	4
920:670 Seminar in Legal Problems of the Poor	3	920:691 Legal Regulation of Competition	4
920:671 Corporations I	3	920:692 Administration of Law Relating to Juveniles	3
920:672 Corporations II	3	920:693 Remedies I	3
920:673 Wills	3	920:694 Remedies II	2
920:674 Trusts and Estates I	3	910:695 Legal Aid	3
920:675 Trusts and Estates II	3	920:697 Legal Control of the Environment	4
920:676 Seminar in Labor Law	3	920:698 International Law I	4
920:677 Equal Opportunity Law	4	920:699 Selected Problems, International Law	3



Research Centers and Institutions

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.



Research

Claibourne E. Griffin, Ph.D., *Dean of Graduate Studies and Research*
Robert G. Corbett, Ph.D., *Coordinator of Research*

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. Thus problems in connection with water pollution have used the services of chemists, biologists, chemical, mechanical and civil engineers.

All of this benefits the student. While the planning and organization of a research project is usually carried out by or with the assistance of a faculty member, both graduate and undergraduate students have the opportunity to participate, depending on the nature of the project and the skills and knowledge required.

Additionally the student is assured of a skilled, knowledgeable faculty, not cloistered in an ivory tower, but alert to the latest developments in the various disciplines. It also makes it easier for the student to bridge the gap between the knowledge of the past that he is obtaining from his books and lectures, and the up-to-date activities of the worlds of commerce, industry, education and technology. All of the research activities on campus are coordinated by the University Research Council which also serves as the policy making body for research. The Council consists of the Coordinator of Research and the Directors of the four Research Institutes, the Institute of Polymer Science, the Institute of Civic and Educational Research, the Institute of Business and Economic Research and the Institute of Science and Engineering Research.

INSTITUTE OF POLYMER SCIENCE — The oldest of the research institutes, this was originally known as the Institute of Rubber Research. This institute has a staff of seventeen faculty members who direct the work of its pre-doctoral and post-doctoral students in a wide range of studies in the chemistry,

physics and engineering aspects of polymers. The Institute is equipped with an extensive array of instrumentation and specialized research equipment appropriate to its activities.

INSTITUTE OF CIVIC AND EDUCATIONAL RESEARCH — Concerned with the increasingly complex human problems facing our society today, this Institute is carrying out a number of studies designed to assist government and industry meet the challenges of the times. In addition to studies whose concern is with how 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.

INSTITUTE OF BUSINESS AND ECONOMIC RESEARCH — The work of this institute is carried out principally by members of the department of Economics and the College of Business Administration. Most of the work in this Institute is not of a project nature but rather is of the nature of a consultation. The specific problem of a specific client is handled rather than large-scale, long-range theoretical studies.

INSTITUTE OF SCIENCE ENGINEERING RESEARCH — The studies conducted in this Institute are what most people think of when the word research is used, for it is this Institute that deals with the natural sciences. Here are the chemists and physicists and engineers, with the test tubes, spectrophotometers, nuclear reactors and all of the varied paraphernalia of modern science. As a result, this Institute possesses a large number of specialized laboratories and many unusual pieces of equipment.

Institute of Polymer Science

Maurice Morton, Ph.D., *Director*

The **INSTITUTE OF POLYMER SCIENCE** was originally established as the Institute of Rubber Research in 1956, in order to prosecute its main functions: 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. Dur-

ing World War II, the research activities were expanded under the impetus of the U.S. Government Synthetic Rubber Program.

After the war, it soon became apparent that the phenomenal rise of the giant 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 was accompanied by the inauguration, in 1956, 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 of this material science, including areas outside his own specialty. To fill this need, The University of Akron, in 1964, broadened its original polymer chemistry program into an interdisciplinary program in polymer science, available to chemists, physicists and engineers, and leading to *M.S. and Ph.D. degrees in Polymer Science*. This program is administered by the Department of Polymer Science, the academic arm of the Institute. Its faculty also hold appointments in other science and engineering departments. This enables the graduate student, while pursuing his individual field of science or engineering, to obtain

both a broad and a specialized training in polymer science.

The Institute occupies the North Tower of the Auburn Science and Engineering Center and the adjacent Whitby Hall. It includes both chemical and physical laboratories, the latter devoted to physical measurements on polymers and elastomers. These facilities enable a wide scope of research to be carried out, including organic reactions, polymerization studies, characterization of macromolecules, and physical behavior and testing of polymers and elastomers. The well-equipped laboratories, together with the large interdisciplinary group of faculty, staff and graduate students, make the Institute a unique facility in this field. It is now comprised of thirteen full-time faculty members, holding ranks ranging from Professor to Asst. Professor 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 now undoubtedly the largest academic facility of its kind in the United States.

The basic research work at the Institute is performed by graduate degree candidates under the supervision of faculty members. The fundamental character of this research makes it suitable for use in the graduate dissertation required of each student. The Institute also operates an Applied Research Section which undertakes projects as a service for government and industry, performed by a special staff of investigators.

Afro-American Studies Program

Lascalles F. Anderson, Ph.D., *Director*

The new Afro-American Studies program at The University of Akron has been created generally to broaden the University's curricula in order to meet the needs of a changing society. The goal of the program is to evolve a solid series of academic offerings that will give students exposure to Black culture not only in the United States context, but from non-United States traditions in South America, the West Indies, and Africa. All the courses, are offered through the departments of associate studies, history, English, speech and theatre arts, economic and political science.

A task force of students and faculty has formulated Black Studies for The University of Akron. The requirements stipulate in part that courses be

developed as they apply to academic disciplines within existing departmental structures. Afro-American Studies courses are open to all students in all disciplines and, to date, enrollment has been representative of a cross section of the campus.

Additional courses will be developed at logical points in the curriculum but the new courses will be offered only after they have been submitted to and approved by the University Council, the faculty legislative body on the campus which reviews all new course offerings. The possibility of offering independent seminars in specific interdepartmental areas is currently under consideration.

The Certificate Program is described under the Buchtel College of Arts and Sciences curricular requirements section of this *Bulletin*.

Center for International Programs

H. Kenneth Barker, Ph.D., *Dean*
International Programs

Arno K. Lepke, Ph.D., *Director*
International Studies

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 225 foreign students. The faculty of this University has wide interests and has traveled extensively to various parts of the world.

The various colleges of the University have developed programs to give our students an awareness of the global nature of knowledge. There are numerous courses in Non-Western studies, area con-

centrations, programs in international business and various opportunities for students and alumni to travel overseas.

Through its Advisory Committee, composed of faculty and students of the various colleges, the Center for International Programs attempts to find ways of committing the University to programs that produce students who will be more knowledgeable about the total world in which we find ourselves. Hopefully, this can be done by increasing the international content of our various courses and finding ways to expose students and faculty to the various cultures of the world.

Center For Peace Studies

Warren F. Kuehl, Ph.D., *Director*

The Center for Peace Studies at The University of Akron has been established to study the subject of international peace within the threefold framework of the University's goal of education, research, and public service. A Peace Studies certificate program is available for students who wish to pursue this course

of study and the Center sponsors special campus programs, a film series, and an international newsletter. It is engaged in research projects and cooperates with organizations in the community interest in peace and with institutes and peace centers on other campuses.

Center For Urban Studies

Edward W. Hanten, Ph.D., *Director*

One of the greatest challenges facing the urban university is that of effectively using its many resources in urban area analysis. The Center for Urban Studies at The University of Akron was established in 1965 in response to this challenge and is the focus around which the University applies available knowledge to urban problem solution. The Center seeks to organize and develop programs and research areas which use and stimulate faculty participation in urban area analysis. The Center's objectives are to apply new methods and to experiment with new approaches in solving urban problems. Thus, it strives to stimulate, within the University, creative solutions

to urban problems by coordinating the urban perspectives of the various disciplines and professions.

The Center for Urban Studies provides advisory and research expertise in a wide range of areas to both public and private agencies on the local, state and federal levels. While most of the advisory and research work of the Center is carried out under contract with various agencies, significant projects have been undertaken without remuneration in an attempt to develop new approaches and new knowledge. Center research covers such areas as urban and regional planning, administrative organization, cost-

benefit analysis, community development, housing, intergovernmental relations, urban employment, criminal justice planning, recreation, social services planning and urban education.

The Center for Urban Studies represents an 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

Education at The University of Akron is a year-around, round-the-clock endeavor. To help individuals who must work or maintain a home during the day, the University offers an extensive Evening College program of both fully-accredited credit courses leading to baccalaureate, associate and graduate degrees and non-credit courses designed to improve their work skills or to enrich a leisure-time avocation. For students who wish to accelerate their study programs or who cannot attend at other times, the University offers a variety of credit and non-credit summer courses. And, to make it convenient for persons who live beyond easy commuting distance of the main campus, the University opened a 157-acre branch campus at Orrville, Ohio.



The Evening College

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

Assistants to the Dean: Richard K. Bonnell, Gordon A. Hagerman

The University of Akron has a rich and historic tradition of service to those students who attend classes after 5 p.m. Evening class offerings run the full range from Community and Technical College through the Ph.D. level. Through Evening and Saturday credit courses the Evening College and the Weekend College keep their doors open throughout the year.

The Evening College is simply a continuation of daytime college campus life. Credit courses taken in the evening have the same high academic value and most full-time faculty members teach and are available to students in the evening. Additional 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 their course work.

One significant factor that may determine the success or failure of an evening academic program is

the attitude of the President and his top level administrators and collegiate deans. The University of Akron administration is vitally concerned and supportive of our effort to serve the needs of the evening students, some 6,500 strong.

Evening Student Council coordinates the extracurricular activities of the Evening College, which are similar to those of the day college and sometimes are part of the daytime activities. Organizations established for Evening College students include Alpha Sigma Lambda, Scholastic Honorary; Gamma Beta, Evening College Social Sorority; Chi Sigma Nu, Evening College Social Fraternity; Alpha Epsilon, a service honorary dedicated to giving recognition to evening students who show a well-rounded contribution to campus and community and *Nite Life*, the official monthly publication of the Evening Student Council.

The Summer Sessions

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

Assistants to the Dean: Richard K. Bonnell, Gordon A. Hagerman

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: recent high school graduates, transfer students from other institutions of higher learning, older persons with life-long learning in-

terests, part-time students and, equally important, those who rejuvenate their intellectual energies in summer study only.

Summer Sessions serve over 13,000 students, young and old, local and commuting, at all stages from non-credit avocational courses to the professional and Ph.D. levels. Faculty, students, administration and the community each contribute talents and resources to further the dynamics of the academic and cultural process.

Department Of Developmental Programs

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

Martin M. McKoski, Ph.D., *Director*

DEPARTMENT OF DEVELOPMENTAL PROGRAMS

The Department of Developmental Programs provides academic support for all University students, especially those who wish to strengthen their educational preparation in

specific areas or who have been out of school for a number of years and feel the need for remediation. Through developmental courses, individual tutoring, and work in the Writing and Reading Laboratories, such students can develop the skills necessary for acceptable performance at the college level.

Developmental courses are offered in English, reading, college reading and study skills, mathematics, and chemistry. Classes are small to provide maximum time for individual help.

Peer-tutoring is provided for most academic subjects taught in the first two years and is free of charge.

So students can develop a college-level proficiency in reading and/or writing or composi-

tion, The Department of Developmental Programs maintains Writing and Reading Laboratories which are distinct from remedial English and reading courses. The Labs are open to all undergraduate students without charge and provide professional diagnosis and remedy of weaknesses in these vital skills.

Additional information about the University's Department of Developmental Programs is available in Room 210, Carroll Hall, 375-7087, The University of Akron.

The Urban Commitment Through Continuing Education and Public Services

William A. Rogers, Ed.D., *Executive Dean*

Institute for Civic Education
Special Programs
Northeastern Ohio Universities College of Medicine

PHILOSOPHY

The three basic missions of universities are teaching, research and public service. Time and location dictates the varying manner by which institutions of higher education administers and achieves these missions.

Since man's knowledge has grown, the rate has accelerated at a staggering pace in the past three decades. There now exists a need for continued education. The universities' dual, traditional mission to educate 18 to 22-year olds and reproduce its own replacements in the Ph.D. format is too limiting a role for the 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.

Some have observed that for the first time in America's 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.

Within the content of Continuing Education and Public Services, at The University of Akron are located a variety of units dedicated to the support of the urban commitment.

PRIMARY 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.

Congruent with the primary objective, in relation to the urban commitment, is the establishment and maintenance of an effective liaison with all Akron area agencies responsible for formal and informal post-secondary education.

MORE SPECIFIC OBJECTIVES ARE:

1. To develop an Akron area higher education council embracing all post-secondary agencies. Council to function as a primary market research agency responsible for facilitating more effective utilization of efforts.

2. To offer meaningful learning opportunities (for which the university has talents) to those engaged in the various professions.

3. 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.

4. To offer university-level assistance and joint community assistance to local, specialized organiza-

tions, agencies and other community groups to help them achieve their educational goals.

5. 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 accomplish these objectives, Continuing Education and Public Service will:

1. Maintain a climate and organization which will elicit a high level of cooperation from all segments of the faculty.

2. Cooperate with all campus offices in the development of proposals that will attract funds to help the University better serve its many audiences.

3. Serve as a coordinating body for all Akron area higher education activities. (Higher education is identified by post-secondary activity.)

4. Support and conduct research directed toward the identification of innovative approaches to continuing education and public service.

5. Provide training programs for off-campus clients that will up-grade skills and help organizations improve the quality of their services.

6. Lastly, motivate the University's continuing education personnel to become sensitive to in-

dividual and group, implicit and explicit, needs within the larger community.

ORGANIZATION

Institute for Civic Education: To function as the interface between community organizations and the University community. Its professional staff fill a variety of roles including coordinating, advising, managing, recommending, innovating, helping, and supportive.

Special Programs: To provide regular, on-going eleven-week, non-credit courses that prepare adults with specific skills and specific information. Program possibilities are almost limitless.

Developmental Programs: To provide courses, tutoring, and individual program materials for those who are academically disadvantaged. Develop, through external funding, up-grading programs for the educationally disadvantaged to insure their entry into the job market.

Institute For Civic Education

Marvin E. Phillips, M.A., *Director*
Mary Elizabeth Chesrown, B.A., *Assistant Director*

The Institute for Civic Education is the public services programming center for The University of Akron. Many informal programs of a continuing educational nature 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 and 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.

Among the continuing educational services provided by the Institute:

1. Coordination and cooperation with more than 400 community organizations in program

planning, workshops and seminars.

2. Complete conference planning for organizations both on and off campus.

3. Presentation of lectures by speakers in public life and national and world affairs, often in cooperation with University departments and community organizations.

4. Developing leadership training programs for implementation within the community organizations.

5. Developing training programs for discussion leaders, board members and program planners.

6. Community and College Ambassador Programs.

7. A Speakers Bureau with more than 100 faculty members and 300 topics.

8. World-at-Our-Door travel film series.

9. Monthly Civic Educalendar listing events and programs.

10. Study discussion programs.

11. Weekly Current Issues Forums.

12. Akron Area Film Society.

Programs are described in special announcements that are distributed to a community mailing list of approximately 4,000.

The Institute represents the University in many community, state and national organizations, including:

Ohio Association for Adult Educators,
United Community Council Conference of Ex-

ecutives, Governing Board of Community Action Council and Foreign Policy Association.

The Director of the Institute serves as Executive Secretary to the University's Coordinating Committee on Life-Long Learning and Development which is charged with the responsibilities of developing and implementing the programming necessary for the creation of education processes appropriate for various adult developmental stages.

Department of Special Programs

Cecil L. Dobbins, B.B.A., *Director*

Continuing education in today's age of specialization is a necessity for many persons wishing to improve work skills. For others, it is a leisure-time avocation for personal enrichment. Since 1937 The University of Akron, through the Department of Special Programs' year-round sessions of informal courses, has offerings 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 quarter. There are no requirements for admission to informal courses and any educational background is acceptable. Interest in learning in a relaxed and non-competitive environment is the only consideration.

Permanent student records are kept for all persons enrolled. Homework and examinations may be given, however, certificates of satisfactory completion are awarded based solely on attendance.

Following is a representative though partial listing of types of subjects taught in informal classes:

BUSINESS & 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 & Inventory Control, Quality Control, Selling, Small Business Management, Steam Plant Operation, Supervision, Technical Drawing.

COMMUNICATIONS SKILLS, VERBAL & WRITTEN — Creative Writing, Effective Oral Communications, English as a Second Language — Verbal, English Grammar, English Review for the College Bound, Practical Jour-

nalism, Reading Improvement, Skills in Listening, Speed Reading, Vocabulary Improvement.

DATA PROCESSING — Assembler Language, Business Data Processing & 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, Women, and Scuba and Skin Diving, Swimming for Women, Self-Defense for Women, Yoga.

REAL ESTATE — Appraising, Commercial Property, Communications, Finance, Fundamentals, I, II, House Construction, Legal Aspects, Management and Investment, Marketing Understanding Real Estate.

SCIENCE — Air Pollution, Engineering Refresher, German, Russian for Polymer Scientists.

SECRETARIAL SKILLS — Business Machines, Certified Professional Secretaries Review Seminar, Gregg Shorthand, Office Receptionist, Typewriting.

Northeastern Ohio Universities College of Medicine

Announcing a
Six Year Program

in

Medical Education
Leading to the
B.S. and M.D. Degrees
to begin with the
Academic Year 1975-76

The University of Akron
Kent State University
Youngstown State University
Acting in concert with the
Northeastern Ohio Universities
College of Medicine

(Established by Act of the Ohio
General Assembly, November 23, 1973)

Northeastern Ohio Universities College of Medicine

HISTORY 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 in Development" by the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association.

EDUCATIONAL PURPOSE OF THE COLLEGE OF MEDICINE

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.

DESCRIPTION OF THE PROGRAM

The curriculum, as planned, will require that students be enrolled for 11 months in each of six academic years. The first two years (Phase I), beginning in July, 1975, will be spent on one of the university campuses. The course work during this period will focus chiefly on studies in the humanities and basic premedical sciences but will also include orientation to clinical medicine.

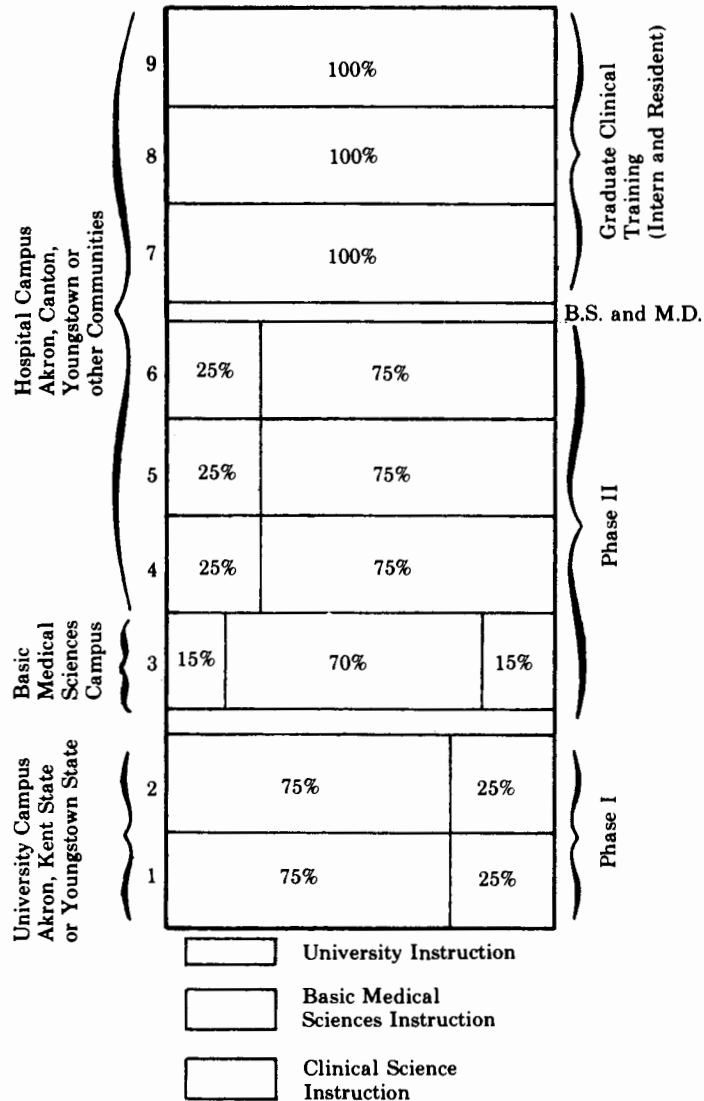
The Third Year of study will be devoted primarily to the basic medical sciences, e.g., anatomy, physiology, microbiology, etc., and will be conducted at the Basic Medical Sciences Campus presently being developed in Rootstown. It is expected that the first group of students will be enrolled at this level in the fall of 1977.

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 one quarter in each of these last three years to complete the requirements for the B.S. 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 B.S. degree by one of the universities and the M.D. degree by the College of Medicine.

INTEGRATED CURRICULUM



ELIGIBILITY

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 the first year of this program to begin in July, 1975. Other students with a conventional college background, including premedical requirements and at least three years of college level work, will be considered for admission to Year Three which will begin in September, 1977.

GENERAL

Progress through the first two years of this program will be based on academic performance and development of personal maturity appropriate to assumption of professional responsibility. An Academic Review and Promotion Committee including University and College of Medicine

faculty will assess these factors and will recommend students for promotion and formal admission to the third year of the program.

To apply, write to the University Admissions Office indicating your interest in the combined B.S./M.D. degree program and request application forms.

Cost: Normal undergraduate fees will be assessed for Years One and Two. Fees for Years Three through Six will be set by the College of Medicine Board of Trustees and will not be significantly different from the \$1,200 fee (for three quarters) which Ohio residents now pay to attend publicly supported medical schools elsewhere in this state.

The site location is on S.R. 43 in Rootstown just south of the I-76 intersection, across from the Rootstown High School.

VI.
Courses of
Instruction

COURSE NUMBERING SYSTEM

DEVELOPMENTAL (000)

020 DEVELOPMENTAL PROGRAM

THE GENERAL COLLEGE (100)

110 General Studies
150 Aerospace Studies
160 Military Science

THE COMMUNITY AND TECHNICAL COLLEGE (200)

202 Associate Studies
220 Educational Technology
222 Criminal Justice Technology
223 Fire Science Technology
224 Commercial Art
226 Community Services Technology
228 Food Service Management
242 Commerce
244 Data Processing
252 Sales and Merchandising
254 Secretarial Science
256 Transportation
278 Allied Health
279 Respiratory Therapy
284 Chemical Technology
286 Electronic Technology
288 Industrial Technology
290 Instrumentation Technology
292 Mechanical Technology
298 Surveying and Construction Technology

THE BUCHEL COLLEGE OF ARTS AND SCIENCES (300)

310 Biology
315 Chemistry
320 Classics
321 Greek
322 Latin
325 Economics
330 English
335 Geography
337 Geology
340 History
345 Mathematics
347 Statistics
352 French
353 German
355 Italian
357 Russian
358 Spanish
360 Philosophy
365 Physics
370 Political Science
375 Psychology
385 Sociology
387 Anthropology
388 Joint Ph.D. Program — Sociology
394 Polymer Science
398 Urban Studies

THE COLLEGE OF ENGINEERING (400)

410 General Engineering
420 Chemical Engineering
430 Civil Engineering

440 Electrical Engineering
445 Computer Science
460 Mechanical Engineering
498 Construction Technology

THE COLLEGE OF EDUCATION (500)

510 Educational Foundations
520 Elementary
525 Reading
530 Secondary
540 Technical and Vocational
555 Physical Education
557 Men's Physical Education
559 Women's Physical Education
560 Guidance and Counseling
561 Special Education
562 School Psychology
563 Inner-city Education
570 School Administration
580 Special Programs
585 Educational Technology

THE COLLEGE OF BUSINESS ADMINISTRATION (600)

620 Accounting
640 Finance
650 Management
660 Marketing

THE COLLEGE OF FINE AND APPLIED ARTS (700)

710 Art
740 Home Economics
750 Music
751 Music Organizations
752 Applied Music
760 Mass Media-Communication
770 Speech Pathology and Audiology
775 Social Work
780 Theatre Arts and Dance

THE COLLEGE OF NURSING (800)

820 Nursing

THE SCHOOL OF LAW (900)

920 Law

INTERDISCIPLINARY PROGRAMS (1000)

1010 Afro-American Studies
1030 Environmental Studies
1060 Peace Studies
1070 Honors Program
1080 Medical Studies

*When approved undergraduate courses are taken for graduate credit they become 500 level courses.

Note: Numbers appearing at the end of the first line in the course description in parenthesis (1-3) indicate hours of recitation or lecture and hours of laboratory work. In the example (1-3) there would be one recitation hour per week and three laboratory hours.

Note: In multiple-numbered courses, the word "sequential" means that the courses must be taken in numerical order.



The General College

020: DEVELOPMENTAL PROGRAM

020:041-042. DEVELOPMENTAL ENGLISH.

3 hours, no credit.

Designed for persons who have weak backgrounds in composition, who have had trouble doing acceptable work in credit composition courses, or who have been out of school for a time and want experience before attempting credit courses. The course concentrates on writing expository paragraphs. Supplementary work in the Reading and Writing Laboratories may be required. The second in the sequence is designed for those students who enroll for an additional quarter.

020:051-052. DEVELOPMENTAL MATH.

3 hours, no credit.

Designed to review and strengthen the mathematical skills needed for credit mathematics courses. Study focuses upon arithmetical operations and elementary algebra. Included are whole numbers, fractions, decimals, per cents, algebraic operations, equations, inequalities, graphing, and factoring for linear and quadratic equations. The second in the sequence is designed for those students who enroll for an additional quarter.

020:061. DEVELOPMENTAL READING.

3 hours, no credit.

The purpose of this course is to develop the students' general reading abilities. Emphasis is given to increasing vocabulary, and understanding and remembering written material.

020:062-063. COLLEGE READING AND STUDY SKILLS.

3 hours, no credit.

Topics covered are understanding and remembering information in textbooks, wise use of time, taking lecture notes, using the library, and passing examinations. This course combines class discussion and individual study using the resources of the Developmental Reading Lab. The second in the sequence is designed for those students who enroll for an additional quarter.

020:071-072. DEVELOPMENTAL NATURAL SCIENCE — CHEMISTRY. 3 hours, no credit.

Designed to help students use scientific knowledge to solve problems so that they can become better prepared for college chemistry and other beginning natural science courses. The second in the sequence is designed for those students who enroll for an additional quarter.

020:299. SPECIAL TOPICS IN DEVELOPMENTAL PROGRAMS. 1-3 hours, no credit.

(May be repeated for a total of 6 hours.)

Prerequisite: Permission. Selected topics or subject areas of interest in Developmental Programs.

110: GENERAL STUDIES

110:105 INTRODUCTION TO PUBLIC SPEAKING.

4 credits.

This course focuses on public speaking both as an activity and object of study. Students read actual speeches to learn methods of expressing thoughts and adapting messages to attain the speaker's ends. Students apply these principles in a variety of speaking assignments. This course may not be taken for credit by any student who has already received credit for 110:108, Effective Speaking.

110:106 EFFECTIVE ORAL COMMUNICATION.

4 credits.

This course is designed to give each student a combination of informal and semiformal communication experiences from the group discussion to individual speeches. Emphasis will be placed on audience psychology, analysis of audience behavior, audience dimensions, criteria and standards for evaluation.

110:111-112. ENGLISH COMPOSITION. 4 credits each.

Must be taken in sequence.

110:113 TYPES OF LITERATURE. 4 credits.

Prerequisite, 112. Courses 111-112 and 205 are intended to enable the student to obtain proficiency in the reading and writing of English. The reading materials used will be primarily, outstanding literary works of our Western tradition.

Through these courses the student will gain competence in reading and writing. He will improve his writing skill through short expository papers (writing at least one a week), and, in the following courses, progress to writing longer and more complex critical and analytical pieces, including, in 112, a longer documented paper. He will improve his reading skill through reading, analyzing and discussing selected materials arranged in order of increasing difficulty and through critical analysis and appraisal of his own and other students' compositions.

110:115-116-117. INSTITUTIONS OF THE UNITED STATES. 3 credits each.

Sequential. Primary objective of this course is to enable the student to achieve an understanding of human relationships through a comparative, descriptive, and analytical study of the institutions of the United States. An exposition of basic institutional principles will be followed by a discussion of these principles in terms of the institutional structure of the United States.

110:120-189. PHYSICAL EDUCATION.

Minimum 2 credits.

Participation in individual and group sports, in which each individual can acquire knowledge and skill in activities which may be of value and satisfaction to him throughout his life. Two periods each week.

MEN'S PHYSICAL EDUCATION

110:120 ARCHERY. 1 credit.

110:121 BADMINTON. 1 credit.

110:122 VARSITY BASEBALL. 1 credit.

110:123 BASKETBALL. 1 credit.

110:124 VARSITY BASKETBALL. 1 credit.

110:125 BODY MECHANICS. 1 credit.

110:126 BEGINNING BOWLING. 1 credit.

110:127 INTERMEDIATE BOWLING. 1 credit.

110:128 VARSITY CROSS COUNTRY. 1 credit.

110:129 CONDITIONING. 1 credit.

110:130 FOLK DANCE. 1 credit.

110:131 VARSITY FOOTBALL. 1 credit.

110:132 GOLF. 1 credit.

110:133 VARSITY GOLF. 1 credit.

110:134 GYMNASTICS-TUMBLING. 1 credit.

110:135 HORSEMANSHIP. 1 credit.

110:136 SOCCER. 1 credit.

110:137 VARSITY SOCCER. 1 credit.

110:138 BEGINNING SWIMMING. 1 credit.

110:139 INTERMEDIATE SWIMMING. 1 credit.

110:140 LIFE SAVING. 1 credit.

110:141 SKIN AND SCUBA DIVING. 1 credit.

- 110:142 BEGINNING TENNIS. *1 credit.*
- 110:143 INTERMEDIATE TENNIS. *1 credit.*
- 110:144 VARSITY TENNIS. *1 credit.*
- 110:145 VARSITY TRACK. *1 credit.*
- 110:146 VOLLEY BALL. *1 credit.*
- 110:147 BEGINNING WRESTLING. *1 credit.*
- 110:148 VARSITY WRESTLING. *1 credit.*
- 110:149 VARSITY SWIMMING. *1 credit.*
- 110:150 VARSITY INDOOR TRACK. *1 credit.*
- 110:151 GYMNASTICS-APPARATUS. *1 credit.*
- 110:152 BODY MECHANICS-THEATRE. *1 credit.*
- 110:153 FOOTBALL. *1 credit.*
- 110:154 KARATE. *1 credit.*
- 110:155 JUDO. *1 credit.*
- 110:156 TEAM HANDBALL. *1 credit.*
- 110:157 SKIING. *1 credit.*
- 110:158 CANOEING. *1 credit.*
- 110:159 SELF-DEFENSE. *1 credit.*

WOMEN'S PHYSICAL EDUCATION

- 110:160 ARCHERY. *1 credit.*
- 110:161 BADMINTON. *1 credit.*
- 110:162 BASKETBALL. *1 credit.*
- 110:163 BODY MECHANICS. *1 credit.*
- 110:164 BEGINNING BOWLING. *1 credit.*
- 110:165 INTERMEDIATE BOWLING. *1 credit.*
- 110:166 FOLK DANCE. *1 credit.*
- 110:167 MODERN DANCE. *1 credit.*
- 110:168 GOLF. *1 credit.*
- 110:169 GYMNASTICS. *1 credit.*
- 110:170 FIELD HOCKEY. *1 credit.*
- 110:171 HORSEMANSHIP. *1 credit.*
- 110:172 SOCCER, SPEEDBALL. *1 credit.*
- 110:173 BEGINNING SWIMMING I. *1 credit.*
- 110:174 BEGINNING SWIMMING II. *1 credit.*
- 110:175 INTERMEDIATE SWIMMING. *1 credit.*
- 110:176 ADVANCED SWIMMING. *1 credit.*
- 110:177 SENIOR LIFE SAVING. *1 credit.*
- 110:178 SKIN AND SCUBA DIVING. *1 credit.*
- 110:179 BEGINNING TENNIS. *1 credit.*
- 110:180 INTERMEDIATE TENNIS. *1 credit.*
- 110:181 VOLLEY BALL. *1 credit.*
- 110:182 BODY MECHANICS-THEATRE. *1 credit.*
- 110:183 SKIING. *1 credit.*
- 110:184 CANOEING. *1 credit.*
- 110:185 KARATE. *1 credit.*
- 110:186 JUDO. *1 credit.*
- 110:187 SELF-DEFENSE. *1 credit.*
- 110:188 VARSITY VOLLEYBALL. *1 credit.*
- 110:189 VARSITY BASKETBALL. *1 credit.*

110:211. NUMBERS COMMUNICATION. 4 credits.

Through this course in the language of quantitative relationships the student will develop his ability to receive and express ideas in mathematical symbols, increase his appreciation of the methods of mathematical reasoning, and come to understand and think creatively about the quantitative aspects of the world in which he lives. Two lecture and two participation-discussion periods each week.

110:221-222-223-224.

Minimum of nine credits of science. This requirement can be met either by taking courses in the Departments of Biology, Chemistry, Geology or Physics, or by any combination of three out of four of the Natural Science courses:

110:221. NATURAL SCIENCE — BIOLOGY. 3 credits.

Designed for non-science majors to illustrate the fundamental concepts of living organisms with emphasis on man's position in, and influence on, the environment.

110:222. NATURAL SCIENCE — CHEMISTRY. 3 credits.

Designed for non-science majors. Chemical principles and facts, with emphasis on generalization designed particularly to prepare the student to appreciate modern advances in chemistry.

110:223. NATURAL SCIENCE — GEOLOGY. 3 credits.

A study of the basic principles and investigative techniques in various fields of geology with emphasis on the relationship of geological processes to society.

110:224. NATURAL SCIENCE — PHYSICS. 3 credits.

An introduction to, and a commentary upon, some of the most significant principles, perspectives and developments in contemporary physics. Intended for non-science students.

110:317-318-319. WESTERN CULTURAL TRADITIONS. 4 credits each.

Primary objectives of this course are to enable the student to understand human experiences of the past, so that he may develop an intelligent and constructive standard of personal behavior and may become a responsible member of society. To achieve these objectives, it is necessary for the student to grasp the essential features of the traditions of Western civilization as manifested in its outstanding accomplishments and creative endeavors in letters, music, and the visual arts. It is not intended that this course give a complete portrayal or minute development of any of these fields, but rather that certain particularly important eras which have special significance for our time should be chosen. Two lectures and two participation-discussion periods each week.

EASTERN CIVILIZATION: Students will be required to take six credits to complete General Studies requirements, except students in the engineering program who need only three credits. Prerequisite, 96 credits.

110:330 EASTERN CIVILIZATIONS: CHINA. 3 credits.

110:331 EASTERN CIVILIZATIONS: JAPAN. 3 credits.

110:332 EASTERN CIVILIZATIONS: SOUTHEAST ASIA. 3 credits.

110:333 EASTERN CIVILIZATIONS: INDIA. 3 credits.

110:334 EASTERN CIVILIZATIONS: NEAR EAST. 3 credits.

110:335 EASTERN CIVILIZATIONS: AFRICA. 3 credits.

The primary objective of these courses is to give the student a knowledge of past human experiences and an understanding of present attitudes in some of the major cultural areas of the non-Western world. The student will become familiar with the essential features of these areas as manifested in their outstanding accomplishments in religion, philosophy, art, science and political organization.

U.S. Air Force R.O.T.C.

150: AEROSPACE STUDIES

150:113-114-115. FIRST YEAR AEROSPACE STUDIES (AS100), General Military Course (GMC).

1 1/2 credits each.

Classes meet weekly and consist of both academic courses and military training. The academic portion, United States Military Forces in the Contemporary World, focuses pri-

marily on the United States Air Force. It is fundamentally an account of the mission and organization of Air Force units. The purpose is to show how the U.S. military forces are structured and how they contribute to national defense. The subject matter is valuable to the student in his capacity as a citizen, voter and taxpayer even if he is not a member of the military service. The weekly Leadership Lab experience is designed to provide a working environment for the practice of military customs and courtesies and to develop a student's leadership skills.

150:253-254-255. SECOND YEAR AEROSPACE STUDIES

(AS200), General Military Course (GMC).

1 1/2 credits each.

Classes meet weekly and consist of both academic courses and military training. The academic portion, the Growth and Development of Aerospace Power, is an introduction to defense policy. The course discusses, among other things, military strategy, foreign policy, and history in order to develop the framework or politico-military environment in which the Armed Forces operate. It affords the student an understanding and relationship between national power and the military forces. It contributes to the understanding of civic responsibilities in a democratic society. The weekly Leadership Lab period provides practical leadership experiences in basic military and leader activities.

150:303-304-305. THIRD YEAR AEROSPACE STUDIES (AS300), Professional Officer Course (POC).

3 credits each.

Prerequisite, completion of GMC and/or individual selection by Professor of Aerospace Studies on the basis of competitive standing. Four one-hour classes each week. This is the first half of the two-year Professional Officer Course. The AS 300 course focuses attention on the military profession, civil-military interaction, and the framework and formulation of defense policy and strategy. Within this study, attention is devoted to developing the communicative skills needed by junior officers. Leadership Lab provides advanced leadership experiences in a practical leadership environment.

150:453-454-455. FOURTH YEAR AEROSPACE STUDIES

(AS400), Professional Officer Course (POC).

3 credits each.

Prerequisite, 303, 304, 305. Four one-hour classes each week. Second half of the two-year Professional Officer Course. The AS 400 course includes a study of professionalism; professional responsibilities; the military justice system; leadership theory, functions, and practices; management tools, practices, and controls. Within this study, attention is devoted to developing the communicative skills needed by junior officers. Leadership Lab consists of advanced leadership experience in a practical leadership environment and detailed preparation for active duty.

U.S. Army R.O.T.C.

160: MILITARY SCIENCE

MILITARY SCIENCE I

160:100. INTRODUCTION TO MILITARY SCIENCE.

1 1/2 credits.

Orientation and overview of the Army ROTC program. Familiarization with the organization and capabilities of the Army to include parachute operations, ranger and special forces capabilities, and the use of helicopters.

160:101. AMERICAN MILITARY HISTORY.

1 1/2 credits.

Familiarization with the historical growth and development of the Army with emphasis on changes in organization, tactics and weaponry. Analysis of the nature and causes of warfare with respect to significant errors and misjudgements.

160:102. MARKSMANSHIP AND ORGANIZATIONAL CONCEPTS. 1 1/2 credits.

Introduction to rifle marksmanship. Familiarization with organizational concept and equipment common to the Army division.

MILITARY SCIENCE II

160:200. AMERICAN DEFENSE SYSTEM.

1 1/2 credits.

Investigation of the nature and dynamics of the international system and the structure and operation of the US Security System. Discussion of contemporary issues concerning the US Defense Forces.

160:201. SMALL UNIT TACTICS.

1 1/2 credits.

Fundamentals and techniques of tactics to include analysis of associated leadership and management problems. Discussion and application of the problem solving process.

160:202. MAP READING.

1 1/2 credits.

Fundamentals of map reading to include topographic analysis, navigation techniques and applicatory work in the use of maps and aerial photographs.

MILITARY SCIENCE III

160:300-301-302. MILITARY SCIENCE III.

3 credits each.

Development of an understanding of the leadership process to include applicatory work emphasizing officer leadership duties and responsibilities. Methods and techniques of military instruction.

Familiarization with branches of the Army. Review of the fundamentals and principles of small unit leadership and tactics stressing application and problem solving processes.

Familiarization with communications equipment and review of the fundamentals of map reading. Orientation for Advanced Camp.

Requirements for enrollment: Completion of three years of High School ROTC or two years of college ROTC (Army, Navy, or Air Force); *or* at least one year active service; *or* by successful completion of Basic Camp between Sophomore and Junior years.

MILITARY SCIENCE IV'

160:400-401-402. MILITARY SCIENCE IV.

3 credits each.

Prerequisite 160:300-301-302. Principles and practices of administrative and operational staff executives, their roles and responsibilities in support of the manager. The study of formal and informal organizations, communication, job satisfaction, authority and leadership.

Training and development of organizational leaders and managers by role playing, conflict resolution and situation studies. Concepts and implications of the Military Judicial System for the executive decision-maker.

Analysis of the decision making process under a high stress condition, including planning, organizing, directing and controlling functions of the manager.

The Community and Technical College

201: DEVELOPMENTAL PROGRAM

201:41. DEVELOPMENTAL ENGLISH.

3 hours, no credit.

This course is designed to help students think and express themselves in writing so that they can become better prepared for college English.

201:51. DEVELOPMENTAL MATHEMATICS.

3 hours, no credit.

This course is designed to help students with basic skills of arithmetic which are combined with careful definitions of elementary Algebra and Geometry to help the student understand broad mathematical concepts necessary to an understanding of beginning college mathematics courses.

201:61. DEVELOPMENTAL READING & STUDY SKILLS. 3 hours, no credit.

This course is designed to help students develop effective reading and study skills in order to succeed more readily in college courses.

201:71. DEVELOPMENTAL NATURAL SCIENCE — CHEMISTRY. 3 hours, no credit.

This course is designed to help students use scientific knowledge to solve problems so that they can become better prepared for college chemistry and other beginning natural science courses.

201:299. SPECIAL TOPICS IN DEVELOPMENTAL PROGRAMS. 1-3 hours, no credit.

(May be repeated for a total of 6 hours.)

Prerequisite: Permission. Selected topics or subject areas of interest in Developmental Programs.

202: ASSOCIATE STUDIES

202:118. ENGLISH. 4 credits.

Intended to improve a student's writing by developing his perception; uses short readings, art, films, and environment as stimuli to increase fluency and basic skill in language. Students keep a journal and write many papers of observation and evaluation.

202:120. ENGLISH. 3 credits.

Prerequisites, 118 or 254:119. Examines the techniques of expository writing through close reading of essays. Students apply skills by writing paragraphs and full-length compositions.

202:131. MATHEMATICAL ANALYSIS I. 3 credits.

Prerequisite, two units of high school mathematics. Theory of sets, real numbers, absolute value, polynomials, algebraic fractions, exponents, roots and radicals, first degree equations and selected topics of geometry.

202:132. MATHEMATICAL ANALYSIS II. 4 credits.

Prerequisite, 131 or equivalent. Advanced factoring, exponents and radicals, variation, trigonometry of the right triangle, complex numbers, first and second degree equations, functions and graphs, first degree analytic geometry, determinants, sequences and series, binomial theorem.

202:133. MATHEMATICAL ANALYSIS III. 4 credits.

Prerequisite, 132. Trigonometric functions, triangulation, radian measure, vectors, complex numbers in polar form, inverse functions, trigonometric identities, laws of sines & cos-

ines, graphs of trig functions, exponential and logarithmic functions.

202:135. MATHEMATICS FOR DATA PROCESSING.

4 credits.

Prerequisite, 132. Algebraic structures, sets, logic, Boolean algebra, matrix algebra, sequences, mathematical induction, computer algorithms, error analysis, basic probability and statistics and business application.

202:222. TECHNICAL REPORT WRITING. 3 credits.

Prerequisite, 120. Practice in preparing and writing the technical and industrial reports most likely to be required of technicians, engineers, scientists, and writers.

202:234. MATHEMATICAL ANALYSIS IV. 4 credits.

Prerequisite, 133. Theory of equations, second degree analytic geometry, systems of quadratic equations, graphical methods of calculus, differentiation and applications, basic integration and applications, methods of integration.

202:240. HUMAN RELATIONS. 4 credits.

A study of the principles and methods which aid in understanding the individual's response to his society and the roles between society and the individual.

202:241. MAN AND TECHNOLOGY. 4 credits.

An examination of man as he exists, now and in the future, within the context of a society oriented toward technical achievements and technological solutions to the problems confronting it. Emphasis on the promise and problems of technology with relation to human values. Areas include biomedical technology, automation, economic growth, the natural environment, and technology and the quality of life.

202:242. AMERICAN URBAN SOCIETY. 4 credits.

This course examines the development and problems of the urban setting in American society. It explores the proposition that urbanism is or could or will be a tolerable and/or desirable life style for large numbers of human beings.

202:247. SURVEY OF BASIC ECONOMICS.

5 credits.

A survey of basic economic principles and issues. An introductory course designed for those students who intend to take only one course in economics. Included are discussions of: economic systems; exchange, money, and banking; national income, employment, and fiscal policy; and current domestic economic problems.

202:251. WORK RELATIONSHIPS. 2 credits.

A study of the various principles and methods which can aid the individual in understanding responses of a job situation.

202:253. INTERGROUP RELATIONS. 2 credits.

A course designed to study the nature of diverse groups and the relations between groups in our society.

202:254. THE BLACK AMERICAN. 2 credits.

A study of the Black American including origins, historical achievement and the present strivings to achieve first class citizenship in American Society. Emphasis is on the thoughts and beliefs of black men rather than on white reaction to Negro society.

202:299. SPECIAL TOPICS IN ASSOCIATE STUDIES

1-3 credits. (May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Associate Studies.

202:336. MATHEMATICS FOR TECHNICAL APPLICATIONS. 4 credits.

Prerequisite, 234. Methods of integration, application of integral calculus, elementary differential equations including Laplace Transforms.

220: EDUCATIONAL TECHNOLOGY**220:201. PROCESSING, CATALOGUING AND CLASSIFYING MATERIALS. 4 credits.**

Introduction to the Dewey Decimal and Library of Congress classification systems. Processes involved in cataloguing and identifying materials for a library media center will be explained in class and practiced in a laboratory session.

220:202. ORGANIZING AND ADMINISTERING LIBRARY MEDIA CENTERS. 4 credits.

Organizing a media center. Includes handling materials, ordering materials, circulation procedures, inventory and other control systems. The administrative role includes physical facility, library finance and public relations.

220:203. MATERIALS SELECTION. 4 credits.

Introduction to the tools used in selecting print and non-print materials for library media center. Problems of censorship, intellectual freedom and academic freedom as they relate to the selection process.

220:204. REFERENCE PROCEDURES. 4 credits.

Introduction to the study and use of basic information tools including almanacs, encyclopedias, dictionaries, directories, yearbooks and specialized reference tools including foreign works. Actual reference practices and procedures will be examined.

220:299. SPECIAL TOPICS IN EDUCATIONAL TECHNOLOGY. 1-3 credits. (May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Educational Technology.

222: CRIMINAL JUSTICE TECHNOLOGY**222:100. INTRODUCTION TO CRIMINAL JUSTICE. 3 credits.**

The philosophy and history of law enforcement; overview of crime and police problems; organization and jurisdiction of local, state and federal enforcement agencies and a broad survey of professional qualifications and opportunities.

222:102. CRIMINAL LAW FOR POLICE. 4 credits.

Prerequisite, 100. In-depth view of the English Legal System; the structure, definition, and application of commonly used Penal Statutes and current case laws; elements of crime; law of arrest, search and seizure.

222:104. CRIMINAL EVIDENCE AND COURT PROCEDURES. 4 credits.

Prerequisite, 100. Review of court systems, procedures, from arrest to final disposition; principles of constitutional, federal and state laws as they apply to law enforcement; the kinds and degrees of evidence; rules governing the admissibility of evidence in court; probation and parole procedures.

222:200. POLICE ROLE IN CRIME AND DELINQUENCY. 3 credits.

Prerequisite, 100. A comprehensive study of law and legal procedures pertaining to juveniles. A brief review of the causal factors and precipitating forces that influence the po-

tential delinquent. The prevention techniques and research projects in the adolescent/police relationship.

222:202. BASIC CRIMINALISTICS. 5 credits.

Prerequisites, 100, 284:100 and permission. The scientific approach to the conduct of criminal investigations; the collection, preservation, analysis and interpretation of evidence.

222:204. VICE AND NARCOTIC CONTROL. 3 credits.

Prerequisite, 100 and permission. An overview of vice squad operations, emphasizing methods used by syndicated gamblers, prostitutes and narcotics pushers. Recognition of narcotics and addicts, the use of informers and undercover methods used to combat vice.

222:240. LAW ENFORCEMENT ADMINISTRATION AND SUPERVISION. 3 credits.

Prerequisite, 100. Organization, management and administrative principles applicable to law enforcement agencies. A functional survey of unit organization, personnel policies and command dynamics of the agency, the ability to apply administrative law in police administrative processes.

222:244. INDUSTRIAL SECURITY. 3 credits.

Prerequisite, 100. Establishing and managing an industrial guard force. Plant Security with a concentration on property protection by use of mechanical and electronic security devices. Federal government security regulations and security clearances.

222:250. CRIMINAL JUSTICE THEORY AND PRACTICE. 3 credits.

Prerequisites, 222:100 and 222:240. A comparative study of traditional criminal justice management strategies and innovative, experimental strategies which are being introduced into the field. Emphasis will be placed on the role of criminal justice agencies, personnel selection, recruitment of women and minorities, training, career ladders, team policing and professionalism.

222:252. POLICE COMMUNITY RELATIONS. 3 credits.

Prerequisite, 100. An examination of the interrelationship between the community and the police. An in-depth study of attitudes and education; emphasis on human relations methodology in bettering relationships. The role of the police administrator in handling conflict and disturbance.

222:256. CRIMINAL INVESTIGATION. 3 credits.

Prerequisite, 100 and permission. Theories and concepts of the investigator's role in the total police function; techniques of interviews and interrogations; crime scene search; collection and preservation of evidence; sources of information, and the conduct of specialized investigations.

222:258. TRAFFIC PLANNING AND OPERATIONS. 3 credits.

Prerequisite, 100. An overview of traffic planning and operation emphasizing the educational, engineering and enforcement concepts; the conduct of special traffic programs, accident investigation and traffic laws.

222:259. CRIMINAL JUSTICE INTERNSHIP. 6 credits.

Prerequisite, 100. A supervised work experience for the purpose of increasing student understanding of law enforcement administration and operation. The police work study is initiated by the school in an agency. Both school and agency supervise and direct the student's program.

222:260. CRIMINAL JUSTICE INTERNSHIP EVALUATION. 2 credits.

Corequisite, 222:259. Analysis of theory, problems, and practices encountered by Criminal Justice intern during service in cooperating agency. Reinforces experiential learning dur-

ing internship; emphasis on problems arising during internship.

222:299. SPECIAL TOPICS IN CRIMINAL JUSTICE TECHNOLOGY. *1-5 credits.*

Prerequisite, permission. Selected topics or workshops of interest in Criminal Justice Technology.

223: FIRE SCIENCE TECHNOLOGY

223:100. INTRODUCTION TO FIRE SCIENCE.

3 credits.

History and philosophy of fire protection; review of statistics of loss of life and property by fire; introduction to agencies involved in fire protection; current legislative developments and career orientation; discussion of current related problems and expanding future fire protection.

223:102. FIRE PREVENTION AND BUILDING CONSTRUCTION. *3 credits.*

Exploration of building construction and design with emphasis focused on fire protection concerns; review of related statutory and suggested guidelines both local and national in scope.

223:104. FIRE INVESTIGATION METHODS.

3 credits.

The history, development and philosophy of fire investigation and detection including inspection techniques; gathering of evidence and development of technical reports; fundamentals of arson investigation, processing of criminal evidence and criminal procedures related to various local and state statutes.

223:200. FIRE DETECTION AND SUPPRESSION SYSTEMS. *3 credits.*

Study of required standard for water supply; protection systems; automatic sprinklers and special extinguishing systems; analysis of various automatic signaling and detection systems.

223:202. FIRE-FIGHTING TACTICS AND STRATEGY. *3 credits.*

Efficient and effective utilization of manpower, equipment and apparatus. Emphasis on preplanning, fire ground organization, problem solving related to fire ground decision making, and attack tactics and strategy.

223:204. FIRE PREVENTION PRACTICES.

3 credits.

Prerequisite: 102. Survey of fire suppression organizations; basic elements of fire ground tactics and organization; manpower and equipment utilization; survey of building designs, construction, hazardous materials, extinguishing agents, equipment, and apparatus.

223:240. FIRE DEPARTMENT ADMINISTRATION AND SUPERVISION. *3 credits.*

An exploration of organization principles with emphasis on fire department organization including a study of the history, types, methods and principles of fire department organization, both formal and informal, line and staff. Emphasis placed on supervisory responsibilities and functions.

223:250. HAZARDOUS MATERIALS. *3 credits.*

Prerequisite, 284:100. Study of chemical characteristics and reactions related to storage, transportation, and handling of hazardous materials, e.e., flammable liquids, combustible solids, oxidizing and corrosive materials and radioactive

compounds. Emphasis on emergency situations and fire fighting and control.

223:252. FIRE HYDRAULICS AND EQUIPMENT.

3 credits.

Application of mathematics and physics to properties of fluid states, force, pressure and flow velocities. Emphasis in applying principles of hydraulics to fire-fighting problems.

223:254. LEGAL ASPECTS OF FIRE PROTECTION. *3 credits.*

Prerequisite, 104. A study of legal rights and duties, liability concerns and responsibilities of the fire department organizations while carrying out their duties.

223:256. FIRE SAFETY CODES. (OSHA STANDARDS). *3 credits.*

A study of the history and development of codes with emphasis on the nature and scope of legal statutes and related codes in fire protection control.

223:299. SPECIAL TOPICS IN FIRE SCIENCE TECHNOLOGY. *1-3 credits.*

(May be repeated to a total of 6 elective credits.)

Prerequisite, permission. Selected topics or subject areas of interest in Fire Science Technology.

224: COMMERCIAL ART

224:124. COMMERCIAL ART STUDIO MECHANICS.

3 credits.

Prerequisite, 140. Craftmanship is stressed in exercises using the specialized tools, materials and techniques of the commercial art studio.

224:140. TYPOGRAPHY AND LETTERING. *3 credits.*

Prerequisite: 245. Letter symbols studied in terms of communication and esthetic considerations. History of letter forms, hand lettering, alphabet design, contemporary type faces.

224:222-223. PHOTOGRAPHY. *3 credits each.*

Sequential; prerequisite, 710:275. Creative use of photographic materials and equipment. Photography is studied as a fine and applied art. Student must own or have use of a camera with controllable shutter, lens diaphragm and focus.

224:242-243-244. COMMERCIAL ART PROBLEMS I, II AND III. *3 credits each.*

Sequential. Prerequisite: 124. Problems in commercial graphic design. Analysis, research, visual experimentation and finished art. Emphasis on craftsmanship and visual problem solving.

224:245. DESIGN IN COMMERCIAL ART.

3 credits.

Projects in visual design fundamentals. Research in audience response to visual media and form. Creative problem solving.

224:247. PACKAGING AND DISPLAY DESIGN.

3 credits.

Prerequisite: 242. Visual design and development of protective devices for packaging, shipment and display of consumer products.

224:248. PRESENTATION TECHNIQUES. *3 credits.*

Prerequisite: 243. Techniques of visual communication and presentation of design concepts. Illustration, charts, models, layout and sketches. Development of personal portfolio.

224:299. SPECIAL TOPICS IN COMMERCIAL ART.

1-3 credits. (May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Commercial Art.

226: COMMUNITY SERVICES TECHNOLOGY

226:260. ALCOHOL USE AND ABUSE. 4 credits.

A survey of the use and abuse of alcohol in our society with particular emphasis on replacing common stereotypes, myths and attitudes with improved understanding.

226:261. ALCOHOLISM PREVENTION AND TREATMENT. 4 credits.

Prerequisite, 260 Survey of theory and practices in the treatment and prevention of alcohol problems with special emphasis on being able to discriminate as to applicability and effectiveness of different approaches.

226:278. TECHNIQUES OF COMMUNITY WORK. 5 credits.

For those intending to work at community organization and outreach assignments in inner city and other poverty areas in the United States and for others desiring an understanding of these newly developing technical community service roles.

226:279. TECHNICAL EXPERIENCE IN COMMUNITY AND SOCIAL SERVICES. 3-6 credits (may be repeated for a total of 6 credits).

Prerequisite: 278 or permission. Individual placement in selected community and social service agencies for educationally supervised experience in a community and social services technician position. Does not substitute for 386:476 or 477.

226:299. SPECIAL TOPICS IN COMMUNITY SERVICES TECHNOLOGY. 1-3 credits. (May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Community Services Technology.

228: FOOD SERVICE MANAGEMENT

228:121-122. FUNDAMENTALS OF FOOD PREPARATION I, II. 3 credits each. (1-2).

Fundamental principles of food preparation and cookery. Laboratory experience in high standards of production, attractive service, use and selection of equipment and time management. Emphasis on basic principles from which food preparation techniques are formed.

228:135. FOOD PURCHASING. 4 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.

228:233. QUANTITY FOOD SERVICE. 5 credits. (1-4).

An introduction to large quantity food service procedures with emphasis on fundamental principles of food preparation, service and sanitation in large quantity operations. This course will give an opportunity for both theoretical and practical application of knowledge of good operation in carefully selected food service situations.

228:236. MENU PLANNING AND COST CONTROL. 4 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.

228:237. FOOD SERVICE INTERNSHIP I 4 credits.

Prerequisite 233. A continuation of 233. Food Service ex-

perience under commercial operating conditions.

228:240. FOOD SERVICE MANAGEMENT. 4 credits. (4-0).

Prerequisite, 242:102. Introduction to management principles pertinent to the organization and administration of food service systems, supervisory development, personnel selection and training, management theories, labor relations, cost control structures, managerial interpretation and evaluation of current systems and procedures.

228:243. FOOD EQUIPMENT AND PLANT OPERATIONS. 3 credits. (2-1).

A course to acquaint the student with available food service equipment, its selection, use and care. Field trips will be taken to wholesale outlets and food service establishments to see food service equipment demonstrated and in operation.

228:245. FOOD SERVICE MAINTENANCE AND SANITATION. 3 credits. (3-0).

The responsibilities of the food service manager are to coordinate the Housekeeping Department and the Maintenance Department in providing sanitary, attractive facilities and prolonging the life of the building and equipment. Emphasis is placed in proper food handling, safety and accident and fire prevention.

228:299. SPECIAL TOPICS IN FOOD SERVICE MANAGEMENT. 1-3 credits. (May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Food Service Management.

242: COMMERCE

242:101. ELEMENTS OF DISTRIBUTION. 4 credits.

A study of the basic principles and methods in distribution. This includes an examination of the functions, institutions and general commodities involved in the marketing process. An overview of agricultural, consumer and industrial goods disbursement through the economy with special attention to brand, product and channels of distribution policies.

242:102. PERSONNEL PRACTICES. 4 credits.

Provides the student with the information necessary to create and develop effective 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.

242:104. INTRODUCTION TO BUSINESS. 4 credits.

A survey course of business in its entirety including production, distribution, finance, control, and personnel functions. Emphasis is on descriptive materials, technical vocabulary, and career opportunities and responsibilities in various business fields.

242:105. REAL ESTATE PRINCIPLES.

Introduction to real estate as a profession, process, product and the measurement of its productivity. Students are responsible for reading and discussions relative to real estate and the American system.

242:111. PUBLIC RELATIONS. 3 credits.

The study of philosophy, techniques, and ethics of the management function known as public relations. Defines the variety of publics and the methods of communication.

242:115. ELEMENTS OF HOUSING DESIGN AND CONSTRUCTION

Included are discussions and readings on neighborhoods and sites, details of the interior and exterior of homes,

mechanical systems and house construction which help the professional discharge his agency responsibilities.

242:121. ADMINISTRATIVE OFFICE SUPERVISION. 4 credits.

Aids the student in developing supervisory leadership skills and includes the basic concepts of: the function of office work, management of information, control of office services, and work simplification.

242:125. ELEMENTS OF LAND AND REAL ESTATE DEVELOPMENT.

A course that requires the student to learn and apply the step-by-step processes that are needed by the professional developer in producing real estate for consumption.

242:170. BUSINESS MATHEMATICS. 3 credits.

A review of the fundamentals of math and algebra as applied to business, interest and discount, stocks and bond yields, payrolls, elementary statistics, retail math, consumer math, checking accounts reconciliations, and depreciation methods.

242:180. ESSENTIALS OF LAW. 4 credits.

A brief history of the law and the judicial system, study of contracts with emphasis on sales, agency, commercial paper, and bailments.

242:185. REAL ESTATE LAW.

A study of the contents of contemporary real estate law. Students are responsible for readings covering units on estates, property rights, license laws, contracts, deeds, mortgages, civil rights and zoning.

242:205 INTRODUCTION TO REAL ESTATE MANAGEMENT.

A survey course focusing upon the application of the management process to the specialized field and product of real estate. Discussion and research topics include property analysis marketing and administration.

242:211. BASIC ACCOUNTING I. 3 credits.

Defines accounting objectives and their relation to business. The basic principles of accounting are applied in theory and practice to the role proprietorship form of service and merchandising concerns. Journals, ledgers, work sheets and financial statements are introduced.

242:212. BASIC ACCOUNTING II. 3 credits.

Prerequisite, 242:211. Additional and more advanced accounting theory and practice includes the areas of cash, accounts receivable, notes, inventories, plant and equipment, and payroll. Partnership account is also introduced in this unit.

242:213. BASIC ACCOUNTING III. 3 credits.

Prerequisite, 242:212. Involves the study of basic accounting principles as they apply to the corporate form of business and a study of manufacturing accounting for job order and process costing, budgeting and standard costs.

242:215. ESSENTIALS OF REAL ESTATE ECONOMICS.

The student will learn and apply the techniques of analysis found in economics to the local real estate market and to parcels of real estate found within the market.

242:225. INDUSTRIAL REAL ESTATE.

An elements course focusing on the functions of the industrial real estate broker. Topics of discussion and research include site selection, development, marketing and financing the transfer of industrial property.

242:235. COMMERCIAL REAL ESTATE.

An elements course focusing on the functions of the commer-

cial real estate broker. Topics of discussion and research include site selection, development, marketing and financing the transfer of commercial property.

242:243. SURVEY IN FINANCE. 4 credits.

Prerequisites, three credits of Economics and three credits of Accounting. A survey of the field including instruments, procedures, practices and institutions. Emphasis on basic principles.

242:245. REAL ESTATE FINANCE.

A study of contemporary real estate finance. Units of reading and discussion include mortgage instruments, financial institutions, the mortgage market, governmental influence on finance and risk analysis and mortgage lending.

242:255. VALUATION OF RESIDENTIAL PROPERTY.

A study of methods used to estimate value in residential property including the cost of reproduction, market data, and income approach. The student prepares an appraisal on a residential property.

242:265. REAL ESTATE BROKERAGE.

A study of the application of the management functions of planning, organizing, directing, controlling and staffing to the real estate brokerage office. Student activities include reading, discussion and research.

242:275. SPECIAL PROJECT IN REAL ESTATE.

The student must demonstrate his knowledge of real estate by preparing a written report covering the brokerage process as it relates to a parcel of property.

242:295. APPLIED REAL ESTATE MATHEMATICS.

The student will learn and apply the mathematics necessary to the profession of real estate. Topics include proration of taxes, area calculations, appraising math, mortgage math and closing statements.

242:299. SPECIAL TOPICS IN COMMERCE. 1-3 credits.

(may be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Commerce.

244: DATA PROCESSING

244:100. DATA PROCESSING PRINCIPLES. 2 credits.

Prerequisite, permission. This course is designed to provide preparation for course 121. Introduction to programming for beginning students having some experience in data processing. Includes overview of data processing and use of equipment and study of computer math. When taken, replaces 120 in program.

244:120. INTRODUCTION TO INFORMATION PROCESSING. 4 credits.

This course is designed to give a general overview of data processing techniques, and provide the fundamentals necessary for subsequent computer oriented courses. Such topics as computer math, unit record theory and I/O flexibility will be discussed.

244:121. INTRODUCTION TO PROGRAMMING.

3 credits.

Prerequisite, 120. This course is designed to illustrate the basic function of a computer and provide specific information about second generation computers. Second generation programming is featured including programs in actual and assembly language as an introduction to programming.*

*Student programming is included.

244:130. COMPUTER PROGRAMMING I. 3 credits.

Prerequisite, 121. This course provides the fundamental information concerning third generation computers, specifically the system/360. It includes 360 machine language programming as well as an introduction to Basic Assembly Language.*

244:131. COMPUTER PROGRAMMING II. 3 credits.

Prerequisite, 130. This course is a continuation of Programming I with emphasis on practical applications in Basic Assembly Language including the decimal instruction set.*

244:229. RPG PROGRAMMING. 2 credits.

Prerequisite, 130. Study of Report Program Generator (RPG) programming. Includes training in RPG coding and debugging as well as discussion of applications which lend themselves to the use of RPG.*

244:232. COMPUTER PROGRAMMING III. 3 credits.

Corequisite, 131. This course is an introduction to COBOL with specific orientation toward the system/360.*

244:233. COMPUTER PROGRAMMING IV. 3 credits.

Prerequisite, 232. This course is a continuation of programming III including detailed applications in areas such as payroll and inventory. Disk and tape concepts will be discussed.*

244:234. COMPUTER PROGRAMMING V. 3 credits.

Prerequisite, 233. This course emphasizes topics which are varied to fit the needs of the students at the time. Such topics as utility utilization, operating systems, advanced topics in disk storage and introductory programming in PL/1 may be offered.*

244:240-241. DATA PROCESSING SYSTEMS I AND II. 3 credits for 240, 2 credits for 241.

Sequential; corequisite, 232. These two courses are designed to cover all systems design from data collection to data dispersment. The course includes system flowcharting at all levels of automation.

244:251-252. DATA PROCESSING PROJECTS I AND II. 4 credits for 251, 2 credits for 252.

Sequential; Prerequisite, 240 or permission. These courses provide a workshop for an accomplished student to thoroughly apply what he has learned. Projects vary to fit the individual needs.*

244:299. SPECIAL TOPICS IN DATA PROCESSING. 1-4 credits (may be repeated for a total of 4 credits.)

Prerequisite, permission. Seminar in topics of current interest in Data Processing or special individual student project in Data Processing.

252: SALES AND MERCHANDISING

252:103. PRINCIPLES OF ADVERTISING. 3 credits.

A review of the basic principles and functions of current advertising practice. A strong emphasis is placed on copy, layout and their interaction upon consumer's buying motives. Also included is an overview of related distributive institutions, media types and economic functions of advertising.

252:104. INTRODUCTION TO VISUAL MERCHANDISING. 3 credits.

A basic studio course in Retail Display Techniques. Includes window, interior, and point of purchase display categories.

252:105. ADVANCED VISUAL MERCHANDISING. 3 credits.

Prerequisite, 104. Principles of design as applied to commercial art. Function in visual design, elements of design, color

theory, lettering, printing processes, layout to camera-ready art. Studio projects in advertising graphics. No credit toward Commercial Art major.

252:202. RETAILING AND FRANCHISING. 3 credits.

Presents basic principles and practices of retailing and franchising operations. This includes site selections, store design, types of retail institutions, store operations and services, distribution centers and branch coordination.

252:203. TECHNIQUES OF RETAIL MERCHANDISING. 3 credits.

Prerequisite, 202. A survey of current retailing procedures at the department level to include the merchandising function, buying and pricing procedures, inventory control, sales analysis, open-to-buy planning and control and department expense control.

252:206. INTRODUCTION TO ADVERTISING MEDIA. 3 credits.

Prerequisite, 103. This course develops the elementary relationships between the advertising media themselves and also between the media and their position in the overall advertising mix. After a brief introduction in which the concept of an advertising plan is defined, the course moves into a discussion of the basic advertising media. Campaign planning with media selection and scheduling are stressed in relation to the overall advertising plan. The course concludes with a brief description of international and noncommercial advertising.

252:210. CONSUMER SERVICE FUNDAMENTALS. 3 credits.

Prerequisite, 242:101. Particular functions performed by firms involved in the distribution of goods. Includes general examination of the formulation of product policies, pricing policies, promotion policies, and distribution policies.

252:211. MATHEMATICS OF RETAIL DISTRIBUTION. 3 credits.

Prerequisite, 242:170. A basic skills course dealing with merchandising mathematics. This includes an understanding of the types of markups, the retail method of inventory, sales and stock planning and open-to-buy computations. Problem solving techniques are utilized throughout in order that the student can acquire a working knowledge of the mathematical concepts and background for successful retail buying.

252:212. PRINCIPLES OF SALESMANSHIP. 3 credits.

A study of the basic principles of selling, emphasizing individual demonstrations and sales projects. A review of the sales function as an integral part of the marketing process. This includes personal preparation for the vocation, buying motives, prospecting, the selling process and ethical problems related to industrial, wholesale, retail and direct selling.

252:213. SALES MOTIVATION. 3 credits.

Motivation of both buyer and seller in order to deliver a professional sales presentation and consequently make the sale. Major emphasis will be on a customer-oriented, problem-solving, need-satisfaction theory of selling.

252:290. FIELD STUDY IN RETAILING. 1 credit.

An intensive study of techniques, principles, and concepts currently used in retailing. Field trips and individual projects are utilized in conjunction with ideas gained from guest lecturers who are currently active in retailing management. The general areas covered are: Merchandising; Advertising and Display; Store Service Operations; Personnel; Finance and Control; Store Layout and Publicity.

252:299. SPECIAL TOPICS IN SALES AND MERCHANDISING. 1-3 credits. (may be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Sales and Merchandising.

254: SECRETARIAL SCIENCE

254:119. BUSINESS ENGLISH. 3 credits.

Fundamentals of the 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.

254:121. OFFICE PROBLEMS. 4 credits.

This course is designed to develop the secretary's occupational intelligence by teaching the best use of reference materials, office time, office supplies and equipment, the processing of incoming mail, postal and shipping services and knowledge about card punch and electronic data processing.

254:125. BUSINESS MACHINES. 2 credits.

Provides each student with the skill needed to solve business problems (with speed and accuracy) using the 10-key printing calculator, the electronic 10-key printing calculator, the electronic 10-key display calculator, and the comptometer.

254:126. ADVANCED BUSINESS MACHINES. 3 credits.

Prerequisites, 125, 242:170, 211. To prepare students to operate key-driven, ten-key, and rotary calculators with greater efficiency and in more complex business applications and to operate mechanical accounting machines in applications such as posting, payroll, accounts receivable, and accounts payable.

254:150. BEGINNING TYPEWRITING. 4 credits.

For students with no previous typewriting. Fundamentals of typewriting followed by drill to acquire skillfull coordination of machine parts and to introduce personal and business letter styles. A minimum standard of 35 gross words per minute with five or fewer errors must be attained on a 3-minute writing. (Note: this course to be substituted for elective credits in program of study.)

254:151. INTERMEDIATE TYPEWRITING I. 4 credits.

Prerequisite, 150 or the ability to pass proficiency examination based on course requirements of 150. Application of typewriting skill to various typewriting problems. Minimum standard of 45 gross words per minute must be attained with three or fewer errors on a 5-minute timed writing.

254:152 INTERMEDIATE TYPEWRITING II. 4 credits.

Prerequisite, 151 or the ability to pass proficiency examination based on the course requirements of 151. Application of typewriting skill to letter production and special communication forms. A minimum standard of 55 gross words per minute must be attained with three or fewer errors on a 5-minute writing.

254:169. SHORTHAND REFRESHER & TRANSCRIPTION. 4 credits.

This course is designed for the student who has completed Gregg shorthand theory (171 and 172) and needs an accelerated review. Principles of word construction, brief forms, and rules of grammatical usage are presented. Minimum dictation speed attainment of 60 words per minute with 95 percent accuracy for 3 minutes. Credit is allowed for this course if taken after 254:171 and/or 254:172.

254:171. SHORTHAND PRINCIPLES. 4 credits.

For the beginning shorthand student or the student who has completed less than one full year of high school shorthand. Presentation of Gregg shorthand theory. Minimum reading rate from homework notes of 100 words per minute; dictation speed attainment of 40 words per minute with 95 percent accuracy for two minutes on practiced material. Credit not allowed for this course if taken after 254:169.

254:172. INTERMEDIATE SHORTHAND. 4 credits.

Prerequisite, 171 or equivalent. Typewriting prerequisite or corequisite, 151 or equivalent. Continued study of Gregg shorthand theory. Minimum reading rate 110 words per minute. Further emphasis on writing shorthand from dictation and constructing outlines fluently. Handwritten transcription with attention to proper English usage. Minimum dictation speed attainment of 60 words per minute with 95 percent accuracy sustained for 3 minutes required for passing course. Credit not allowed for this course if taken after 254:169.

254:173. SHORTHAND AND TRANSCRIPTION.

4 credits.

Prerequisite, 172, 169, or equivalent (successful completion of a minimum of one year of high school shorthand). Typewriting prerequisite or corequisite 254:152. Emphasis in developing skill in taking shorthand dictation and typewriter transcription. A minimum dictation attainment of 70 words per minute with 95 percent accuracy sustained for 5 minutes on new material is required to pass the course.

254:241. RECORDS MANAGEMENT. 2 credits.

A study of the creation, storage, retention, transfer, and disposition of records in the business office.

254:253. ADVANCED TYPEWRITING. 3 credits.

Prerequisite, 152. Statistical typewriting, shortcut techniques, service mechanisms, legal, medical, technical, accounting, and various other business papers. A minimum standard of 60 gross words per minute must be attained with three or fewer errors on a 5-minute timed writing.

254:254. LEGAL TYPEWRITING. 3 credits.

Prerequisite, 152. A course to develop skill in typing of legal documents and printed legal forms from rough draft materials as well as from straight-copy material.

254:257. SECRETARIAL MACHINES. 4 credits.

(2-hour lab required).

Prerequisite, 253. Demonstration and laboratory practice in machines used to process data in the modern office, including machines used in dictation and transcription, duplicating, automated typing and statistical typing.

254:274. ADVANCED DICTATION AND TRANSCRIPTION I. 4 credits.

Prerequisite, 173 or equivalent. Course to follow one year of shorthand at the college level or determined equivalent. (successful completion of two years of high school shorthand). Emphasis on building dictation speed, producing mailable transcripts from dictated shorthand, increasing business and shorthand vocabulary, and reviewing shorthand theory. Minimum speed requirement at end of course is 80 words per minute with 95 percent accuracy sustained for five minutes on new matter dictation.

254:275. ADVANCED DICTATION AND TRANSCRIPTION II. 4 credits.

Prerequisite, 274. Emphasis on speed building with introduction of special shorthand shortcuts. Further emphasis on production of mailable letters. Minimum speed requirement is 90 words per minute with 95 percent accuracy sustained for five minutes on new matter dictation.

254:276. EXECUTIVE DICTATION AND TRANSCRIPTION. 4 credits.

Prerequisite, 275. Final shorthand course in the Executive Secretarial program. Designed to bring shorthand dictation and transcription skills to the level of employability in business offices. Emphasis on vocabulary building in specialized areas of modern business and technology. Minimum speed requirement at end of course is 100 words per minute with 95 percent accuracy sustained for five minutes on new matter dictation.

254:277. LEGAL DICTATION AND TRANSCRIPTION. 4 credits.

Prerequisite, 275. Course to develop shorthand and transcription skill of legal correspondence, basic pleadings, legal papers, reports and rules of practice. Minimum speed requirement at end of course is 100 words per minute with 95 percent accuracy sustained for five minutes on new matter dictation.

254:278. TECHNICAL DICTATION AND TRANSCRIPTION. 4 credits.

Prerequisite, 275. A course designed to develop skill in the writing and transcribing of specialized shorthand dictation for the technical, science, and engineering secretary.

254:282. MEDICAL MACHINE TRANSCRIPTION. 3 credits.

Prerequisite, 283. Introduction to medical terminology. Emphasis on meaning, pronunciation, spelling, and application of common medical terms, abbreviations, stems, and suffixes as related to the human body.

254:283. MEDICAL TERMINOLOGY. 4 credits.

Vocabulary and terms used by medical personnel. Usage and spelling of medical terms.

254:284. OFFICE NURSING TECHNIQUES I. 3 credits.

Prerequisite or corequisite, 254:283. This course provides theory and practice in nursing duties most often performed in a physician's and dentist's office. These include temperature, pulse, and respiration reading; examination room supplies, instruments, and methods of sterilization; taking of blood pressure and administering injections.

254:285. OFFICE NURSING TECHNIQUES II. 3 credits.

Prerequisite, 254:284. Laboratory techniques used in a medical office: laboratory orientation to urinalysis, hematology, bacteriology, Roentgen rays, electrocardiograms, and dentology terms.

254:291. DATA COMMUNICATIONS. 3 credits.

Development of knowledge, techniques, and skills to work successfully with data communications systems. Emphasis on written, oral, and machine language communication. Practice in operating equipment such as TWX, keypunch, PBX board, etc.

254:293. BUSINESS COMMUNICATIONS. 3 credits.

Prerequisites: 119 or 202:120 or equivalent. A course in business writing with emphasis divided between what to write in typical business situations and how to express ideas effectively to achieve specific purposes. In addition to writing business letters and memoranda, students write application letters, resumes, and other communications that most college students need for their personal use.

254:295. LEGAL OFFICE PROCEDURES. 4 credits.

Prerequisite or corequisite, 277. Introduction of the most common legal situations students will face on the job. Simu-

lated office situations with cassette material, work papers, and projects in noncourt and court documents and actions.

254:299. SPECIAL TOPICS IN SECRETARIAL SCIENCE. 1-3 credits. (may be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Secretarial Science.

256: TRANSPORTATION**256:110-111. TRANSPORTATION ECONOMIC POLICY I AND II. 3 credits each.**

Sequential. The economic characteristics of the transportation industries. A survey course of the early development of the economical aspects of rail, highway, water, air and pipeline. An analysis of the role of transportation in the nation's economic development.

256:115. TRANSPORTATION: COMMERCIAL MOTOR. 3 credits.

A study of the economic characteristics of the commercial motor industry. Emphasis on the problems, practices, rates, regulation, fares, and tariffs of the motor carrier. Attention is also given to operations, equipment, and financial aspects in this field.

256:116. TRANSPORTATION: COMMERCIAL AIR. 3 credits.

A critical analysis of the economic characteristics of the commercial air industry. A study of the problems, practices, regulations, rates, fares, and tariffs of the air carrier. Types of carriers and their services will be examined.

256:117. TRANSPORTATION: COMMERCIAL WATER. 3 credits.

Theories, practices, and regulations of the commercial water transportation industry with a detailed analysis of the part it plays in the nation's economy. Emphasis will be placed on inland and lake shipping as well as ocean-going water carriers. Classification, rates, practices, and tariffs will be included in the study.

256:118. TRANSPORTATION FREIGHT RATES AND CLASSIFICATION. 3 credits.

An analysis of freight rates, tariffs, and classifications. Detailed study of motor transport ratings and their applications utilizing extracts of existing tariffs of various regions. Details of posting, filing, and construction of tariffs are emphasized through problem solving.

256:220. TRANSPORTATION TERMINAL MANAGEMENT AND OPERATIONS. 3 credits.

A study of the management problems, practices, and decision-making as pertains to location of facilities, personnel programs, operations, organization, and control. Attention will be directed to the practical aspects of terminal management.

256:221. TRANSPORTATION TRAFFIC PRINCIPLES. 3 credits.

Principles applicable to industrial traffic management; traffic organization and documentation; shipping documents; carrier liability; shippers responsibility, routings; and transits will be explored. Emphasis on the problems encountered by the shipper in the economical movement of cargo will be highlighted.

256:222. TRANSPORTATION TRAFFIC PRACTICES AND PROCEDURES. 3 credits.

Prerequisite, 221. Practices applicable to industrial traffic management and problems involving the shipper will be

studied. Operations, services, warehousing, privileges, and locational factors will be analyzed.

256:225-226-227. INTERSTATE TRAFFIC PRACTICES AND PROCEDURES I, II, III. *3 credits each.*

Sequential. A series of three courses which includes comprehensive study of federal regulation of the transportation industry. 225 covers a thorough review of the Interstate Commerce Commission; its functions and organization; and remedial action available to shippers and carriers under the Interstate Commerce Act. Emphasis on ICC regulations, related acts, and practitioner procedures. 226 covers an analysis of the Interstate Commerce Regulations Acts affecting transportation and the National Transportation Policy. 227 constitutes a continuing analysis of the Interstate Commerce Commission with emphasis on related Federal Regulatory agencies; General Rules of Practice before the Commission; Study of cases establishing transportation policy; and code of ethics required.

256:299. SPECIAL TOPICS IN TRANSPORTATION.

1-3 credits.

(May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Transportation.

278: ALLIED HEALTH

278:100. BASIC PROCEDURES IN MEDICAL ASSISTING. *4 credits. (3-1).*

Techniques basic to all areas of medical assisting. Emergency treatment of burns, bleeding injuries, fractures, loss of consciousness, cessation of heartbeat and breathing. Techniques of bandaging, aseptic procedures and isolation. Transfer of injured or ill patients and their proper positioning. Monitoring of vital signs.

278:101. INTRODUCTION TO PHYSICAL THERAPY.

3 credits. (3-0).

History of Physical Therapy. 3 credits (3-0). History of Physical Therapy and survey of treatment procedures. Role and rationale for the Physical Therapist Assistant. Legal and ethical responsibilities.

278:121-122. MEDICAL ASSISTING PROCEDURES.

4 credits each.

Sequential. Each course presents a progression of skills required by the Allied Health worker in the caring of patients and delivery of health care. The student transcript will state the health area taught.

278:131. CLINICAL APPLICATION I. *2 credits. (2-0).*

Prerequisite: 100 and permission. Application of learned skills to patients in an affiliated hospital.

278:161-162. BASIC PHYSICAL SCIENCE FOR RADIOLOGIC TECHNOLOGY I, II.

2 credits each.

Sequential. Prerequisite: 202:131 and permission. Introduction to systems of measurement. Matter, force, motion, work, power, energy, basic electricity and magnetism.

278:165-166-167. RADIOGRAPHIC PRINCIPLES I, II, III. *2 credits each.*

Sequential. Prerequisite: 161. Elementary principles of ionizing radiation and their application in the medical setting. Radiographic accessories and chemical processing of the exposed X-ray film.

278:223-224-225. MEDICAL ASSISTING PROCEDURES. *4 credits each.*

Sequential. Prerequisite; appropriate courses in the 121-122 sequence. Presentation of more advanced skills appropriate

to second year paraprofessionals in Allied Health. Student transcript will state the health area taught.

278:232. CLINICAL APPLICATION II. *2 credits. (0-2).*

Prerequisite; 100 and permission. Application of learned skills to patients in an affiliated hospital.

278:233. CLINICAL APPLICATION III. *2 credits. (0-2).*

Prerequisite; 100 and permission. Application of learned skills to patients in an affiliated hospital.

278:234. CLINICAL APPLICATION IV. *6 credits. (0-6).*

Prerequisite; 100 and permission. Application of learned skills to patients in an affiliated hospital.

278:240. PATHOLOGICAL CONDITIONS. *3 credits. (3-0).*

Corequisite, 224 and 233. Most frequent diagnosis of patients receiving physical therapy. Central and peripheral nervous system diseases. Genetic traits leading to disease. Degenerative and skin diseases. Burns, fractures, lung and heart disease.

278:261-262. PHYSICAL SCIENCE FOR RADIOLOGIC TECHNOLOGY I, II. *2 credits each.*

Sequential. Prerequisite: 162. Fundamentals of electricity and radiation physics. Principles of X-ray equipment and other radiation sources used in the medical setting.

278:299. SPECIAL TOPICS IN ALLIED

HEALTH. *1-3 credits.*

Prerequisite; permission. A course designed to enable students to acquire information in an area of allied health where no formal course is available.

279: RESPIRATORY THERAPY

279:102. INTRODUCTION TO RESPIRATORY

THERAPY TECHNOLOGY. *1 credit.*

Prerequisite, permission. History of Respiratory Therapy and survey of care procedures. Role and rationale for the Respiratory Therapy assistant. Legal and ethical responsibilities.

279:121-122. MEDICAL ASSISTING PROCEDURES

I, II. *4 credits each.*

Sequential. Each course presents a progression of skills required by the Respiratory Therapy Technology worker in the caring of patients and delivery of health care.

279:131. CLINICAL APPLICATION I. *2 credits.*

Prerequisite, permission. Application of learned skills to patients in an affiliated hospital.

279:139 PHYSICAL SCIENCE FOR RESPIRATORY

THERAPY. *1-3 credits.*

Prerequisite, 202:131. Basic Physical Science as applied to Respiratory Therapy. Gas laws and gas analysis in Respiratory Therapy; gas flow, temperature, particle size, sedimentation rate, specific gravity, density, and viscosity.

279:140. PATIENT CARE IN RESPIRATORY

THERAPY. *3 credits.*

Prerequisite, 102, corequisite, 310:149. Nursing arts as applied to patients requiring respiratory therapist assistance and treatment.

279:141. PHARMACOLOGY IN RESPIRATORY

THERAPY TECHNOLOGY. *3 credits.*

Prerequisites, 102, 284:100, 254:283, and 310:149. Introduction to Pharmacology as related to Respiratory Therapy Technology. Safety and efficiency of handling drugs, legal considerations, methods of drug administration, and specific drugs used in Respiratory Therapy.

279:142. PATHOLOGY FOR RESPIRATORY THERAPY. 3 credits.

Prerequisites, 107, 310:149, and 310:133. Study of the Pathology of respiration and cardiovascular systems and their interaction with other systems of the body.

279:201. ANATOMY AND PHYSIOLOGY OF CARDIOPULMONARY SYSTEMS.

From 3 to 4 credits.

Prerequisite, 310:149. Detailed anatomy and physiology of the pulmonary and cardiovascular systems as related to the practice of Respiratory Therapy. Homostatic and defense mechanics. Thoracic structure and mechanics, patterns of ventilation, lung volumes and capacities, pertinent gas laws, resistance and compliance. Oxygen and carbon dioxide transport. Pertinent neurological factors. Ventilation and perfusion relationships. Lung and blood gas determinations and significance. (Laboratory)

279:223-224-225. MEDICAL ASSISTING PROCEDURES III, IV, V. 4 credits each.

Sequential. Prerequisites, appropriate courses in the 121-122 sequence. Presentation of more advanced skills appropriate to second year paraprofessionals in Respiratory Therapy Technology.

279:232-233. CLINICAL APPLICATION II, III. 2 credits each.

Prerequisite, permission. Application of learned skills to patients in an affiliated hospital.

279:234. CLINICAL APPLICATION IV. 6 credits.

Prerequisite, permission. Application of learned skills to patients in an affiliated hospital.

279:235. CLINICAL APPLICATION V.

4 credits. Prerequisite, permission. Application of learned skills to patients in an affiliated hospital.

284: CHEMICAL TECHNOLOGY**284:100. BASIC CHEMISTRY.** 4 credits. (3-1).

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 and measurement of chemical and physical quantities. Primarily for Medical Assistant and Criminal Justice students. Laboratory.

284:101. INTRODUCTORY CHEMISTRY I.

4 credits. (3-1).

Basic facts and principles of chemistry at an elementary level. Important elements and compounds and their uses in different fields. For Chemical Technology and Bachelor of Technology Students. Laboratory.

284:102. INTRODUCTORY CHEMISTRY II.

4 credits. (3-1).

Prerequisite, 101. Continuation of 101 with emphasis on structure of matter and deeper treatment of basic concepts of inorganic chemistry. Reactions in aqueous solutions. Laboratory.

284:103. QUALITATIVE METHODS. 4 credits. (3-1).

Prerequisite, 102. Principles of Analytical Chemistry. Organization of the laboratory; materials and safety. Semi-micro inorganic qualitative analysis with the underlying theory. Laboratory.

284:121-122. ORGANIC PRINCIPLES I AND II.

4 credits each. (3-1).

Prerequisite, sequential. Nomenclature, classification

preparation, physical and chemical properties of organic compounds. Laboratory.

284:201. QUANTITATIVE METHODS. 4 credits. (3-1).

Prerequisite, 102. Elementary theory of analytical chemistry with emphasis on gravimetric and volumetric procedures. Laboratory.

284:202-203. INSTRUMENTAL METHODS I AND II.

4 credits each. (3-1).

Prerequisite, 201 and 292:151, 152, 153; or permission. Instrumentation employed in qualitative and quantitative analysis. Theory and practice in chromatographic, electrochemical, optical, thermal and other methods. 202 or 203 can be taken independently. Laboratory.

284:210-211. SCIENTIFIC GLASS BLOWING I AND II.

1 credit each. (0-1).

Sequential. Prerequisite, permission. Laboratory instruction in the art of glass blowing. Fabrication and blowing of scientific glassware and chemical apparatus.

284:250. ELEMENTS OF PHYSICAL CHEMISTRY.

4 credits. (3-1).

Prerequisite, 102, 202:133, 292:151, 153. Physical principles governing behavior of chemical systems. Introductory thermodynamics, solution properties, chemical equilibrium, phase rule, electrochemistry, chemical kinetics and structure of matter. Laboratory.

284:255. LITERATURE OF CHEMISTRY. 1 credit. (1-0).

Prerequisite, permission. The literature of chemistry and how it can be used to gather information. Techniques of abstracting and computer application. Bibliography.

284:260. COMPOUNDING METHODS. 3 credits. (2-1).

Prerequisites, 102, 122 and 202:131 or permission. Principles and methods of selecting and compounding rubber for specific end uses. The compounder's art. Design and manufacture of rubber products. Processing and testing of basic elastomers. Lab.

284:270. POLYMER CHEMISTRY METHODS.

4 credits. (3-1).

Prerequisite, 122. A survey of polymer structure and properties and basic polymer preparation and testing methods. Commercially important polymers will be used as examples. Laboratory.

284:299. SPECIAL TOPICS IN CHEMICAL TECHNOLOGY.

1-3 credits. (May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Chemical Technology.

286: ELECTRONIC TECHNOLOGY**286:122. CIRCUIT THEORY.** 4 credits.

Prerequisites, 153. Corequisite 202:132. Sinusoidal voltages and currents, reactance and impedance, methods of circuit analysis, resonance, nonsinusoidal wave forms.

286:123. ELECTRONICS I. 4 credits.

Corequisite, 122. Fundamentals of electronic devices. Theory of solid state, vacuum tube and gas tube components; their elements, nomenclature, operation and interaction with other circuit components and environment.

286:124. ELECTRONICS II. 4 credits. (3-1).

Prerequisite, 123. Study of Class A single and multistage transistor amplifiers. Biasing considerations, equivalent circuits, basic amplifier design.

286:127. MEASUREMENTS. 3 credits.

Corequisite, 122. Principles and use of electrical and

electronic instruments including moving coil instruments, bridges, oscilloscopes, and signal generators. Analysis of measurement errors.

286:128. ELECTRONIC DRAFTING. *2 credits.* (1-1).
Prerequisite, 123. Fundamentals of electronic drafting. Preparation of principle types of electronic drawings. Survey of sources of electronic data and standards and experience in their use.

286:153. DC CIRCUITS. *6 credits.* (5-1).
Corequisite, 202:131. Nature of electricity, current and voltage. Ohm's Law, network analysis, DC instruments, magnetism, inductance, capacitance, transients and time constants.

286:225. ELECTRONICS III. *4 credits.* (3-1).
Prerequisite, 124. Study of application of transistors in low frequency circuits. Topics include single stage feedback, multistage feedback, power amplification and power supplies.

286:226. INTEGRATED CIRCUITS. *2 credits.* (1-1).
Prerequisite, 237. A survey of the development of the integrated circuit, its impact on the electronics industry, and its use in digital and analog applications.

286:237. DIGITAL COMPUTERS. *4 credits.* (3-1).
Prerequisite, 124. Fundamentals of digital computation, Boolean algebra, switching circuits, computer units, analog-digital conversion.

286:242 MACHINERY. *4 credits.* (3-1).
Prerequisite, 122. Principles of current and torque generation in DC and AC rotating machinery. Transformer theory. Basic control circuits for rotating machinery. Practical problems involving power conversion.

286:245. ANALOG COMPUTERS. *4 credits.* (3-1).
Prerequisites, 225, and 202:234. Principles and design of electronic analog computers and associated circuits. Solution of differential equations by analog computers.

286:249. INDUSTRIAL ELECTRONICS. *4 credits.* (3-1).
Prerequisites, 225, and 242. Industrial electronic circuit principles including timing, heat and light sensing devices, power controls and typical control circuits. Laboratory practice with device characteristics and simple circuits.

286:250. ELECTRONIC PROJECT. *2 credits.* (0-2).
Prerequisite. Final quarter or permission. Design, construction, and testing by student of electronic circuit. Progress reports and final report required. Presentation of electronic concept, principles involved, design and fabrication techniques.

286:251. COMMUNICATION CIRCUITS. *4 credits.* (3-1).
Prerequisite, 225. Principles of radio-wave propagation, modulation, and demodulation. Fundamentals, components, and circuits of communications systems.

286:253. SERVOMECHANISMS. *3 credits.* (2-1).
Prerequisite, 245. Principles of closed loop control systems. Methods of analysis to predict performance. Design of simple servomechanisms.

286:255. SHOP PRACTICES. *1 credit.* (0-1).
Prerequisites, 124 and 128. Use of hand and small power tools; assembly and construction of typical electronic equipment; design and production of printed circuit boards. Experience in performance testing and troubleshooting.

286:299. SPECIAL TOPICS IN ELECTRONIC TECHNOLOGY. *1-3 credits.*
(May be repeated for a total of 6 credits.)
Prerequisite: Permission. Selected topics or subject areas of

interest in Electronic Technology.

286:310. ELECTROMECHANICAL DEVICES AND CIRCUITS. *4 credits.*

Prerequisites, 202:336, 292:151, 152 and 153. Fundamentals of electrical circuits. Survey of electromechanical devices emphasizing electrical/mechanical interface. For non-Electronic Technology majors.

286:311. ELECTRONIC DEVICES AND CIRCUITS. *4 credits.*

Prerequisite, 310. Survey of electronic devices and their basic circuits. Applications in mechanical equipment and systems. For non-Electronic Technology majors.

286:350. CIRCUIT ANALYSIS. *4 credits.* (4-0).

Prerequisites, 225, 202:336. Analysis of linear electric circuits in both frequency and time domains. Loop analysis by matrix methods, Fourier analysis of non-sinusoidal waveforms. Laplace transformations, power and power-factor correction, polyphase systems.

286:351. INDUSTRIAL ELECTRICAL SYSTEMS. *3 credits.* (3-0).

Prerequisite, 350. Power systems including single-phase and three-phase analysis, balanced and unbalanced systems. fault calculations, symmetrical components with industrial applications.

286:352. DIGITAL SYSTEMS. *4 credits.* (3-1).

Prerequisites, 226 and 350. Study of design of digital systems. Topics include development of the system with time and space iteration, timing considerations, reduction techniques, and medium-scale integration.

286:353. CONTROL SYSTEMS. *4 credits.* (3-1).

Prerequisites, 253, 350 & 202:336. Laplace transform and frequency response methods of analysis. Control of industrial process variables such as pressure, temperature, flow, liquid level, and position.

286:360. NETWORK ANALYSIS. *3 credits.* (3-0).

Prerequisite, 350. Application of Norton, Thevenin & superposition theorems to four-terminal networks, network conversion, electrical wave filter analysis and synthesis, and pole-zero analysis.

286:400. DATA ACQUISITION & INTERPRETATION. *4 credits.* (3-1).

Prerequisites, 445:206, 347:251. Survey of data analysis and experimental design techniques including distributions, regression, correlation, analysis of variance, programming, canned programs.

286:402. INSPECTION TRIPS. *1 credit.* (0-1).

Prerequisite, senior standing. Guided tours through area industrial plants and technical facilities. Written reports on observations and processes.

286:406. COMMUNICATIONS SYSTEMS. *4 credits.* (3-1).

Prerequisites, 251, 350. Antennas, transmission lines, matching networks, modulation systems, propagation, noise, radar and microwaves. Problems encountered in communication systems.

286:410. TECHNOLOGY PROJECT. *1 to 3 credits.*

Prerequisite, Senior standing. A detailed study of a problem typically encountered in industry. Includes problem definition, literature search, comparison of solutions, and formal report. Course must be taken for at least one credit but may be expanded to 2 or 3 credits depending on the complexity of the problem and the depth of study.

288: INDUSTRIAL TECHNOLOGY

288:100. MANAGEMENT FUNCTIONS IN MANUFACTURING. 4 credits. (4-0).

Corequisite, 288:110. An introduction to the functions of the major sections of a manufacturing concern. Departmental purposes are identified with the major emphasis on their sequential relationship with each other. Intended to identify and relate the major functions which the Industrial Technology student encounters later in individual courses.

288:130. WORK MEASUREMENT PROCEDURES I. 3 credits. (2-1).

Prerequisite: 288:100. This course familiarizes the student with procedures for making hand work (assembly or machine) easier for the worker and faster for the employer. The "best method," once established, is the one which should be time studied.

288:131. WORK MEASUREMENT PROCEDURES II. 3 credits. (2-1).

Prerequisite: 130. This course utilizes the information gathered in establishing the best method, (Work Measurement I) to take time studies and establish standard data. Production standards set in this way provide the lowest labor cost per unit available. Work sampling for establishing time study allowances and machine or worker utilization is also covered.

288:141. SAFETY PROCEDURES. 3 credits. (3-0).

Prerequisite, 242:104. Sources and causes of accidents. The philosophy of accident prevention. An appraisal of the cost of accidents. The elements of an effective safety program. The human factors in safety, safety promotion and enforcement.

288:200. MANUFACTURING PROFITABILITY. 4 credits. (4-0).

Prerequisites: 100 or 242:104, and 242:211. Profit is defined as the difference between price and cost. It is also the basic purpose of manufacturing (at least for the owner and employee). To achieve this purpose, knowledge and control of costs are necessary. This leads to intelligent control of price (within the limitations of the marketplace) and profit improvement.

288:210. CONTROLLING AND SCHEDULING PRODUCTION. 2 credits. (2-0).

Prerequisite: 100 or 242:104. The production order is followed from the sales order through requisitioning, plant loading, expediting, scheduling, and shipping. Also covers material control and inventory record keeping. Covers Critical Path, Linear Programming and EDP applications.

288:231. FACTORY PLANNING AND MATERIALS HANDLING. 4 credits. (4-0).

Prerequisite, 242:104. In order to have the optimum operation facility we must have the best possible arrangement of the factors of production: manpower, materials and equipment. This course is concerned with the selection and arrangement of the activities which constitutes the factory. The selection and implementation of the material handling system that will facilitate production.

288:232. LABOR-MANAGEMENT RELATIONS. 4 credits. (4-0).

Prerequisite, 242:104. A study of the historical background of the labor movement. A study of the management viewpoint, the legal framework within which the modern labor organization operates, and the collective bargaining process and its effect on current labor management relations.

288:241. QUALITY CONTROL PROCEDURES.

4 credits. (2-2).

Prerequisites: 100 or 242:104 and 202:133 or 135. This course provides the theory and practice of inspection and sampling to measure quality. Students also learn to control quality by the use of charts mounted on the machine and by sampling plans, to compute plans and take them from Mil Specs, and to check machine capability and set tolerances.

288:245. PLANT AND EQUIPMENT MAINTENANCE. 3 credits. (3-0).

Prerequisite, 242:104. The application of scientific management principles to the maintenance functions. Meaning and scope of maintenance control, the organization of maintenance. Preventive maintenance. Estimating and controlling maintenance costs.

288:299. SPECIAL TOPICS IN INDUSTRIAL TECHNOLOGY 1-3 credits.

(May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Industrial Technology.

290: INSTRUMENTATION TECHNOLOGY

290:120. INSTRUMENTATION DRAFTING.

2 credits. (0-2).

A study of the effective ways of presenting instrumentation information. Includes practice in the preparation of sketches, drawing, graphs and bills of materials according to industry standards.

290:121. FUNDAMENTALS OF INSTRUMENTATION. 5 credits. (4-1).

Prerequisite, 292:153. A study of the variables encountered in process instrumentation and the indicating and recording devices used to measure these variables. Includes measurement of flow, pressure, temperature and related phenomena in industrial processes.

290:230. CONTROL PRINCIPLES. 5 credits. (5-0).

Prerequisites, 121 and 202:234. General control principles with emphasis on the characteristics of the process being controlled. Includes typical hydraulic, pneumatic and electrical controllers.

290:231. AUTOMATIC PROCESS CONTROL.

4 credits. (4-0).

Prerequisites, 230, 232. Analysis and design of feedback control systems by means of frequency response methods.

290:232. COMPUTER PRINCIPLES. 5 credits. (4-1).

Prerequisite, 286:124 and 202:234. Fundamentals of analog and digital computers. Application of computers in process control.

290:240. CALIBRATION AND STANDARDIZATION.

2 credits. (0-2).

Corequisite, 230. A laboratory course to provide training in the calibration and standardization of various pneumatic, hydraulic and electrical instruments. Also includes methods of maintenance and troubleshooting.

290:241. INSTRUMENTATION PROJECT. 3 credits. (0-3).

Prerequisite, final quarter or permission. Design, construction and testing by individual student of a specific instrumentation project. Comprehensive use is made of previous course of study.

290:299. SPECIAL TOPICS IN INSTRUMENTATION TECHNOLOGY.*1-3 credits.*

(May be repeated for a total of 6 credits.)

Prerequisite: Permission. Selected topics or subject areas of interest in Instrumentation Technology.

292: MECHANICAL TECHNOLOGY**292:121. TECHNICAL DRAWING I.** *3 credits. (1-2).*

Lettering and proper use of drawing instruments Freehand sketching. Geometric drawing. Pictorials. Drawing technique and accuracy emphasized.

292:122. TECHNICAL DRAWING II. *3 credits. (1-2).*

Prerequisite, 121. Basic descriptive geometry is introduced to aid in projection of auxiliary views. Sections and conventions. Dimensioning to include basic principles. Allowances and tolerances. Threads and fasteners to encompass standard forms of representation. Graphical solutions of problems using vectors.

292:123. TECHNICAL DRAWING III. *3 credits. (1-2).*

Prerequisite, 122. Study of descriptive geometry with applicable problems. Intersections. Developments. Piping

292:151. BASIC PHYSICS: MECHANICS. *4 credits. (3-1).*

Corequisite, 202:132. Principles of mechanics. Topics includes force and motion, work and energy, properties of fluids and gases, and introduction to atomic physics.

292:152. BASIC PHYSICS: ELECTRICITY AND MAGNETISM. *3 credits. (2-1).*

Prerequisites, 151 and 202:132. Principles of electricity and magnetism. Topics include electrostatics, basic direct current circuits, magnetism and electro-magnetism, alternating currents, and basic a-c circuits.

292:153. BASIC PHYSICS: HEAT, LIGHT, AND SOUND. *3 credits. (2-1).*

Prerequisites, 151 and 202:132 Principles of sound and light. Topics include wave motion, sound waves, light and illumination, reflection and refraction, mirrors and lenses, interference and diffraction, and thermal behavior of matter.

292:242. DESIGN MATERIALS. *4 credits. (3-1).*

Prerequisites, 298:125, 298:241. Fundamental properties of materials. Testing of material properties. Applications of methods to control the properties of materials.

292:243. KINEMATICS. *3 credits.*

Corequisite, 298:241. The study of rigid-body motions of simple linkage, cam driven mechanisms, and gear trains. Displacement, velocity, and acceleration analysis using graphical vector solutions wherever possible. Industrial applications if mechanisms used as examples.

292:244. MECHANICAL DESIGN I. *4 credits.*

Prerequisites, 123, 243, 298:241 and corequisite 242. Design of simple machine elements: springs, shafting, threaded fasteners, columns and combined stress problems. Fatigue analysis of both single and combined stresses.

292:245. MECHANICAL DESIGN II. *5 credits. (3-2).*

Prerequisite, 244. Machine layouts. Dimension determination from graphical constructions. Limit dimensioning for mass production manufacture. Complete over-all design of a simple machine including detail and assembly drawings for each part or sub-assembly.

292:247. SHOP METHODS AND PRACTICES.*4 credits. (1-3).*

Study of machine operations and the set-up of various types of tool room machines. Uses and operating techniques of the lathe, drill press, shaper, milling machine, and tool grinder. Emphasis on the planning of machine operations and use of measuring and layout instruments. Project work to illustrate the particular problems associated with each machine.

292:249. APPLIED THERMAL ENERGY. *4 credits. (3-1).*

Prerequisites, 153 and 202:234. Thermodynamic principles. Study of power cycles, involving gases, vapors and mixtures. Applications in I. C. engines, compressors, steam power cycles and refrigeration systems.

292:251. ELEMENTARY FLUID MECHANICS.*4 credits. (3-1).*

Prerequisites, 298:125; corequisite, 202:133. Statics and dynamics of fluids. Viscosity, energy and momentum relationships. Applications to fluid machinery and measurement.

292:299. SPECIAL TOPICS IN MECHANICAL TECHNOLOGY. *1-3 credits. (May be repeated for a total of 6 credits.)*

Prerequisite: Permission. Selected topics or subject areas of interest in Mechanical Technology.

292:310. ECONOMICS OF TECHNOLOGY. *5 credits. (5-0).*

Prerequisite, Junior standing or permission. Principles of technology economy including equivalence, alternatives, costs, depreciation, valuation and selected project studies.

292:346. MECHANICAL DESIGN III. *5 credits. (5-0).*

Prerequisites, 245 and 202:336. Design of machine components and subsystems. Vibrations in machines, dynamic forces caused by rotating masses, and lubrication problems in machine. Analysis of stress and deflection in machine structures. Laboratory problem in machine design including all necessary drawings and layouts and specifying all components complete with cost estimate.

292:347. PRODUCTION MACHINERY AND PROCESSES. *5 credits. (5-0).*

Prerequisites, 247 and 202:336. A study of the theory of metal cutting, various manufacturing machines, and modern production processes and techniques. Casting, forging, rolling, welding, powder metallurgy, plastics molding, electronic machining and materials handling techniques and equipment. Numerical control of automatic machine tools introduced.

292:348. INTRODUCTION TO NUMERICAL CONTROL. *4 credits.*

Prerequisites, 121, 202:132. Introduction to numerical control (N/C) process (operation of machine tools and other processing machines by series of coded instructions). Includes history, electronic data processing for N/C, manual programming, computer assisted programming, types of N/C systems, and economic evaluation.

292:401. INSPECTION TRIPS. *1 credit. (0-1).*

Prerequisite, senior standing. Trips through area industrial plants and technical facilities. Written reports.

298: SURVEYING AND CONSTRUCTION TECHNOLOGY**298:122. BASIC SURVEYING.** *4 credits. (3-1).*

Prerequisite, 202:132. Basic tools and computations for surveying, measurements of distances, elevations, and angles, traverse surveys. Field practice.

298:123. SURVEYING FIELD PRACTICE. 3 credits.(0-3). Prerequisite, 122. Practical experience in the use of surveying equipment and methods of surveying. Also provides student with responsibility for making decisions and planning and directing complete projects.

298:125. STATICS. 5 credits.(5-0). Prerequisite, 292:151 and 202:132. Forces, resultants and couples. Equilibrium of force systems. Trusses, frames, friction, first and second moment of areas. Shear and bending moment diagrams.

298:222. CONSTRUCTION SURVEYING. 4 credits.(3-1). Prerequisite, 122. Methods and procedures for establishing line and grade for construction. Circular, spiral, and parabolic curves. Cross-sectioning methods and earthwork. Laboratory problems involving calculations and field layout.

298:224. LAND SURVEYING. 4 credits.(4-0). Prerequisite, 122. 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 liabilities.

298:225. ADVANCED SURVEYING. 4 credits.(3-1). Prerequisite, 122. Introduction to theory of errors, precise leveling, baseline measurements, triangulation, trilateration, and bearings from celestial observations. Field practice.

298:226. SUBDIVISION DESIGN. 3 credits.(1-2). Prerequisite, 222, corequisite, 224. Topics include site analysis, land use controls, and plotting procedures. Laboratory includes the preparation of various types of projects leading to a complete subdivision.

298:231. BUILDING CONSTRUCTION. 4 credits.(4-0). Materials and types of construction used for the various parts of buildings. Encompasses buildings constructed with heavy timber, steel, concrete or a combination of these materials.

298:232. CONSTRUCTION. 4 credits.(4-0). Planning of construction operations. Construction equipment and selection for typical jobs. Emphasis on heavy construction.

298:233. CONSTRUCTION ADMINISTRATION. 4 credits.(4-0). Construction specifications. Office organization, preparation

of construction documents. Bidding, bonds. Construction management and supervision. Agreements and contracts.

298:234. ELEMENTS OF STRUCTURES. 4 credits. Prerequisite, 241. Principles of stress and structural analysis. Members in steel, timber, and concrete; connections.

298:235. SOILS TESTING. 2 credits.(1-1). Laboratory testing of soils following the testing procedures of the American Society for Testing Materials or the American Association of State Highway Officials with emphasis on the physical properties of the materials laboratory and field procedures which have been developed to control quality are presented.

298:236. MATERIALS TESTING-METALS. 2 credits.(1-1). Corequisite, 241. Emphasis is placed on ferrous and nonferrous metals. Laboratory experiments are designed to demonstrate the physical properties of metals as they relate to design. Whenever possible, procedures followed in the laboratory are based on the testing specifications of the American Society for Testing Materials.

298:239. MATERIALS TESTING-NONMETALS. 2 credits.(1-1). Mix design and testing of cement mortars and concrete. Wherever possible, procedures followed in the laboratory are based on the standard specifications of the American Society for Testing Materials.

298:241. STRENGTH OF MATERIALS. 5 credits.(5-0). Prerequisite, 125. Stress, strain, and stress-strain relationships. Tension. Compression. Torsion. Beams. Columns. Mohr's stress circle.

298:245. COST ANALYSIS AND ESTIMATING. 3 credits.(3-0). Elements of cost in construction, determination of unit costs, analysis of cost records, quantity surveys.

298:250. STRUCTURAL DRAFTING. 3 credits.(1-2). Prerequisite, 292:122. Duties of the structural draftsman in the preparation of detailed working drawings for steel, concrete, and wood members. Emphasis placed upon the portrayal, dimensions, and notes on a working drawing.

298:299. SPECIAL TOPICS IN SURVEYING & CONSTRUCTION TECHNOLOGY. 1-3 credits.(may be repeated for a total of 6 credits.) Prerequisite: Permission. Selected topics or subject areas of interest in Surveying & Construction Technology.

Buchtel College of Arts and Sciences

310: BIOLOGY

310:121-122-123. PRINCIPLES OF BIOLOGY.

4 credits each.

Sequential. An integrated course emphasizing cell structure and function, genetics, evolution, comparative morphology and physiology of living organisms and their developmental and ecological relationships. Laboratory.

310:133. MICROBIOLOGY. *4 credits.*

Basic principles of microbiology; destruction, removal and inhibition of microorganisms, immunity and allergy; common pathogens. Laboratory. Not available for credit toward a degree in Biology.

310:135. NATURE STUDY — PLANTS. *3 credits.**

Common plants of this region, life habits. Recommended for teachers of nature study. Not available for credit towards a degree in biology.

310:136. NATURE STUDY — ANIMALS. *3 credits.**

Common animals of this region, life habits. Recommended for teachers of nature study. Not available for credit towards a degree in biology.

310:147-148-149. ANATOMY AND PHYSIOLOGY.

3 credits each

Anatomy of the human body, chiefly gross study of all organ systems with emphasis on the physiological processes. Background of high school chemistry or equivalent strongly recommended. Not open to biology and pre-medical majors. Laboratory.

310:177. INTRODUCTORY BACTERIOLOGY. *3 credits.*

Basic principles of morphology, growth and techniques. Offered as a course for engineers, others by permission. Laboratory. Not available for credit toward a degree in Biology.

310:185. ECOLOGY AND BIOLOGICAL RESOURCES.

3 credits.

Basic principles of ecology and the functioning of ecosystems. Management of biological resources. The human population problems. Not available for credit toward a major in Biology.

310:191. INTRODUCTORY HUMAN PHYSIOLOGY.

4 credits.

Physiology of human processes operating in organ systems. Not open to pre-medical majors. Laboratory.

310:195-196-197. HEALTH CARE DELIVERY SYSTEMS. *1 credit each quarter, sequential.*

Only on credit/noncredit basis. Corequisite 310:121 and permission. Lecture and seminar on health care principles and practices including demonstrations and field trips with an analysis of the various components of the Health Care Delivery System. Restricted to students entering the Northeast Ohio Medical School 6-year program. This course is graded on a credit-noncredit basis and does not count toward meeting the requirements for a major in the biological sciences.

310:201. ANATOMY AND PHYSIOLOGY OF CARDIO-PULMONARY SYSTEMS. *3 credits.*

Laboratory. Prerequisites, 310:147-148-149 or equivalent and permission. A detailed treatment of the structure and function of the cardio-pulmonary systems. Open to students

in the Respiratory Therapy curriculum, others by permission.

310:207. PRINCIPLES OF MICROBIOLOGY. *4 credits.*

Prerequisites, 315:129-131 or equivalent. Principles of Microbiology; cultivation and control of microorganisms; relationships of microorganisms to man and his environment; medical microbiology. Laboratory.

310:228. TECHNIQUES IN BIOLOGY. *4 credits.*

Prerequisite, 123. Instruction in instrumentation used in biological laboratories. Recommended for all majors in biology. Laboratory.

310:229. HISTOLOGICAL TECHNIQUE. *4 credits.*

Techniques for the preparation of plant and animal tissues for light and electron microscopy. Laboratory.

310:246. GENERAL GENETICS. *4 credits.*

Prerequisite, 123. Principles of heredity, fundamental principles of genetics.

310:247. GENETICS LABORATORY. *1 credit.*

Prerequisite or corequisite, 246. Fundamental principles of genetics illustrated by experiments with *Drosophila* and other organisms.

310:260. ANATOMY AND PHYSIOLOGY OF SPEECH AND HEARING. *4 credits.*

Prerequisite, 123 and 191 and 770:135. This course, designed for both biology and speech students, considers speech as a basic biological process. It briefly surveys anatomical concepts of bodily organizations, and studies in more detail the anatomy and physiology of body regions and organs, which are both directly and indirectly responsible for speech. Laboratory.

310:271. GENERAL ECOLOGY. *4 credits.**

Prerequisite, 123. A study of the interrelationships between organisms and environment.

310:272. ORGANIC EVOLUTION. *4 credits.*

Prerequisite, 123. Early concepts of Evolution; Darwinian Theory and supporting evidence; the mechanism of evolution; molecular evolution; evolutionary trends in plants and animals.

310:273. ORGANIC EVOLUTION DISCUSSION. *1 credit.*

Corequisite, 272. Informal discussions of various aspects of organic evolution of general or special interest.

310:274. ECOLOGY LABORATORY. *1 credit.**

Prerequisite, 123, 271 to be taken concurrently, and permission. Methods of ecological observation and experimentation; analysis of data.

310:301. CELL BIOLOGY. *4 credits.*

Prerequisite, 123; 315:201-203; or 315:263-268. A study of the structure and functions of cells using microbial, plant and animal cells for demonstration of common tenets. The laboratory is designed to introduce the student to techniques used in biological research as well as to demonstrate biological phenomena. Laboratory.

310:307. MICROBIOLOGY. *4 credits.*

Prerequisite, one year of college chemistry. A general survey of microorganisms found in the Protista with emphasis on the bacteria — their physical and chemical characteristics. Relationships of microorganisms to man and his environment. Laboratory.

310:308. MICROBIOLOGY. 4 credits.

Prerequisite, 307. A detailed study of the cultivation and biology of bacteria — their growth, death, metabolism and genetics. Laboratory.

310:309. MICROBIOLOGY. 4 credits.

Prerequisite, 308. Determinative bacteriology. Classification and identification of major groups of bacteria. Laboratory.

310:313. FALL FLORA. 4 credits.*

Prerequisite, 123. Classification and recognition of autumn-flowering plants of the region. Laboratory.

310:314. PLANT TAXONOMY. 4 credits.

Prerequisite, 123. History of plant classification. Current theory and practice of taxonomy. Laboratory.

310:315. SPRING FLORA. 4 credits.*

Prerequisite, 123. Classification and recognition of spring flowering plants of region. Laboratory.

310:328. HISTOLOGY. 4 credits.

Prerequisite 123 and 301. Study of animal tissues. Laboratory.

310:341. INVERTEBRATE ZOOLOGY. 4 credits.*

Prerequisite, 123. Invertebrate groups, their classification, anatomy and life history of representative forms. Laboratory.

310:343. PARASITOLOGY. 4 credits.

Prerequisite, 123. Principles of parasitism; survey of the more important human and veterinary parasitic diseases. Laboratory.

310:344. GENERAL ENTOMOLOGY. 4 credits.*

Prerequisite, 123. Insects, their nature, structure, life history, and economic importance; insect orders, representative families and types. An insect collection is made (the department reserves the right to retain any specimens). Laboratory.

310:355. ORNITHOLOGY. 4 credits.*

Prerequisites, 310:123 or permission. An introduction to the biology of birds: Classification, anatomy, physiology, behavior, ecology, natural history, and field identification.

310:361-362. HUMAN ANATOMY AND PHYSIOLOGY. 4 credits each.

Prerequisite, 123, College Chemistry. A study of structure and function of the human body. Laboratory.

310:401. SEMINAR IN BIOLOGY. 1-2 credits.

Prerequisite, permission. Selected topics or areas for discussion with background material from original sources.

310:403. SPECIAL TOPICS IN BIOLOGY.

1-3 credits (may be repeated for maximum of 6 credits).

Prerequisite, permission. To enable undergraduate students to acquire information in special areas in which no formal course is offered.

310:410/510. PLANT DEVELOPMENT.

4 credits.

Prerequisite, 301, one year Organic Chemistry. Embryology and morphogenesis of plants in relation to physical, chemical, genetic, and spatial factors. Laboratory.

310:411-412/511-512. PLANT PHYSIOLOGY.

4 credits each.

Prerequisite, 123 and Organic Chemistry. Water, soil and mineral requirements of plants, and their metabolism, growth, and response to stimuli. Laboratory.

310:415/515. PLANT ANATOMY. 4 credits.

Prerequisite, 123. Structure and development of cells, tissues, organs and organ systems of seed plants. Laboratory.

310:416/516. MYCOLOGY. 4 credits.*

Prerequisite, 123. A study of the characteristics and life cycles of representative fungi with emphasis on plant pathogens. Laboratory.

310:417/517. PHYCOLOGY. 4 credits.*

Prerequisite, 123. Examination of the major groups of algae with emphasis on life cycles and economic importance. Laboratory.

310:418/518. PLANT MORPHOLOGY. 4 credits.*

Prerequisite, 123. The structure, reproduction, evolution and economic significance of liverworts, mosses, clubmosses, horsetails and ferns. Laboratory.

300:419/519. PLANT MORPHOLOGY. 4 credits.*

Prerequisite, 123. The structure, reproduction, evolution and economic significance of flowering and non-flowering seed plants. Laboratory.

310:422/522. CONSERVATION OF BIOLOGICAL RESOURCES. 4 credits.

Prerequisite, 271 or permission of instructor. Basic principles for the management of plant and animal resources and natural areas. Political, economic, and social aspects of resource management. Laboratory with field trips.

310:425/525. POPULATION ECOLOGY. 4 credits.

Prerequisite, 271. A study of the factors determining the size and structure of populations of microorganisms, plants, animals, and man. Field and laboratory work will emphasize census and experimental design. Laboratory.

310:427/527. LIMNOLOGY. 4 credits.*

Prerequisite, 271. Field and laboratory study of ponds, lakes, streams, and rivers. Dynamics of aquatic communities. Laboratory.

310:428/528. APPLIED AQUATIC ECOLOGY. 4 credits.

Prerequisite, permission. Methods and techniques for assessing the quality of natural water. Emphasis will be given to biological methods of evaluating water quality. Laboratory.

310:431/531. PHYSIOLOGY OF THE FUNGI. 4 credits.

Prerequisite, Mycology 416, and Organic Chemistry. The cultivation, growth, nutrition, metabolism, respiration, composition, and reproduction of fungi. Laboratory.

310:436/536. COMPARATIVE PHYSIOLOGY. 4 credits.

Prerequisite, 191 or 491-2 and 315:265, 268. A comparison of osmoregulatory, digestive, respiratory, cardiovascular, endocrine, neural and other physiological mechanisms in a wide variety of invertebrate and vertebrate animals. Emphasis is placed on evolutionary relationships in ecological adaptations. Laboratory.

310:437-438. CELLULAR MICROBIOLOGY.

4 credits each.

Prerequisite, 123, and Organic Chemistry. Characteristics of cellular and subcellular systems; main emphasis on characteristics common to all living things, most examples from microorganisms. Laboratory.

310:440-441/540-541. BACTERIAL PHYSIOLOGY.

3 credits each.

Prerequisites, 307, 308, 309, also Organic Chemistry, General Biochemistry. Biochemical activities of the bacterial cell with emphasis on metabolic transformations, catabolic pathways, biosynthesis, electron transport and energy relationships are stressed.

310:443/543. PATHOGENIC BACTERIOLOGY. 4 credits.

Prerequisites 307, 308, 309. Study of the major groups of bacteria which produce infections in man. The biochemical pro-

*Courses so marked involve field trips and the student may be expected to defray minor transportation costs.

perties of microorganisms which engender virulence, and the nature of host resistance. Laboratory.

310:444/544. IMMUNOLOGY. 4 credits.

Prerequisites 307, 308, 309; 443 recommended. The nature of antigens, the antibody response, and antigen-antibody reactions. The site and mechanism of antibody formations, hypersensitivity, immunologic tolerance, and the immune diseases will also be considered. Laboratory.

310:446/546. VIROLOGY. 4 credits.

Prerequisite, 309. Physical, chemical and biological properties of viruses including mechanisms of infection, genetics and tumor formation; methods of cultivation and identification. Laboratory.

*Courses so marked involve field trips and the student may be expected to defray minor transportation costs.

310:448. HUMAN GENETICS. 3 credits.

Prerequisites, 123. Principles of genetics in the human, immuno-genetics, mutation, genetics of population, selection and eugenics.

310:453-454-455/553-554-555. DEVELOPMENTAL ANATOMY. 4 credits each.

Prerequisite, 123. A sequence designed to introduce the process of vertebrate development. Lecture and laboratory work include descriptive and experimental embryology, phylogenetic development of the major vertebrate orders, and individual student research in developmental anatomy.

310:458/558. VERTEBRATE ZOOLOGY. 4 credits.*

Prerequisite, 123. Biology of vertebrates — evolution, ecology, behavior, systematics, anatomy. Laboratory.

310:459/559. MAMALOGY. 4* credits.

Prerequisite, 271; 458/558 suggested. Systematics, zoogeography, ecology, behavior, and functional anatomy of the mammals. Laboratory.

310:461/561. ADVANCED GENETICS. 4 credits.

Prerequisites, 246, 345:115-116 and 315:265, 268. The nature of the gene; genetic codes; hereditary determinants; mutagenesis and genes in populations. Lecture and seminar.

310:467-468-469/567-568-569 BIOLOGICAL PROBLEMS. 1-3 credits each.

Prerequisites, permission. Honors work, usually of laboratory investigations. Open to Seniors.

310:470/570. BIOLOGY OF BEHAVIOR. 3 credits

Prerequisites, 14 credit hours in Biology and/or Psychology and senior or graduate standing. The biological basis of behavior; ethological theory; the function, causation, significance, evolution, and adaptiveness of behavior.

310:480/580. RADIATION BIOLOGY. 4 credits.

Prerequisite, permission. This presents basic information in the applications of radio-isotopes and high energy sources to biology. Radiation safety and dosimetry will be included as well as selected practical applications of radio-labeled compounds. Laboratory.

310:481/581. PLANT BIOSYSTEMATICS. 3 credits.

Prerequisites, 415, 417, 418, 419 or permission. A survey of current research methods and thinking in plant phylogenetic and taxonomic work. Includes study of original publications discussion of experimental methods and the use of the herbarium in research.

310:491-492/591-592. HUMAN PHYSIOLOGY.

4 credits each.

Prerequisites, Organic chemistry and senior or graduate standing. A detailed study of function of the human body

with special emphasis on neuro-muscular, cardiovascular, and respiratory physiology. Laboratory.

310:493/593. ENDOCRINOLOGY. 4 credits.

Prerequisites, 191 and one year of chemistry. A detailed study of the endocrine system including its historical development, the chemical nature of hormones, their mode of action and regulatory mechanisms.

310:499/599. LABORATORY ANIMAL MANAGEMENT. 4 credits.

Prerequisite, 123 and permission. The principles involved in maintaining laboratory animals. Emphasis is placed on selection, management, preventative medicine and surgical procedures used in laboratory animal colonies.

GRADUATE COURSES

310:601-602. SEMINAR IN BIOLOGY. 1 credit each.

Discussion of students' research and papers from the current literature in biology.

310:603. SPECIAL TOPICS IN BIOLOGY. 1-3 credits.
(may be repeated for maximum of 6 credits.)

Prerequisite, permission. To enable students to acquire information in special areas in which no formal course is offered.

310:641-642. EXPERIMENTAL MICROBIAL PHYSIOLOGY. 4 credits each.

Prerequisite, 540, 541, 315:401. Primarily a laboratory course concerned with the basic techniques peculiar to the study of microbial physiology and modification of selected biochemical techniques for application to microbial systems. The relative merits of various techniques using microbial systems, methods of reporting and interpretation of data will be stressed.

310:647. CYTOLOGY. 4 credits.

Study of cells, main emphasis will be placed on the characteristics common to all cells and on investigative techniques used to determine these characteristics. Specialized cells will be considered mainly as they demonstrate general cellular principles.

310:649. ANIMAL TISSUE CULTURE. 4 credits.

Prerequisites, 301 and 307. 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.

310:657. EXPERIMENTAL EMBRYOLOGY. 4 credits.

Prerequisite, permission. A survey of the field of Experimental Embryology emphasizing basic terminology, definitions, and the principles and experimental methods of investigating basic processes in the various phases of vertebrate embryology. Laboratory.

310:667-668-669. MASTERS RESEARCH. 3 credits each.

310:691. ENVIRONMENTAL PHYSIOLOGY. 4 credits.

Prerequisites, 591-592. A study of the physiological reactions of healthy mammals to natural changes or extremes of the physical environment. Laboratory.

315: CHEMISTRY

315:111-112. INTRODUCTORY CHEMISTRY FOR ENGINEERS. 3 credits each.

Sequential. Introduction to basic facts and principles of chemistry, particularly as they apply to civil and mechanical engineering students.

315:121-122-123. INORGANIC CHEMISTRY.*3 credits each.*

Sequential. Designed primarily for students in Medical Technology. Fundamental laws and theories of chemistry; the more important elements and their components. Laboratory.

315:124. CHEMISTRY. 4 credits.

Fundamentals of organic, inorganic and physiological chemistry. Filmed Laboratory.

315:126-127-128. GENERAL INORGANIC CHEMISTRY FOR ENGINEERS. 4 credits each.

Sequential. Introduction to basic facts and principles of chemistry, particularly in relation to atomic structure and the periodic table. Laboratory.

315:129-130-131. GENERAL CHEMISTRY. 4 credits each.

Sequential. Introduction to basic facts and principles of chemistry. Laboratory.

315:132-133. PRINCIPLES OF CHEMISTRY.*4 credits each.*

Sequential. Introduction to basic facts and principles of chemistry. Structure of the atom and the periodic table. The chemical bond, chemical reactivity and oxidation-reduction relations. The states of matter. For chemistry majors and pre-medical students. Laboratory.

315:134. PRINCIPLES OF CHEMISTRY AND QUALITATIVE ANALYSIS. 5 credits.

Prerequisite, 133. The general theory of aqueous solutions, including acid-base behavior. Electrochemistry and chemical kinetics. The general laws of equilibria in chemical reactions, especially as they apply to qualitative analysis. For chemistry majors and pre-medical students. Laboratory.

315:201-202-203. ORGANIC CHEMISTRY AND BIOCHEMISTRY. 3 credits each.

Sequential. Prerequisite, 123. Designed especially for students in Medical Technology. Principles of organic chemistry with emphasis on biological systems. Laboratory.

315:263-264-265. ORGANIC CHEMISTRY, LECTURE.*3 credits each.*

Sequential. Prerequisite, 134 or 128 and permission. Covalent bond; structure of organic molecules; aliphatic and aromatic compounds; functional groups, polynuclear hydrocarbons and heterocyclic compounds; mechanisms of simple organic reactions.

315:266-267-268. ORGANIC CHEMISTRY, LABORATORY. 2 credits each.

Sequential. Corequisite, 263, 264, 265. Laboratory experiments to develop techniques in organic chemistry and to illustrate principles.

315:313-314-315. PHYSICAL CHEMISTRY, LECTURE.*3 credits each.*

Sequential. Prerequisite, 265 and 345:235 or permission. Gases, thermo-dynamics, thermo-chemistry, solutions, dilute solutions, chemical equilibrium, phase rule, chemical kinetics, electrochemistry, electrolytic equilibria, and atomic and molecular structure.

315:316-317-318. PHYSICAL CHEMISTRY, LABORATORY. 2 credits each.

Sequential. Corequisites, 313, 314, 315. Laboratory designed for illustrating techniques and equipment used in physical chemical investigations.

315:335-336-337. ANALYTICAL CHEMISTRY FOR LABORATORY TECHNICIANS. 4 credits each.

Sequential. Prerequisite, 134 or 123. Intended primarily for students preparing to become laboratory or hospital technicians. Elementary theory and calculations in qualitative and quantitative analysis, laboratory exercises, methods and instruments used in hospital laboratories.

315:401/501. BIOCHEMISTRY I, LECTURE. 4 credits.

Sequential. Prerequisite, 265. An intensive study of modern Biochemistry. Topics covered include the biochemistry of amino acids and proteins, the study of enzymes and their role as biocatalysts, the structure and biochemistry of nucleotides, nucleic acids, carbohydrates, liquids and the biochemistry of energy storage and utilization.

315:402/502. BIOCHEMISTRY II LECTURE.*4 credits.*

Sequential. Prerequisite 401/501. Topics covered in this second quarter of biochemistry include the carbohydrate metabolism, the citric acid cycle, oxidative phosphorylation, lipid and amino acid metabolism nucleotide and nucleic acid biosynthesis, the biosynthesis of proteins and the regulation of gene function.

315:404/504. BIOCHEMISTRY LABORATORY.*1 credit.*

Corequisite, 401/501. Topics include the chemical investigation of constituents of living matter such as amino acids, proteins, carbohydrates, lipids, and nucleic acids. The student will be exposed to modern biochemical laboratory techniques, such as the various types of chromatography, oxygen measurements, spectrophotometry and the use of radioisotopes.

315:405/505. BIOCHEMISTRY II LABORATORY.*1 credit.*

Sequential. Corequisite, 402/502. In this second quarter course the student will be exposed to the biological synthesis and degradation of the biochemicals which he investigated in the previous quarter. Experiments will furthermore deal with the role of enzymes as biological catalysts, their characteristics and the utilization of energy released during the oxidation of biological compounds.

315:408/508. THE PROFESSIONAL CHEMIST IN INDUSTRY. 2 credits.

Prerequisite, Senior Year or degree in Chemistry or Chemical Engineering or Permission. The business, legal, societal, economic, and other non-chemical aspects of a chemist's profession. The course is designed toward career education in the chemical industry by widening the professional chemist's horizons and broadening his interest.

315:411/511. PHYSICAL CHEMISTRY FOR BIOLOGY MAJORS. 5 credits.

Prerequisites, 268 and 345:116 and permission. Gases, thermodynamics, electrochemistry, chemical kinetics, macromolecules and colloids, special topics in biochemistry, biophysics and molecular biology.

315:415/515. CHEMICAL INSTRUMENTATION I.*3 credits.*

Prerequisites, 425, 428 or permission. Principles and applications of electrical and electronic devices for chemical analysis. Laboratory.

315:416/516. CHEMICAL INSTRUMENTATION II.*3 credits.*

Prerequisite, 415. Principles and applications of various transducers for chemical analysis. Laboratory.

315:417/517. INSTRUMENTAL METHODS OF ANALYSIS. 3 credits.

Prerequisite, 416. Principles and applications of analytical chemical techniques based on physical measurements. Laboratory.

315:421-422/521-522. QUALITATIVE ORGANIC ANALYSIS. 3 credits each.

Sequential. Prerequisites 268 and 428 or permission. Characterization and identification of organic substances, separation and identification of components of organic mixtures. Laboratory.

315:423. ANALYTICAL CHEMISTRY, LECTURE. 3 credits.

Prerequisite, 265 or 134 and permission. Introduction to the theoretical principles of quantitative analysis. Techniques and calculations, gravimetric and volumetric methods.

315:424. ANALYTICAL CHEMISTRY, LECTURE. 3 credits.

Prerequisite, 423. More advanced treatment of theoretical principles of quantitative analysis and of experimental procedures and techniques. Introduction to instrumental analysis.

315:425. ANALYTICAL CHEMISTRY, LECTURE. 3 credits.

Prerequisite, 424; corequisite, 315. Continuation of instrumental analysis with emphasis on newer analytical tools and methods.

315:426-427-428. ANALYTICAL CHEMISTRY, LABORATORY. 2 credits each.

Sequential. Corequisites, 423, 424, 425. Laboratory techniques employed in gravimetric, volumetric, and instrumental analysis.

315:450. INDUSTRIAL CHEMISTRY. 3 credits.

Prerequisite, 268. Chemical engineering unit operation considered in non-mathematical language, basic principles of instrumentation, manufacture of various inorganic and organic chemicals.

315:463/563. ADVANCED ORGANIC CHEMISTRY. 2 credits.

Prerequisite, 265. Introduction to the study of mechanisms of organic reactions.

315:464/564. ADVANCED ORGANIC CHEMISTRY. 3 credits.

Prerequisite, 463. Continuation of 463.

315:472/572. ADVANCED INORGANIC CHEMISTRY. 3 credits.

Corequisite, 315. Concepts of atomic structure integrated in systematic classification of elements. Periodic table. Study of the chemistry of the representative elements according to periodic grouping.

315:473/573. ADVANCED INORGANIC CHEMISTRY. 2 credits.

Prerequisite, 472. Chemistry of the transition elements. Coordination compounds, organometallics and metal carbonyls.

315:481. RESEARCH PROBLEMS. 2 credits.

May be repeated to total of 12 credits. Prerequisite, permission. An assignment of special problems to the student, designed as an introduction to research problems.

GRADUATE COURSES**315:601. CHEMISTRY OF POLYMERS I. 2 credits.**

Prerequisites, 265 and 268 or permission of instructor. Histo-

ry, classification and nomenclature (macrostructure and microstructure), naturally occurring polymers (polysaccharides, protein, nucleic acids, rubber, esters). Functional group polymerization, chain addition polymerization, reaction of polymers.

315:602. CHEMISTRY OF POLYMERS II. 2 credits.

Prerequisites, 601 or permission of instructor. Chain addition polymerizations. Free radical polymerization. Ionic polymerizations. Cationic polymerizations. Anionic polymerization. Ziegler-Natta coordinated polymerization.

315:603. CHEMISTRY OF POLYMERS III. 2 credits.

Prerequisites, 601 and 602 or permission of instructor. Condensation polymerization and natural polymers. Ring vs. chain stability. Linear condensation polymerization. Non-linear polycondensation. Polysaccharides. Natural and synthetic polypeptide proteins, and nucleic acids. Inorganic polymers.

315:604-605-606. CHEMISTRY OF POLYMERS LABORATORY. 2 credits each.

Sequential. Prerequisites, 265, 268. Preparation and identification of polymers to illustrate the method of polymerization discussed in 601, 602, 603, and 649.

315:609. MICRO—QUANTITATIVE ORGANIC ANALYSIS. 3 credits.

Prerequisites, 268, 428 and permission. Micro-quantitative analytical methods for determination of carbon, hydrogen, nitrogen, sulfur, and halogens in organic substances. Laboratory.

315:610. BASIC QUANTUM CHEMISTRY. 2 credits.

Prerequisite, 315. A study of the principles of quantum chemistry and their present applications. The emphasis is upon 1) understanding the principles behind the various approximate methods currently being used to describe molecular systems, 2) learning to perform the actual calculations with the use of a high-speed computer and programs supplied by the instructor, and 3) the interpretation and limitations of the results of the various methods.

315:611. CHEMICAL BONDING. 2 credits.

Prerequisite, 610. Application of quantum chemistry to the elucidation of chemical bonding and the structure of molecules.

315:612. SPECTROSCOPY. 2 credits.

Prerequisite 611. Application of quantum mechanical principles to the interpretation of molecular spectra.

315:613. SYNTHETIC METHODS OF ORGANIC CHEMISTRY. 3 credits.

Prerequisite, 265. A discussion of synthetic organic chemistry. Standard syntheses of organic compounds as well as newer techniques.

315:621-622-623. ADVANCED PREPARATIONS.

1 or 2 credits each.

Prerequisite, permission, Methods for preparing and purifying organic and inorganic compounds. Laboratory.

315:625. COLLOID CHEMISTRY. 2 credits.

Prerequisites, 425, 428. A thermodynamic and kinetic approach to interfacial, electrokinetic, and colligative phenomena. Application of Schlieren optics to studies in diffusion, ultracentrifuge, and distributions. Debye double layer concept and colloid stability. Micelles. Adsorption and related phenomena.

315:629-630-631. THEORETICAL INORGANIC CHEMISTRY. 2 credits each.

Sequential. Prerequisites, 315, 318 and 473 or permission. A

detailed treatment of the chemistry of the transition elements. Ligand field theory, kinetics and mechanisms, magnetism, applications of group theory, electronic spectra, molecular orbital theory.

315:635. BASIC THERMODYNAMICS. 2 credits.

Prerequisites, 315, 318. A rigorous treatment of the laws of thermodynamics and their application to chemical systems.

315:636. STATISTICAL THERMODYNAMICS. 2 credits.

Prerequisite, 635. Statistical thermodynamics systematically developed and applied to calculation of thermodynamics properties of various state of matter.

315:637. KINETICS. 2 credits.

Prerequisites, 315, 318. Methods of investigation and theory of the rate of chemical reactions. The theory of rate processes and its application in chemistry.

315:638-639-640. ADVANCED PHYSICAL CHEMISTRY LABORATORY. 1 credit each.

Prerequisite, permission. Laboratory experiments in physical chemistry.

315:649. CHEMISTRY OF ELASTOMERS. 2 credits.

Prerequisites, 265, 268 or permission. A study of the molecular structure and chemical reaction and properties of natural and synthetic rubbers, as well as the polymerization processes involved in the formation of the synthetic elastomers.

315:651-652-653. QUANTUM CHEMISTRY. 3 credits each.

Sequential. Prerequisite, 345:236, or permission. Wave mechanics from a postulation basis; exactly soluble problems, angular momentum and spin. Approximation methods and many-particle systems. The structure of diatomic and polyatomic molecules, and their properties; symmetry and spectroscopy. Self-consistent field techniques.

315:665. MASTER'S RESEARCH. 1 to 9 credits.

For properly qualified candidates for Master's degree. Supervised original research in organic, analytical, physical, and organic chemistry.

315:670. CHEMICAL MICROSCOPY AND MICRO CHEMICAL ANALYSIS. 3 credits.

Prerequisite, 427 and permission. Microscale titrations and physical measurements, phase studies, identifications, microchemical procedures.

315:671. THERMOANALYTICAL TECHNIQUES. 3 credits.

Prerequisite, 318 and permission. The methods of differential thermal analysis, thermogravimetric analysis and related techniques are discussed. The method of heating, programming, amplifying and recording and the effects of atmosphere, heat transfer, dilution, sample size and geometry are described. Applications to inorganic and organic reactions, reversible and irreversible, are discussed.

315:672. ADVANCED ANALYTICAL CHEMISTRY. 4 credits.

Prerequisite, 428 or equivalent. Two lectures, two laboratory periods. Advanced techniques for separation, determination and identification. Classical as well as recent techniques.

315:673. STEREOCHEMISTRY OF ORGANIC COMPOUNDS. 3 credits.

Prerequisite, 265. Modern theory of stereochemistry and its application to reactions of organic chemistry.

315:674. PHYSICAL CHEMISTRY OF POLYMERS I. 2 credits.

Prerequisite, 315 or permission of instructor. Basic statisti-

cal ideas. Molecular weights and molecular weight distributions. Molecular sizes and shapes. Kinetics of polymerization and degradation.

315:675. PHYSICAL CHEMISTRY OF POLYMERS II. 2 credits.

Prerequisites, 674 or permission of instructor. Mechanism and kinetics of end group and chain addition polymerization. Chain transfer. Copolymerization. Kinetics. Emulsion polymerization. Degradation.

315:676. PHYSICAL CHEMISTRY OF POLYMERS III. 2 credits.

Prerequisites, 674 and 675 or permission of instructor. Thermodynamics of polymer solutions. Chain parameters, phase equilibria. Dilute solutions. Polyelectrolytes. Branching. Association.

315:680. SPECIAL TOPICS IN ORGANIC CHEMISTRY. 1, 2 or 3 credits. (May be repeated).

Prerequisite, permission. Topics in advanced organic chemistry such as natural products, heterocyclic compounds, photochemistry.

315:681. SPECIAL TOPICS IN ANALYTICAL CHEMISTRY. 1, 2 or 3 credits. (May be repeated).

Prerequisite, permission. Topics in advanced analytical chemistry such as electronanalysis, activation analysis, atomic absorption spectrometry, mass spectrometry, liquid-liquid and liquid-solid chromatography, gas chromatography, ion exchange, thermoanalytical methods, separation, standards, sampling, recent developments.

315:682. SPECIAL TOPICS IN INORGANIC CHEMISTRY. 1, 2 or 3 credits. (May be repeated).

Prerequisite, permission. A consideration of topics in modern inorganic chemistry, such as: coordination compounds, the chemistry of the solid state, representative elements, nuclear chemistry, nonaqueous solvents, organometallic compounds.

315:683. SPECIAL TOPICS IN PHYSICAL CHEMISTRY. 1, 2 or 3 credits. (May be repeated).

Prerequisite, permission. Subject matter from the areas of modern physical chemistry.

315:684. SPECIAL TOPICS IN POLYMER CHEMISTRY. (Lectures and/or laboratory). 1, 2 or 3 credits.

Prerequisites, 265, 268, 315, 318 or permission. Study of topical subjects of current interest in the chemistry of macromolecules, encompassing organic, inorganic or physical chemistry aspects, and including laboratory work where applicable.

315:685-686-687. EXPERIMENTAL PHYSICAL CHEMISTRY OF POLYMERS.

2 credits each for 685 and 686; 2-4 credits for 687.

Sequential. Prerequisite or corequisite, 674, 675, 676 respectively. Laboratory experiments to illustrate methods and principles discussed in 674, 675, 676, respectively.

315:688. ADVANCED CHEMICAL THERMODYNAMICS. 3 credits.

Prerequisite, 636. Thermodynamics of solutions, fluctuation theory, generalized thermodynamic potential, irreversible thermodynamics.

315:691. ADVANCED INSTRUMENTAL ANALYSIS. 2 credits.

Prerequisite, 417. Modern Instruments.

315:692. ADVANCED INSTRUMENTATION. 3 credits.

Prerequisites, 318, 428. Theory and application of instrumental measurements. Interpretation of data.

315:793. PHYSICAL ORGANIC CHEMISTRY I. *3 credits.*
Prerequisite, undergraduate Organic and Physical Chemistry, no more than 4 years previously, or instructor's permission. Corequisite, 610. A consideration of the physical-chemical principles that determine the course of a chemical reaction, and initiation of discussion of reactive intermediates.

315:794. PHYSICAL ORGANIC CHEMISTRY II. *3 credits.*
Prerequisite, 793 or instructor's permission. Further consideration of reactive intermediates; discussion of solvent effects; substitution, additions and elimination reactions.

315:795. PHYSICAL ORGANIC CHEMISTRY III. *3 credits.*
Prerequisite, 794 or instructor's permission. Further consideration of reactive intermediates. Carbonyl reactions, heterocycle reactions, molecular rearrangements, photochemistry.

315:796. THEORETICAL ORGANIC CHEMISTRY. *3 credits.*
Prerequisite, 794. The application of modern quantum chemistry and thermodynamics to problems of organic chemistry.

315:865. DOCTORAL RESEARCH. *1 to 24 credits.*
Open to properly qualified students accepted as candidates for the degree of Doctor of Philosophy in Chemistry. Supervised original research may be undertaken in organic, inorganic, physical, or analytical chemistry.

320: CLASSICS

320:161-162-163. COMPARATIVE LITERATURE. *3 credits each.*
Major writers of Greece and Rome; their influence on later European literature. No foreign language necessary. Required of majors.

320:199. CLASSICAL MYTHOLOGY. *4 credits*
Myths, legends and folklore of Greece and Rome; some attention to the history of religion. No foreign language necessary.

320:313-314-315. CLASSICAL ARCHAEOLOGY. *3 credits each.*
The ruins and monuments of Greece and Rome; history reconstructed by examination of the material remains. No foreign language necessary. Required of majors.

320:401-402-403/501-502-503. EGYPTOLOGY. *3 credits each.*
Prerequisite, permission of instructor. Classical Egyptian (standard hieroglyphic of the 18th Dynasty); the history and antiquities of Egypt as far as the Roman occupation.

320:404-405-406/504-505-506. ASSYRIOLOGY. *3 credits each.*
Prerequisite, permission of Instructor. The Akkadian language; history and antiquities of Mesopotamia. May be repeated for credit with another cuneiform language.

320:407-408-409/507-508-509. ANCIENT NEAR EASTERN ARCHAEOLOGY. *3 credits each.*
Palestine, Mesopotamia, Asia Minor and adjacent lands; the Old Testament reviewed in the light of material evidence.

321: GREEK

321:121-122-123. ELEMENTARY GREEK. *4 credits each.*
The standard language of Hellenistic times with some atten-

tion to Modern Greek.

321:431-432-433/531-532-533. GREEK READING AND RESEARCH. *3 credits each.*
Prerequisites, 121-122-123 or equivalent, Second-year Greek of any Advanced Greek may be taken under these numbers. Homer, Sophocles, Plato, or the like; the New Testament is commonly offered. May be repeated for credit with a change of authors.

322: LATIN

322:121-122-123. ELEMENTARY LATIN. *4 credits each.*
Sequential. Some attention to the development of the Romance languages, especially Italian.

322:243-244-245. SECOND YEAR LATIN. *3 credits each.*
Selections from Virgil or Pliny; other material may be offered.

322:303. ROMAN SATIRISTS. *3 credits.*
Horace, Persius, Juvenal and Martial. History of satire, ancient and modern.

322:304. ROMAN DRAMATISTS. *3 credit*
Plautus, Terence and Seneca. History of the drama and theatre.

322:305. ROMAN HISTORIANS. *3 credits.*
Sallust, Livy, Tacitus and Suetonius. Historiography; philosophy of history.

322:306. ROMAN PHILOSOPHICAL AND RELIGIOUS WRITERS. *3 credits.*
Lucretius, Cicero, Seneca and Boethius. The conflict of religions in the Roman Empire.

322:307. MEDIEVAL LATIN WRITERS. *3 credits.*
The Vulgate, the liturgy and hymns; St. Augustine or the other Fathers; monastic chronicles and Goliardic verse.

322:308. ROMAN LYRIC AND ELEGIAC POETS. *3 credits.*
Catullus, Horace, Ovid, Propertius and Tibullus.

322:311. ROMAN NOVELISTS. *3 credits.*
Petronius and Apuleius. Milesian tale and Alexandrian romance.

322:431-432-433/531-532-533. LATIN READING AND RESEARCH. *3 credits each.*
Generally Latin Epigraphy, but certain subjects in the literature or archaeology of Rome may be offered. May be repeated for credit with a change of subject.

325: ECONOMICS

325:100. INTRODUCTION TO ECONOMICS. *5 credits.*
May not be substituted for 201, 202, 243, 244. In this course economics will be primarily considered in a broad social science context. Adequate amount of basic theory will be introduced with the main emphasis placed on the theory of price formation and income determination. There will be a balance between the emphasis on institutional aspects and formal analysis. Other topics to be discussed include: competition, monopoly, oligopoly and their effects on production and distribution; saving, investment and growth; the money mechanism, the Federal Reserve System and the economic role of modern governments and related matters.

325:201-202. PRINCIPLES OF ECONOMICS. *4 credits each.*
Sequential. Economic activity in modern industrial society, preparation for responsible participation in process of shap-

ing public policy. No credit to students who have received credit in 243.

325:244. INTRODUCTION TO ECONOMIC ANALYSIS. 4 credits.

For engineering majors. Intensive introduction to the analysis of modern industrial society as well as of the formulation of economic policy. The structure of economic theory and its relation to economic reality. (No credit for persons having completed 201, 202.)

325:248. CONSUMER ECONOMICS. 4 credits.

Spending habits of American consumers, influences affecting their spending decisions, personal finance, budget planning, saving programs, installment buying, insurance, investments, housing finance.

325:330. LABOR PROBLEMS. 4 credits.

Prerequisite, 202. Labor economics, principles, and public policy. Development of structure, objectives and policies of unions in the United States. Labor-management relations negotiations of collective bargaining agreements, administration of grievance procedures, economic effects of union activities, problems of public control.

325:333. LABOR ECONOMICS. 4 credits.

Prerequisite, 330. This course deals with the basic theoretical tools used in the analysis of the problems of labor in any modern economic system. Emphasis is given to the examination of the determinants of the demand for and the supply of labor.

325:360. INDUSTRIAL ORGANIZATION AND PUBLIC POLICY. 4 credits.

Prerequisite, 201-202. The role of industrial structure and firm conduct in the performance of industry and the way in which antitrust policy is designed to provide remedies where performance is unsatisfactory.

325:371. DEVELOPMENT OF ECONOMIC INSTITUTIONS. 4 credits.

Prerequisite, 201 and 202. Analytical survey of the origins and growth of the institutional frame of contemporary economic life in all its forms.

325:380. MONEY AND BANKING. 4 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.

325:385. ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT. 4 credits.

Prerequisite, 100 or 202, or 244 or permission. An introduction to the economic analysis of the use of natural resources and economics of the environment. Emphasis will be on the development and application of economic models to problems of water and air pollution, natural environments, natural resource scarcity, conservation, economic growth.

325:400. MACRO-ECONOMICS. 4 credits.

Prerequisite, 201, 202; recommended 650:348-49. Changes in the national income, production, employment, price levels, long-range economic growth, short-term fluctuations of economic activity.

325:405. PUBLIC FINANCE. 4 credits.

Prerequisite, 201 and 202. Tax systems and other sources of revenue of federal, state, and local governments; changing patterns of public expenditures; fiscal policy and debt management; economic effects of public policy.

325:410. MICRO-ECONOMICS. 4 credits.

Prerequisite, 201 and 202. Advanced analysis of consumer

demand, production costs, market structures, determinants of factor income.

325:420/520. MATHEMATICAL ECONOMICS I. 4 credits.

Prerequisites, 201, 202, 345:140-195 or permission. Mathematical treatment of economic statics and comparative statics. Single and multi-market equilibrium; comparative statics stability conditions. Theory of the firm and theory of consumer behavior. General equilibrium analysis; welfare analysis.

325:421/521. MATHEMATICAL ECONOMICS II.

4 credits.

Prerequisites, 420 or permission. A continuation of Mathematical Economics I. Input-output analysis, static and dynamic versions. Linear programming and activity analysis; application to theory of the firm. Elements of game theory. Dynamic economic analysis; solution techniques; some significant dynamic models from the literature.

325:425. QUANTITATIVE ECONOMICS.

4 credits.

Prerequisites, 201, 202, 650:348-49. or equivalent. Quantitative relationships. Construction of static and dynamic models and their use in explanation, forecasting and decision-making. Elements of Linear-programming, activity analysis, game-theory.

325:426/526. STATISTICAL APPLICATIONS IN ECONOMICS. 4 credits.

Prerequisites, 201, 202, 650:348-49 or permission. Relationship between facts and explanation. The techniques of making forecasts as basis for decisions in business and government as well as for the verification of hypotheses.

325:431/531. LABOR AND THE GOVERNMENT.

4 credits.

Prerequisites, 201, 202, 330. Development of public policy for control of industrial relations, from judicial control of 19th century to statutory and administrative controls of World War II and post-war periods. Economic effects of public control.

325:432. THE ECONOMICS AND PRACTICE OF COLLECTIVE BARGAINING. 4 credits.

Prerequisites, 201, 202, 330. Principles and organization of collective bargaining, collective bargaining agreements, issues presented in labor disputes and settlements, union status and security, wage scales, technological change, production standards, etc.

325:450. COMPARATIVE ECONOMIC SYSTEMS.

4 credits.

Prerequisite, 201-202. Systems of economic organization, ranging from the theoretical extreme of unregulated private enterprise to that of Marxian communism. Comparison of actual system of mixed public and private enterprise of contemporary United States with the state socialism of the Soviet Union.

325:460/560. ECONOMIC DEVELOPMENT AND PLANNING FOR UNDERDEVELOPED COUNTRIES. 4 credits.

Prerequisite, 201, 202, 650:348-49. Basic problems in economic development. Theories of development. The issues of industrialization and investment. Government planning for development and international efforts for economic development of underdeveloped countries. No credit for graduate majors in economics.

325:461. PRINCIPLES OF INTERNATIONAL ECONOMICS. 4 credits.

Prerequisite, 201 and 202. Theory of international trade and

foreign exchange, policies of free and controlled trade, international monetary problems, world economic planning.

325:472/572. STRUCTURE OF ECONOMIC THEORY.

4 credits.

Prerequisite, 400, 410 or permission. This course deals with the logical structure of economic theory. The relationship between formal theory and empirical data, and the testing of macro- and micro-economic hypotheses.

325:475/575. DEVELOPMENT OF ECONOMIC THOUGHT.

4 credits.

Prerequisite, 201 and 202. Evolution of theory and method, relation of ideas of economists to contemporary conditions.

325:481/581. MONETARY AND BANKING POLICY.

4 credits.

Prerequisites, 380 and 400. Control over currency and credit policies of control by central banks and governments, U.S. Treasury and Federal Reserve System.

325:486. GHETTO ECONOMIC DEVELOPMENT.

4 credits.

Prerequisite, 201 and 202. This course will stress careful study of the question of economic planning and development at the urban level, in response to the persuasive phenomena urban ghetto structures.

325:487. URBAN ECONOMICS: THEORY AND POLICY. *4 credits.*

Prerequisite, 410. This course is concerned with theoretical and empirical analyses of allocation, growth, and structure in the urban economy. Some attention will be paid to the spatial dimension in economic analysis along with discussions of metropolitan land markets and urban growth models. Attention is also focused on specific urban problems like housing, urban transportation, education and manpower policy and the evaluation of public programs. Special attention will be given to resource allocation in the urban public sector.

325:490/590. SEMINAR IN ECONOMICS. *4 credits.*

Prerequisite, permission. Opportunity for advanced students to study special fields of Economics.

GRADUATE COURSES

325:600. FOUNDATIONS OF ECONOMIC ANALYSIS. *4 credits.*

Prerequisite, graduate standing. Determination of national income, employment and price level; aggregate consumption, investment, and asset holding; also, decision problems faced by the household and the firm. Partial equilibrium analysis of competition and monopoly and general equilibrium analysis. May not be substituted for 325:602-603, 611 or toward the 45 hours of graduate credit required for M.A. in Economics.

325:601. MACRO-ECONOMIC THEORY. *4 credits.*

Advanced analysis of national income, the level of employment, and economic long-term growth.

325:602. MACRO-ECONOMIC ANALYSIS I. *4 credits.*

Prerequisite, graduate standing. The construction of static equilibrium models. Emphasis is on the explanatory value. The analysis throughout is predominantly in terms of comparative statics with only relatively brief mention of dynamic models. The presentation of the macro-models is in graphical and algebraic terms.

325:603. MACRO-ECONOMIC ANALYSIS II.

4 credits.

Prerequisite, 602. Macrodynamics economics and stability

analysis of the closed and open Keynesian system. Inclusive coverage of the post-Keynesian theories of production and growth from the Harrod-Domar Model to the more contemporary neoclassical growth economics. Technological improvement, capital accumulation, and stability of long run equilibrium are among the subjects stressed.

325:606. FISCAL THEORY AND POLICY. *4 credits.*

Economic theory of fiscal policy, government and income determination in the framework of the theory of general equilibrium. Background and goals of fiscal policy; problems and conflicts inherent in the attainment of these goals. Impact of fiscal policy upon the level of economic activity.

325:611. MICRO-ECONOMIC THEORY. *4 credits.*

Recent developments in partial and general equilibrium theory. Statistics and Dynamics. Review of mathematical programming, input-output analysis, activity analysis, game-theory. Decision and control processes in the allocation of resources and the distribution of income.

325:615. INDUSTRIAL ORGANIZATION. *4 credits.*

This course deals with the various forms of market structures. It is designed, however, not as a descriptive course, but primarily as analytical study of these observable market structures and of the dynamic determinants which shape and change them.

315:616. ANTITRUST AND REGULATION. *4 credits.*

Prerequisite, 611 and 615 recommended or consent of instructor. Antitrust policy and the regulation of industry. Focus on the economics of precedent-setting judicial decisions, and also on government policies in context of existing knowledge in areas of industrial organization and price theory. Alternative policies are examined.

325:627. ECONOMETRICS. *4 credits.*

Prerequisite, 526 or equivalent. Relationship of econometrics to economic analysis. Formulation of functional relations among economic variables in form suitable for statistical estimation from observational data. Construction of multiequation econometric models and methods of estimation.

325:628. LINEAR PROGRAMMING AND ACTIVITY ANALYSIS. *4 credits.*

A study of the methods of linear programming, including a presentation of the special cases of the transportation problem and input-output analysis. A comparison is also made between conventional marginal analysis and the linear programming formulation of the theory of the firm.

325:633. THEORY OF WAGES AND EMPLOYMENT.

4 credits.

An analytical approach to the integration of economic theory with observed labor market phenomena. Discussion of wage and employment theories and their evolution, the effects of unions on wage differentials, collective bargaining theories, and the effects of government regulation of the labor market.

325:634. LABOR ECONOMICS. *4 credits.*

The economic issues and implications involved in hours of work, employment and unemployment, and the impact of trade unions upon the basic institutions of a free private enterprise economy.

325:635. COMPARATIVE LABOR ECONOMICS.

4 credits.

A comparison of the structure and function of labor organizations in the United States, Western Europe, and some of the emerging underdeveloped countries. Emphasis is on the analytical explanation of the differences as well as of the common features of these organizations and on the social and legal framework within which they function.

325:642. THE ECONOMIC THEORY OF PUBLIC CHOICE. 4 credits.

Course concerns both positive and normative issues. Attention on criteria for public decision-making on the normative side, and on the analysis of institutional behavior (form and change) in the area of collective choice on the positive side. Discussion of real issues in at least our own urban and regional area.

325:655-656-657. READING IN ADVANCED ECONOMICS. 1-4 credits each. (A maximum of 8 credits may be applied toward the master's degree in economics.) Intensive investigation of selected problem area in advanced Economics under supervision of the instructor. Since the subject matter is decided upon in each case, the course may be taken repeatedly for credit.

325:664. SEMINAR ON ECONOMIC GROWTH AND DEVELOPMENT. 4 credits.

Main theories of economic growth since the age of classical economics are reviewed. This seminar deals with the major factors and problems in the development of emerging countries. Aggregative macro models of capital formation, investment, technology and external trade are discussed.

325:665. SEMINAR ON ECONOMIC PLANNING. 4 credits.

Types, methods and applications of planning. Planning for growth. Application of Input-Output, linear programming, computer simulations, and other statistical and mathematical methods in planometrics.

325:666. SEMINAR ON REGIONAL ECONOMIC ANALYSIS AND DEVELOPMENT. 4 credits.

The study of a particular national or international regional development. Any one or a combination of the following regions may be considered. The Middle East, North Africa, areas within Latin America such as the Brazilian North East or Caribbean, Southern Europe, South East Asia or Eastern Europe.

325:670. INTERNATIONAL ECONOMICS. 4 credits.

Historical development of international trade theory is surveyed and brought up to date. Equilibrium in the balance of payments through various mechanisms is discussed. The international monetary problems and reform proposals are examined. The European Economic Community and other regional integration attempts and their possible effects on the U.S. Balance of Payments and the evolution of the international economy are studied.

325:671. SEMINAR IN THE THEORY OF INTERNATIONAL TRADE. 4 credits.

Classical International Trade theory displayed by means of current geometric — algebraic methods. Major recent developments in international trade theory and their applications to current issues, such as trade liberalization, economic development and regional economic integration.

325:683. MONETARY THEORY AND POLICY. 4 credits.

An intensive study of some important areas of Monetary Theory including the more significant modern developments. Emphasis will be placed on the integration of money and value theory among other areas, plus some pressing policy issues.

325:695/696. RESEARCH AND THESIS. 4 credits each.**330: ENGLISH****330:150-155-160. 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 the General College requirement, 110:111-112-113.

330:220. STUDIES IN LITERATURE. 4 credits.

Prerequisite, 110:205. (With permission, the course may be repeated for additional credit as different topics are offered, but not for credit toward an English major.) Course is concentrated, in-depth study of thematically-grouped fiction, drama, poetry and/or exposition; course materials may well cut across generic lines.

330:237. REPRESENTATIVE AMERICAN WRITERS BEFORE 1865. 4 credits.**330:239. REPRESENTATIVE AMERICAN WRITERS, 1865 TO PRESENT. 4 credits.****330:240. SHAKESPEARE. 5 credits.**

Reading of 15 or more plays, with explanatory lectures and discussions.

330:242-243. INTRODUCTION TO LINGUISTICS.

3 credits each.

Sequential. Review of parts-of-speech grammar, strengths and weaknesses. Introduction to modern linguistic theory, descriptive and generative techniques.

330:244. APPRECIATION OF DRAMA. 3 credits.**330:245. APPRECIATION OF FICTION. 3 credits.****330:246. APPRECIATION OF POETRY. 4 credits.**

Courses 244, 245, and 246 constitute an approach to critical reading.

330:251. INTRODUCTION TO POETRY. 3 credits.

An introduction to poetry writing. Works by established writers will be analyzed in terms of technique. Weekly writing assignments will be discussed in class. Class limit is 15 students. (Effective winter quarter 1977)

330:252. INTRODUCTION TO FICTION WRITING. 3 credits.

An introduction to fiction writing. Works by established writers will be analyzed in terms of technique. Weekly writing assignments will be discussed in class. Class limit is 15 students.

330:253. INTRODUCTION TO SCRIPT WRITING. 3 credits.

An introduction to script writing. Works by established writers will be analyzed in terms of technique. Weekly writing assignments will be discussed in class. Class limit is 15 students.

330:265-266-267. ENGLISH LITERATURE.

4 credits each.

English Literature from Anglo-Saxon to modern times.

330:271. EUROPEAN BACKGROUNDS OF ENGLISH LITERATURE. 5 credits.

Representative French, German, Italian, and Spanish works, medieval to nineteenth century, in translation.

330:272. MODERN EUROPEAN LITERATURE. 5 credits.

Representative European writers from about 1850 to the present in translation.

330:275. THE OLD TESTAMENT AS LITERATURE. 4 credits.

The history of the Hebrews to 586 B.C., with related prophecy, fiction and poetry.

330:277. THE APOCRYPHA AND THE NEW TESTAMENT AS LITERATURE. 4 credits.

Messianic literature, Wisdom literature. Apocalyptic literature, the Apocrypha, selections from the Gospels, and the Pauline letters.

330:280. SPECIALIZED WRITING. 4 credits.

Prerequisite, 110:205 or equivalent. Principles and practice of style, structure, and purpose in advanced expository writing, with special applications to the writing demands of a specific academic discipline or career: e.g., business writing, legal writing, writing for behavioral scientists, or literary criticism. With permission, the course may be repeated for credit as different special areas are offered.

330:321. THE ENGLISH NOVEL BEFORE 1830.

5 credits.

The development of the English novel from Defoe to Scott.

330:323. THE ENGLISH NOVEL: 1830-1900. 5 credits.

The development of the English novel from Dickens to Hardy.

330:338. BLACK AMERICAN LITERATURE.

4 credits.

A study of the representative writings of Black America authors from the eighteenth century to the present.

330:351. ADVANCED POETRY WRITING. 3 credits.

Prerequisite, permission. Advanced practice in writing poems, with an emphasis on shaping works for publication. Class limit is 15 students.

330:352. ADVANCE FICTION WRITING. 3 credits.

Prerequisite, permission. Advanced practice in writing short stories, with an emphasis on shaping works for publication. Class limit is 15 students.

330:355. CONTINENTAL DRAMA. 5 credits.

Masterpieces of the drama from the Greeks to the present.

330:363. ENGLISH DRAMA OF THE PRE-ELIZABETHAN AND ELIZABETHAN PERIOD.

4 credits.

The development of English non-Shakespearean drama from the *Quem Quaeritis* Trope to the death of Elizabeth, 1603.

330:364. ENGLISH DRAMA OF THE JACOBEAN AND CAROLINE PERIOD. 4 credits.

The development of English non-Shakespearean drama from the end of the sixteenth century to the closing of the theatres in 1642.

330:365. ENGLISH DRAMA OF THE RESTORATION AND EIGHTEENTH CENTURY. 4 credits.

Development of the British drama from the reopening of the theatres in 1660 to 1800.

330:390. SPECIAL TOPICS IN LITERATURE AND LANGUAGE. 4 credits.

Prerequisite, 110:113. Traditional and non-traditional topics in English literature and language, supplementing courses listed in the University Bulletin, generally constructed around theme, genre, and language study. The course may be repeated for credit as different topics are offered.

330:401/501. CHAUCER. 5 credits.

The *Canterbury Tales* and other literary works in Middle English.

330:403/503. MIDDLE ENGLISH LITERATURE.

4 credits.

Middle English literature works from the 12th to the 15th century.

330:404/504. SIXTEENTH-CENTURY LITERATURE.

5 credits.

Prose and poetry from early Tudor period to later Elizabethan period, excluding drama.

330:406-407/506-507. ANGLO SAXON. 3 credits each.

Sequential. From studies in Old English language and Old English prose to selections from old English poetry, including *Beowulf*.

330:412/512. SEVENTEENTH-CENTURY

LITERATURE. 4 credits.

Non-dramatic literature from Bacon to Dryden.

330:413/513. MILTON. 4 credits.

Concentrated study of selected prose and major poems of Milton.

330:415/515. THE EARLY EIGHTEENTH CENTURY.

3 credits.

Pope, Swift and others.

330:416/516. THE LATER EIGHTEENTH CENTURY.

3 credits.

Johnson, Gray and others.

330:419/519. LITERATURE OF THE ROMANTIC PERIOD. 4 credits.

Poetry and prose of the early nineteenth century.

330:420/520. LITERATURE OF THE VICTORIAN PERIOD. 4 credits.

Poetry and prose of the later nineteenth century.

330:426/526. AMERICAN FICTION: BEGINNINGS TO 1885. 4 credits.

A survey of the development of American fiction from its beginnings in the late eighteenth century to the writings of Mark Twain.

330:427/527. AMERICAN FICTION: 1885-1918.

4 credits.

A continuation of the first quarter concluding with the close of World War I.

330:428/528. AMERICAN FICTION: 1918 TO PRESENT. 4 credits.

A continuation of the second quarter concluding with recent examples of American fiction.

330:429/529. AMERICAN POETRY. 5 credits.

A survey of American poetry from the beginning to the present time.

330:430/530. AMERICAN NON-FICTION. 4 credits.

A study of major or representative contributions to non-fictional prose including the journals, notebooks, autobiographies, biographies and essays of those writers important in the history of American literature.

330:432/532. TWENTIETH-CENTURY AMERICAN DRAMA. 4 credits.

Development of American drama from the end of World War I to the present.

330:440/540. TWENTIETH CENTURY BRITISH LITERATURE. 5 credits.

A study of representative works of major British and Irish writers from 1900 to the present.

330:442/542. MODERN BRITISH AND IRISH DRAMA.

4 credits.

Development of British and Irish drama from the late nineteenth century to the present.

330:443/543. BRITISH FICTION SINCE 1925. 4 credits.
A study of important British novelists since 1925, excluding Lawrence, Joyce and Woolf.

330:450-451-452. HONORS IN ENGLISH.
3 credits each.

Prerequisite, Senior standing and permission. Directed studies both in individual and group sessions designed to encourage independent reading and thought — based on a related series of readings to be arranged with the instructor.

330:460/560. THEORY OF RHETORIC. 3 credits.
Ancient and modern theories of rhetoric, with attention to the classical oration, the "topics" of rhetoric, and their application to the teaching of English.

330:462/562. HISTORY OF THE ENGLISH LANGUAGE. 5 credits.
From Proto-Old English to the present.

330:490/590. SEMINAR: ENGLISH. 3-5 credits.

330:491/591. SEMINAR: ENGLISH. 3-5 credits.

330:492/592. SEMINAR: ENGLISH. 3-5 credits.
Special studies, methods of literary research, special concentration in English and American literature.

330:498/598. WORKSHOP. 1-5 credits.
Group studies of special topics in English. May not be used to meet undergraduate or graduate major requirements in English. May be used for elective credit only. May be repeated.

GRADUATE COURSES

330:619. SHAKESPEAREAN DRAMA. 5 credits.
Concentrated study of several Shakespearean plays with emphasis on historical, critical and dramatic documents pertinent to the development of Shakespeare's art.

330:622. SHAKESPEARE'S CONTEMPORARIES IN ENGLISH DRAMA. 5 credits.
Readings in such playwrights as Lyly, Marlowe, Jonson, Beaumont, Fletcher, Middleton, and Ford and in contemporary writings pertinent to the theatrical scene.

330:643. KEATS AND HIS CONTEMPORARIES. 5 credits.
The poetry of John Keats studied against the background of romantic poetic theory and the poetry of Keats' contemporaries.

330:647. VICTORIAN POETS. 5 credits.
Major verse of Tennyson, Browning, and Arnold, related poetry and critical studies.

330:659. THEORY AND PRACTICE OF MODERN POETRY. 5 credits.
A study of modern prosody, critical theories of modern poetry, and the relation between a writer's theory and his practice, with particular attention to Frost, Stevens, Yeats, and Eliot.

330:675. AMERICAN ROMANTIC FICTION. 5 credits.
The meaning of American Romanticism applied to the study of Poe, Hawthorne, and Melville.

330:679. REALISM AND NATURALISM IN AMERICAN FICTION. 5 credits.
The meanings of American Realism and Naturalism applied to the study of such writers as Twain, Howells, James, Crane, Dreiser, London, and Norris.

330:689. MODERN LINGUISTICS. 5 credits.
Modern synchronic linguistics; studies in applied linguistics.

330:690. SEMINAR IN ENGLISH. 3-5 credits.

330:691. SEMINAR IN ENGLISH. 3-5 credits.

330:692. SEMINAR IN ENGLISH. 3-5 credits.
Special studies offered in the specialties of the members of the Graduate Faculty as needed.

330:693. LITERARY CRITICISM. 5 credits.
The development of European literary criticism from classical times to the present.

330:697. BIBLIOGRAPHY AND LITERARY RESEARCH. 3 credits.
Sources and methods of research in English and American literature and language.

330:698. INDIVIDUAL READING IN ENGLISH. 1-3 credits.
Study under the direction of a professor guiding the student's individual reading and research.

330:699. RESEARCH ENGLISH: THESES. 4 credits.

335: GEOGRAPHY

335:100. INTRODUCTION TO GEOGRAPHY. 4 credits.
An introduction to the geography of the world. Investigates principles of cultural geography by introducing basic physical, economic, and settlement patterns and by utilizing maps as research devices.

335:210. PHYSICAL GEOGRAPHY. 4 credits.
Landforms, weather and climate, soils and vegetation. The nature and distribution of these physical elements and their significance for man. Laboratory.

335:220. ECONOMIC GEOGRAPHY. 3-4 credits.
The geographical basis for production, exchange and consumption of goods. The effect which economic patterns have on man's culture and on the adjustment of man to his environment.

335:230. RURAL AND URBAN SETTLEMENT. 4 credits.
Study of the origin, function and rationale of settlement patterns which man has evolved in the process of occupying various areas.

335:240. MAPS AND MAP READING. 4 credits.
Designed to develop competence in map use and evaluation, use and interpretation of globes, cartograms, block diagrams, topographic sheets and thematic maps. Laboratory.

335:285. THE GEOGRAPHY OF SOCIAL INSTITUTIONS IN THE UNITED STATES. 4 credits.
The course will be devoted primarily to the geographical variations in social institutions and social well-being within the United States. Some time will be spent also on the development of territorial social indicators and their possible use in city, regional and social policies.

335:314. CLIMATOLOGY. 3 credits.
Prerequisite, 210 or permission. A study of the controls of weather and climate. Acquaints the student with the types of climates, their world pattern of distribution, and the problems involved as man attempts to control and modify weather and climate.

335:326. MINERALS, ENERGY & ECOLOGY. 3 credits.
Prerequisite, 220 or permission. An analysis of the influence of minerals on human activities.

335:335. PLANNING SEMINAR. 4 credits.
Prerequisite, permission of instructor. Development of plan-

ning studies including completion of a paper covering a city or regional resource planning topic in depth. Projects are presented by students and critically analyzed.

335:350. ANGLO-AMERICA. 4 credits.

Prerequisite, 100 or permission. Regional and systematic geography of the U.S. and Canada, relating cultural and economic patterns to physical environment.

335:353. NORTHERN LATIN AMERICA. 3 credits.

Prerequisite, 100 or permission. An analysis of the relationship of cultural and economic patterns to physical environment in Mexico, Central America, northern South America, and the Caribbean.

335:354. SOUTHERN LATIN AMERICA. 3 credits.

Prerequisite, 100 or permission. Regional and topical analysis of geographical relationships in Latin America, south of the equator.

335:356. EUROPE. 3 credits.

Prerequisite, 100 or permission. Regional and systematic analysis of cultural, economic and physical patterns of the continent, excluding the USSR.

335:358. USSR. 3 credits.

Prerequisite, 100 or permission. Regional and topical analysis of the Soviet Union considering how the Russian culture and economic patterns relate to the physical environment of northern Eurasia.

335:360. EAST ASIA. 4 credits.

Prerequisite, 100 or permission. Regional and systematic geography of China, Japan, and adjacent areas, with emphasis on cultural, economic and physical patterns and relationships.

335:361. SOUTH AND SOUTHEAST ASIA.

3 credits.

Prerequisite, 100 or permission. Analysis of the relationship of cultural and economic patterns to physical environment in the Indian subcontinent and southeast Asia.

335:362. MIDDLE EAST. 3 credits.

Prerequisite, 100 or permission. Regional and systematic geography of that part of the world united by a desert environment and Muslim culture.

335:363. AFRICA SOUTH OF THE SAHARA.

3 credits.

Prerequisite, 100 or permission. Topical and regional analysis of the relationship between cultural, economic and physical environment patterns.

335:380. CARTOGRAPHY. 4 credits.

Use of cartographic principles and techniques as well as other forms of graphic representation, as a means of recording information. Emphasis is placed on use of cartographic tools and equipment. (no special drafting ability required)

335:389. READING AND INDIVIDUAL RESEARCH.

3 credits.

Prerequisite, permission of instructor. Directed reading and research in special field of interest chosen by student in consultation with the instructor.

335:401/501. WORKSHOP. 1-5 credits.

Group studies of special topics in Geography. May not be used to meet undergraduate or graduate major requirements in Geography. May be used for elective credit only. May be repeated.

335:415/515. GEOGRAPHY OF WATER RESOURCES.

3 credits.

Prerequisite, 210 or permission. Discusses the occurrence of water in nature and the influence of water on human activities.

335:418/518. GEOGRAPHY OF SOILS/VEGETATION.

4 credits.

Prerequisite, 210 and permission. Examination of natural vegetation and soil types found over the surface of the earth. Discussion of the geographic relationships of soils and vegetation to climate and landforms, and to man's activities.

335:422/522. GEOGRAPHIC ASPECTS OF TRANSPORTATION. 3 credits.

Prerequisite, 200 or permission. Discusses the geographic patterns of the various transportation systems, explains their rationale and investigates the influence of transportation patterns on man's activities.

335:428/528. INDUSTRIAL AND COMMERCIAL SITE SELECTION. 3 credits.

Prerequisite, 220 or permission. Relationship between relief, climate, resources, population, transportation and the industrial and commercial location process. Case studies in the effects of transportation networks, rates, sources of materials, labor supply, location of markets, etc., on selection and evaluation of potential sites.

335:433/533. GEOGRAPHIC ASPECTS OF PLANNING. 3 credits.

Prerequisite, 230 or permission. The role of geographic investigation in city, regional and resource planning.

335:435/535. GEOGRAPHY OF RECREATION RESOURCES. 3 credits.

Prerequisite, 230 or permission. The effect of the physical and economic environment on recreational patterns. Discussion of seasonality and tourism patterns. Case studies of important recreational activities and areas in which tourism contributes significantly to the area economy.

335:436/536. URBAN LAND USE ANALYSIS.

4 credits.

Prerequisite, 240 or permission. A study of the internal structure of the city with particular emphasis on the methods of defining and mapping the various parts.

335:438/538. COMPARATIVE GEOGRAPHY OF WORLD METROPOLITAN AREAS. 3 credits.

Prerequisite, 230 or permission. Association of phenomena within the metropolitan area expressed in land use and occupation features. The changing function of the urban area; relationships between urban centers.

335:444/544. MAP COMPILATION AND REPRODUCTION. 3 credits.

Prerequisite, 240 or permission. The non-drafting techniques involved in producing modern maps.

335:447/547. REMOTE SENSING OF THE ENVIRONMENT. 5 credits.

Prerequisite, 240 or permission. Principles of aerial photography, satellite, radar, and infrared imagery and their utilization in map production and geographic research.

335:448/548. STATISTICAL MAPPING. 3 credits.

Prerequisite, 240 or permission. Problems of cartographic statistical representation. Methods of data manipulation and problems of symbolization are stressed as well as techniques of presentation.

335:451/551. REGIONAL PROBLEMS IN CANADIAN GEOGRAPHY. 3 credits.

Prerequisite, 350 or permission. A comprehensive analysis of the main regional problems facing Canada, not only internally but also internationally. The emphasis will be placed

on the current political, economic, and social environments, their interrelationships and the inter-regional relationships which exist throughout the country.

335:480/580. THEMATIC CARTOGRAPHY. 4 credits.

Prerequisite, 380 or permission. A laboratory study of basic principles and techniques used in thematic mapping. Stresses the use of map symbols to indicate certain characteristics of geographical information. The symbols may be employed to show qualitative differences (differences in kind) of a certain category of information and may also indicate quantitative differences in the information (differences in amounts).

335:481/581. INTRODUCTION TO GEOGRAPHIC RESEARCH. 3 credits.

Prerequisite, 18 credits of geography courses. Introduction to the techniques and source materials of geographic research. Statistical measurements and library resources will be stressed. Research papers will be required.

335:483/583. INTRODUCTION TO SPATIAL ANALYSIS. 3 credits.

Prerequisite, 481 or permission. The conceptual basis for spatial analysis including the methodological innovations leading to modern geographic research. Beginning use of the computer is emphasized.

335:484/584. FIELD RESEARCH METHODS. 4 credits.

Prerequisite, 481 or permission. Field work enabling the student to familiarize himself with the proper approach to collecting, organizing and analyzing data while carrying out field research projects.

335:489/589. AUTOMATED COMPUTER MAPPING. 4 credits.

Prerequisite, 380 or permission. A laboratory study of computer-assisted map compilation and execution; emphasis is placed upon the integration of computer graphic and cartographic skills and techniques for those students with no prior experience in computer use. Laboratory problems adapted to specialized interests of students.

GRADUATE COURSES

335:610. SEMINAR IN PHYSICAL GEOGRAPHY. 4 credits.

Prerequisite, 210 or permission. Investigation and analysis of selected topics in physical geography.

335:615. ADVANCED CLIMATOLOGY. 4 credits.

Prerequisite, 314 or permission. The statistical and cartographical formulation of patterns of atmospheric variables upon various scales and depths in the atmosphere; emphasis upon relationships to causal factors or controls; methods of data acquisition, processing, and presentation; typical analytical relationships employed in analysis, presentation, and interpretation of large-scale weather systems.

335:620. SEMINAR IN ECONOMIC GEOGRAPHY. 4 credits.

Prerequisite, 220 or permission. Investigation and analysis of selected topics in economic geography.

335:630. SEMINAR IN URBAN GEOGRAPHY. 4 credits.

Prerequisite, 230 or permission. An intensive study of the development of theories and techniques in urban geography and their application to selected problems.

335:635. PLANNING — FIELD EXPERIENCE.

3 credits.

Prerequisite, permission of department head. Individual experience in selected planning agencies for supervised performance in professional planning work. Twenty hours per week in the agency and eight weeks full time experience in summer.

335:640. ADVANCED CARTOGRAPHY. 4 credits.

Prerequisite, 380 or permission. Advanced techniques in cartography, with emphasis on the solving of special cartographic problems and on the philosophy of cartography.

335:660. SEMINAR IN CULTURAL AND POLITICAL GEOGRAPHY. 4 credits.

Prerequisite, 374. Investigation and analysis of selected topics in cultural and political geography.

335:680. SPATIAL ANALYSIS. 4 credits.

Prerequisite, 483 or permission. The application of quantitative measures in geographic research. Consideration of the problems of sampling design, spatial statistics measurement and evaluation of data, and simulation techniques.

335:685. ADVANCED SPATIAL ANALYSIS.

4 credits.

Prerequisite, 680 or permission. Discussion of current trends in spatial analysis and the methodology underlying them. A seminar format is used.

335:687 HISTORY OF GEOGRAPHIC THOUGHT.

4 credits.

Prerequisite, 481/581. A critical review of the major developments in geographic thought from the Greek period to modern times.

335:690. INDIVIDUAL READING AND RESEARCH.

4 credits.

Prerequisite, permission of the instructor and the department head. Intensive investigation of selected topics, under guidance of a faculty member.

335:695. THESIS RESEARCH.

3 credits. (May be repeated twice for credit.)

Prerequisite, permission of department head. Supervised original research.

337: GEOLOGY

337:100. EARTH SCIENCE. 4 credits.

An elementary introduction to earth science designed primarily for non-science majors. A survey of the earth in relation to the physical composition and structure of its solid part; its development and history; its atmosphere and oceans; and its relation to the solar system and universe.

337:101. INTRODUCTORY PHYSICAL GEOLOGY.

5 credits.

The materials, structures, surface features of the earth and processes which have produced them. Laboratory.

337:102. INTRODUCTORY HISTORICAL GEOLOGY.

5 credits.

Prerequisite, 101. The geologic history of the earth and the succession of the major groups of plants and animals as based on the geologic interpretation of rock formations and fossils. Laboratory.

337:200. GEOLOGY AND THE ENVIRONMENT.

3 credits.

Land, air and waters of the earth as the framework of man's environment. Natural environmental hazards. Action and reaction of man and the geologic environment in the use of energy, minerals, water, air and food in the release of waste products. This course not available for the major.

337:201. EXERCISES IN ENVIRONMENTAL GEOLOGY. 1-2 credits.

Prerequisite or corequisite, 200. Demonstrations, field exercises and laboratory exercises, collecting data, measurements, recognizing and solving environmental problems related to geologic setting through the application of concepts from Geology and the environment.

337:210. GEOMORPHOLOGY. 4 credits.

Prerequisite, 101. The landforms of the earth. Description of the various types, their geographical distribution, and an explanation of the geological processes which have produced them. Laboratory.

337:211. OCEANOGRAPHY. 4 credits.

Prerequisites, 101 and 102. An introduction to the physical processes, geologic history and development of marine areas.

337:215. STRUCTURAL GEOLOGY. 5 credits.

Prerequisite, 101 or permission. Identification and interpretation of common and important structural geologic features including the construction and use of structural maps and cross sections. Laboratory.

337:216-217. CRYSTALLOGRAPHY AND MINERALOGY. 4 credits each.

Prerequisite, 101 or permission. Study of morphological crystallography and general mineralogy. Laboratory emphasis on mineral recognition. Laboratory.

337:260. INTRODUCTORY INVERTEBRATE PALEONTOLOGY. 5 credits.

Prerequisite, 102 or permission. An introductory course emphasizing morphology and evolution of the major invertebrate groups with a consideration of the practical applications of paleontology. Laboratory.

337:313. FIELD METHODS IN GEOLOGY. 3 credits.

Prerequisites, 101 and 102 per permission. Introduction of the use of geologic field equipment including Brunton compasses, alidades and plane table surveying, and stereoscopes and aerial photography interpretation.

337:324. SEDIMENTATION. 4 credits.

Prerequisite, 102. An introduction to the processes and environments of sedimentation and the principles employed in the examination of sediments and sedimentary rocks. Hand specimens and sequences of sedimentary rocks will be studied noting their characteristics and interpreting their origin.

337:404/504. ASTROGEOLOGY. 4 credits.

Prerequisites, 418; 315:134; 365:233, or permission. Study of the relations of planet earth to the solar system and universe. Analysis and implications of the data from the lunar and space probes.

337:410/510. REGIONAL GEOMORPHOLOGY OF NORTH AMERICA. 4 credits.

Prerequisites, 101, 102, 210 or permission. Recommended, 215. Examination of physiographic provinces of North America emphasizing structure, tectonic setting, stratigraphy and processes responsible for landforms in each province.

337:411/511. PLEISTOCENE GEOLOGY. 4 credits.

Prerequisite, 210 or permission. An examination of the causes and effects of the Pleistocene expansions of polar ice masses with particular emphasis on glacial deposits and world climatic changes.

337:412. FIELD STUDIES IN GEOLOGICAL STRUCTURES AND PROCESSES.

2 credits. (May be repeated for a total of 6 credits).

Prerequisite, permission. A field trip course emphasizing

phases of geology not readily studied in Ohio and including individual pretrip preparation and a written report on field problems studied. Students will be expected to bear the actual costs involved in operating the trip.

337:413/513. GEOLOGY FIELD CAMP. 9 credits.

Prerequisites 215 and permission, recommended 313 and 323. Instruction as a working field geologist with emphasis on collection, recording, and interpretation of field data; detailed structural and stratigraphic field study. Five week camp, work 6 days per week.

337:415/515. ECONOMIC GEOLOGY. 4 credits.

Prerequisites, 215 and 418. A study of metallic mineral assemblages and non-metallic mineral deposits, emphasizing factors controlling deposition and exploration techniques. Laboratory.

337:416/516. ADVANCED STRUCTURAL GEOLOGY. 4 credits.

Prerequisite, 215 or permission. Detailed examination of fundamental and advanced concepts of structural geology with stress upon current and developing concepts.

337:417/517. OPTICAL MINERALOGY. 4 credits.

Prerequisite, 217 or equivalent. An introduction to the petrographic microscope and its use in the identification of minerals in this section. The optical properties and occurrence of common igneous, metamorphic, and sedimentary minerals will be studied in detail. Laboratory.

337:418/518. PETROGRAPHY. 4 credits.

Prerequisite, 417/517 or equivalent. The classification and description of igneous, metamorphic, and sedimentary rocks using the polarizing microscope. Lecture will also deal with the mode or origin of igneous, metamorphic and sedimentary rocks as inferred from microscopic studies of texture and mineral assemblages. Laboratory.

337:425/525. STRATIGRAPHY. 4 credits.

Prerequisites or corequisites, 260 and 324, or permission of the department. A first course in stratigraphy for beginning graduate students and qualified seniors in the earth sciences. Important topics include modern sedimentary environments as a means for treating the rock record; principles of stratigraphy nomenclature; sedimentary facies; the use of fossils in subdivision of the rock record and correlation; geologic time units, time-rock units, and rock units; boundary problems in the stratigraphic record. Field studies of selected stratigraphic units in eastern Ohio will permit practical application of theory and principles.

337:434/534. GROUND WATER HYDROLOGY. 4 credits.

Prerequisite, 101. Study of the origin, occurrence, regimen and utilization of the ground water sector of the hydrological cycle. Qualitative and quantitative presentation of the geological and geochemical aspects of ground water hydrology. Location and evaluation of ground water. The influences of man and the aquifer upon the composition of ground water. Field and laboratory.

337:435/535. PETROLEUM GEOLOGY. 4 credits.

Prerequisite, 215 or permission, 324 and 325 recommended. A study of the natural occurrences of petroleum including origin, entrapment, and exploration methods.

337:441/541. FUNDAMENTALS OF GEOPHYSICS. 4 credits.

Prerequisites: 345:235 or permission and 365:293. A study of fundamental concepts in solid earth geophysics, planetary physics, geodesy and geomagnetism, and of the contributions of geophysics to recent major developments in geoscience.

337:446/546. EXPLORATION GEOPHYSICS.*4 credits.*

Prerequisites, 345-235 and 365:293. A study of basic principles and techniques used in geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical exploration methods and the application of geophysical methods to geological problems.

*** 337:462. PALEOECOLOGY. 4 credits.**

Prerequisites, 260 and 463 or permission. A study of the interaction between ancient organisms and their environments with the emphasis on methods of environmental interpretation.

337:463/563. MICROPALAEONTOLOGY. 5 credits.

Prerequisite, 260 or permission. An introduction to the techniques, systematics and application of micropaleontology. Laboratory.

337:470/570. GEOCHEMISTRY. 5 credits.

Prerequisites, minimum 20 credits in chemistry or geology or permission. Chemical systems of the earth, both open and closed, under the extremes of temperatures and pressures found naturally. Laboratory.

337:482. RESEARCH PROBLEMS.*1-3 credits. (May be repeated to a total of 6 credits.)*

Prerequisite, departmental approval. Directed reading and research in special field of interest chosen by student in consultation with the instructor.

337:490/590. WORKSHOP. 1-5 credits.

Group studies of special topics in Geology. May not be used to meet undergraduate or graduate major requirements in Geology. May be used for elective credit only. May be repeated.

GRADUATE COURSES

337:612. ADVANCED FIELD STUDIES.*2 credits. (May be repeated for a total of 4 credits)*

Prerequisite, permission of instructor. A field trip course to areas displaying geology, not available locally. Course involves pretrip preparation, field observations and data gathering and written reports or examinations at conclusion of trip. Students will bear the actual expenses of trip.

337:619. CLAY MINERALOGY*. 4 credits.

Prerequisite 417/517. The classification, identification, and genesis of clay minerals and clay rocks, their use and exploitation. Laboratory will stress methods of identification of clay minerals and the analysis and petrogenetic interpretation of clay materials in suites of samples from the rock record.

337:621. IGNEOUS PETROLOGY*. 4 credits.

Prerequisite, 418/518 and 417/517. A study of the origin and paragenesis of igneous rocks. Lecture will stress the petrochemistry and occurrence of major families of igneous rocks. The laboratory will be devoted to petrographic study of selected rock suites.

337:622. METAMORPHIC PETROLOGY*. 4 credits.

Prerequisite, 418/518. A study of the origin and paragenesis of metamorphic rocks. Lecture will stress the chemistry of metamorphic reactions, the textures fabrics induced by metamorphism, and the occurrence of metamorphic rocks. The laboratory will be devoted to petrographic study of selected rock suites.

337:623. SEDIMENTARY PETROLOGY. 4 credits.

Prerequisite, 323 and 417/517 or permission. Detailed hand

sample and their section examination of selected sedimentary suites, particularly with respect to mineralogy and texture. Laboratory.

337:625. ADVANCED STRATIGRAPHY. 4 credits.

Prerequisite, 323 or permission. Examination and interpretation of distribution patterns of sediments through geologic time in North America. Emphasis on shifting environments and sedimentary facies and interpreted history of the area.

337:631. ROCKS AND MINERALS. 5 credits.

Prerequisite, 101 and permission. An intensive course for graduate students in the earth sciences who come into the field from disciplines other than geology. Lecture will stress those processes that give rise to minerals and rocks and some aspects of crystallography. Laboratories will stress methods of identification and analysis of minerals and rocks. For science teachers.

337:660. EVOLUTION AND THE FOSSIL RECORD*.*3 credits.*

Prerequisite, 260. The major features of evolution including rates of evolution and extinction, using selected fossil groups as examples.

337:665. URBAN GEOLOGY. 4 credits.

Prerequisites, 210, 215, 217, 415/515 or permission. Problems of urbanization as related to the consumption of our finite resources and the creation of wastes. Geologic hazards. Case histories which demonstrate the application of geologic data to management and conservation.

337:675. GEOCHEMICAL METHODS OF PROSPECTING. 3 credits.

(2 hours lecture, 3 hours laboratory, per week). Prerequisites, graduate standing, and at least one year of undergraduate chemistry and one year of undergraduate mineralogy and/or petrology; recommended 337:515 and 337:570. The application of geochemical methods of analysis and interpretation to the search for ore deposits; emphasis is placed upon stability, mobility, and associations of elements in the various geologic environments; lecture, lab and field study.

337:682. GRADUATE RESEARCH PROBLEMS.*1-3 credits. (May be repeated to a total of 6 credits.)*

Prerequisite, Departmental approval. Directed reading and research in special field of interest chosen by student in consultation with the instructor.

337:684. SELECTED TOPICS IN GEOLOGY.*1-4 credits. (May be repeated for a total of 8 credits.)*

Prerequisite, permission of Instructor. Study of selected topics in geology not regularly offered as formal courses, generally of classic or current importance. Entails lectures, readings, discussions, and/or guided laboratory work.

337:690. SEMINAR IN GEOLOGY.*3 credits. (May be repeated for a total of 9 credits.)*

Selected topics in areas for discussion with background material from original published material.

337:692. THESIS RESEARCH. 1-8 credits.

Embodies an independent and original investigation. Must be successfully completed, report written and defended before a thesis committee.

340: HISTORY

340:201. UNITED STATES HISTORY OF 1815.*4 credits.*

From the period of exploration and discovery through the War of 1812.

*To be offered alternate years.

340:202. UNITED STATES, 1815-1898. 4 credits.
The emergence of nationalism and sectionalism, the Civil War, Reconstruction, and the new industrial society.

340:203. UNITED STATES, 1898-PRESENT. 4 credits.
From the Spanish-American War to the present.

340:207. MODERN EUROPE, 1500-1750. 4 credits.
The Renaissance and Reformation, development of the nation states, religious wars, and the Age of Louis XIV.

340:208. MODERN EUROPE, 1750-1870. 4 credits.
The French Revolution and Napoleon, a study of nineteenth century "isms", and the formation of Germany and Italy.

340:209. MODERN EUROPE, 1870-PRESENT. 4 credits.
The modern world: World Wars I and II. Nazism, Communism, Fascism, and postwar Europe.

340:220. HISTORY OF THE BLACK PEOPLE OF THE UNITED STATES. 4 credits.
A survey of the social, economic and cultural history of Afro-Americans from the 17th century to the present.

340:304. THE ANCIENT NEAR EAST. 3 credits.
Mesopotamia and Egypt; Israel and her neighbors to the time of the Persian Empire.

340:305. GREECE. 3 credits.
The Minoans and Mycenaeans; Classical Greece to the triumph of Macedon.

340:306. ROME. 3 credits.
Rome and the Hellenistic East to the end of Classical times.

340:311. INDIVIDUAL STUDY OR RESEARCH IN HISTORY. 1-4 credits. (May be repeated for a maximum of 6 credits.)
For individual Study or Research in history, including special projects, such as workshops, summer study tours, or specialized training. Permission required.

340:334. A SOCIAL AND CULTURAL HISTORY OF THE UNITED STATES, 1607-1840. 3 credits.
A study of select concepts and attitudes in their social and cultural framework with emphasis on growth of population, rural and urban life, religion, education and learning, literature and the arts, the new man.

340:335. A SOCIAL AND CULTURAL HISTORY OF THE UNITED STATES, 1840-1910. 3 credits.
A study of select concepts and attitudes with emphasis on reforms, the impact of the Civil War and the rise of business, agrarianism, cult of the self-made man, urbanism, muckrakers, religion, literature and the arts, education, and learning.

340:336. A SOCIAL AND CULTURAL HISTORY OF THE UNITED STATES, 1910-PRESENT. 3 credits.
A study of select concepts and attitudes with emphasis on the revolt against formalism, progressivism, impact of two wars, social and economic planning, trends in religion, literature and the arts, education, and learning.

340:337. THE WEST IN THE DEVELOPMENT OF THE UNITED STATES. 4 credits.
An examination of the Westward Movement in the United States from Revolutionary times to the closing of the frontier in 1890, including a study of various types of frontiers and the impact of the West as a section on the history on the nation.

340:338. THE HISTORY OF WOMEN IN THE UNITED STATES. 4 credits.

An examination in historical perspective of the history of women in the United States. The course will explore the roles, status, and self-image of women within the broad cultural context of American social, political, economic, and intellectual movements.

340:339. A HISTORY OF AMERICAN IMMIGRATION. 4 credits.

An examination of European migrants to the American colonies and the United States, their reasons for leaving Europe and coming to America, and their experience after arrival.

340:340. PEACE, WAR AND MANKIND. 3 credits.
An historical examination of peace movements, including a study of leaders, groups and ideas for peace.

340:350. SELECTED TOPICS IN HISTORY. 4 credits.
Selected topics may include experimental departmental offerings such as those which cross subject or chronological lines within history or those which are not presently offered by the department and listed in the catalogue. See the departmental office for current subject.

340:401-402. HONORS SEMINAR IN HISTORY. 3 credits each.
Selected readings; the writing of a research paper in proper scholarly form. Permission of the department head and/or the instructor required. Normally a student will take both 401 and 402, but under special circumstances he may be permitted to take 401 only.

340:407/507. DIPLOMATIC HISTORY OF THE UNITED STATES 1776-1919. 4 credits.
Establishment of basic policies, diplomacy of expansion, and emergence of a world power.

340:408/508. DIPLOMATIC HISTORY OF THE UNITED STATES 1914-PRESENT. 4 credits.
Responses of government and public to the challenges of war, peace-making, and power politics.

340:412/512. HISTORY OF INTERNATIONAL ORGANIZATION. 3 credits.
An examination of ideas and plans for world organization from ancient times to the present, including a study of regional bodies and the history of the League of Nations and the United Nations and their quest for peace.

340:413. A HISTORY OF BLACK SOCIAL AND INTELLECTUAL THOUGHT. 4 credits.
An examination in historical perspective of the nature of and changes in Black social and intellectual thought and activities, as they reflect (1) the internal culture of the Black community, (2) conditions of Black people within the United States, and (3) efforts toward coordinated Black group activity.

340:420/520. COLONIAL AMERICA. 3 credits.
The establishment of European colonies in North America to 1689 with special emphasis on English settlements.

340:421/521. THE AMERICAN COLONIES AND THE BRITISH EMPIRE. 3 credits.
Colonial life from 1689 to 1754, struggle for control of North America, and the development of British colonial institutions.

340:422/522. THE AMERICAN REVOLUTION, 1754-1783. 3 credits.
The Revolution and the War of Independence.

340:423/523. FOUNDING OF THE UNITED STATES TO 1801. 3 credits.
The Confederation, the Constitution, and the Federalist Era.

340:424/524. NEW NATION. 3 credits.

Formation of political parties; Jeffersonian politics; the War of 1812; Era of Good Feelings.

340:425/525. AGE OF JACKSON. 3 credits.

The roots of Jacksonian Democracy; the Age of Jackson, the Whig party; Age of Reform.

340:426/526. CIVIL WAR. 3 credits.

Slavery controversy; causes of American Civil War; politics and conduct of the war of 1863.

340:427/527. CIVIL WAR AND RECONSTRUCTION. 3 credits.

Politics and conduct of war to 1865; Reconstruction; roots of Jim Crow mentality.

340:428/528. THE UNITED STATES IN THE LATE NINETEENTH CENTURY. 3 credits

The emergence of modern America with emphasis on economic, social, political, and intellectual developments, 1877-1898.

340:429/529. THE UNITED STATES IN THE TWENTIETH CENTURY, 1898-1920. 3 credits.

The Progressive era and World War I.

340:430/530. THE UNITED STATES IN THE TWENTIETH CENTURY, 1920-1945. 3 credits.

Normalcy, the Great Depression, and World War II.

340:431/531. THE UNITED STATES IN THE TWENTIETH CENTURY, 1945-PRESENT. 3 credits.

Social, political, diplomatic, constitutional, and economic changes in postwar America.

340:432/532. AMERICAN ECONOMIC HISTORY, 1607-1837. 3 credits.

A survey of economic developments from the Colonial background through the Jacksonian period, treating topically and historically such factors as agriculture, labor, commerce, politics and economic thought that influenced growth and change. Special emphasis on the economy and its relationship to public policy.

340:433/533. AMERICAN ECONOMIC HISTORY, 1837-1917. 3 credits.

A survey of economic developments from the Colonial era to the First World War, treating topically and historically agriculture, labor, commerce, politics, economic thought, and industrial changes. Special emphasis on the economy and its relationship to public policy.

340:434/534. AMERICAN ECONOMIC HISTORY, 1917-PRESENT. 3 credits.

A survey of economic developments since 1917, treating topically and historically the factors that lead to the American Free enterprise system. Special emphasis on the rise of modern industry and its relationship to public policy.

340:435/535. OHIO HISTORY. 4 credits.

The political, social, economic and intellectual history of Ohio, with special emphasis upon Ohio's relationship to the Old Northwest and to the nation.

340:436/536. HISTORY OF THE AMERICAN CITY. 5 credits.

An examination of urbanization and its consequences from the colonial period to the present.

340:440/540. WORKSHOP. 1-5 credits.

Group studies of special topics in History. May not be used to meet undergraduate or graduate major requirements in History. May be used for elective credit only. May be repeated.

340:442/542. THE CLASSIC ERA, 1610-1715. 3 credits.

The Constitutional, diplomatic, cultural, intellectual and social developments of 17th century Europe.

340:443/543. THE ERA OF ENLIGHTENMENT, 1715-1783. 3 credits.

Intellectual, social, political, economic and diplomatic developments of 18th century Europe.

340:444/544. THE ERA OF REVOLUTION, 1783-1815. 3 credits.

The French Revolution and Napoleon.

340:455/545. MEDIEVAL EUROPE, 400-1100. 3 credits.

The Barbarians, the Carolingian revival, and the renewed invasions.

340:446/546. MEDIEVAL EUROPE, 1100-1300. 3 credits.

The High Middle ages: Part I: Political, social, economic, religious, and intellectual reawakening. Part II: The great age of synthesis.

340:447/547. MEDIEVAL EUROPE, 1300-1500. 3 credits.

The Later Middle Ages: Economic and political decline, the great international wars, economic and social unrest, and religious cross-currents.

340:449/549. THE RENAISSANCE. 5 credits.

The European Renaissance (1350-1600): the economic, social, and political trends with specific emphasis on intellectual and artistic developments.

340:450/550. THE REFORMATION. 5 credits.

Europe in the sixteenth century; its religious, cultural, political and diplomatic development, with special emphasis upon the Protestant and Catholic Reformations.

340:451/551. NINETEENTH CENTURY EUROPE, 1815-1848. 3 credits.

Europe from the Napoleonic era to the revolution of 1848 with emphasis upon the impact of the French and industrial revolutions.

340:452/552. NINETEENTH CENTURY EUROPE, 1848-1871. 3 credits.

The impact of nationalism, socialism, and imperialism on European civilization.

340:453/553. NINETEENTH CENTURY EUROPE, 1871-1914. 3 credits.

The coming of modern industrial society; intellectual currents; the background of World War I.

340:454/554. TWENTIETH CENTURY EUROPE, 1914-1930. 3 credits.

World War I, Russian revolutions, the rise of Fascism, and other postwar problems.

340:455/555. TWENTIETH CENTURY EUROPE, 1930-1945. 3 credits.

Rise of National Socialism, the plight of the democracies, road to war, and World War II.

340:456/556. TWENTIETH CENTURY EUROPE, 1945 TO PRESENT. 3 credits.

Europe since World War II, the cold war, and European attempts at unity.

340:458/558. RUSSIA TO 1801. 4 credits.

A survey of Russian history from the Kievan period to the death of Paul I. Special attention will be paid to the development of autocratic government, the unique quality of Russian culture, and the reigns of Peter the Great and Catherine the Great.

- 340:459/559. RUSSIA SINCE 1801.** 4 credits.
A survey of the nineteenth and twentieth centuries. Special attention will be paid to the problems of modernization in Russia, the Revolution, and the development of communism.
- 340:470/570. ANGLO-SAXON AND MEDIEVAL ENGLAND TO 1471.** 5 credits.
Anglo-Saxon life, thought and institutions, the Norman Conquest; Medieval life, thought, and institutions.
- 340:471/571. TUDOR ENGLAND, 1471-1588.** 3 credits.
The Yorkists and Tudors; the transition from medieval to early modern times. The early Elizabethan age.
- 340:472/572. STUART ENGLAND, 1588-1685.** 3 credits.
The Armada; the late Elizabethan age; the early Stuarts — conflict, revolution, the Restoration.
- 340:473/573. THE AGE OF ARISTOCRACY IN ENGLAND, 1685-1783.** 3 credits.
The Sensible Revolution — late Stuarts and early Hanoverians: politics, religion, and society in the Age of Aristocracy.
- 340:474/574. THE AGE OF IMPROVEMENT IN ENGLAND, 1783-1867.** 3 credits.
The Agricultural and first Industrial Revolutions; the politics of reform.
- 340:475/575. ENGLAND SINCE 1867.** 3 credits.
The second Industrial Revolution; politics in transition; the development of the welfare state; war society.
- 340:477/577. HISTORY OF WESTERN SCIENCE AND TECHNOLOGY TO 1700.** 3 credits.
The birth of science with the Greeks; its transmission to Western Europe; the scientific revolution from Copernicus to Newton. Technology in Greek, Roman, Medieval and early modern times.
- 340:478/578. HISTORY OF WESTERN SCIENCE AND TECHNOLOGY, 1700-1900.** 3 credits.
Industrial revolutions; the further development of physical science; interactions of science and technology; the chemical and electrical industries. Development of geology and biology, including Darwin's theory of evolution. Science and technology in the United States.
- 340:479/579. HISTORY OF WESTERN SCIENCE AND TECHNOLOGY IN THE 20TH CENTURY.** 3 credits.
Atomic and nuclear physics; relativity theory; the Bomb. Genetics and the chemical basis of life. The unparalleled growth of science and technology and their impacts on all aspects of life.
- 340:480/580. HISTORY OF CHINA TO 1840.** 3 credits.
Traditional China from its origins to the Opium War.
- 340:481/581. HISTORY OF CHINA SINCE 1840.** 3 credits.
The impact of the West; Nationalism; Communism.
- 340:485/585. HISTORY OF JAPAN.** 3 credits.
Traditional and modern Japan; its relations with China and the West.
- 340:489. COLLOQUIUM IN HISTORY.** 3 credits.
A course designed for history majors in their senior year, to cut across existing chronological and subject matter lines and provide an opportunity for majors to relate their previous work in history to various topics or themes. The subject and instructor will vary.
- 340:490/590. COLONIAL LATIN AMERICA.** 3 credits.
Pre-Columbian civilization, discovery and conquest, Spanish and Portuguese institutions.

- 340:491/591. LATIN AMERICA, NINETEENTH CENTURY.** 3 credits.
Era of independence through the launching of new nations.
- 340:492/592. REPUBLICS OF LATIN AMERICA, TWENTIETH CENTURY.** 4 credits.
Political history, social revolution, and contemporary problems.
- 340:494/594. U.S.-LATIN AMERICAN RELATIONS.** 5 credits.
Latin American problems and policy; the Monroe Doctrine, O.A.S., intervention, militarism, social revolution, recent relations and trends.
- 340:496/596. HISTORY OF MEXICO.** 5 credits.
Indian civilizations to the present with emphasis upon relations with the United States.
- 340:499/599. HISTORICAL METHODS.** 3 credits.
Practice in historical research, use of research tools, experience in the writing of history. This course will not apply to the graduate History major.

GRADUATE COURSES

- 340:611, 612 and 613. INDIVIDUAL READING FOR M.A. STUDENTS.** 1-3 credits each.
May be repeated for a maximum of 9 credits total. Written permission of the instructor required.
- 340:622. PROSEMINAR IN ANCIENT HISTORY.** 4 credits.
Study of historical literature, sources of materials, and major interpretations of Ancient history, especially Greek and Roman periods.
- 340:623-624. SEMINAR IN ANCIENT HISTORY.** 4 credits each.
Prerequisite, 622. This seminar in Ancient history will deal with selected topics in the field, particularly the Greek and Roman eras.
- 340:625. PROSEMINAR IN MEDIEVAL HISTORY.** 4 credits.
Study of historical literature, sources of materials, and major interpretations of Medieval history period of Europe.
- 340:626-627. SEMINAR IN MEDIEVAL HISTORY.** 4 credits each.
Prerequisite, 625. This seminar will deal with selected topics from Medieval history of Europe, from the time of the barbarian invasions to and including the Later Middle Ages.
- 340:631. PROSEMINAR IN MODERN EUROPEAN HISTORY TO 1815.** 4 credits.
Study of historical literature, sources of materials, and major interpretations of early Modern European history, from the Renaissance to the early 19th Century.
- 340:632-633. SEMINAR IN MODERN EUROPEAN HISTORY TO 1815.** 4 credits each.
Prerequisite, 631. This seminar will deal with selected topics of early Modern European history, including on occasion social, economic, and intellectual aspects.
- 340:634. PROSEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815.** 4 credits.
Study of historical literature, sources of materials, and major interpretations of Modern European history from the early 19th Century to the present.
- 340:635-636. SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815.** 4 credits each.
Prerequisite, 634. This seminar will deal with selected topics

of Modern European history, including on occasion social economic, and intellectual aspects.

340:651. PRESEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE. 4 credits.

Study of historical literature, sources of materials, and major interpretations of English History.

340:652-653. SEMINAR IN THE HISTORY OF ENGLAND AND THE EMPIRE. 4 credits each.

Prerequisite, 651. This seminar will deal with selected topics of English history.

340:666. PROSEMINAR IN AMERICAN HISTORY TO 1865. 4 credits.

Study of historical literature, sources of materials, and major interpretations of American history prior to 1865.

340:667-668. SEMINAR IN AMERICAN HISTORY TO 1865. 4 credits each.

Prerequisite, 666. This seminar will deal with selected topics in American history from the Colonial period to the mid-nineteenth century.

340:669. PROSEMINAR IN AMERICAN HISTORY SINCE 1865. 4 credits.

Study of historical literature, sources of materials, and major interpretations of American history since 1865.

340:670-671. SEMINAR IN AMERICAN HISTORY SINCE 1865. 4 credits each.

Prerequisite, 669. This seminar will deal with selected topics in American history from the end of the Civil War to the present.

340:677. PROSEMINAR IN LATIN-AMERICAN HISTORY. 4 credits.

Prerequisite, two courses in Latin-American history. Study of historical literature, sources of materials, and major interpretations of Latin-American history.

340:678-679. SEMINAR IN LATIN-AMERICAN HISTORY. 4 credits each.

Prerequisite, 677. This seminar will deal with selected topics in cultural, diplomatic, intellectual, and political history of Latin-America.

340:690. THESIS RESEARCH. 4 credits.

Research for thesis for Master of Arts degree.

340:696. THESIS WRITING. 4 credits.

Writing of thesis for Master of Arts degree.

340:698. HISTORIOGRAPHY. 3 credits.

A study of historians, historical interpretations, and writings.

340:711, 712 and 713. INDIVIDUAL READING FOR PH.D. STUDENTS. 1-6 credits each.

May be repeated for a maximum of 18 credits total. Written permission of the instructor required.

340:890. DISSERTATION RESEARCH. 1-18 credits.

Research for dissertation for Doctor of Philosophy degree.

340:896. DISSERTATION WRITING. 1-18 credits.

Writing of dissertation for Doctor of Philosophy degree.

345: MATHEMATICS

345:100. MATHEMATICS LABORATORY. 0 credits.

Opportunity for individual work under staff guidance. For students enrolled in Finite Math, Elementary Functions and Analytical Geometry-Calculus.

345:115-116. ELEMENTARY FUNCTIONS I, II. 3 credits each.

Prerequisites, high school algebra and trigonometry. An in-

roduction to elementary function theory; sets, number systems, absolute value, polynomial functions, systems of equations, matrices and determinants, circular functions, logarithmic and exponential functions, identities, sequences, mathematical induction, binomial theorem.

345:118. PRE-CALCULUS MATHEMATICS. 4 credits.

Prerequisite, 3 years of high school mathematics. An introduction to pre-calculus mathematics: sets, number systems, absolute value, polynomial functions, systems of equations, trigonometric functions, trigonometric identities, complex numbers, solutions of triangles.

345:120-199. MODERN UNIVERSITY MATHEMATICS. 1 credit for each module.

A series of short courses intended for students majoring in areas other than physical sciences and engineering. Emphasis is on developing manipulative skills through problem solving. Not available to mathematics and statistics majors. Courses in the Modern University Mathematics sequence numbered below 3:45-1:30 do not meet the University mathematics requirement.

345:120. ELEMENTARY ALGEBRA. 1 credit.

Prerequisite, one year of high school mathematics.

345:130. METRIC SYSTEM (SI). 1 credit.

Prerequisite, one year of high school mathematics.

345:140. BASIC LANGUAGE. 1 credit.

Prerequisite, one year of high school algebra.

345:145. FUNCTIONS AND GRAPHING. 1 credit.

Prerequisite, 140.

345:147. NUMBER SYSTEMS. 1 credit.

Prerequisite, 145.

345:148. BASIC GEOMETRY. 1 credit.

Prerequisite, 145.

345:150. COMBINATORICS AND VARIATION. 1 credit.

Prerequisite, 145.

345:155. PROBABILITY. 1 credit.

Prerequisite, 150.

345:157. INTRODUCTION TO TRIGONOMETRY I. 1 credit.

Prerequisite, 145.

345:158. INTRODUCTION TO TRIGONOMETRY II. 1 credit.

Prerequisite, 157.

345:160. ANALYTIC GEOMETRY. 1 credit.

Prerequisite, 145.

345:165. DIFFERENTIAL CALCULUS. 1 credit.

Prerequisite, 160.

345:170. INTEGRAL CALCULUS. 1 credit.

Prerequisite, 165.

345:171. DIFFERENTIAL CALCULUS - TRIGONOMETRY. 1 credit.

Prerequisites, 158 and 170.

345:172. INTEGRAL CALCULUS - TRIGONOMETRY. 1 credit.

Prerequisite, 171.

345:175. MULTIVARIATE CALCULUS. 1 credit.

Prerequisite, 170.

345:180. MATRICES. 1 credit.

Prerequisite, 145.

345:185. SYSTEMS OF EQUATIONS AND INEQUALITIES. 1 credit.

Prerequisite, 180.

345:190. LINEAR PROGRAMMING. 1 credit.

Prerequisite, 185.

345:192. MATRIX GAMES. 1 credit.

Prerequisite, 190.

345:195. MATHEMATICS OF FINANCE. 1 credit.

Prerequisite, 150.

345:206. ACTUARIAL MATHEMATICS. 3 credits.

Prerequisite, 115-116 (or equivalent). Interest procedures, annuities, amortization, sinking funds, bonds, stocks, depreciation, formulas for life insurance, premiums, valuation procedures, construction of mortality tables.

345:231-232-233-234-235. ANALYTIC GEOMETRY — CALCULUS I, II, III, IV, V. 4 credits each.

Sequential; prerequisite, 116 or 118 or equivalent. Equations of functions and their graphical representation, analytic geometry, limits, continuity, introduction to differentiation and integration, applications involving maxima and minima, differentials, curvature, applications to area, volumes, surface of revolution, moments and center of mass, methods of integration, solid analytical geometry, vectors, partial differentiation, multiple integrals, infinite series.

345:236. DIFFERENTIAL EQUATIONS. 4 credits.

Prerequisite, 235. Methods of forming and solving important types of ordinary differential equations; applications of differential equations to science.

345:301. HISTORY OF MATHEMATICS. 3 credits.**

Prerequisite, 233 or permission of instructor. Origin and development of mathematical ideas and processes.

345:311. ABSTRACT ALGEBRA. 3 credits.

Prerequisite, 233. Introduction to groups, rings, integral domains, axiomatic foundation of the natural, integer, rational, real, and complex number systems.

345:312-313. LINEAR ALGEBRA I, II. 3 credits each.

Prerequisite, 233. Sequential. Vector spaces, linear transformations, matrices, determinants, inner product spaces, spectral theory, quadratic forms, linear programming.

345:401/501. THEORY OF NUMBERS. 3 credits.

Prerequisite, 233. Development of the euclidean algorithm, congruences, primitive roots and indices, quadratic residues, number-theoretic functions and the distribution of primes.

345:405/505. CONCEPTS IN GEOMETRY. 3 credits.*

Prerequisite, consent of Instructor. A presentation of geometry as a branch of contemporary mathematics by treating Euclidean geometry in an axiomatic manner to meet the current standards of rigor. Topics included are incidence, distance, betweenness, planar and spatial order properties, congruence, angles, triangles, non-Euclidean Geometries, similarities, circles, spheres, areas, ruler and compass constructions. Intended primarily for secondary school teachers. Does not meet major requirements for graduate degree programs in mathematics, statistics, physical sciences or engineering.

345:406/506. CONCEPTS IN ALGEBRA. 3 credits.*

Prerequisite, consent of Instructor. Not available to students taking 311. Definition and elementary properties of groups, rings, integral domains, fields, vector spaces, with major emphasis on the rings of integers, rational numbers, complex numbers and polynomials. Intended primarily for secondary school teachers. Does not meet major requirements for graduate degree programs in mathematics, statistics, physical sciences or engineering.

345:407/507. CONCEPTS IN ANALYSIS. 3 credits.*

Prerequisite, consent of Instructor. Not available to students

taking 420. A careful introduction to the notion of a limit and to related notions of continuity, differentiation and integration with particular emphasis on gaining conceptual mastery rather than in the acquisition of manipulative skills. Intended primarily for secondary school teachers. Does not meet major requirements for graduate degree programs in mathematics, statistics, physical sciences or engineering.

345:410/510. MATRICES AND LINEAR ALGEBRA.*3 credits.*

Prerequisite, 116 or 118, or permission. Not available for graduate credit for mathematics majors or students who have completed Differential Equations. Matrices and their operation, determinants, systems of linear equations, vector spaces, eigenvectors, eigenvalues.

345:413/513. INTRODUCTION TO TOPOLOGY.*3 credits.*

Prerequisite, 313. Introduction to topological spaces and topologies, functions, mappings, homeomorphisms, connected spaces, compact spaces, metric spaces.

345:415/515. COMBINATORICS AND GRAPH THEORY.*3 credits.*

Prerequisite, 345:233 or permission of instructor. An introduction to a working knowledge of the basic ideas and techniques of counting the number of ways of arranging given objects in a prescribed way; structure and properties of systems satisfying certain prescribed conditions with applications to the social, behavioral and physical sciences, statistics, and operations research; properties of graphs and their use in the analysis of the structure of systems involving binary relations.

345:424/524. TOPICS IN APPLIED**MATHEMATICS. 3 credits.**

(May be repeated for a total of 6 credits.)

Prerequisite, 483 or permission of the Instructor. Selected topics, such as mathematical model building, non-linear oscillations, stability theory, graph theory, combinatorics, game theory, or other areas of applied mathematics.

345:425/525. COMPLEX VARIABLE. 4 credits.

Prerequisite, 345:235. Complex numbers, elementary functions of a complex variable, mappings and geometry of elementary functions, differentiation, integration, series, residues, poles, conformal mappings and applications in engineering and the sciences.

345:427-428/527-528. NUMERICAL ANALYSIS I, II.*3 credits each.*

Sequential; prerequisite, 236. Interpolation, finite difference methods, numerical differentiation and integration; numerical solutions to ordinary differential equations, algebraic and transcendental equations, coding, method of least squares.

345:431/531. SPECIAL FUNCTIONS. 3 credits.

Prerequisite, 236. Power series solution to differential equations, Bessel functions, Legendre functions, hypergeometric functions, boundary-value problems, orthogonal functions, Fourier Series.

345:432/532. PARTIAL DIFFERENTIAL EQUATIONS.*3 credits.*

Prerequisite, 236. Partial differentiation and integration, Lagrange equations, linear partial differential equations, boundary-value problems.

*These courses are to be offered in alternate years beginning with the 1973-74 academic year.

**These courses are to be offered in alternate years beginning with the 1974-75 academic year.

345:433/533. OPERATIONAL CALCULUS. 3 credits.

Prerequisite, 236. Applied properties of Laplace and integral transforms, integration of transforms, convolution theorem, transforms of unit, impulse and period functions, applications to differential equations.

345:434-435/534-535. VECTOR AND TENSOR ANALYSIS I, II. 3 credits each.

Sequential. Prerequisite, 235. Vector algebra with applications to analytic geometry; differential and integral calculus of scalar-vector, vector-scalar, and vector-vector functions; integral theorems; coordinate transformations; cartesian, contravariant, covariant vectors and tensors; fundamental operations with tensors; differentiation of tensors; applications.

345:436/536. ADVANCED PARTIAL DIFFERENTIAL EQUATIONS. 3 credits.*

Prerequisite, 432. Existence and uniqueness theorems, wave equations, problems on infinite intervals, initial-value problems, Laplace equation, Bessel functions.

345:437/537. INTERMEDIATE DIFFERENTIAL EQUATIONS. 3 credits.

Prerequisite, 236. The analysis and solution of systems of ordinary differential equations, both linear and nonlinear. Topics include stability theory, perturbation methods, asymptotic methods, and applications from the physical and social sciences.

345:439/539. MATHEMATICAL MODELS. 3 credits.

Prerequisite, 236 or permission of instructor. The formulation and analysis of mathematical models in the social and physical sciences. An analysis is made of both deterministic and stochastic models. Topics include Markov processes, linear programming, game theory, graph theory, and queuing theory.

345:441/541. NON-EUCLIDEAN GEOMETRY. 3 credits.

Prerequisite, 233. The development of hyperbolic geometry by investigating the historical axiomatic treatment of euclidean geometry.

345:442/542. PROJECTIVE GEOMETRY. 3 credits.*

Prerequisite, 313 or consent of Instructor. An introduction to projective linear spaces and coordinate systems; the propositions of incidence, the principle of duality, the theory of forms of the first and second kinds, conics.

345:481-482-483/581-582-583. ADVANCED CALCULUS I, II, III. 3 credits each.

Prerequisite, 236. An introduction to the real number system, sequences and series, point 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.

345:484/584. TOPICS IN MATHEMATICS.

3 credits. (May be repeated for a total of 6 credits).

Prerequisite, permission. Selected topics in advanced mathematics, including subject areas in analysis, algebra, geometry.

345:490. INDIVIDUAL READING.

1-3 credits. (May be repeated for a total of 6 credits.)

Prerequisite, Senior standing and permission, Mathematics majors only. Directed studies designed as an introduction to research problems, under the guidance of a selected faculty member.

345:491/591. WORKSHOP. 1-5 credits.

Group studies of special topics in Mathematics and

Statistics. May not be used to meet undergraduate or graduate major requirements in Mathematics and Statistics. May be used for elective credit only. May be repeated.

GRADUATE COURSES

345:610. MATRIX ALGEBRA. 3 credits.

Prerequisite, 236. Study of techniques used in matrices, inverse of a matrix, rank, linear equations, vector spaces and linear transformations, characteristic equation of a matrix; bilinear, quadratic and Hermetian forms.

345:611-612-613. ALGEBRAIC THEORIES I, II, III.

3 credits each.

Sequential; prerequisites, 311-312, or 406/506 and 410/501, or consent of instructor. Review of the fundamental structures of algebra (groups, rings, fields, vector spaces); The Jordan-Holder and Sylow theorems, modules over principal ideal domains, the classical groups, Galois Theory, lattices, and Boolean algebra.

345:614-615-616. TOPOLOGY I, II, III. 3 credits each.**

Sequential; prerequisite, 483. Set theory, ordinal and cardinal numbers, topological spaces, filters, and nets, separation, coverings, metric spaces, homotopy, topological groups, related topics.

345:621-622-623. FUNCTIONS OF A REAL VARIABLE I, II, III. 3 credits each.

Sequential; prerequisite 483. Structure of the real number system, sets and their properties, limit theorems properties of continuous and semi-continuous functions, derivatives of functions, Borel sets and Baire functions, measure; measurable sets, measurable functions, Riemann and Lebesgue integration, the Lebesgue integration as a set function, planar measure and double integration.

345:625-626-627. ANALYTIC FUNCTION THEORY I, II, III. 3 credits each.*

Sequential; prerequisite, 483. Concepts of number systems, elementary functions, homeomorphic functions, continuity, differentiability, power series, complex integration, residue theory, analytic continuation. Singularities.

345:628. ADVANCED NUMERICAL ANALYSIS.

3 credits.

Prerequisite, 428 (or equivalent). Least square polynomial approximation, Gaussian quadrature, approximations of types other than polynomial, numerical solution of differential equations of various types, integral equations and solutions of systems of equations.

345:635-636-637. CALCULUS OF VARIATIONS, I, II, III. 3 credits each.

Sequential; prerequisite, 236. Problems with fixed and movable end-points, problems with constraints, generalizations, several variables, parameter-invariant problems, finite differences, Ritz's method. Kantorovich's method, maximality principle, linear time-optimal problems, the relationship between calculus of variations and the maximality principle.

345:641. ALGEBRAIC GEOMETRY. 3 credits.**

Prerequisite, 313. An introduction to the study of systems of algebraic equations in several variables and of the structure which can be associated with such equations.

*These courses are to be offered in alternate years beginning with the 1973-74 academic year.

**These courses are to be offered in alternate years beginning with the 1974-75 academic year.

345:642. DIFFERENTIAL GEOMETRY. 3 credits.**
Prerequisite, 483. An introduction to the theory of curves and surfaces in three dimensions, intrinsic geometry of a surface, the geometry of surfaces in the large.

345:698. MATHEMATICS AND STATISTICS SEMINAR.

3 credits. (May be repeated for a total of 6 credits.)
For properly qualified candidates for the Master's degree in mathematics and statistics. Seminar type discussions scheduled by the Department involving special problems dealing with various phases of mathematics and statistics. A supervised research project will be included in this course.

345:699. RESEARCH AND THESIS.

3 credits. (May be repeated for a total of 6 credits.)
Prerequisite, permission. Properly qualified candidates for the master's degree may obtain six credits for research experience which culminates in the presentation of a faculty-supervised thesis.

347: STATISTICS

347:200. STATISTICAL LABORATORY. 2 credits.
Opportunity for individual work under staff guidance.

347:250-299. INTRODUCTION TO STATISTICS.

1 credit for each module.
An introduction to the fundamental ideas of statistics at a pre-calculus level which includes topics from descriptive statistics, probability, discrete distributions, normal distribution, problems of sampling, sampling distributions, tests of hypotheses, confidence intervals, regression and correlation, nonparametric statistics, experimental design, analysis of variance, time series and index numbers.

347:250. DESCRIPTIVE STATISTICS AND PROBABILITY. 1 credit.

Prerequisite, one quarter of college algebra or equivalent.

347:255. DISTRIBUTIONS. 1 credit.

Prerequisite, 250.

347:260. HYPOTHESIS TESTING I. 1 credit.

Prerequisite, 255.

347:265. HYPOTHESIS TESTING II. 1 credit.

Prerequisite, 260.

347:270. REGRESSION AND CORRELATION.

1 credit.

Prerequisite, 260.

347:275. EXPERIMENTAL DESIGN. 1 credit.

Prerequisite, 265.

347:280. NONPARAMETRIC STATISTICS.

1 credit.

Prerequisite, 260.

347: 285. TIME SERIES AND INDEX NUMBERS. 1 credit.

Prerequisite, 270.

347:450/550. PROBABILITY. 3 credits.

Prerequisite, 345:235. An introductory to frequency distributions, probability, probability distributions, expected values, sums of random variables.

347:451-452-453/551-552-553. THEORETICAL STATISTICS I, II, III. 3 credits each.

Sequential; prerequisite, 345:236. 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.

347:464/564. SAMPLING TECHNIQUES. 3 credits.**

Prerequisite, 252. Statistical aspects of sampling, general discussion of methods of drawing samples, evaluation of sample surveys.

347:471-472/571-572. APPLIED STATISTICS I, II.

3 credits each.

Sequential; prerequisite, 345:235. Applications of statistical theory to the natural and physical sciences and engineering, including tests of hypotheses, regression and correlation, analysis of variance and covariance, nonparametric statistics, sampling, quality control, reliability, and other selected topics.

347:473-474/573-574. EXPERIMENTAL DESIGN, I, II.

3 credits each.

Sequential; prerequisite, 452 or 472. Fundamental principles of analysis of variance, crossed and nested designs, multiple comparisons, power considerations, factorial designs, crossed and nested factors, principles of confounding, randomized blocks, latin squares, fractional factorial designs analysis of covariance, applications to problems in applied fields.

347:475/575. RELIABILITY THEORY AND QUALITY CONTROL. 3 credits.*

Prerequisite, 453 or 472. Theory involved in the study of reliability and quality control including hazard functions, exponential failure law, the Weibull distribution, series and parallel reliability, reliability estimation, control charts, acceptance sampling.

GRADUATE COURSES

347:650. ADVANCED PROBABILITY. 3 credits.

Prerequisite, 653 or permission. Random walk, distributions, unlimited sequences of trials, laws of large numbers, convolutions, branching processes, renewal theory, Markov chains, time-dependent stochastic processes.

347:651-652-653. MATHEMATICAL STATISTICS I, II, III. 3 credits each.

Sequential; prerequisite, 345:483. Probability theory, random variables and probability distributions, moment generating functions and limit theorems, large and small sample theory, theory of tests of hypotheses, point and interval estimation, introduction of nonparametric statistics.

347:661. REGRESSION AND CORRELATION.

3 credits.

Prerequisite, second quarter of a sequential statistics course or equivalent. Analytical theory of least squares using matrix notation, methods of matrix inversion, multiple regression, orthogonal polynomials, basic analysis of variance, correlation analysis, partial correlation.

347:662-663. LINEAR MODELS I, II. 3 credits each.**

Sequential; prerequisite, 653 or permission. The general linear model in matrix notation, general linear hypotheses, regression models, experimental design models, analysis of variance and covariance, variance components, response surfaces.

347:665-666. ADVANCED TOPICS IN STATISTICS I, II. 3 credits each.*

Sequential; prerequisite, 653 (or permission). Selected topics in statistics including concepts in nonparametric statistics, order statistics, advanced inference, multivariate analysis,

sequential analysis, stochastic processes, advanced analysis of variance.

347:667. STATISTICAL COMPUTER APPLICATIONS.
3 credits.*

Prerequisite, 345:236 and one course in statistics. Translation of statistical procedures into computer languages, iterative procedures, recursion formulas, generating data, Monte Carlo techniques, use of statistical packages.

347:668. MULTIVARIATE STATISTICAL METHODS.
3 credits.

Prerequisite, 673 or 473/573. Basic concepts and methods of multivariate techniques, including distance concept, Hotelling T^2 , multivariate analysis of variance, linear contrasts among vectors of treatment means, multivariate factorial experiments, nested and repeat-measure designs, Bonferroni X^2 tests, multivariate regression and correlation, linear discriminant analysis, canonical correlation, applications to problems in applied fields.

347:671-672-673. ADVANCED BEHAVIORAL STATISTICS, I, II, III. 3 credits each.

Sequential; prerequisite, College level algebra (or equivalent). Descriptive statistics, probability, statistical distributions, hypothesis testing, point and interval estimation, nonparametric statistics, regression and correlation, multiple regression, fundamental principles of designs, factorial experiments, individual comparisons, nested designs, repeat-measure designs, randomized blocks, analysis of covariance, applications to problems in applied fields. Laboratory. Not open to mathematics or statistics majors.

347:675. FACTOR ANALYSIS. 2 credits.

Prerequisite, 671 or permission. Theory and techniques in identifying independent variables through the use of factor analysis.

347:676. NONPARAMETRIC STATISTICS-METHODS.
3 credits.

Prerequisite, 252 or 672 (or permission). Theoretical bases and relationships among various nonparametric techniques compared with parametric ones.

350: MODERN LANGUAGE

350:101-102-103. BEGINNING MODERN LANGUAGE, I, II, III. 4 credits each.

Sequential. Reading, speaking, writing and listening comprehension: intensive drill in pronunciation, short stories, outside reading and supplementary work in the Language Laboratory. May be repeated for a different language.

350:201-202-203. INTERMEDIATE MODERN LANGUAGE, I, II, III. 3 credits each.

Sequential. Prerequisite, 103 (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 the Language Laboratory. May be repeated for a different language.

350:432/532 WORKSHOP. 1-5 credits.

Group studies of special topics in Modern Languages. May be repeated.

352: FRENCH

352:101-102-103. BEGINNING FRENCH I, II, III.

4 credits each.

Sequential. A thorough study of the sound system and basic structural patterns of the French language, including oral practice and the reading of simple prose. A placement test is required of every student who has completed more than one unit of French in high school.

352:201-202-203. INTERMEDIATE FRENCH, I, II, III.

3 credits each.

Audio-oral sections. Sequential; prerequisite, 103 or equivalent. Practice in reading, writing, speaking and listening comprehension. Grammar review, short stories, plays and novels on intermediate level. A placement test is required of every student who did not complete 103 or the equivalent.

352:205. FRENCH READINGS FOR NON-MAJORS.

3 hours, 0 credits.

May be repeated. A one-quarter non-credit course for graduate students preparing for the graduate reading proficiency examination in French. No previous knowledge of French required.

352:207-208-209. INTERMEDIATE FRENCH I, II, III READING OPTION. 3 credits each.

Sequential. Prerequisite, 103 or equivalent. Reading and translation of texts dealing with contrasting French and American customs, values and attitudes. A placement test is required of every student who did not complete 103 or the equivalent.

352:212/312. INDIVIDUAL SUMMER STUDY.

ABROAD. 3 credits.

Prerequisite, 202 or equivalent and consent of Instructor. Individual Summer Study Abroad projects under this code number may be recognized as equivalent to 353:203, or to one quarter of *French Composition and Conversation* or to one quarter of *French Culture and Civilization*.

352:250. MASTERPIECES OF THE TWENTIETH CENTURY FRENCH NOVEL IN TRANSLATION.

3 credits.

Reading and discussion of the works of Proust, Gide, Saint-Exupery, Malraux, Sartre, Camus, Sarraute. May not be taken for credit toward the major in French.

352:251. MASTERPIECES OF TWENTIETH CENTURY FRENCH THEATER IN TRANSLATION.

3 credits.

Reading and discussion of the works of Giraudoux, Anouilh, Montherlant, Sartre, Camus, Ionesco, Beckett, de Ghelderode. May not be taken for credit toward the major in French.

352:301-302-303. FRENCH COMPOSITION AND CONVERSATION. 3 credits each.

Prerequisite, 203 (or equivalent). Free composition, special attention to vocabulary and idioms, development of oral expression and conversational ability. In 303, introduction to the fundamentals of *explication de textes*.

352:305-306-307. INTRODUCTION TO FRENCH LITERATURE. 3 credits each.

Prerequisite, 203 (or equivalent). Survey of French literature from its origins to the present, with lectures, readings, and class discussion of representative works.

352:309-310-311. FRENCH CULTURE AND CIVILIZATION. 3 credits each.

Prerequisite, 303 or 307 or consent of Instructor. An audio-

*These courses are to be offered in alternate years beginning with the 1973-74 academic year.

**These courses are to be offered in alternate years beginning with the 1974-75 academic year.

visual presentation with class discussions of the French cultural heritage from its origins to the present. Conducted in French.

352:401. FRENCH PHONETICS. 3 credits.

Prerequisite, 203 or equivalent. Intensive drill in pronunciation with correction and improvement of student's accent, emphasis on articulation, intonation and rhythm.

352:403-404-405. ADVANCED FRENCH COMPOSITION AND CONVERSATION. 3 credits each.

Prerequisite, 303 or equivalent. A thorough analysis of syntax, morphology, phonetic principles and grammatical structure. Free composition and conversation on a wide variety of topics designed to improve the student's ability to speak and write idiomatic French.

352:407/507. FRENCH LITERATURE OF THE MIDDLE AGES TO THE 14TH CENTURY. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Reading, in modern translation, of such medieval works as the *Chanson de Roland*, other medieval epics, *romans courtois*, *lais* and the *Roman de Renart*. Class discussions and lectures. Conducted in French.

352:408/508. FRENCH LITERATURE OF THE 14TH AND 15TH CENTURIES AND OF THE EARLY RENAISSANCE. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Reading, in modern translation, of medieval religious drama, secular drama, the poetry of Francois Villon, the poetry of Marot, the novels of Rabelais. Class discussions and lectures. Conducted in French.

352:409/509. FRENCH LITERATURE OF THE RENAISSANCE. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Reading, in modern translation, of works by Ronsard, Du Bellay, Montaigne and others. Class discussions and lectures. Conducted in French.

352:411/511. 17TH CENTURY FRENCH LITERATURE I. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. The literary movements of the classical period and their background. Malherbe and his literary doctrine. The early novel: Honore d'Urfé, Scarron, Furetiere. The theater of Corneille. Conducted in French.

352:412/512. 17TH CENTURY FRENCH LITERATURE II. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Descartes, Pascal, the theater of Moliere, La Fontaine, Bossuet. Conducted in French.

352:413/513. 17TH CENTURY FRENCH LITERATURE III. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. The theater of Racine, Boileau, Mme de Sevigne, La Bruyere, Mme de La Fayette, La Rochefaucauld, Fenelon. Conducted in French.

352:415/515. 18TH CENTURY FRENCH LITERATURE I. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. The legacy of Moliere and Racine; the beginning of the novel, Regnier, Le Sage, Marivaux, Abbe Prevost. The first assault on traditions: Bayle, Fontenelle, Montesquieu. Conducted in French.

352:416/516. 18TH CENTURY FRENCH LITERATURE II. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Buffon, Diderot, and the Encyclopedists, Voltaire, the *salons*. Conducted in French.

352:417/517. 18TH CENTURY FRENCH LITERATURE III. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Rousseau, Beaumarchais, Choderlos de Laclos, literature of the Revolution. Conducted in French.

352:419/519. 19TH CENTURY FRENCH LITERATURE I. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. French literature of the Romantic period: Chateaubriand, Madame de Stael, Stendhal, Balzac, Lamartine, Hugo, Musset, Vigny. Conducted in French.

352:420/520. 19TH CENTURY FRENCH LITERATURE II. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Realism and Parnassianism, Scribe, Gautier, Leconte de Lisle, Heredia, Flaubert. Conducted in French.

352:421/521. 19TH CENTURY FRENCH LITERATURE III. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Naturalism and symbolism in prose and poetry. Verlaine, Rimbaud, Mallarme, Lautreamont, Laforgue, Becque, Maeterlinck, Zola and the naturalistic writers. Conducted in French.

352:427/527. 20TH CENTURY FRENCH THEATER AND POETRY I. 3 credits.

Prerequisite, 303 or 307 or consent of instructor. Apollinaire, Peguy, Claudel, Valery, Tarry, Romain, Salacrou. Conducted in French.

352:428/528. 20TH CENTURY FRENCH THEATER AND POETRY II. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Breton and surrealism, Eluard, Aragon, Supervielle, Cocteau, Giraudoux, Lenormand, Anouilh, and Montherlant.

352:429/529. 20TH CENTURY FRENCH THEATER AND POETRY III. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Saint-John Perse, Michaux, Prevert, Char, Sartre, Camus, Beckett and Ionesco. Conducted in French.

352:435/535. TWENTIETH CENTURY FRENCH NOVEL I. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Proust, Gide, Martin du Gard, Romain, Duhamel and others. Conducted in French.

352:436/536. TWENTIETH CENTURY FRENCH NOVEL II. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Rodiguet, Mauriac, Bermanos, Giono, Maurois and others. Conducted in French.

352:437/537. TWENTIETH CENTURY FRENCH NOVEL III. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Malraux, Saint-Exupery, Existentialism and new trends. Conducted in French.

352:450. EXPLICATION DE TEXTES. 3 credits.

Prerequisite, 303 or 307 or consent of Instructor. Study of the traditional French method of literary analysis based on passages of representative authors from selected periods of French literary history.

352:491-492-493. RESEARCH IN FRENCH LITERATURE. 1 to 3 credits each.*1 to 3 credits each.*

Prerequisite, consent of Instructor. Offered in accordance with student's needs.

GRADUATE COURSES**352:601. ADVANCED FRENCH GRAMMAR AND STYLISTICS.** 5 credits.

Advanced study of normative French grammar with translation into French of English texts and practice in free composition.

352:603-604-605. ROMANCE AND APPLIED LINGUISTICS. 3 credits each.

History of the French language from 842 to the present, syntactical analysis of French texts. Third quarter deals with the application of linguistic research to the teaching of French in secondary schools or in college.

352:607-608-609. SELECTED TOPICS IN THE MOVEMENT OF IDEAS IN FRENCH LITERATURE.*3 credits each.*

Ideas characteristic of various periods in French literature. The first quarter will focus on writers before 1750. Second and third quarter topics will be selected from 1750 to the present time. A formal report demonstrating the ability to use essential research techniques will be required.

352:619-620-621. FRENCH CULTURE AS EXPRESSED IN LITERATURE. 3 credits each.

An anthropological approach to French culture emphasizing social and civic institutions, education, value systems, national characteristics, and historical perspectives. A study of major themes and patterns of French culture as they are expressed in the mainstream of French literature.

352:651-652-653. INDIVIDUAL READING AND RESEARCH SEMINAR. 1-3 credits each.

Prerequisite, consent of Instructor. Private study and research in specific areas, with considerable reading of French texts in the area concerned, plus written reports in French and/or an intensive term paper.

352:661 FRENCH TEACHING PRACTICUM. 3 credits.

Prerequisite, Teaching Assistantship or permission. Orientation and practice of particular aspects of teaching French language and culture. Student teaching experiences are periodically reviewed and evaluated. These credits may not be applied toward degree requirements.

352:690. THESIS WRITING. 3-9 credits.**353: GERMAN****353:101-102-103. BEGINNING GERMAN, I, II, III.***4 credits each.*

Sequential. Reading, speaking, writing and listening comprehension, intensive drill in pronunciation, short stories, outside reading and/or supplementary work in the Language Laboratory.

353:201-202-203. INTERMEDIATE GERMAN, I, II, III.*3 credits each.*

Sequential; prerequisite, 103 or equivalent. Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level, outside reading and/or supplementary work in the Language Laboratory.

353:205. GERMAN READINGS FOR NON-MAJORS.*3 hours, 0 credits.*

May be repeated. A one-quarter non-credit course for gradu-

ate students preparing for the graduate reading proficiency examination in German. No previous knowledge of German required.

353:207-208-209. INTERMEDIATE GERMAN I, II, III READING OPTIONS. 3 credits each.

Sequential. Prerequisite, 103 or equivalent and permission. Reading of German texts in culture and civilization, discussion in English, translation and grammatical analysis where appropriate. Not open to majors.

353:250. MASTERPIECES OF TWENTIETH CENTURY GERMAN LITERATURE IN TRANSLATION. 3 credits.

Readings and discussion of the works of Mann, Rilke, Hesse, Kafka, Benn, Brecht, Frisch, Dürrenmatt, Borchert and Grass. May not be taken for credit toward the major in German.

353:251. MASTERPIECES OF NINETEENTH CENTURY GERMAN LITERATURE IN TRANSLATION. 3 credits.

Readings and discussion of the works of Kleist, Heine, Hebel, Keller, Storm, Meyer, and Hauptmann. May not be taken for credit toward the German major.

353:252. LITERATURE OF THE AGE OF GOETHE IN TRANSLATION. 3 credits.

Readings and discussions of representative drama, prose and poetry of Lessing, Goethe, and Schiller. May not be taken for credit toward the major in German.

353:301-302-303. GERMAN COMPOSITION AND CONVERSATION. 3 credits each.

Prerequisite, 203 (or equivalent). Advanced composition using German models, special attention to words and idioms, development of oral expression and conversational ability.

353:305-306-307. INTRODUCTION TO GERMAN LITERATURE. 3 credits each.

Prerequisite, 203 (or equivalent). Introduction to the study of German literature. Readings and class discussions in German of representative works.

353:403-404-405. ADVANCED GERMAN COMPOSITION AND CONVERSATION. 3 credits each.

Prerequisite, 303 (or equivalent). A continuation of the material covered in 301, 302 and 303 at a more advanced level.

353:406-407-408. GERMAN CULTURE AND CIVILIZATION. 3 credits each.

Prerequisite, 303, 307 or equivalent. Particular emphasis on the customs, traditions, literary trends, and artistic tendencies that constitute Germany's contribution to Western Civilization.

353:419/519. THE AGE OF GOETHE I. 3 credits.

Prerequisite, 303 or 307 or permission. Enlightenment and the generation of Sturm and Drang, including works of Wieland, Lessing, Klopstock, Herder the young Goethe, and others.

353:420/520. THE AGE OF GOETHE II. 3 credits.

Prerequisite, 303 or 307 or permission. Faust, selections from parts I and II. Ballads of Goethe and Schiller.

353:421/521. THE AGE OF GOETHE III. 3 credits.

Prerequisite, 303 or 307 or permission. Romanticism in the poetry of Goethe, Novalis, Eichendorf, Heine, and others. Study of the Märchen, folklore and Germanic mythology.

353:431/531. CLASSICAL GERMAN DRAMA. 3 credits.

Prerequisite, 303 or 307 or permission. Representative works of the major classical dramatics including Lessing, Goethe, (except Faust) Schiller, Kleist, Grillparzer, and others.

353:432/532. DRAMA OF SOCIAL CRITICISM. 3 credits. Prerequisite, 303 or 307 or permission. Representative works of the major dramatists of social criticism including Strum and Drang dramatists, Büchner, Hebbel, Hauptmann and Wedekind.

353:433/533. TRENDS IN MODERN DRAMA. 3 credits. Prerequisite, 303 or 307 or permission. Representative works of major modern dramatists including Hofmannsthal, Kaiser, Brecht, Zuckmayer, Dürrenmatt, and Borchert.

353:435/535. THE ROMANTIC SHORT STORY. 3 credits. Prerequisite, 303 or 307 or permission. Reading and discussion of representative works of German Romanticism, including those of Tieck, Kleist, E.T.A. Hoffman, Brentano, Eichendorff, and others.

353:436/536. THE SHORT STORY OF POETIC REALISM. 3 credits. Prerequisite, 303 or 307 or permission. Reading and discussion of works representative of the period, including those of Droste-Hulshoff, Stifter, Keller, Meyer, Storm, and others.

353:437/537. THE MODERN SHORT STORY. 3 credits. Prerequisite, 303 or 307 or permission. Reading and discussion of representative works of Hauptmann, Schnitzler, T. Mann, Kafka, Zweig, Borchert, Boll, and others.

353:439/539. TWENTIETH CENTURY GERMAN LITERATURE I. 3 credits. Prerequisite, 303 or 307 or permission. The fading of old traditions and emergency of new values during the first decades of the century. Readings, and discussion of the works of T. Mann, Schnitzler, Hauptmann, Kaiser, George, Hofmannsthal, Rilke, Wedekind, and others.

353:440/540. TWENTIETH CENTURY GERMAN LITERATURE II. 3 credits. Prerequisite, 303 or 307 or permission. New interpretations of reality during and after World War I. A continuation of the studies undertaken in 439, based on readings and discussions of the writings of Hesse, Kafka, Döblin, Werfel, and others.

353:441/541. TWENTIETH CENTURY GERMAN LITERATURE III. 3 credits. Prerequisite, 303 or 307 or permission. Recent trends as reflected in such writers as Zweig, Zuckmayer, Dürrenmatt, Böll, Frisch, Grass, and others.

353:491-492-493. INDIVIDUAL READING IN GERMAN. 1-3 credits each. Prerequisite, permission.

355: ITALIAN

355:101-102-103. BEGINNING ITALIAN, I, II, III. 4 credits each. Sequential. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation, short stories, outside reading and/or supplementary work in the Language Laboratory.

355:201-202-203. INTERMEDIATE ITALIAN, I, II, III. 3 credits each. Sequential. Prerequisite, 103 (or equivalent). Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level, outside reading and/or supplementary work in the Language Laboratory.

355:207-208-209. INTERMEDIATE ITALIAN I, II, III READING OPTION. 3 credits each.

Sequential. Prerequisite, 103 or equivalent. The readings will cover various aspects of Italian culture through the centuries, with particular emphasis on history, literature, art, and the contemporary Italian way of life as compared with the American one. Review of grammar to the extent necessary for an accurate understanding of the texts.

355:250. GENIUS OF ITALIAN LITERATURE IN TRANSLATION. 3 credits. Reading and discussion of works of Dante, Petrarca, Boccaccio, Ariosto, Macchiavelli, Cellini, Tasso, Bruno, Pirandello De Filippo.

355:301-302-303. ITALIAN COMPOSITION AND CONVERSATION. 3 credits each. Prerequisite, 203 (or equivalent). Italian composition using Italian models, special attention to words and idioms, and development of oral expression and conversational ability.

355:305-306-307. INTRODUCTION TO LITERATURE. 3 credits each. Prerequisite, 203 (or equivalent). Introduction to the study of Italian literature. Readings and class discussions in Italian of representative works.

357: RUSSIAN

357:101-102-103. BEGINNING RUSSIAN, I, II, III. 4 credits each. Sequential. Reading, speaking, writing and listening comprehension; intensive drill in pronunciation, short stories, outside reading and/or supplementary work in the Language Laboratory.

357:201-202-203. INTERMEDIATE RUSSIAN, I, II, III. 3 credits each. Sequential. Prerequisite, 103 (or equivalent). Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level, outside reading and/or supplementary work in the Language Laboratory.

357:207-208-209. INTERMEDIATE RUSSIAN I, II, III READING OPTION. 3 credits each. Sequential. Prerequisite, 103 (or equivalent). Reading of texts in Russian dealing with the culture of Russian-speaking people. Discussion of the content of these texts in English along with a review of grammar to the extent necessary for an accurate understanding of the texts. Not open to majors.

357:301-302-303. RUSSIAN COMPOSITION AND CONVERSATION. 3 credits each. Prerequisite, 203 (or equivalent). Advanced composition using Russian models, special attention to words and idioms, development of oral expression and conversation ability.

357:305-306-307. INTRODUCTION TO RUSSIAN LITERATURE. 3 credits each. Prerequisite, 203 (or equivalent). Introduction to the study of Russian literature. Readings and class discussions in Russian of representative works.

357:309-310-311. RUSSIAN CIVILIZATION AND CULTURE. 3 credits each. Prerequisite, 203 (or equivalent). Readings and discussion of Russian texts relating to important developments in Russian civilization and culture.

357:403-404-405. ADVANCED RUSSIAN COMPOSITION AND CONVERSATION. 3 credits each. Prerequisite, 303 (or equivalent). A continuation of the material covered in 301, 302, and 303 at a more advanced level.

357:411-412-413. SCIENTIFIC RUSSIAN. 3 credits each.
Prerequisite, 203 (or equivalent). Intensive reading of scientific articles in Chemistry, Physics, Mathematics, Biology, and Medicine.

357:427. RUSSIAN LITERATURE OF THE TWENTIETH CENTURY. 5 credits.

Prerequisite, 203 (or equivalent). Reading and discussion of selected literary works from Gorky to Evtushenko.

357:439. ADVANCED RUSSIAN SYNTAX, GRAMMAR AND CONVERSATION. 5 credits.

Prerequisite, 405 (or equivalent). Advanced work in composition, translation into Russian, and idiomatic use of the spoken language.

357:491-492-493. INDIVIDUAL READING IN RUSSIAN. 1-3 credits each.

Prerequisite, permission.

358: SPANISH

358:101-102-103. BEGINNING SPANISH, I, II, III.

4 credits each.

Sequential. Reading, speaking, writing and listening comprehension: intensive drill in pronunciation, short stories, outside reading and/or supplementary work in the Language Laboratory.

358:201-202-203. INTERMEDIATE SPANISH, I, II, III.

3 credits each.

Sequential. Prerequisite, 103 (or equivalent). Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level, outside reading and/or supplementary work in the Language Laboratory.

358:207-208-209. INTERMEDIATE SPANISH I, II, III

READING OPTION. 3 credits each.

Sequential. Prerequisite, 103 or equivalent. By permission only. Reading of texts in Spanish dealing with the culture of Spanish-speaking people. Discussion of the content of these texts in English along with a review of grammar to the extent necessary for an accurate understanding of the texts. Not open to majors.

358:211/311. SPANISH-SPANISH AMERICAN CULTURAL EXPERIENCE. 1-3 credits.

Prerequisite, faculty permission. A student's residence and/or independent study in a Spanish speaking country which results in demonstrable assimilation of the country's culture may earn a maximum of three hours of credit. The student's success in attaining prescribed levels of cultural knowledge and insights and the overall educational value of the student's experience of living abroad will be measured and evaluated by the faculty.

358:251. CONTEMPORARY SPANISH LITERATURE IN TRANSLATION. 3 credits.

Reading and discussion of representative works from Spain and Spanish America's leading novelists, dramatists, and thinkers, a selection of whose writings in English translation will provide students with insights into the contemporary Spanish mind and imagination as they focus on the problems of human existence. May not be taken for credit toward the Spanish major.

358:301-302-303. SPANISH COMPOSITION AND CONVERSATION. 3 credits each.

Prerequisite, 203 (or equivalent). Advanced composition using Spanish models, special attention to words and idioms, development of oral expression and conversational ability.

358:305-306-307. INTRODUCTION TO SPANISH AND SPANISH-AMERICAN LITERATURE.

3 credits each.

Prerequisite, 203 (or equivalent). Direct reading and discussion, in Spanish, of novels, short stories, and drama in the modern idiom of Spain, Puerto Rico and the 17 Spanish-American republics.

358:309-310. INTRODUCTION TO HISPANIC LINGUISTICS I, II. 3 credits each.

Prerequisite, 203 (or equivalent). An elementary survey of four approaches to the study of the Spanish Language: (a) the history of the language, from late spoken Latin to modern Spanish; (b) the structure of present-day Spanish; its phonology and grammar; (c) the dialects, or regional varieties, of Spanish; (d) applied linguistics, with special emphasis on the problems likely to be met by prospective teachers of Spanish. Lectures and discussion. This course should be taken by all Spanish majors.

358:401. COMMERCIAL CORRESPONDENCE IN SPANISH. 5 credits.

Prerequisite, 203 (or equivalent). Translation of business letters from Spanish into English and from English into Spanish, with emphasis on modern phraseology in commercial correspondence.

358:403-404-405. ADVANCED SPANISH COMPOSITION AND CONVERSATION.

3 credits each.

Prerequisite, 303 (or equivalent). A continuation of the material covered in 301, 302, and 303 at a more advanced level.

358:407-408-409. MEDIEVAL AND RENAISSANCE SPANISH LITERATURE. 3 credits each.

Prerequisite, 303 or 307 or permission. Reading and discussion of representative works that mark the beginnings of Spanish literature in poetry, prose and drama, with emphasis given to the major works: *Cantar de Mio Cid*, *El Libro de Buen Amor*, *La Celestina*, and the ballads. The Renaissance in Spain: lyric and mystical poetry, the comedia before Lope de Vega, and the pastoral and chivalric novel. Conducted in Spanish.

358:411-412-413/511-512-513. SPANISH LITERATURE OF THE GOLDEN AGE. 3 credits each.

Prerequisite, 303 or 307 or permission. Reading and discussion of representative novels and short stories with special emphasis on the works of Miguel de Cervantes. Drama, poetry and essays of the sixteenth, seventeenth and eighteenth centuries will be studied. Conducted in Spanish.

385:415-416-417/515-516-517. SPANISH LITERATURE FROM 1800-1936. 3 credits each.

Prerequisite, 303 or 307 or permission. Reading discussion and lectures. Study of Neoclasicismo, Romanticismo, Realismo, Naturalismo, the generation of 1898 and 1927. Conducted in Spanish.

358:419-420-421/519-520-521. SPANISH LITERATURE SINCE 1940. 3 credits each.

Prerequisite, 303 or 307 or permission. Reading and discussion of the most representative writers in Spain's literary Renaissance since 1940. Representative poetry, drama, novels, and short stories will be studied. Conducted in Spanish.

358:423-424-425/523-524-525. SPANISH-AMERICAN LITERATURE. 3 credits each.

Prerequisite, 303 or 307 or permission. Reading and discus-

sion of representative Spanish-American Literature from discovery to the present time. Oral and written reports. Conducted in Spanish.

358:427-428-429. SPANISH AND SPANISH-AMERICAN CULTURE AND CIVILIZATION.

3 credits each.

Prerequisite, 303 or 307 or permission. Emphasis on the customs, traditions, literary trends, and artistic tendencies that constitute Spain's specific contribution to Western Civilization. Cultural evolution, including educational and political institutions of Puerto Rico and the 17 Spanish-American republics. Conducted in Spanish.

358:491-492-493. INDIVIDUAL READING IN SPANISH.

1-3 credits each.

Prerequisite, permission.

GRADUATE COURSES

358:601-602-603. MEDIEVAL AND RENAISSANCE SPANISH LITERATURE. *3 credits each.*

Reading and discussion of the monumental medieval literary works of Spain such as *Poema de Mio Cid*, *El Conde Lucanor*, *El Libro de Buen Amor*. Studies in the effect of the revival of learning on Spanish literature; Italianism, Humanism, Mysticism. Conducted in Spanish.

358:605-606. SEMINAR IN HISPANIC LINGUISTICS.

3 credits each.

Present-day methods of comparative, historical, and structural linguistics. Research work in Castilian and Spanish American Linguistics. Offered in accordance with student needs. Conducted in Spanish.

358:607-608. SEMINAR IN HISPANIC BIBLIOGRAPHY AND IN RESEARCH METHODS.

3 credits each.

Required of all candidates on the thesis plan. Special studies in research methods. Identification, analysis and evaluation of Hispanic bibliographical sources. Offered in accordance with student needs. Conducted in Spanish.

358:609-610-611. SEMINAR ON CLASSICAL AND MODERN PENINSULAR LITERATURE.

3 credits each.

Reading and discussion of representative writers from the Renaissance to the late Baroque period. Studies in the essay, the novel, the theater, the poetry and the philosophic writings of the modern period. Conducted in Spanish.

358:613-614-615. SEMINAR ON SPANISH-AMERICAN LITERATURE.

3 credits each.

Studies in representative writers preceding the War for Independence. Reading and discussion of various genres and authors representing significant literary developments of the modern period. Conducted in Spanish.

358:617-618-619. SEMINAR ON PRESENT DAY SPANISH-AMERICAN LITERATURE.

3 credits each.

Reading and discussion of contemporary writers with emphasis on the theatre, the novel and the short story. Conducted in Spanish.

358:621-622-623. SEMINAR ON PRESENT-DAY PENINSULAR SPANISH LITERATURE.

3 credits each.

Studies in representative present-day writers with analyses and discussions of the novel (621), the theater (622) poetry and short stories (623). Conducted in Spanish.

358:625-626. SEMINAR ON HISPANIC CULTURE AND CIVILIZATION. *3 credits each.*

An anthropological approach to Hispanic culture emphasizing social and civic institutions, education, art, political systems, value systems, national characteristics and historical perspectives; 625 will cover Spain and 626 Latin America. Conducted in Spanish.

358:651-652-653. INDIVIDUAL READINGS IN SPANISH.

1-3 credits each.

The content of any given Individual Reading program would be taken from course contents approved for graduate work in Spanish.

358:661. SPANISH TEACHING PRACTICUM.

3 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.

358:690. THESIS WRITING. *3-9 credits.*

360: PHILOSOPHY

360:101. INTRODUCTION TO PHILOSOPHY.

4 credits.

An introduction to philosophic problems and attitudes through acquaintance with the thought of some of the leading thinkers of the Western tradition.

360:120. INTRODUCTION TO ETHICS. *4 credits.*

Prerequisite, 101. An introduction to the problems of moral conduct through readings from the tradition and class discussions; Nature of "good", "right", "ought" and "freedom".

360:131. COMPARATIVE RELIGIONS I: EASTERN.

4 credits.

An introduction to Hinduism, Buddhism, Jainism, Confucianism, Taoism and Shinto.

360:132. COMPARATIVE RELIGIONS II: MAJOR WESTERN RELIGIONS. *4 credits.*

An introduction to Zoroastrianism, Judaism, Christianity and Islam.

360:133. COMPARATIVE RELIGIONS III: CONTEMPORARY MAJOR DEVELOPMENTS.

4 credits.

An inquiry into the variety of contemporary religions outside the major eastern and western systems.

360:170. INTRODUCTION TO LOGIC. *4 credits.*

An introduction to the nature and function of deductive systems with particular attention to traditional logic, including forms of mediate and immediate inference and formal fallacies.

360:211. HISTORY OF ANCIENT PHILOSOPHY.

4 credits.

History and early development of ancient Greek philosophy from Pre-Socratics to Aristotle.

360:212. HISTORY OF MEDIEVAL PHILOSOPHY.

4 credits.

History of Western philosophy from end of Roman Empire to Renaissance. Major philosophers studied will include St. Augustine, St. Anselm, St. Thomas Aquinas, Duns Scotus, and William of Ockham.

360:213. HISTORY OF MODERN PHILOSOPHY.*4 credits.*

An analysis of the major philosophical issues of the 17th and 18th centuries.

360:223. VALUE THEORY. 4 credits.

An inquiry into man as an evaluator. A study of some principles and theories of value and their implications.

360:224. SOCIAL AND POLITICAL PHILOSOPHY.*4 credits.*

Prerequisite, one course in philosophy or permission of instructor. An examination of the images of man implied in the major social and political philosophies in Western History. Special attention is devoted to the epistemological, methodological, ontological and axiological assumptions and consequences of these theories.

360:232. PHILOSOPHY OF RELIGION. 4 credits.

Prerequisite, two courses in philosophy. Discussion and analysis of the problems of theology and the nature of the religious experience; God's nature and existence, immortality, sin, faith, and reason, the holy, revelation and redemption.

360:250. PHILOSOPHY OF ART. 4 credits.

Prerequisite, 101 or permission. An introduction to the major theories of the nature of art and the art object with readings and discussions of examples. Such thinkers as Plato, Aristotle, Schopenhauer, Lessing, Pater and Freud are examined.

360:314. 19th CENTURY PHILOSOPHY. 4 credits.

Prerequisite, one course in philosophy or permission of instructor. An inquiry into the philosophically significant ideas of Hegel, Marx, Schopenhauer, Mill, Kierkegaard, and Nietzsche.

360:316. AMERICAN PHILOSOPHY. 4 credits.

Prerequisite, one course in philosophy or permission of instructor. The movement of ideas in America from Royce to the present.

360:332. DIALECTICAL MATERIALISM. 4 credits.

Prerequisite, 224 or permission of instructor. Includes attention to Hegelian and other origins as well as its development in the writings of Marx, Engels, Lenin, and contemporary writers. Focus on metaphysics, social philosophy, philosophy of history, the nature of man, ethics, and aesthetics.

360:374. SYMBOLIC LOGIC. 4 credits.

Prerequisite, 170 or permission of instructor. An introduction to symbolic logic through the construction of a propositional calculus and a first-order predicate calculus.

360:411/511. LATER DIALOGUES OF PLATO. 4 credits.

Prerequisites, one introductory course, and 211 or permission of instructor. A course in the later dialogues of Plato, commencing with the Theatetus.

360:418/518. ANALYTIC PHILOSOPHY. 4 credits.

Prerequisite, 211, 212 and 213, or permission of instructor. Study of British and American philosophers concerned with ideal and ordinary languages. Russell, Carnap, Ayer, Moore, Wittgenstein, Ryle, and Austin.

360:419/519. BRITISH EMPIRICISM. 4 credits.

Prerequisites, one introductory course, 213 or permission of instructor. An intensive analysis of selected major writings of Locke, Berkeley, and Hume.

360:421/521. PHILOSOPHY OF LAW. 4 credits.

Prerequisite, one course in philosophy or permission of instructor. A philosophical inquiry into the nature of law and legal institutions.

360:422/522. CONTINENTAL RATIONALISM. 4 credits.

Prerequisites, one introductory course, 213, or permission of instructor. An intensive analysis of selected major writings of Descartes, Spinoza, and Leibniz.

360:424/524. EXISTENTIALISM. 4 credits.

Prerequisite, one introductory course in philosophy, 314, or permission of instructor. An in-depth inquiry into the thought of Kierkegaard, Jaspers, Heidegger, Sartre, Tillich and other existentialists with their concern for man and his human condition.

360:426/526. PHENOMENOLOGY. 4 credits.

Prerequisites, one introductory course, 314, or permission of instructor. The inquiry into the methodology of Husserl and Heidegger and their influence upon Western European and American thought.

360:432/532. ARISTOTLE. 4 credits.

Prerequisites, 211, 213, or permission of instructor. A detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of man, and ethics. Taught in alternate years.

360:434/534. KANT. 4 credits.

Prerequisite, 213 or permission of instructor. A study of Kantian system of thought and its relation to the history of philosophy. Includes a thorough investigation of one or more of Kant's philosophic works.

360:436/536. GERMAN IDEALISM. 4 credits.

Prerequisite, 213 or permission of instructor. An intensive study of the German idealists of the 19th century, including Fichte, Schelling, Hegel, and Schopenhauer.

360:442/542. 20TH CENTURY PHILOSOPHY. 4 credits.

Prerequisites, two courses in History of Philosophy or permission of instructor. A study of pragmatism, logical positivism, linguistic analysis, and existentialism.

360:444/544. PROBLEMS IN PHILOSOPHY. 4 credits.

Prerequisites, two courses in philosophy or permission of instructor. A thorough, critical examination of one major philosophical problem. Topics include such as Philosophy of Mind, Philosophy of Language, Philosophy of History, Aesthetics, Philosophy of Social Science.

360:462/562. THEORY OF KNOWLEDGE. 4 credits.

Prerequisite, three courses in philosophy. An examination of the nature of knowledge; theories of perception, conception and truth, the problem of induction, and the relation of language to knowledge.

360:464/564. PHILOSOPHY OF SCIENCE. 4 credits.

Prerequisite, permission of instructor. The nature of explanation, causality, and physical theory.

360:471/571. INTRODUCTION TO METAPHYSICS.*4 credits.*

Prerequisite, 211, 212, 213. A systematic and critical study of metaphysical problems and their possible solutions as seen in the context of their historic development. Each problem is carefully defined and placed in its historic context. Emphasis is placed upon reading of original sources, both historic and contemporary.

360:480/580. SEMINAR. 4 credits.

Prerequisite, permission of instructor.

360:481/581. SEMINAR. 4 credits.

Prerequisite, permission of instructor.

360:482. SEMINAR. 4 credits.

Prerequisite, permission of instructor.

GRADUATE COURSES

Admission to courses requires permission of departmental advisor.

360:615. SEMINAR: HISTORY OF PHILOSOPHY.

4 credits. (May be repeated for a total of 16 credits.)

A study in the philosophical works of one major philosopher. Open only with consent of instructor.

360:626. ETHICAL THEORY. 4 credits.

An examination of the problems related to human conduct and decision-making in the light of the Western tradition as well as the contemporary insights of positivism, phenomenology, existentialism, logical analysis, naturalism and pragmatism.

360:676. LOGICAL THEORY. 4 credits.

An introduction to the main problems typically encountered in logical theory; Logic and ontology, alternative logics, truth and analyticity, induction, special problems concerning the interpretation of the conditional and modal logics. It is suggested that graduate students be familiar with the material covered in undergraduate logic (274) before taking this course.

360:680. SEMINAR. 4 credits. (May be repeated for a total of 12 credits).

360:688. SEMINAR: THESIS SUPERVISION I.

2 credits.

360:689. SEMINAR: THESIS SUPERVISION II.

2 credits.

365: PHYSICS

365:130. DESCRIPTIVE ASTRONOMY. 3 credits.

A qualitative and non-mathematical introduction to the subjects of astronomy and astrophysics, intended primarily as a first science course for students not majoring in physical science. Telescopes and spectroscopy; the solar system; physical characteristics of the sun and planets, planetary motions, satellites, comets, meteorites, age and origin of the solar system; the stars: description, evolution, multiple stars and clusters, interstellar space, galaxies, the physical universe and relativity.

365:133. MUSIC, SOUND AND PHYSICS.

3 credits.

A qualitative introduction to sound production, transmission and perception, with emphasis on music. Descriptive treatment of vibration, waves, resonance; physiology of hearing; production of musical sounds; pitch, frequency, tone quality, harmonics, intensity; room acoustics; musical instruments, the human voice, electronic sound.

365:137. LIGHT: COLORS, CAMERAS AND PERCEPTION. 3 credits.

A qualitative introduction to the understanding of light and color, their perception and recording. The nature of light: reflection, refraction, interference diffraction, polarization, absorption, photoelectric effect; cameras: lenses, apertures, shutters, photographic emulsions and processing; color characteristics of light and films; the structure of the human eye, color perception, color sensitivity; lasers and holography.

365:138. PROPERTIES OF LIGHT LABORATORY.

1 credit.

Prerequisite or corequisite, 365:137 or permission. An introductory laboratory, which deals qualitatively and quantitatively with the properties of light and the interaction of

light with material objects. Experiments considered include: light sources, intensity and luminosity, reflection, transmission and refraction, dispersion, lenses and optical instruments, polarization, scattering and absorption of light, interference, diffraction, and perception. One two-hour laboratory period each week.

365:141. PHYSICS, ENERGY AND MAN. 4 credits.

An introductory, qualitative course dealing with the nature of energy and the related concepts in the physical sciences such as force, work, power, entropy and the conservation of energy. Topics considered include: forms of energy, such as potential energy, kinetic energy and thermal energy; work; conservation of energy; gravitational energy; important processes such as the conversion of heat energy to electrical energy to mechanical energy; solar energy, hydro-energy, nuclear energy, geothermal energy, chemical energy, radiant energy; the energy of ocean tides, wind energy; natural energy resources and the limits on the growth of energy consumption.

365:231-232-233. CONCEPTS OF PHYSICS I, II AND III. 4 credits each.

Prerequisites, high-school algebra and trigonometry, or 345:115-116 as a corequisite. General physics; emphasizes such unifying concepts of contemporary physics as conservation laws, symmetry principles and the nature of particles and fields. Newtonian mechanics: electricity and magnetism; interference and diffraction of waves; the nature of heat, space and time in the theory of relativity, quantum mechanics of atomic phenomena; recent developments in the study of elementary particles.

365:237-238-239. INTRODUCTORY COMPUTATIONS I, II, III. 1 credit each.

Corequisite, 231-232-233. Optional courses to provide additional, computational experience in introductory physics, and to emphasize the application of algebra and trigonometry to the solution of physical problems. Course 107 should be taken concurrently with 101, etc.

365:261-262-263. PHYSICS FOR THE LIFE SCIENCES I, II, III. 4 credits each.

Prerequisite, adequate permission preparation in high-school algebra and trigonometry, or 345:115-116 as corequisites. An introductory course sequence specifically designed to provide the physics background needed in professional work for students in biology, premedicine, predentistry, pharmacy, nursing, physical therapy, physical education, and the allied health services. Emphasis is on applications to the life sciences. Mechanics: Newton's laws of motion, force, torque, work, energy, power, efficiency, scaling laws. Properties of matter: gases, liquids, solids; fluid mechanics; the laws of thermodynamics; kinetic theory. Wave phenomena: sound, light, optics. Electricity and magnetism. Atomic and nuclear physics; radioactivity.

365:267-268-269. LIFE SCIENCES PHYSICS COMPUTATIONS I, II, III. 1 credit each.

Corequisite, 261-262-263. Optional companion courses to accompany 261-262-263. Course 267 should be taken concurrently with 261, course 268 with 262, etc. Intended to provide additional computational experience in various applications of physics to the life sciences, and to emphasize the use of algebra and trigonometry in such applications of physics. The thrust and content of these courses is closely coordinated with 261-262-263 in order to provide maximum continuity and reinforcement for the student. Particularly recommended for persons with average preparation or less in mathematics.

365:291-292-293. ELEMENTARY CLASSICAL PHYSICS I, II, AND III. 4 credits each.

An introductory physics course for students of science and engineering. Kinematics and classical mechanics with emphasis on conservation laws, particularly as they relate to contemporary physics. Thermodynamics from the atomic point of view, concepts of order and disorder. Basic laws of electromagnetism. Wave motion, both mechanical and electromagnetic. Interference and diffraction of waves for both coherent and noncoherent sources. Vectors and a limited amount of calculus are introduced as needed.

365:297-298-299. PHYSICS COMPUTATIONS I, II, III. 1 credit each.

Corequisite, 291-292-293. Optional courses intended (1) to stress problem-solving techniques in elementary physics, and (2) to elaborate the application of mathematics through calculus to simple physical phenomena. Course 211 should be taken concurrently with 201, etc. Recommended for freshmen students, and also for other students with average performance or less in prior physical science and mathematics courses.

365:301. ELEMENTARY MODERN PHYSICS. 4 credits.

Prerequisite, 293 or permission of the instructor. Special relativity, introduction to quantum physics, atomic spectra, topics in nuclear and solid state physics.

365:311-312-313. COLLOQUIUM. 1 credit each.**365:331-332-333. ASTROPHYSICS I, II, and III. 3 credits each.**

Prerequisite, 233 or 293. A one-year comprehensive, quantitative course recommended for students majoring in physics or natural science, and for secondary school teachers and others desiring a comprehensive survey of astronomy and astrophysics at the intermediate level. The solar system; the earth, the moon, the sun, celestial mechanics, the planets, comets and meteors. The stars: spectral classification, atomic structure, variable stars, stellar motions, Milky Way, star clusters, interstellar medium, galaxies, cosmology, astronomical instruments.

365:397-398-399. UNDERGRADUATE RESEARCH I, II, III. 1 to 6 credits each.

Prerequisite, permission of instructor. Participation in a current research project in the department under the supervision of a faculty member.

365:400/500. HISTORY OF PHYSICS. 4 credits.

Prerequisite, 233 or 293. A study of the origin and evolution of the major principles and concepts that characterize contemporary physics.

365:405-406-407/505-506-507. STRUCTURE OF MATTER I, II, III. 4 credits each.

Prerequisite, 293. Contemporary physics at the intermediate level, aimed at the understanding of the observable properties of matter in terms of the interactions of its microscopic constituents.

365:410/510. ELECTRONIC DEVICES AND CIRCUITS. 4 credits.

Prerequisite, 293; corequisite, 345:234. Electron tubes, semi-conductors, and their utilization in circuits. Introduction to the mathematical analysis of these circuits.

365:411-412-413/511-512-513. INTERMEDIATE LABORATORY I, II, III. 2 credits each.

Prerequisite, or corequisite, 410. Experiments involving measurements of physical properties of various systems which are 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, semi-conductors and other materials. Photoelectric effect. Charge on the electron.

365:420/520. OPTICS. 4 credits.

Prerequisite, 293 and 345:235. 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.

365:421/521. OPTICS LABORATORY. 2 credits.

Corequisite, 420. Experimental studies of lenses, mirrors, prisms, diffraction gratings, interferometers, photometers, polarization, optical spectra and lasers.

365:430/530. KINETIC THEORY AND THERMODYNAMICS. 4 credits.

Prerequisite, 293 and 345:235. 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.

365:431-432-433/531-532-533. MECHANICS I, II, III. 3 credits each.

Prerequisite, 293; corequisite, 345:236. Introduction to vector analysis, planar statics and kinematics, plane motion of a particle and of a rigid body, plane impulsive motion, moving frames of reference, special motion of a particle and of a rigid body. Lagrange's equations, the special theory of relativity.

365:441-442-433/541-542-543. ELECTRICITY AND MAGNETISM I, II, III. 3 credits each.

Prerequisite, 293, corequisite, 345:236. Coulomb's law; Gauss's law; dielectrics; Poisson and Laplace equations; electrical images; magnetostatics; Kirchhoff's laws, chemical and thermal electromotive forces; Ampere's laws. Forces on moving charges, electromagnetic induction, alternating circuits, coupled circuits, filters, Maxwell's equations and electromagnetic waves.

365:450/550. X-RAYS. 4 credits.

Prerequisite, 293 or permission of instructor. Properties of X-rays. Theory of X-ray spectra. Absorption and scattering of X-rays. X-ray diffraction. Techniques for the production and utilization of X-rays. Application of X-rays to physical and chemical problems. Interpretation of X-ray diffraction and X-ray photographs.

365:451-452-453/551-552-553. ADVANCED LABORATORY I, II, III. 2 credits each.

Prerequisite, 413 or permission of instructor. Applications of electronic and solid state devices and techniques to research-type projects in contemporary physics. Introduction to resonance techniques; nuclear magnetic resonance, electron spin resonance, nuclear quadrupole resonance. Scintillation spectroscopy. Alpha and beta ray spectrometry.

365:460/560. REACTOR PHYSICS. 4 credits.

Prerequisite, 407. Nuclear physics, nuclear reactions, diffusion of neutrons, slowing down of neutrons, diffusion in the general case, reactor statics.

365:461-462-463/561-562-563. PHYSICAL PROPERTIES OF POLYMERS I, II, III.

1 credit each.
Prerequisite, 293. An introduction to the concepts of polymer molecular dimensions and configurations, rubber elasticity, diffusion and viscosity, polymer chain segmental motions, glass transition temperature, creep, visco-elasticity, partial

crystallinity, spherulitic structure, and the mechanical properties of polymers.

365:470/570. INTRODUCTION TO SOLID STATE PHYSICS. 4 credits.

Prerequisites, 301; 345:236 or permission of instructor. An account of the basic physical processes which occur in solids with emphasis on the fundamental relation between these processes and the periodicity of the crystalline lattice.

365:471-472-473/571-572-573. NMR SPECTROSCOPY I, II, III. 2 credits each.

Prerequisites 293; 345:236 or permission of instructor. The theoretical basis and experimental techniques of Nuclear Magnetic Resonance (NMR) spectroscopy. Classical concepts and quantum mechanical treatments of NMR. The 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. The theory and analysis of high resolution NMR spectra. Discussion of the quantitative applications of broadline and high-resolution NMR spectra to the determination of physical and chemical structures.

365:490/590. INTRODUCTION TO QUANTUM MECHANICS. 4 credits.

Prerequisites, 443; 345:236 or permission of instructor. A brief introduction to the concepts of quantum mechanics; correspondence principles, uncertainty principle, state functions, Schrodinger's equation, WKB approximation, wave packets, continuum states, postulates of quantum mechanics central potentials, hydrogen atom.

365:491-492-493/591-592-593. METHODS OF MATHEMATICAL PHYSICS I, II, III. 3 credits each.

Prerequisites, 293; 345:236, and senior graduate standing in a physical science or engineering. A consideration of many 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. Emphasis on applications to physics and engineering.

365:496/596. WORKSHOP. 1-5 credits.

Group studies of special topics in Physics. May not be used to meet undergraduate or graduate major requirements in Physics. May be used for elective credit only. May be repeated.

365:497/597. PHYSICS LABORATORY PROJECTS.

1 to 5 credits.

Prerequisite, permission. Design and development of laboratory apparatus experiments, techniques or demonstrations. May be repeated.

365:498/598. TOPICS IN CLASSROOM PHYSICS.

1 to 5 credits.

Prerequisite, permission. Consideration and evaluation of new apparatus, materials, topics, procedures and techniques for the presentation of physics in the classroom. May be repeated.

365:499/599. INDEPENDENT STUDY IN PHYSICS.

1 to 5 credits.

Prerequisite, permission. Further investigations of various selected topics in physics, under the guidance of a faculty member. May be repeated.

GRADUATE COURSES

365:601-602-603. ATOMIC AND NUCLEAR PHYSICS I, II, III. 3 credits each.

Prerequisites, 301 or 407 and 345:236, or permission of instructor. An expository and analytical treatment of the fundamental principles which operate to yield the observed complex behavior of matter. Introductory quantum mechanics, free particle quantum mechanics, the one-electron atom. Special theory of relativity, Radiation and radiative transitions. Pauli principle and exchange symmetry. Atomic spectroscopy, Quantum statistics. X-rays. Band theory of solids. Basic properties of nuclei. Particle scattering and nuclear forces. Systematics of nuclear stability and nuclear models.

365:605-606. COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICAL PROBLEMS, I and II. 3 credits each.

Prerequisite, 445:660 or permission. Review of Fortran and properties of digital computers. Computer solutions to physical problems, including Newton's Schrodinger's and Laplace's equations; data reduction, curve fitting, plotting. Numerical methods are elaborated along with applications; problems are solved on the central computer. The second quarter may accommodate scientific problems of individual interest.

365:611-612-613. PHYSICAL PROPERTIES OF MATTER I, II, III. 3 credits each.

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, measurement and analysis of the friction and adhesion of real materials, surface tension of liquids and solids, thermodynamics of spreading and wetting, viscosity.

365:621-622-623. ATOMIC AND MOLECULAR SPECTRA I, II, III. 3 credits each.

Prerequisites, 301; 345:236 or permission of instructor. Elements of atomic theory; line spectra; electron spin and multiple structure; the building-up principle and the periodic system of the elements; special intensities; hyperfine structure; isotope effect, nuclear spin. Molecular bands, and development of theory; rotational, vibrational and electronic bands; Raman effect, isotopic effect, intensity of bands; methods of determining the molecular constants from wave number measurements.

365:631. PHYSICS OF POLYMERS I. 2 credits.

Prerequisites, 345:236 or permission of instructor. Polymeric states of matter, crystallinity, rubber elasticity, viscoelasticity, transport and electrical properties, the glassy state, fracture processes.

365:632. PHYSICS OF POLYMERS II. 2 credits.

Prerequisites, 365:631 or permission of instructor. Elasticity at large strains, phenomenological visco-elasticity, dielectric properties, diffusion.

365:633. PHYSICS OF POLYMERS III. 2 credits.

Prerequisites, 365:632 or permission of instructor. Phase transitions, temperature dependence of mechanical and electrical properties, crystalline polymers, kinetics of crystallization, fracture, adhesion, wear.

365:635-636-637. PHYSICS OF POLYMERS LABORATORY I, II, III. 2 credits each.

Prerequisite, 291, corequisite, 631-632-633. Selected laboratory experiments to illustrate the principles and methods discussed in courses 631-632-633.

365:651-652-653. THEORETICAL CLASSICAL PHYSICS I, II, III. 4 credits each.

Prerequisites, 433 and 443. A course in theoretical physics emphasizing advanced classical mechanics, electricity and magnetism and developing the foundations of quantum mechanics. Inertial reference frames and Newtonian time scales, non-inertial frames, generalized coordinates, Lagrange's equations, theory of small vibrations, normal coordinates, Hamilton's equations, principles of least action. Hamilton-Jacobi method, application to atomic systems and origin of quantum mechanics, introduction to tensor analysis. Maxwell's equations space-time symmetry of the field equations, transformation of the field vectors to moving systems, stress and strain in elastic media, electro-magnetic forces on charges and currents, electrostatic energy, magnetostatic energy, Poynting's theorem, forces on dielectrics in an electrostatic field, forces in the magnetostatic field, forces in the electromagnetic field, general properties of an electrostatic field, calculations of an electrostatic field from charge, distribution, expansion of the potential in spherical harmonics dielectric polarization, general properties of the magnetostatic field, calculation of the fields of a current distribution.

365:661-662-663. THERMODYNAMICS AND STATISTICAL MECHANICS I, II, III. 3 credits each.

Prerequisites, 430 and 345:236. Introduction to basic statistical concepts. Application of statistical ideas to systems of particles in equilibrium to develop the basic notions of statistical mechanics. Derivation of the purely macroscopic statements of thermodynamics. Illustration and discussion of macroscopic aspects followed by the same for the microscopic aspects of the theory. Phase transitions and quantum gases. Nonequilibrium situations and transport theory.

365:681-682-683. QUANTUM MECHANICS I, II, III. 3 credits each.

Prerequisite, 433, 443, 345:236 or permission of instructor. Courses 653 and 490 are also recommended but not required. A thorough development of ordinary wave mechanics; matrix formulation and unification in the more abstract Dirac formulation. The state function and its interpretation; wave packets; uncertainty relation; the wave equation; dynamical variables and operators; stationary states, Hermitian operators; eigenvalues and eigenfunctions; angular momentum; scattering theory; Green's functions; Born approximation; spin; Pauli matrices; symmetry properties; parity; perturbation methods; spin-orbit interactions; Clebsch-Gordon coefficients; exclusion principle; T-R invariance; S-matrix.

365:684. ADVANCED NUCLEAR PHYSICS. 4 credits.

Prerequisites, 603, 683. Quantum mechanics applied to the nucleus. Interaction of radiation with the nucleus, nuclear scattering, nuclear reactions; energy levels of nuclei.

365:685-686-687. SOLID STATE PHYSICS I, II, III. 3 credits each.

Prerequisites, 470, 683 or permission of instructor. Theory of the physics of crystalline solids. Properties of the reciprocal lattice and Bloch's theorem. Lattice dynamics and specific heat. Electron states; cellular method, tight-binding method, Green's function method, orthogonalized plane wave and pseudo potentials. Electron-electron interaction; screening by impurities, Friedel sum rule, and plasma oscillations. Dynamics of electrons, transport properties and the Fermi surface.

365:691. SEMINAR IN THEORETICAL PHYSICS.

1 to 4 credits.

Prerequisite, permission. May be repeated.

365:692. SEMINAR IN NMR SPECTROSCOPY.

1 to 4 credits.

Prerequisite, permission. May be repeated.

365:693. SEMINAR IN SOLID STATE PHYSICS.

1 to 4 credits.

Prerequisite, permission. May be repeated.

365:695. SPECIAL PROBLEMS IN THEORETICAL PHYSICS. 1 to 6 credits.

Prerequisite, permission. Intended to facilitate the expansion of particular areas of interest in theoretical physics, by consultation with a faculty member and independent study beyond available course work. May be repeated.

365:696. SPECIAL PROBLEMS IN EXPERIMENTAL PHYSICS. 1 to 6 credits.

Prerequisite, permission. Intended to encourage the development of experimental techniques in selected areas under the supervision of a faculty member. May be repeated.

365:697. GRADUATE RESEARCH. 1 to 8 credits.

Prerequisite, permission. Properly qualified candidates for the M.S. degree may obtain up to eight credits for participation in faculty-supervised original research investigations. Grades and credits will be awarded at the completion of relevant portions of approved research projects, and not necessarily at the end of normal grading periods.

365:698. MASTER'S THESIS RESEARCH. 1 credit.

Prerequisite, permission. With the approval of the department, one credit may be earned by candidates for the M.S. degree upon the satisfactory completion of a Master's Thesis. This thesis shall be the report of one or more faculty-supervised original research investigations.

365:699. SPECIAL TOPICS IN PHYSICS. 1 to 5 credits.

Prerequisite, permission. To enable students who need information in special areas, in which no formal course is offered, to acquire knowledge in these areas.

370: POLITICAL SCIENCE**370:100. GOVERNMENT AND POLITICS IN THE U.S. 5 credits.**

An examination of the American political system, with emphasis on the fundamental principles, ideas, institutions and processes of modern government.

370:110. CIVIL LIBERTIES IN AMERICA. 3 credits.

Not open to Political Science majors and cannot be used for credit toward a major in Political Science. A study of civil liberties issues in the U.S. Historical materials, judicial decisions, and contemporary social criticism are used to enhance understanding of the nature and justification of our civil liberties.

370:120. CURRENT POLICY ISSUES. 3 credits.

Cannot be used for credit toward major in Political Science. A survey of the major political issues and problems confronting the nation; the environment in which public policies are formed and executed.

370:200. COMPARATIVE POLITICS. 5 credits.

An introduction to comparative political analysis; description of the political systems of Great Britain, France, Germany and the Soviet Union; the contrast between democracy and totalitarianism.

370:201. INTRODUCTION TO POLITICAL SCIENCE. 5 credits.

An introduction to the study of modern political systems,

with an emphasis on the use of contemporary approaches and techniques employed in political analysis. Required of all Political Science majors and recommended for other students with good social science backgrounds.

370:210. STATE AND LOCAL GOVERNMENT AND POLITICS. 5 credits.

An examination of institutions, processes and inter-governmental relations at the state and local level.

370:220. AMERICAN FOREIGN POLICY: PROCESS AND PROBLEMS. 4 credits.

An examination of American foreign policy with emphasis on the policy-making process; public opinion and other limitations on policy; specific contemporary problems in selected areas.

370:302. AMERICAN POLITICAL IDEAS. 4 credits.

A study of the major thinkers and writers of American political thought.

370:303. DEVELOPMENT OF WESTERN POLITICAL THOUGHT. 5 credits.

A survey of the major ideas and concepts of Western political theory from the pre-Socratics through the modern period.

370:310. INTERNATIONAL POLITICS. 5 credits.

Relations among nations examined in the political context.

370:312. INTERNATIONAL ORGANIZATION. 4 credits.

Description and analysis of the processes and problems of international organizations with appropriate references to the United Nations, regional patterns, and alliance systems.

370:320. BRITAIN AND THE COMMONWEALTH. 4 credits.

Description and analysis of the government and politics of Great Britain and the leading nations of the Commonwealth.

370:321. WESTERN EUROPEAN POLITICS. 5 credits.

Description and analysis of the government and politics of France, Germany, Italy and Switzerland, with appropriate references to Scandinavia and the Low Countries.

370:322. SOVIET AND EAST EUROPEAN POLITICS. 5 credits.

Theory and practice of government and politics in the Soviet Union; comparison with selected Communist systems of Eastern Europe.

370:323. POLITICS OF CHINA AND JAPAN. 4 credits.

An examination of the governmental structures and political processes of China and Japan.

370:324. MIDDLE EASTERN POLITICS. 3 credits.

An examination of the government structures and political processes of the nations of the Middle East.

370:326. POLITICS OF DEVELOPING NATIONS. 4 credits.

A general introduction to the concepts and theories of political culture and political institutions, elite-recruitment and political processes of selected emerging nations.

370:327. AFRICAN POLITICS. 4 credits.

An examination of the patterns of government and politics of the nations south of the Sahara.

370:340. AMERICAN POLITICAL PARTIES AND INTEREST GROUPS. 5 credits.

The central role of political parties and interest groups in the political process. Development, structure and function of parties; patterns of party allegiance and voting behavior; interest groups and their effect on party government and policy.

370:341. THE AMERICAN CONGRESS. 5 credits.

An examination of the structure and function of Congress, with comparative materials on the legislative process on all levels. Presidential and Congressional conflict is examined with reference to political parties, interest groups and the bureaucracy.

370:342. MINORITY GROUP POLITICS. 4 credits.

An examination of the political behavior of racial, religious and ethnic minority groups in the United States and in selected foreign nations.

370:350. THE AMERICAN PRESIDENCY. 4 credits.

The Presidency as the focal point of politics, policy, and leadership in the American political system.

370:360. THE JUDICIAL PROCESS. 4 credits.

The role of the police, lawyers, courts, and judges in the context of the American political process. The structure and process of judicial policy-making on the national, state, and local levels, and the limitations on judicial power.

370:370. PUBLIC ADMINISTRATION. 4 credits.

An examination of the implementation of public policy. Administrative organization and principles will be stressed.

370:375. THE FEDERAL BUREAUCRACY. 5 credits.

Study of political conflict and cooperation in the executive branch, with emphasis on bureaucratic influence in policy-making. Specific attention will be paid to problems of Presidential and Congressional control, internal organization and decision-making, public relations, and state-federal relations.

370:380. METROPOLITAN POLITICS. 5 credits.

An examination of the problems emerging from urban and regional complexes in the United States. The structure and processes of political decision-making at this level will be analyzed.

370:381. STATE POLITICS. 4 credits.

An analysis of the state political process in terms of its capacity to deal with a wide range of socio-economic problems. Special emphasis on legislators, administrators, parties, and interest groups as participants.

370:390. INDEPENDENT STUDY. 2-6 credits.

(May be repeated for a total of 6 credits)

Prerequisite, Senior standing. 3.0 grade point average and adviser's permission.

370:391. INTERNSHIP IN GOVERNMENT AND POLITICS. 3-5 credits.

(May be repeated for a total of 9 credits. No more than 6 credits may be applied toward the major in Political Science.) Prerequisite, four courses in Political Science, including 100 or 150, either 210 or 380, and permission of the instructor. Individual placement with political officeholders, party groups, governmental agencies and political interest groups for supervised field experience. Primarily for Political Science majors.

370:392. HONORS IN POLITICAL SCIENCE. 5 credits.

Prerequisite, at least 25 credits and a 3.25 average in Political Science and adviser's permission.

370:393. SELECTED TOPICS IN POLITICAL SCIENCE. 1-4 credits.

(May be repeated, but no more than 4 credits can be applied to the major in Political Science.)

May include topics of substantial current importance, specialized topics which cross subject lines within Political Science, or experimental courses.

370:395. PROSEMINAR FOR POLITICAL SCIENCE**MAJORS. 4 credits.**

Prerequisite, 15 credits in Political Science. Group study and research; discussion of recent trends and developments in Political Science. Required of all majors.

370:403/503. CONTEMPORARY POLITICAL IDEAS.**5 credits.**

Prerequisite, 303 or permission. An examination of central concepts of political thought from Marx to the present. Modern liberalism, communism, fascism and totalitarianism emphasized.

370:415/515. COMPARATIVE FOREIGN POLICY.**4 credits.**

Prerequisite, 310 or 220, or permission. A study of the foreign policies of selected nations, with special attention to the processes and instruments of decision-making of the major powers.

370:420/520. PROBLEMS IN COMPARATIVE POLITICS. 4 credits.

Prerequisite, 200. Comparative studies in depth of various aspects of foreign political systems.

370:425/525. LATIN AMERICAN POLITICS.**4 credits.**

Prerequisite, 200 or permission of instructor. An examination of the patterns of government and politics in the Latin American area.

370:440/540. PUBLIC OPINION AND POLITICAL BEHAVIOR. 5 credits.

Prerequisite, 100 or 150 or permission. The nature and role of public opinion in the political process; historical development, current methods of measurement. The political behavior of the American electorate.

370:441/541. THE POLICY PROCESS. 4 credits.

Prerequisite, 12 credits in Political Science. An intensive study of the policy-making process, emphasizing the roles of the various participants in the executive and legislative branches as well as private individuals and groups. The case method will be emphasized.

370:461/561. THE SUPREME COURT AND CONSTITUTIONAL LAW. 5 credits.

Prerequisite, 100 or 150 or permission. Interpretation of the U.S. Constitution by the Supreme Court; judicial review of the democratic political process. Special emphasis on judicial policy-making in the areas of civil rights and liberties.

370:470/570. THE ADMINISTRATIVE PROCESS.**4 credits.**

Prerequisite, 370. An intensive analysis of the process and environment of administrative decision-making.

370:480/580. URBAN POLICY PROBLEMS. 4 credits.

Prerequisite, 380. An intensive study of selected problems in urban policy.

370:485/585. WORKSHOP. 1-5 credits.

Group studies of special topics in Political Science. May not be used to meet undergraduate or graduate major requirements in Political Science. May be used for elective credit only. May be repeated.

GRADUATE COURSES

370:600. SEMINAR IN POLITICAL THEORY.**5 credits.**

Prerequisite, 9 credits of Political Science or permission.

Selected topics in Political Theory will be investigated in depth.

370:610. SEMINAR IN INTERNATIONAL POLITICS.**5 credits.**

Prerequisite, 9 credits of Political Science, or permission. Analysis of current problems in the theory and practice of international politics and organization.

370:620. SEMINAR IN COMPARATIVE POLITICS.**5 credits.**

Prerequisite, 9 credits of Political Science, including Political Science 420, or permission. Research on selected topics in Comparative Politics. The comparative method in Political Science.

370:626. SEMINAR IN POLITICS OF DEVELOPING NATIONS. 5 credits.

Prerequisite, (9 credits of Political Science, or permission. Selected topics will be investigated in depth. Emphasis on theories of political development.

370:630. SEMINAR IN NATIONAL POLITICS. 5 credits.

Prerequisite, 9 credits of Political Science, or permission. Readings and research on the formulation, development and implementation of national policy in one or more areas of contemporary significance.

370:640. SEMINAR IN POLITICAL BEHAVIOR.**5 credits.**

Prerequisite, 9 credits in Political Science, including 440, or permission. Techniques of quantitative research in Political Science; utility of and limitations of quantitative analysis.

370:641. SEMINAR IN INTERGOVERNMENTAL RELATIONS. 5 credits.

Prerequisite, 9 credits of Political Science, or permission. A graduate level examination of problems resulting from the rapidly changing relations between levels of government in the U.S.; legal, social and political implications; comparisons with other federal systems.

370:660. SEMINAR IN CIVIL LIBERTIES AND THE JUDICIAL PROCESS. 5 credits.

Prerequisite, 9 credits of Political Science, including 460 or permission. Civil liberties and the judicial process are viewed in the political context. Readings and research on selected topics.

370:670. SEMINAR IN THE ADMINISTRATIVE PROCESS. 5 credits.

Prerequisite, 9 credits of Political Science, including 470, or permission. An intensive examination of the administrative implementation of public policies. Readings and research on selected topics.

370:680. SEMINAR IN URBAN AND REGIONAL POLITICS. 5 credits.

Prerequisite, 9 credits of Political Science, including 480, or permission. Focuses on the processes of policy formulation and execution in the modern metropolitan community, with emphasis on a structural-functional context.

370:690. INDEPENDENT RESEARCH AND READINGS.**2-6 credits.**

(May be taken repeatedly, but no more than 9 credits can be applied toward the Master's degree in Political Science.)

Prerequisite, permission.

370:691. INTERNSHIP IN POLITICAL SCIENCE.**5 credits.**

Prerequisite, permission of the graduate advisor. A field experience program in which the student will be placed with officeholders, government agencies, or political groups for

research or practical experience of demonstrable relevance to the student's program.

370:699. THESIS. 3-9 credits.

375: PSYCHOLOGY

375:141. INTRODUCTION TO PSYCHOLOGY. 5 credits.
Introduction to the scientific study of behavior. Survey of physiological basis of behavior, sensation and perception, development, learning and cognition, personality, social interaction and other selected topics.

375:145. QUANTITATIVE METHODS IN PSYCHOLOGY. 4 credits.

Prerequisite, 141 (141 may be taken concurrently.) Presentation of data, descriptive statistics, correlation, hypothesis testing and introduction to quantitative methodologies in psychology.

375:147. INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY. 5 credits.

Prerequisites, 141 and 145. Lectures and readings on problems of experimental evidence, apparatus, controls, observations and experimental designs. Students will conduct and report laboratory experiments, including statistical treatment, to answer standard and original questions, using human and animal subjects.

375:151. DEVELOPMENTAL PSYCHOLOGY. 5 credits.

Prerequisite, 141. The determinates and nature of behavioral changes from conception to death.

375:160. INTRODUCTION TO INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY. 4 credits.

Prerequisite, 141. A survey of the applications of psychology in industry, business and government. Emphasis will be on understanding workers and the evaluation of their behavior.

375:310. EXPERIMENTAL METHODS IN HUMAN BEHAVIOR RESEARCH. 4 credits.

Prerequisite, 147. Scientific methods and tools in the modern experimental investigation of human behavior. Emphasis is an exposure to and performance on all aspects of a single, in-depth research project.

375:311. EXPERIMENTAL AND OBSERVATIONAL METHODS IN ANIMAL BEHAVIOR RESEARCH. 4 credits.

Prerequisites, 141, 147 or permission. Methods and techniques used in the analysis of behavior. Emphasis will be on the use of the observational method primarily with regard to animal research.

375:315. SOCIAL PSYCHOLOGY. 4 credits.

Prerequisite, 141. Responses of the individual in relation to group situations and social influences of modern life. Lectures, readings and experiments.

375:320. PHYSIOLOGICAL PSYCHOLOGY. 4 credits.

Prerequisite, 141. The relationship between the behavior of organisms and physiological processes mediating the behavior. Brain structure and function, motivation, etc. Biology 310:191 is desirable as a background.

375:325. COMPARATIVE PSYCHOLOGY. 4 credits.

Prerequisite, 141. An analysis of behavior as a function of species which attempts to provide an understanding of the interaction between such factors as physiology, environment, population density, and social structure in the determination of behavior.

375:330. SENSORY AND PERCEPTUAL EXPERIENCE. 4 credits.

Prerequisites, 141 or permission. A survey of basic sensory and perceptual phenomena covering the physical and psychological bases of each. An overview of the major theoretical treatments and empirical findings in perception and sensation will be included, plus discussion of the implications for behavior of fundamental sensory and perceptual processes.

375:335. MOTIVATION AND THE DYNAMICS BEHAVIOR. 4 credits.

Prerequisites, 141 or permission. A wide-ranging treatment of the motivation of behavior in humans and animals covering both physiological and psychological mechanisms, and including a survey of the major theoretical ideas on motivation and the empirical evidence concerning them.

375:340. THE PSYCHOLOGY OF SMALL GROUP BEHAVIOR. 4 credits.

Prerequisite, 141, 315. Intensive investigation of factors affecting behavior in groups. Course covers joint effects of personality, social structures, task, and situational variables in effecting group behavior.

****375:345. INTRODUCTION TO CROSS-CULTURAL PSYCHOLOGY.** 4 credits.

Prerequisite, 141. An introduction to the influence of culture upon the development of individual psychological processes. The theories and methods of cross-cultural studies will be examined in relation to the following psychological processes: perception, motivation, intellectual functioning, values and organizational structure.

375:350. RESEARCH METHODOLOGY. 4 credits.

Prerequisites, 375:141, 145 or 347:251. A review of experimental design and methodology in terms of five interrelated activities: formulation of statistical hypotheses, decision rules to be followed in testing these hypotheses, research design for data collection, statistical analysis of data, and statistical inference.

375:400/500. ABNORMAL PSYCHOLOGY. 5 credits.

Prerequisite, 141 and 4 credits in Psychology. Syndromes, etiology, diagnosis and treatment of the major psychopathological conditions ranging from transient maladjustments to the psychoses.

375:403/503. PERSONALITY. 4 credits.

Prerequisite, 141. Consideration of current concepts of the normal personality with emphasis on methods of measurement, experimental findings, and research techniques.

375:405/505. PSYCHOLOGICAL DISORDERS OF CHILDREN. 4 credits.

Prerequisites, 141 and 151 or permission. A survey of the psychological disorders of children from the standpoint of the developmental psychologist and behavior therapist. Emphasis will be on the role of the social environment in shaping and maintaining behavior. Relationships with problems in areas such as child psychology, intervention, approaches, and social and educational contexts will be presented.

375:407/507. PSYCHOLOGICAL TESTS AND MEASUREMENTS. 4 credits.

Prerequisites, 141, 145 and permission. The nature, proper use and construction of tests and measurements in industry, government and education. Aptitude and achievement tests, rating scales, attitude and opinion analysis.

*Scheduled on alternate years starting 1975-76.

**Scheduled on alternate years starting 1976-77.

375:409/509. INTRODUCTION TO THE CLINICAL METHOD. 4 credits.

Prerequisites, 141 and 4 additional credits in psychology. A review of tests, interviews and personal history data in human assessment.

***375:410. CONTEMPORARY ISSUES IN DEVELOPMENTAL PSYCHOLOGY. 4 credits.**

Prerequisites, 141, 151 or permission. A detailed survey of current issues, methodology and major contemporary research topics in developmental psychology. The topic areas of developmental change in intelligence, personality, sensation, perception, learning, memory and socialization will be explored in depth.

375:412/512. PSYCHOLOGY OF LEARNING. 4 credits.

Prerequisite, 141. Problems of conditioning and learning; acquisition of individual responses; reinforcement, drive, frequency, transfer, retention, problem solving. Lectures, readings, and experiments.

375:415. COGNITION. 4 credits.

Prerequisites, 412 or permission. An introductory review of the research and theory concerning the higher-order mental processes, such as human conceptual behavior, problem solving and thinking.

375:417/517. HISTORY OF PSYCHOLOGY. 4 credits.

Prerequisite, 141. Psychology in the pre-scientific period and the details of the development of systematic viewpoints in the 19th and 20th centuries.

375:421. ADVANCED INDUSTRIAL PSYCHOLOGY. 4 credits.

Prerequisites, 160 or permission. Application of psychology to organizations with special emphasis on engineering psychology, human factors, man-machine systems and personnel psychology.

375:422. INDEPENDENT READING IN PSYCHOLOGY. 1-4 credits.

1-4 credits.

Prerequisite, Psychology majors only. Departmental permission. Independent reading in an area of psychology under the supervision and evaluation of a selected faculty member.

375:425. ORGANIZATIONAL PSYCHOLOGY. 4 credits.

Prerequisites: 160 and permission. Application of psychology to organizations with special emphasis on organization theory, leadership, management, consumer behavior and advertising psychology.

375:440-441-442. HONORS SEMINAR IN PSYCHOLOGY. 3 credits each.

Sequential; prerequisite, psychology major, Senior standing and permission. 440 — Exploration of research topics and issues in contemporary psychology. Selection of a research topic and survey of relevant literature. 441 — Independent research design and data collection, or independent critical review of research literature or theoretical formulation. 442 — Preparation of Honors Thesis. Submission of work to faculty of department for approval of thesis. Credit for 375:440-441-442 is contingent upon approval of Honors Thesis. Rough draft of thesis must be submitted one month prior to the end of the third quarter.

375:450/550. ENVIRONMENTAL PSYCHOLOGY. 4 credits.

Prerequisite, 141 and permission. An attempt will be made to show the connection between some of the major questions that those concerned with environmental management and control are facing and particular problem areas from the study of developmental animal behavior motivation, learning, etc.

375:460. UNDERGRADUATE SEMINAR IN PSYCHOLOGY. 2-4 credits.

(May be repeated to a total of 8 credits).

Prerequisite: 141.

375:470/570. WORKSHOP. 1-5 credits.

Group studies of special topics in Psychology. May not be used to meet undergraduate or graduate major requirements in Psychology. May be used for elective credit only. May be repeated.

GRADUATE COURSES

375:600. 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.

375:601. INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY. 4 credits.

A survey course in Industrial/Organizational Psychology. The course covers the application of Industrial/Organizational Psychology to solving human problems in industry, business, and government, such as organizational theory, differential psychology, the social psychology of organizations, personnel psychology, consumer, industrial, clinical, and engineering psychology.

375:602. PERSONALITY AND SOCIAL PSYCHOLOGY. 4 credits.

A survey of contemporary theories and research in personality and social psychology.

375:603. PERCEPTUAL AND SENSORY PROCESSES. 4 credits.

Study of basic perceptual phenomena and their respective peripheral and central correlates. Topic will include basic psychophysics, scaling, theories of perception, receptor mechanisms, depth perception, motion perception, and other perceptual processes.

375:604. METHODS AND THEORIES OF HUMAN DEVELOPMENT. 4 credits.

A survey of current research methodology and theoretical approaches to human development. Reviews of major theoretical perspectives will include stimulus-response behavior theory, cognitive-organismic, information processing and psychoanalytic approaches.

375:605. CLINICAL PSYCHOLOGY. 4 credits.

Prerequisites, 602 or permission. Clinical techniques and approaches to the study, evaluation and treatment of abnormal behavior.

375:606. THESIS RESEARCH. 2-6 credits.

Prerequisite, departmental permission. Research analysis of data and preparation of thesis for the master's degree.

375:607 PRACTICUM IN PSYCHOLOGICAL ASSESSMENT AND INTERPRETATION. 1-3 credits.

(May be repeated to a total of 9 credits.) Prerequisites, 20 credits of Graduate Psychology and permission. Supervised work-experience in the application of psychological techniques to human assessments and interpretations.

375:620. EXPERIMENTAL DEVELOPMENTAL PSYCHOLOGY. 1-4 credits.

Prerequisites, 412/512 or permission. Not open to Psychology Department graduate students. A survey course of current

topics in the area of developmental psychology. Topics include basic learning processes, transfer and set, motivation, intelligence and socialization.

375:621. SURVEY OF PROJECTIVE TECHNIQUES.

3 credits.

Prerequisites, 400 required or permission of the instructor; 403, 407 recommended. Introduction to the rationale assumptions and ethics of projective testing. Elementary administration, scoring and interpretation of the Rorschach and survey of other important projective instruments.

375:622. PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING.

5 credits.

Prerequisite, instructor's permission required. History, principles and methodology of Intelligence Testing, practice in the administration, scoring and interpretation of individual intelligence tests for children and adults.

375:625. PRACTICUM IN INDIVIDUAL INTELLIGENCE TESTING IN PRESCHOOL CHILDREN.

3 credits.

Prerequisite, 622 (may be taken concurrently) and permission of instructor required.

375:700. THEORIES OF PSYCHOTHERAPY. 4 credits.

Prerequisites, 602, 605 or permission. Contemporary theories of psychotherapy including Freudian, Jungian, Adlerian, Rogerian, and other major systems.

375:701. THEORIES OF PERSONALITY. 4 credits.

Prerequisite 602 or permission. Historical consideration of personality. Psychoanalysis and deviations from it. Contemporary theoretical formulations; personality dynamics, structure and organization.

375:702. ADVANCED PROJECTIVE TECHNIQUES.

3 credits.

Prerequisite, 621 plus permission. 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 a variety of settings.

375:725. DEVELOPMENTAL PSYCHOLOGY PRENATAL, INFANCY AND EARLY EXPERIENCE. 4 credits.

Prerequisites, 604 or permission. A survey of the psychological aspects of the prenatal period, infancy and early experience. Emphasis will be on an understanding of the general problem of how early experience structures adult behavior.

375:726. EXPERIMENTAL CHILD PSYCHOLOGY.

4 credits.

Prerequisites, 604 or permission. Current research in child psychology. Topics include classical conditioning, discrimination learning, attentional processes, mediation, perceptual learning and social reinforcement.

375:727. PSYCHOLOGY OF ADULTHOOD AND AGING. 4 credits.

Prerequisites, 604 or permission. A survey of psychological aspects of development and aging. Emphasis will be on lifespan methodology and research design. Research in gerontological psychology will be reviewed such as age-related changes in intelligence, personality, sensation, perception, learning, memory and socialization. Relevant interdisciplinary links and intervention approaches will be explored.

375:728. EXPERIMENTAL SOCIAL PSYCHOLOGY.

4 credits.

Prerequisite, 602 or permission. An examination of selected theoretical and methodological issues in the study of social perception, group dynamics, inter-group relations and attitude formation and change.

375:729. FUNCTIONAL ANALYSIS OF BEHAVIOR.

4 credits.

The application of learning principles to human behavior. Topics include observing and recording behavior, modeling, establishing stimulus and reinforcement control, analysis of complex behavior, designing intervention programs, and current research issues. Some laboratory experience may be available.

375:730. THEORIES OF LEARNING. 4 credits.

Prerequisite, 412 or permission. Empirical evaluation of the bases of major theoretical positions. Lectures, readings and experiments.

375:731. OPERANT CONDITIONING. 4 credits.

Prerequisite, 412 or permission. A course covering theory and research in operant conditioning. The conduct and reporting of an original experiment may be required.

375:732. ACQUISITION OF SKILL. 4 credits.

Prerequisite, 412 or permission. A review of research concerned with motor learning, the acquisition of manual or non-verbal behavior. The conduct and reporting of an original experiment may be required.

375:733. COGNITIVE DEVELOPMENT. 4 credits.

Prerequisites, 412 or permission. Theory and research concerning the development of such cognitive activities as concept formation, problem solving, and thinking. Topics include the major theories of cognitive development and cognitive behavior, the research paradigms and methods of investigation employed, and a review of empirical findings concerning cognitive development.

375:734. HUMAN LEARNING AND LANGUAGE.

4 credits.

Prerequisite, 412 or permission. A historical and contemporary review of research and theory in language, verbal learning, transfer, meditation and memory. A research paper on a selected topic will be required.

375:740. PHYSIOLOGICAL PSYCHOLOGY I. 4 credits.

A survey of the neuroanatomical and neurophysiological basis of behavior with emphasis on functional analysis of neural mechanisms and behavior.

375:741. PHYSIOLOGICAL PSYCHOLOGY II. 4 credits.

Prerequisite, 740. Detailed treatment of the biochemical and neurophysiological bases of motivated behavior, hormonal and endocrine mechanisms, gene and enzyme systems.

375:742. COMPARATIVE ANIMAL BEHAVIOR.

4 credits.

Prerequisite, permission of instructor. A comparative study of the behavior of organisms emphasizing the interaction between such factors as physiology, environment, population density and social structure.

375:743. SENSORY PSYCHOLOGY. 4 credits.

Prerequisite, 603 or permission. Structure and function of peripheral receptor mechanisms and their relationship with basic psychological dimensions. Theories of sensation and empirical data on subjective responses to the physical environment.

375:744. EXPERIMENTAL MOTIVATION. 4 credits.

Prerequisites, 412 or permission. A broad, experimentally-oriented treatment of motivation emphasizing the evolution

and development of current theoretical viewpoints and their empirical bases.

375:745. SYSTEMS OF PSYCHOLOGY. 3 credits.

Prerequisite, 417/517. Overview of the development of the scientific method. Analysis of special problems confronting modern psychology.

375:746. PERCEPTION. 4 credits.

Prerequisite, 603 or permission. Analysis of the psychological phenomena and principles involved in the process of information extraction. Particular emphasis will be on concepts and methodological factors derived from information processing models. Consideration will also be given to developmental changes in perceptual functioning.

375:751. ADVANCED TESTS AND MEASUREMENTS. 4 credits.

Prerequisite, 601. Advanced techniques in test construction and analysis.

375:752. COMPUTER APPLICATIONS IN PSYCHOLOGICAL RESEARCH. 4 credits.

Prerequisites, 601 or permission. Practicum in the application of computers to problems in psychological research including data collection, data-analysis and interpretation. The course will also cover computer simulation of human decision-making, psychological processes and the simulation of personnel systems.

375:753. ORGANIZATIONAL PSYCHOLOGY. 4 credits.

Prerequisite, 601. Organizational Psychology — The study of the relationships between organizational characteristics and human behavior.

375:754. PERFORMANCE EVALUATION. 4 credits.

Prerequisite, 601. The analysis development, and use of objective and subjective criteria in industry for use in performance appraisal, test validation, training and validation of environmental arrangements.

375:755. RESEARCH METHODS IN PSYCHOLOGY. 4 credits.

Prerequisites, 601 and 604 or permission. The scientific method and its specific application to psychology. Topics include data collection, validity, reliability, the use of the general linear model and its alternatives and power analysis.

375:756. PERSONNEL SELECTION. 4 credits.

Prerequisite, 601. Review of strategies employed by industrial/organizational psychologists for personnel selection, placement and promotion.

375:757. CONSUMER PSYCHOLOGY. 4 credits.

Prerequisite, 601. A survey of consumer psychology which includes the application of theory and methods to advertising, marketing, and selling in both the public and private sector.

375:758. SURVEY OF PSYCHOLOGICAL TESTS. 4 credits.

Prerequisite, 601. An examination of published tests and measuring instruments used in the practice of Industrial/Organizational Psychology. Students will administer, interpret and evaluate tests.

375:759. ORGANIZATIONAL MOTIVATION. 4 credits.

Prerequisite, 601. Identification, description, analysis and techniques for implementation of intrinsic and extrinsic incentives during work activity.

375:760. ENGINEERING PSYCHOLOGY. 4 credits.

Prerequisite, 601. A survey of the field of engineering psychology. This course covers such topics as job design, task

analysis, man-machine systems analysis, working conditions and accidents.

375:761. ORGANIZATIONAL TRAINING AND DEVELOPMENT. 4 credits.

Prerequisite, 601. The nature of industrial training, training needs, methods and techniques, evaluation of training, training and learning theory and organizational development.

375:762. DECISION MODELS FOR PERSONNEL SELECTION. 4 credits.

Prerequisites, 601 and permission. The use of advanced analytic and stochastic techniques for selection classification, placement and evaluation based on individual differences. Models to be covered will include Cronbach & Gleser Cost-benefit Models, Bayesian Models, and Man-power allocation Models.

375:763. CROSS-CULTURAL PSYCHOLOGY. 4 credits.

Prerequisite, 601. The application of principles and techniques of psychology across cultures, societies, and economic and political systems. The course will cover topics in comparative management, cross-cultural selection and training, attitudes and motivation.

375:764. SEMINAR IN INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY. 4 credits. (May be repeated for credit).

Prerequisites, 601 and permission. Special topics in industrial/organizational psychology at the discretion of the faculty member to meet particular student interests. The following topics will be covered on a rotating basis: Industrial/organizational psychology and public policy, leadership, managerial selection, assessment centers and organizational development.

375:780. GRADUATE SEMINAR IN PSYCHOLOGY. 2 credits. (May be repeated.)

Prerequisite, permission of instructor. Special topics in psychology.

375:785. INDEPENDENT READING AND/OR RESEARCH. 1-4 credits. (May be repeated for credit.)

Prerequisite, permission. Individual readings and/or research on a topic under the supervision of a member of the faculty with whom specific arrangements have been made.

375:800. DISSERTATION RESEARCH. 2-20 credits.

Required minimum 20 credits. Maximum subject to departmental approval — open to properly qualified students. Supervised research on a topic deemed suitable by the dissertation committee.

385: SOCIOLOGY

385:100. INTRODUCTION TO SOCIOLOGY. 5 credits.

Basic terminology, concepts, and approaches in Sociology; including an introduction to the analysis of social groups, and the application of sociological concepts to the understanding of social systems. Required of majors.

385:104. SOCIAL PROBLEMS. 4 credits.

Prerequisite, 100 or permission. Selected contemporary problems in society examined from the viewpoint of sociological concepts which underline an understanding of social behavior.

385:304. METHODS OF SOCIAL RESEARCH I. *4 credits.*
Prerequisite, 100 and 345:140, 145, 150, 155, or permission. A combination lecture and laboratory course requiring at least five laboratory hours per week. Research design, data gathering techniques and statistical procedures. Required of majors.

385:305. METHODS OF SOCIAL RESEARCH II.

4 credits.

Prerequisite, 304. Continuation of 304. Required of majors.

385:314. CRIMINOLOGY. *4 credits.*

Prerequisite, 100 or permission. The nature and extent of types of crime in varied social/cultural settings; the relation of the development of various criminal behavioral systems to the nature of criminal law, law enforcement process, social values, social settings and motivational orientations; the study of the etiologies of criminal behavioral systems.

385:320. POPULATION. *4 credits.*

Prerequisite, 100 or permission. Introduction to demographic analysis; the numbers, distribution, characteristics, and trends of U.S. and world population.

385:321. POPULATION TRENDS AND DEMOGRAPHIC ANALYSIS. *4 credits.*

Prerequisite, 320 or permission. Analysis of national and world population trends; and examination of the methods of the demographer.

385:325. THE FAMILY. *4 credits.*

Prerequisite: 100 or permission. Analysis of the Family as a social system; historical, comparative, and contemporary sociological approaches examined in relation to a family structure and functions.

385:327. SOCIAL STRATIFICATION. *4 credits.*

Prerequisite, 100 or permission. A study of the way social rankings occur in societies and how particular rankings affect individual behavior, group relations and social structures.

385:330. SOCIOLOGY OF HEALTH AND ILLNESS.

4 credits.

Prerequisite, 100 or permission. Topics to be covered include sociological perspectives on health and illness, the social and organizational contexts of health care, epidemiology, and methodological issues in medical sociology. The utility of major schools of sociological theory for the study of health care will be explored.

385:336. SOCIAL CHANGE. *4 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.

385:337. SOCIAL MOVEMENTS. *4 credits.*

Prerequisite, 100 or permission. Social movements distinguished from other forms of collective behavior; analysis of social situations likely to produce social movement; focus upon structure and function of movements and their role in social change.

385:339. POLITICAL SOCIOLOGY. *4 credits.*

Prerequisite, 100 or permission. A survey of theory and empirical research dealing with the relationship between political phenomena and the larger network of social processes in human societies.

385:340. SOCIOLOGICAL READING AND RESEARCH. *1-4 credits.*

Prerequisite, permission. Individual study of a problem area

of specific interest to the individual student under guidance of a department member. Preparation of a research paper.

385:380. THE SOCIOLOGY OF AGING. *4 credits.*

Prerequisite, 100 or permission. An examination of the process of aging from the perspective of behavioral and sociological aspects.

385:402/502. SOCIOLOGY OF RELIGION. *4 credits.*

Prerequisite, 100 or permission. A study of forms of religion and their social functions with an emphasis on Religion in American Society.

385:414/514. THE HISTORY OF SOCIOLOGICAL THOUGHT. *4 credits.*

Prerequisite, 100 or permission. A study of the contributions of European and American thinkers to sociological thought. An appraisal of the theorist, his main works, influences on his thinking, and his sociological views. Emphasis on the historical development of the major schools of thought. Required of majors.

385:415/515. CONTEMPORARY SOCIOLOGICAL THEORIES. *4 credits.*

Prerequisite, 414 or permission. An examination and critical evaluation of the works of modern sociological theorists. Each is studied in breadth and depth; provides a perspective of the range of problems in the field and suggested approaches. Required of majors.

385:423/523. JUVENILE DELINQUENCY. *4 credits.*

Prerequisite, 100 or permission. An analysis of: differences and relationships between social problems, deviancy, adult criminal code, juvenile (delinquent) code, and delinquent subcultures; the nature, extent and trends of delinquency in various social/cultural settings, motivational orientations and the development process of varied delinquent role formations. The legal processing of juveniles and the etiologies forms of delinquency.

385:425/525. CORRECTIONS. *4 credits.*

Prerequisites, 314, or 423, or permission. The history and development of corrections; international comparative correctional patterns; current and experimental practices in the U.S.; and issues and evaluation of corrections.

385:426/526. PROBATION AND PAROLE.

4 credits.

Prerequisites, 314 or 423, or permission. The nature and organization of probation and parole. An examination of current issues and problems; procedures, techniques, and evaluation of outcomes; and new directions in probation and parole work will be undertaken.

385:427/527. RACIAL AND CULTURAL INTERGROUP RELATIONS. *4 credits.*

Prerequisite, 100 or permission. A sociological interpretation of the relationships, between dominant and minority groups. An analysis of minority response patterns, the development of prejudice, discrimination, stereo-types, and ways of coping with inter-group tensions.

385: 430/530. SOCIAL STRUCTURE AND PERSONALITY. *4 credits.*

Prerequisite, 375:315 or permission. Review of theory and research on the linkages between social context, personality and behavior. Major focus will be on the personality patterns that appear to result from contexts of modernity, class, occupation and ethnicity, and on personal-social integration and malintegration.

385:431/531. SOCIAL INTERACTION. 4 credits.

Prerequisite, 375:315 or permission. Social interaction as a process involving the exchange of values, meanings, behaviors and attractions between human actors. Both the process of interaction and the outcomes of interaction will be examined.

385:432/532. SOCIALIZATION: CHILD TO ADULT. 4 credits.

Prerequisite, 375:315 or permission. Theoretical and empirical analyses of the process by which the infant, child, adolescent and adult learn the social and cultural requirements necessary to function in new roles, changing roles and society in general.

385:433/533. SOCIAL ORGANIZATION. 4 credits.

Prerequisite, 9 hours of Departmental credit. The nature of social organization and social control; organizational typologies; theories of organizational structure and functions; analysis of complex organizations in a social system.

385:434/534. SOCIOLOGY OF LAW. 4 credits.

Prerequisite, 9 credits of sociology or permission. A general treatment of the social origins and consequences of law and legal process. Particular emphasis is placed on problems of law and social change and on the structure and functioning of legal sanctions. Some attention is paid to law and law-like phenomena in formal organizations and primitive societies.

385:435/535. SOCIOLOGY OF URBANIZATION. 4 credits.

Prerequisite, 100 or permission. A study of the implications of growing density and nucleation of population on attitudes, social structures and social change.

385:436/536. SOCIOLOGY OF EDUCATION. 4 credits.

Prerequisite, 100, or permission. The sociological analysis of education as a social institution and social system, emphasizing the contributions of the major contemporary sociological theoretical viewpoints; structural-functionalism, symbolic interactionism, and conflict theory.

385:438/538. INDUSTRIAL SOCIOLOGY. 4 credits.

Prerequisite, 9 credits of sociology of 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.

385:440/540. URBAN RESEARCH METHODS I. 4 credits.

Prerequisite, competence in elementary statistics. Special problems and social research in urban areas, emphasis on problems of stratification, and social problems. Includes advanced statistical techniques and computer usage.

385:441/541. URBAN RESEARCH METHODS II. 4 credits.

Prerequisite, 440. A continuation of 440.

385:442/542. COMPUTER APPLICATIONS IN SOCIAL SCIENCE. 4 credits.

Prerequisites, 304 and 305 or permission. Elementary Fortran programming for social science research application; preparation, storage and processing of data; use of stored program libraries and review of selected other applications such as simulation models and data banks.

385:443. RESEARCH INTERNSHIP. 3-6 credits.

Prerequisite, 304, 305, 320 and 442 with a 3.0 average and a 3.0 average in Sociology, and permission. Individual placement in selected community organization for supervised ex-

perience in all phases of a social research project. Includes experience in research design, data collection and analysis, report writing, and policy recommendations. Student must register intent and receive permission to take the course with the instructor during the quarter prior to enrollment. This course may be repeated for credit.

385:446/546. WORKSHOP. 1-5 credits.

Group studies of special topics in sociology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only. May be repeated.

385:448/548. SOCIOLOGY OF DEVIANT BEHAVIOR. 4 credits.

Prerequisites, 100 and at least 8 additional hours of Sociology courses or permission. A survey of theories of deviant behavior and relevant empirical research. Special emphasis will be given to interaction processes and social control.

GRADUATE COURSES

385:600. SOCIOLOGICAL RESEARCH METHODS. 4 credits.

Advanced research methods including advanced statistical techniques.

385:601. SEMINAR IN SOCIAL RESEARCH DESIGN. 4 credits.

An intensive analysis of problems in a research design similar to those which will be encountered in the preparation of a master's thesis.

385:602. SEMINAR IN THEORY AND MEASUREMENT OF SOCIAL ATTITUDES. 4 credits.

Prerequisite, 600 and 601, or permission. Theories of social attitudes and techniques for their measurement.

385:603. SEMINAR IN SOCIOLOGICAL THEORY CONSTRUCTION. 4 credits.

An intensive study of techniques, rules, and methods for constructing scientific theory. The emphasis is upon the development of theories appropriate to the problems of sociological investigation. The writings of both social and physical scientists are studied in this regard, with a consideration of what philosophers of science have contributed.

385:604. SEMINAR IN SOCIOLOGICAL ANALYSIS. 4 credits.

A concentrated and accelerated introduction to the logic, methodologies, theories, terminology, substantive findings, fields and applications of sociology. This course serves two functions. It is required for all students with inadequate background in sociology who will take other graduate courses in sociology. It is recommended as an elective to any graduate student who would strengthen his understanding of general sociology.

385:606. SOCIOLOGY OF WORK. 3 credits.

An examination of work as a behavioral phenomenon in human societies; contrasts with nonwork and leisure; significance of occupations, professions, and work types in organization of work.

385:609. SEMINAR IN SMALL GROUP THEORY. 4 credits.

Prerequisite, permission. Theory of small group relationships and discussion of empirical findings about primary groups.

385:610. SEMINAR IN SMALL GROUP RESEARCH TECHNIQUES. 4 credits.

Prerequisite, 609. Application and implications of techniques of laboratory research in small groups.

385:611. SEMINAR IN PERSONALITY AND SOCIAL SYSTEMS. 4 credits.

Advanced study of theory and research on the interaction of personality systems and social systems. Emphasis will be on the dynamics of the interaction and their direct effects upon both personality and social systems.

385:612. SOCIOLOGY OF COMMUNICATION. 3 credits.
Examination of communication media, content, audiences, and impact within a sociological context.

385:614. SEMINAR IN SOCIOLOGICAL THEORY. 4 credits.

An examination of major theoretical frameworks and concepts that form the foundation of sociological thought. Emphasis placed on classic works and their implications for contemporary sociological theory.

385:616. SOCIAL CHANGE. 4 credits.

An advanced seminar in the theories of social change.

385:617. RESEARCH IN SOCIAL CHANGE. 2 credits.

Prerequisite, 616. A continuation of 616. The student will prepare a major research paper based on the theoretical material covered in 616 and present it for discussion to the seminar.

385:620. POPULATION THEORY. 4 credits.

Prerequisite, 320 or permission. The field of demography; the historical development of population theory; contemporary theories and their application to existing trends in the nation and world. Relation of population theory to other aspects of society.

385:624. FAMILY STRUCTURE AND THEORY. 3 credits.

Prerequisite, 404 or permission. Analysis of actual and theoretical patterns of family systems; current research in family in relation to theories of the family and theories of social systems.

385:625. SOCIAL STRATIFICATION. 4 credits.

Prerequisite, permission. Seminar dealing with social class and castes with special reference to the American social structure.

385:628. SEMINAR IN RACE RELATIONS. 4 credits.

Prerequisite, graduate standing. An examination of race relations from the standpoint of theory and empirical research. Material will be drawn from a broad range of sources to provide an assessment of race relations as a world issue. Particular emphasis will be given to the relationship between social structure and the development of particular patterns of race relations.

385:630. THE SOCIOLOGY OF POLITICAL BEHAVIOR. 4 credits.

Description, analysis, and interpretation of political behavior through the application of sociological concepts.

385:633. SEMINAR IN URBAN SOCIOLOGY. 4 credits.

An in-depth analysis of concepts of urbanism and the theoretical frameworks in which they have been utilized from classic to contemporary periods; review of major contributions to the empirical analysis of urban life and to the establishment of program of urban regeneration.

385:635. READINGS IN CONTEMPORARY SOCIOLOGICAL LITERATURE. 1-4 credits.

Prerequisite, 10 credits of Sociology and permission. Intensive reading and interpretation of written material in the student's chosen field of interest. Regular conferences with instructor. May be taken more than once.

385:638. SEMINAR IN THE SOCIOLOGY OF DEVIANCE. 4 credits.

Prerequisite, 8 credits of graduate sociology, or permission. An examination of nature, types, and controls of deviance; and the analysis of conceptual levels, theoretical contributions, processes in social labeling and self-labeling, case studies, social consequences, and problems and issues of theory and research in the sociology of deviance.

385:640. SEMINAR IN CRIMINOLOGY AND JUVENILE DELINQUENCY. 4 credits.

Analysis and evaluation of problems in criminological research; issues and problems in the development of criminal law and the process of selection and treatment of offenders; and the relationship of criminal and delinquent behavioral systems, as forms of socially deviant behavior, to social/cultural standards. An emphasis is placed on contemporary theories.

385:645. SEMINAR IN CONTEMPORARY SOCIAL ISSUES. 2-4 credits.

Prerequisite, permission. Analysis of current theory and research related to significant contemporary social issues. Topics and credit variable. See class schedule for quarter in which seminar is offered.

385:646. FAMILY INTERACTION. 4 credits.

This course will focus on treating the family as "a unity of interacting personalities." After exploring the various conceptual frameworks through which family sociology can be approached, it will concentrate on symbolic interactionism. Socialization within the family and for family roles will be viewed within a life cycle perspective, from early years of marriage, through parenthood and child socialization, to post-parental years.

385:647. SEMINAR IN THE SOCIOLOGY OF EDUCATION. 4 credits.

Prerequisite, permission. Selected problems in the sociological analysis of educational systems. Emphasis on contemporary research on family, social stratification and race as determinants of learning, on school contexts and subcultures and on the dynamics of school and classroom as social systems.

385:650. THESIS. 2-8 credits.

(May be repeated for a total of 8 credits.)

Prerequisite, permission. Supervised thesis writing.

388: SOCIOLOGY —
JOINT DOCTORAL PROGRAM
GRADUATE COURSES

388:607. SOCIOLOGICAL THEORY CONSTRUCTION. 4 credits.

An intensive study of techniques, rules, and methods for constructing scientific theory. The emphasis is upon the development of theories appropriate to the problems of sociological investigation. The writings of both social and physical scientists are studied in this regard, with a consideration of what philosophers of science have contributed. (Same as

385:603 and KSU 72107).

388:608. SEMINAR IN SOCIOLOGICAL THEORY.
4 credits.

An examination of major theoretical frameworks and concepts that form the foundation of sociological thought. Emphasis is placed on classic works and their implications for contemporary sociological theory. (Same as 385:614 and KSU 72106).

388:610. QUANTITATIVE TECHNIQUES. 4 credits.

Prerequisite, permission. Advanced research methods including advanced statistical techniques. (Same as KSU 72210).

388:611. SOCIOLOGICAL RESEARCH METHODS.
4 credits.

Advanced research methods including advanced statistical techniques. (Same as 385:600 and KSU 72211).

388:612. RESEARCH DESIGN. 4 credits.

An intensive analysis of problems in a research design similar to those which will be encountered in the preparation of a master's thesis. (Same as 385:601 and KSU 72212).

388:613. THEORY AND MEASUREMENT OF SOCIAL ATTITUDES. 4 credits.

Prerequisite, 611 and 612 or permission. Theories of social attitudes and techniques for their measurement (Same as 385:602 and KSU 72213).

388:614. COMPUTER APPLICATIONS IN SOCIAL SCIENCES. 4 credits.

Prerequisite, elementary statistics course or permission of instructor. An introduction to computers and their applications in the social sciences. (Same as KSU 72214).

388:620. SOCIAL CHANGE. 4 credits.

An advanced seminar in the theories of social change. (Same as 385:616 and KSU 72320).

388:621. RESEARCH IN SOCIAL CHANGE. 2 credits.

Prerequisite, 620. A continuation of 620. The student will prepare a major research paper based on the theoretical material covered in 388:620 and present it for discussion to the seminar. (Same as 385:617 and KSU 72321).

388:630. SOCIAL PSYCHOLOGY. 4 credits.

An intensive examination of social psychological theory and research, both classic and contemporary. Provides students with a background and working knowledge of the social psychological aspects of social phenomena. (Same as KSU 72430).

388:631. RESEARCH IN SOCIAL PSYCHOLOGY. 2 credits.

Prerequisite, 630. The design and development of a research project oriented to empirically examining selected concepts in social psychology or to testing selected propositions in social psychology. (Same as KSU 72431).

388:632. SMALL GROUPS ANALYSIS. 4 credits.

Prerequisite, permission. Theory of small group relationships and discussion of empirical findings about primary groups (Same as 385:609 and KSU 72432).

388:633. PERSONALITY AND SOCIAL SYSTEMS.
4 credits.

Advanced study of theory and research on the interaction of personality systems and social systems. Emphasis will be on the dynamics of the interaction and their direct effects upon both personality and social systems. (Same as 385:611 and KSU 72433).

388:634. SOCIOLOGY OF COMMUNICATION.

3 credits.

Examination of communication media, content, audiences, and impact within a sociological context. (Same as 385:612 and KSU 72434).

388:640. SOCIAL ORGANIZATION. 4 credits.

An in-depth treatment of theories of social organization and their applications at both the micro and macro levels including bureaucracy, complex organizations, social control and power relations in organizations and societies. Special emphasis is placed on the various structuring components and their interrelationships as treated by contemporary theoretical schools. (Same as KSU 72540).

388:641. RESEARCH IN SOCIAL ORGANIZATION.

2 credits.

Prerequisite, 640. The design and development of a research project oriented to empirically examining selected concepts in social organization or to testing selected propositions in social organization. (Same as KSU 72541).

388:642. SOCIOLOGY OF WORK. 3 credits.

An examination of work as a behavioral phenomenon in human societies; contrasts with nonwork and leisure; significance of occupations, professions and work types in organization of work. (Same as 385:606 and KSU 72542).

388:643. FAMILY STRUCTURE AND THEORY.

3 credits.

Prerequisite, 385:404 or permission. Analysis of actual and theoretical patterns of family systems. Current research in family in relation to the theories of the family and theories of social systems. (Same as 385:624 and KSU 72543).

388:644. POLITICAL SOCIOLOGY. 4 credits.

Description, analysis, and interpretation of political behavior through the application of sociological concepts. (Same as 385:630 and KSU 72544).

388:645. COMPLEX ORGANIZATIONS. 4 credits.

Prerequisite, permission. Organizations as social systems; their effect on individuals. Problems of professionals in bureaucracies. (Same as KSU 72545).

388:646. SOCIAL STRATIFICATION. 4 credits.

Prerequisite, permission. Seminar dealing with social class and castes with special reference to the American social structure. (Same as KSU 72546).

388:650. FAMILY INTERACTION. 4 credits.

This course will focus on treating the family as "a unity of interacting personalities." After exploring the various conceptual frameworks through which family sociology can be approached, it will concentrate on symbolic interactionism. Socialization within the family and for family roles will be viewed within a life cycle perspective, from early years of marriage, through parenthood and child socialization, to post-parental years. (Same as 385:646).

388:651. SOCIOLOGY OF EDUCATION. 4 credits.

Prerequisite, permission. Selected problems in the sociological analysis of educational systems. Emphasis on contemporary research on family, social stratification and race as determinants of learning, on school contexts and subcultures and on the dynamics of school and classroom as social systems. (Same as 385:647 and KSU 72547).

388:655. HUMAN ECOLOGY. 4 credits.

Selected problems in the sociological analysis of interactions between physical environments and human behavior. Emphasis on social institutions and environmental design, theories of urban form, environmental and physical constraints

upon urban dynamics, social area analysis, and theories of residential differentiation. (Same as KSU 72650).

388:656. RESEARCH IN HUMAN ECOLOGY. *2 credits.*
Prerequisite, 655. Intensive research on a selected aspect of human ecology by individual students with previous training in this area. Topic to be arranged between student and instructor. (Same as KSU 72651).

388:657. URBAN SOCIOLOGY. *4 credits.*
An in-depth analysis of concepts of urbanism and theoretical frameworks in which they have been utilized from classic to contemporary periods, review of major contributions to the empirical analysis of urban life and to the establishment of programs of urban regeneration. (Same as 385:633 and KSU 72652).

388:660. RESEARCH IN COMMUNITY AND AREA PROBLEMS. *4 credits.*
Prerequisite, permission. Special investigation of community, area, or regional problems; design and execution of small projects. (Same as KSU 72655).

388:661. POPULATION. *4 credits.*
The field of demography; the historical development of population theory; contemporary theories and their application to existing trends in the nation and the world. Relation of population theory to other aspects of society. (Same as 385:620 and KSU 72656).

388:665. DEVIANCE AND DISORGANIZATION. *4 credits.*
An examination of nature, types, and controls of deviance; and the analysis of conceptual levels, theoretical contributions, processes in social labeling and self-labeling, case studies, social consequences, and problems and issues of theory and research in the sociology of deviance. (Same as 385:638 and KSU 72760).

388:666. RESEARCH IN DEVIANCE AND DISORGANIZATION. *2 credits.*
Prerequisite, 665. This course provides for an analysis of research problems in deviance and disorganization and for the development of a research project in the above area. (Same as KSU 72761).

388:667. JUVENILE DELINQUENCY: THEORY AND RESEARCH. *4 credits.*
Prerequisite, permission. An analysis of theories of delinquency; ecological, class structural, subcultural, etc. A review of relevant research also presented. (Same as KSU 72762).

388:668. SOCIOLOGY OF CRIMINAL BEHAVIOR. *4 credits.*
Analysis and evaluation of problems in criminological research; issues and problems in the development of criminal law and the process of selection and treatment of offenders; and the relationship of criminal and delinquent behavioral systems, as forms of socially deviant behavior, to social/cultural standards. An emphasis is placed on contemporary theories. (Same as 385:640 and KSU 72763).

388:669. SOCIOLOGY OF CORRECTIONS. *4 credits.*
Prerequisite, permission. An analysis of the correctional institution as a social system; its formal structure and informal dynamics. Analysis of the present state of corrections research. (Same as KSU 72764).

388:680. RACE RELATIONS. *4 credits.*
Prerequisite, graduate standing. An examination of race relations from the standpoint of theory and empirical research. Material will be drawn from a broad range of

sources to provide an assessment of race relations as a world issue. Particular emphasis will be given to the relationship between social structure and the development of particular patterns of race relations. (Same as 385:628 and KSU 72870).

388:681. THE AFRO-AMERICAN. *4 credits.*
Prerequisite, permission. Seminar in the culture of the Black American. (Same as KSU 72871).

388:682. RESEARCH SEMINAR IN BLACK STUDIES. *4 credits.*
Prerequisite, permission. A joint, interdisciplinary, history and sociology research seminar, focusing on selected aspects of the life of the black community. (Same as KSU 72872).

388:685. CONFLICT. *4 credits.*
Prerequisite, permission. Current conceptions of human conflict. Discussion of vital concepts and principles for understanding conflict phenomena. Power, values, ideology, riots, revolution and war. (Same as KSU 72875).

388:686. CRITIQUE OF MASS COMMUNICATIONS RESEARCH. *4 credits.*
Prerequisite, permission. The systematic evaluation of theoretical, methodological and empirical aspects of significant studies of mass communication. (Same as KSU 72876).

388:687. SOCIAL GERONTOLOGY. *4 credits.*
Prerequisite, permission. The impact of aging upon individuals and the society. The reactions of individuals and society to aging. (Same as KSU 72877).

388:692, 693, 694. INDIVIDUAL INVESTIGATION. *1-4 credits each.*
Prerequisites, one quarter of graduate work, permission of the instructor and the Director of Graduate Education. Readings and/or research supervised by a member of the graduate faculty. (Same as KSU 72896).

388:696. COLLEGE TEACHING OF SOCIOLOGY. *2 credits.*
Prerequisite, Teaching Assistant or Permission. Training and experience in the college teaching of sociology. Not approved as credit toward a degree.

388:703. ADVANCED CONCEPTUAL ANALYSIS. *4 credits.*
A critical examination of those concepts held fundamental and widely used in sociological diagnoses. Evaluation of these concepts from logical, semantical and operational perspectives. Assessment of the utility of these concepts to the development of sociological theories. (Same as KSU 82106).

388:705. GENERAL SYSTEMS THEORY. *4 credits.*
Prerequisite, 607. An analysis of general systems theory as the basis for a model of society and as a heuristic framework for theory and research. (Same as KSU 82107).

388:709. SPECIAL TOPICS IN SOCIOLOGICAL THEORY. *2-4 credits.*
An open course to cover a content area not readily subsumable under other headings. Content of the course to be determined by the instructor. (Same as KSU 82109).

388:719. ADVANCED TECHNIQUES IN RESEARCH. *2-4 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).

388:729. CONTEMPORARY ISSUES IN SOCIAL CHANGE. 2-4 credits.

Prerequisite, 620 or permission. A special subject seminar focusing on current research and theory related to significant contemporary issues, or to recent advances in the study of social change. Course content will vary each quarter and will be reported sufficiently in advance of each offering. (Same as KSU 82329).

388:739. CONTEMPORARY TRENDS IN SOCIAL PSYCHOLOGY. 2-4 credits.

Prerequisite, permission. A special subject seminar focusing on an analysis of current social psychological theory and research related to significant contemporary issues, or to theoretical and methodological development of the field. Course content and focus will vary for each quarter in which it is offered. Sufficient advanced notice on content will be provided. (Same as KSU 82439).

388:749. SPECIAL TOPICS IN SOCIAL ORGANIZATION. 2-4 credits.

An open course to cover a content area not readily subsumable under other headings. Content of the course to be determined by the instructor. (Same as KSU 82549).

388:764. ISSUES IN URBAN ANALYSIS. 2-4 credits.

A special topics seminar designed to allow the content to vary according to the interests and needs of both faculty and students. Current and special interests in urban process will be dealt with. (Same as KSU 82659).

388:765. SPECIAL TOPICS IN DEVIANCE AND DISORGANIZATION. 2-4 credits.

Designed to meet the needs of students with interests in selected topics in deviance and disorganization. (Same as KSU 82769).

388:899. DISSERTATION. 1-15 credits.

Dissertation. Must be repeated for a minimum of 45 credits. (Same as KSU 82899).

387: ANTHROPOLOGY**387:150. CULTURAL ANTHROPOLOGY.** 5 credits.

Structural and functional analysis of the concept and phenomenon of culture in general; comparative study of the social organization, material implements, world-view and ethos of contemporary non-literate groups seen in the process of rapid acculturational change.

387:151. PHYSICAL ANTHROPOLOGY. 4 credits.

Study of protohuman and early human paleontology and comparative anatomy of the primates; evolutionary differentiation of Homo Sapiens as a single, polymorphous species into racial variations and their current sociocultural significance; Paleolithic, Neolithic and protohistorical archeology, including the emergence of agriculture and urbanization in the old and new worlds; and the evolution and structure of language as man's fundamental system of symbols.

387:256. NEW WORLD PREHISTORY. 4 credits.

Prerequisites, 150 or 385:100, or permission. A survey of the prehistoric cultures of North, Middle, and South America; beginning with the peopling of the Western Hemisphere and ending with European contact.

387:257. INDIANS OF SOUTH AMERICA. 4 credits.

Prerequisites, 150 or 385:100, or permission. A survey of the aboriginal peoples of South America, with emphasis on culture areas and continuity of culture patterns.

387:258. INDIANS OF NORTH AMERICA. 4 credits.

Prerequisite, 150 or permission. An ethnographic survey of

the native cultures of North America, with emphasis on variations in ecological adaptations, social organization and modern American Indians in anthropological perspective.

387:357. MAGIC, MYTH AND RELIGION. 4 credits.

Prerequisite, 150 or 385:100. 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.

387:455/555. CULTURE AND PERSONALITY. 4 credits.

Prerequisites, 150 or permission. A cross-cultural study of the roles and relationships of individual potentials and socio-cultural norms, socialization, and primary groups in the formation of the basic structures of modal and deviant personalities.

387:461/561. LANGUAGE AND CULTURE. 4 credits.

Prerequisite, 150 or permission. Language as a sub-system of culture in relation to language as a whole. The study of language and culture versus language in culture, as different approaches to their interdependence and interaction.

387:463/563. TYPES OF KINSHIP AND SOCIAL ORGANIZATION. 4 credits.

Prerequisites, 150 or permission. A 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.

387:465/565. WORKSHOP. 1-5 credits.

Group studies of special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only. May be repeated.

387:466/566. SPECIAL TOPICS IN ANTHROPOLOGY. 4 credits.

Prerequisites, 387:150 and permission. Designed to meet the needs of students with interests in selected topics in Anthropology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research, or advanced coursework not presently offered by the department on a regular basis. May be repeated.

GRADUATE COURSES**387:651. SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS.** 4 credits.

Major theoretical viewpoints in cultural anthropology. Nature and scope of research problems in anthropology. Survey of methods in field work.

394: POLYMER SCIENCE**394:401. INTRODUCTION TO APPLIED POLYMER SCIENCE.** 2 credits.

Lectures and laboratory. Prerequisite, one year of organic chemistry, or permission. The use of coal and petroleum products as raw materials for the polymer industry is discussed. Typical industrial processes are described, and the preparation, and properties of both natural, and synthetic polymers are outlined, and supplemented with suitable laboratory experiments.

394:402. INTRODUCTION TO ELASTOMERS. 2 credits.

Lectures and laboratory. Prerequisite, 401 or permission. The history and preparation of natural rubber are discussed.

The methods utilized for the production of all synthetic rubbers are outlined. Typical laboratory experiments are included to show the effects of compounding, processing, vulcanization, and testing on rubber products.

394:403. INTRODUCTION TO PLASTICS. 2 credits.

Lectures and laboratory. Prerequisite, 401 or permission. The plastics industry and its manufacturing methods are discussed. Plastics compounding for both thermoplastic and thermosetting materials is discussed with emphasis on processing and testing illustrated by typical laboratory experiments.

394:407. POLYMER SCIENCE. 3 credits. (2-3).

Prerequisite, 315:314, or 365:301, or 420:305, or permission. The principles of polymerization processes and the relationships between molecular structures and physical behavior of polymers are dealt with.

394:408. POLYMER SCIENCE. 3 credits.

Prerequisite, 315:112 or 128 or 133, or permission. The topic of molecular weight distributions of macro-molecules is discussed along with the methods of the determination of molecular weights. In addition, the relationships between the physical behavior of polymers and their molecular structure is discussed.

394:411/511-412/512-413/513. MOLECULAR STRUCTURE AND PHYSICAL PROPERTIES OF POLYMERS I, II, AND III. 3 credits each.

Prerequisite, 401 or 402 or 403 or permission. This is an interdisciplinary course in which the principles of chemistry and physics are brought to bear on the relationships between the molecular structure and chemical composition of macromolecules and their physical properties. The theories concerning physical properties of elastomers, amorphous and crystalline plastics as well as melts are presented. The principal experimental techniques to determine the physical properties of polymers will be outlined. The dependence of structure and morphology on previous thermodynamic histories will be discussed as well. Lecture and Laboratory

394:414-415-416. SEMINAR IN POLYMER SCIENCE.

1 credit each.

New and unsolved problems of polymer science will be discussed from the interdisciplinary view of materials science and students will prepare at least one formal technical presentation during the year.

GRADUATE COURSES

394:604-605. SPECIAL PROJECTS IN POLYMER SCIENCE. 1-5 credits each. (May be repeated for a maximum of 5 credits for both courses.)

Prerequisite, permission. Individual research projects of a limited character, intended to be completed within one quarter, will be assigned to students entering the Polymer Science program, under the supervision of a faculty member. These are intended to familiarize the student with typical problems and techniques in this field and to prepare him for his thesis research.

394:610. INORGANIC POLYMERS. 2 credits.

Prerequisite, 315:472/572 or 601, 602 or permission. This course is a survey course that is designed to broaden the outlook of the typical Department of Polymer Science graduate student beyond the chemistry and physics of carbon-chains. It is designed to show that there is no all-encompassing polymerization theory that can explain either the chemical formation or the constitution and structure of inorganic polymers.

394:613. POLYMER SCIENCE LABORATORY.

2 credits.

Prerequisite or corequisite, 315:601, 674; 365:631; 394:701 or permission of instructor. Laboratory experiments in the synthesis, characterization, physical properties and processing of polymers.

394:691. MASTER'S RESEARCH. 1-9 credits.

Prerequisite, permission. For properly qualified candidates for master's degree. Supervised original research in polymer science, under the direction of a faculty member, followed by submission of a thesis.

394:701. POLYMER TECHNOLOGY I.

2 credits.

Principles of compounding and testing, processing principles, and types of operation, design principles.

394:702. POLYMER TECHNOLOGY II.

2 credits.

Prerequisites, 394:701 or permission of instructor. Rubber industry, rubber compounding and processing vulcanization methods, physical testing, plastics preparation and compounding, manufacturing processes.

394:703. POLYMER TECHNOLOGY III.

2 credits.

Prerequisite, 394:701 or 702 or permission of instructor. Flow properties, extrusion, calendaring and milling, molding, mixing, bond operations, engineering properties, rubber springs, viscoelastic analysis design consideration.

394:704-705-706. POLYMER TECHNOLOGY LABORATORY.

1 credit each.

Prerequisite or corequisite, 701, 702, 703 or permission of instructor. Experiments designed to illustrate the accompanying lecture courses of 701, 702, and 703.

394:708-709-710. MACROMOLECULAR CHAIN STRUCTURE. 3 credits each.

Prerequisites, either 315:314 or 365:301 or 420:305, or permission. This course is an interdisciplinary course on the chain-like structure of large molecules. The fundamental theories of chemical conformation and statistical mechanics must be developed to a sufficient degree that their application to polymeric problems can be discussed thoroughly. The experimental techniques used in the elucidation of chain structures are also discussed in detail.

394:711-712. SPECIAL TOPICS IN POLYMER SCIENCE. 2 credits each.

Prerequisite, permission. Study of topical subjects of current interest in Polymer Science, encompassing the chemistry, physics or engineering aspects of macromolecular substances, and including laboratory work where applicable. Lectures and/or laboratory.

394:713. CHAIN STRUCTURE LABORATORY.

2 credits.

Prerequisite or corequisite, 708 or permission of instructor. This laboratory is intended to apply the principles discussed in 708 to the laboratory determination of polymer structure.

394:791. DOCTORAL RESEARCH IN POLYMER SCIENCE. 2-24 credits.

Open to properly qualified students accepted as candidates for the degree of Doctor of Philosophy in Polymer Science. At the present time, supervised original research may be undertaken in the fields of the chemistry, physics or engineering aspects of Polymer Science, depending on availability of staff and facilities.

398: URBAN STUDIES**GRADUATE COURSES****398:550. WORKSHOP. 1-5 credits.**

Group studies of special topics in Urban Studies. May not be used to meet graduate major requirements in Urban Studies. May be used for elective credit only. May be repeated.

398:600. URBAN SCIENCE. 4 credits.

Prerequisite, permission. A study of approaches used in the various disciplines in the study of urban area and region. This course is required of all students entering the urban studies program.

398:601. FISCAL PROBLEMS AND POLICIES OF URBAN DEVELOPMENT. 3 credits.

Prerequisite, permission. A study of the fiscal resources and potentials of an urban community and the limitations to urban fiscal planning.

398:602. ECONOMIC IMPLICATIONS OF URBAN GROWTH. 3 credits.

Prerequisite, permission. An examination of the urban economic unit and its susceptibility to social, economic, political and physical change.

398:604. COMPARATIVE URBAN STUDIES. 4 credits.

Prerequisite, permission. This course is designed to review conceptual schemes and methodology for comparative urban analysis and to examine selected urban areas among different countries in the following respects: pattern of urbanization, problems and challenges generated by urbanization, and public and private institutions and their measures developed and employed to meet the surging urban challenge. The study areas shall include a number of major cities selected from each continent for which sufficient scholarly publication in the English language is available.

398:605. SEMINAR IN NATIONAL URBAN POLICY. 4 credits.

Major federal policies which are primarily designed to solve urban problems will be systematically examined in such aspects as the background of policy developments, policy making processes, policy implementations and policy impact.

398:610. SEMINAR IN AMERICAN URBAN DEVELOPMENT. 4 credits.

An examination of the major literature on the processes of urbanization in the United States, and selected facets of urban institutional development.

398:611. POLITICS IN URBAN AREAS. 3 credits.

Prerequisite, permission. An empirical analysis of urban political structure and processes, and major political problems.

398:612. ADMINISTRATION OF URBAN GOVERNMENT. 3 credits.

Prerequisite, permission. The organization and management characteristics of various types of government entities in urban areas. Municipal and county governments, and special districts will be examined within the framework of organization and management theory.

398:620. SOCIAL ORGANIZATION AND STRUCTURE OF THE URBAN AREA. 3 credits.

Prerequisite, permission. An examination of the social organization and the functional implications of social change and disorganization.

398:621. SOCIAL SERVICES PLANNING IN AN URBAN SOCIETY. 3 credits.

Prerequisite, permission. An in-depth analysis of the total social services requirements and the various ways in which the social services planning function is carried out in urban communities.

398:631. URBAN FACILITIES PLANNING. 3 credits.

Prerequisite, permission. A study of the approaches to urban facilities planning — the need, process and limitation.

398:632. PLANNING AND URBAN RENEWAL IN THE URBAN REGION. 4 credits.

Prerequisite, permission. An in-depth examination of the types, forms, approaches and nature of urban planning at various levels and a critical appraisal of the impact of urban renewal.

398:640. URBAN STUDIES SEMINAR. 3 credits.

Prerequisite, 15 credits of Urban Studies core curriculum and 3 of approved advanced statistics of permission. Advanced urban research methods and techniques applied to a specific urban area. A comprehensive research paper is required.

398:641. QUANTITATIVE METHOD OF URBAN REGIONAL ANALYSIS. 4 credits.

Prerequisite, permission. The application of quantitative methods to urban and regional research. An interdisciplinary consideration of techniques of population projection, migration estimation, regional income and social accounting, interregional flow analysis and urban cycle and multiplier analysis.

398:644. SEMINAR IN URBAN RESEARCH DESIGN. 4 credits.

Prerequisite, 641 or equivalent and the completion of eight credits of core curriculum or permission. This course will emphasize advanced work in problem of definition, conceptual logic of urban research, sampling, questionnaire design, planning report development and writing, and advanced quantitative procedures.

398:650. SELECTED TOPICS IN URBAN PLANNING. 4 credits. (May be repeated for a total of 12 credits)

Prerequisite, by permission. A comprehensive analysis of the micro and macro level of selected topics in specific areas of Urban Planning. Topics may include urban design, housing or other areas related to planning.

398:652. SELECTED TOPICS IN URBAN DEVELOPMENT. 4 credits. (May be repeated for a total of 12 credits)

Prerequisite, by permission. An analysis of selected topics in the processes and forms of the development of cities. Selected topics will be drawn from the economic, political, social and cultural development of cities and will concentrate on one or more urban institutions.

398:654. SELECTED TOPICS IN URBAN POLICY AND ADMINISTRATION. 4 credits. (May be repeated for a total of 12 credits)

Prerequisite, by permission. A consideration of issues surrounding specific urban policy. Selected topics may include public welfare, intergovernmental financial aid, or other appropriate policy issues.

398:670. SEMINAR ON INNOVATIVE ASPECTS OF NEW COMMUNITIES. 3 credits.

Prerequisite, permission. A study of the development of utopian communities and "new towns" and their social, political and economic implications for urban development.

398:671. SEMINAR IN TECHNOLOGY, SCIENCE AND THE URBAN ENVIRONMENT. 4 credits.

This seminar is designed to explore the significance of science and technology on the quality of the environment in the urban community. The impact of biology, industrial technology and medicine, on the ethics, ecology and social environment of the urban community of the 20th century are the areas of central focus.

398:689. INDIVIDUAL STUDIES. 2-6 credits.

(May be repeated for a total of 6 credits.)

Directed individual readings or research focused on a

specific area or topic.

398:690. INTERNSHIP IN URBAN STUDIES.

2-6 credits.

Prerequisite, permission. A work experience program in which the student is expected to engage in meaningful research, policy planning and administrative operations in selected urban governments, state and federal governments and urban agencies, under the combined supervision of the employing agent and the faculty of the Urban Studies Department.

The College of Engineering

410: GENERAL ENGINEERING

410:180. ENGINEERING DESIGN. 2 credits. (2-0).

Introduction of the freshman engineering student to problem-solving techniques in Engineering design. Required of all entering Engineering freshmen in Evening College.

410:201. FUNDAMENTALS OF ENVIRONMENTAL ENGINEERING ANALYSIS.

3 credits. (3-0).

An introduction to the scientific methods used to analyze and solve environmental problems. Several case studies are conducted, each involving topics such as automotive pollution; heating, lighting and cooling of buildings; electric power generation, etc. The inter-relationships among the environmental, physical, economic and social factors for each case are studied. This course will not count toward degree requirements of students majoring in Chemistry, Physics or Engineering.

410:202. ATMOSPHERIC POLLUTION. 3 credits. (3-0).

This course introduces the non-technical student to the complex interactions which the proposed technical solutions for atmospheric pollution have on the process, the environment and the surrounding community. Case studies are chosen to illustrate the causes of atmospheric pollution and the technical, economic and social problems associated with the control of atmospheric pollution as well as the effect on other forms of pollution. Some of the topics which may be included are: removal of sulfur dioxide from flue gases, control of hydrocarbon vapors from cleaning plants and solvent manufacturing operations, recovery of particulates from flue gases, control of automotive air pollutants. This course will not count toward degree requirements of students majoring in Chemistry, Physics or Engineering.

410:301. COOPERATIVE WORK PERIOD I.

0 credits.

410:302. COOPERATIVE WORK PERIOD II.

0 credits.

410:403. COOPERATIVE WORK PERIOD III.

0 credits.

410:404. COOPERATIVE WORK PERIOD IV.

0 credits.

420: CHEMICAL ENGINEERING

420:120. ENGINEERING DESIGN:

CHEMICAL ENGINEERING. 2 credits. (2-0).

Introduction of the freshman engineering student to problem-solving techniques in Engineering design. Required of all entering Chemical Engineering Freshmen.

420:200. MATERIAL BALANCES. 3 credits. (3-0).

Prerequisite, 315:133. Introduction to the material balance and other fundamental concepts as applied to the solution of chemical engineering problems.

420:201. ENERGY BALANCES. 4 credits. (4-0).

Introduction to energy balances and the first law of thermodynamics as applied to open and closed systems. Ther-

modynamic concepts, definitions and properties will be discussed.

420:210. PROCESS SYNTHESIS. 3 credits. (3-0).

Prerequisite, 201. Application of material and energy balances and cost factors to process selection, alternatives, energy allocation.

420:305. MATERIALS SCIENCE. 3 credits. (3-0).

Prerequisites, 315:112 or 315:127 or 315:133; 345:231 and Junior standing. A study of metals, ceramics and polymers relating their general thermal, mechanical, electrical and dielectric behavior. Special topics, such as wear, polymer composites, semiconductors and metallic corrosion, will be covered.

420:321. INTRODUCTION TO TRANSPORT

PROPERTIES. 4 credits. (4-0).

Prerequisites, 201, and 345:233. The transport properties of viscosity, thermal conductivity and diffusivity. Illustrative examples of conservation of mass, momentum and energy. Analogy and dimensionless groups. Laboratory applications and demonstrations.

420:322. INTERPHASE TRANSPORT.

3 credits. (3-0).

Interphase transport, friction factors, heat and mass transfer coefficients, dimensionless correlations. Theoretical development of macroscopic momentum and energy balances.

420:323. MULTICOMPONENT TRANSPORT.

3 credits. (3-0).

Further illustrative examples of conservation of mass, momentum and energy at the macroscopic level.

420:325. CHEMICAL ENGINEERING THERMODYNAMICS.

3 credits. (3-0).

Prerequisite, 201. Introduction of the second law of thermodynamics. Presentation of thermodynamic properties of pure components and mixtures. Application of thermodynamics to flow processes using compressible fluids.

420:351. FLUID FLOW SYSTEMS. 3 credits. (2-1).

Prerequisite, 321. Fluid statics and fluid flow rate measurement. Analysis of fluid systems as it applies to process piping and pumping. The application of fluid mechanics to solid-liquid, solid-gas and liquid-liquid separations. Laboratory.

420:352. THERMAL TRANSFER PROCESSES.

3 credits. (2-1).

Prerequisite, 351. Energy transfer equipment analysis and theory and application of radiant heat transfer. Application of heat transfer to boiling systems such as evaporation. Laboratory.

420:353. MASS TRANSFER PROCESSES.

4 credits. (3-1).

Prerequisite, 352. Discrete mass transfer stages involving vapor-liquid, liquid-liquid, solid-liquid and solid-vapor equilibria. Multistage operations in co-current, counter-current and cross-current modes. Covers continuous unit operations of binary distillation, extraction, absorption, adsorption, humidification and drying. Laboratory.

420:408. POLYMER PROCESSING AND APPLICATIONS. 3 credits (2-1).

Prerequisite, 394:407 or permission. The principles of forming and setting polymetric materials, for example by extrusion, calendaring, molding, etc., are treated and applied to elastomers, thermoplastic and thermosetting materials. Various industrial applications of polymers are also discussed. The course consists of two 1-hour lecture periods and one 3-hour laboratory period per week.

420:409/509. CERAMIC MATERIALS. 3 credits. (3-0).

Prerequisite, 305 or equivalent. An advanced study of ceramics and glasses including the macrostructure, microstructure and other properties.

420:426. PHASE AND REACTION EQUILIBRIA.

3 credits. (3-0).

Prerequisite, 325. Use of fugacity, activity coefficients, and chemical potential to determine interphase and chemical equilibrium requirements.

420:430. CHEMICAL REACTION ENGINEERING.

4 credits. (4-0).

Prerequisite, 323. Study of non-equilibrium processes. Reaction mechanisms, rate equations and reactor design as applied to both homogeneous and heterogeneous systems.

420:430. REACTION KINETICS. 4 credits. (4-0).

Prerequisite, 323. Study of non-equilibrium processes. Reaction mechanisms, rate equations and reactor design as applied to both homogeneous and heterogeneous systems.

420:435. PROCESS CONTROL. 4 credits. (3-1).

Prerequisite, 323. The study of the response of process system, controllers, and sensing elements. Applications to control systems design.

420:440/540. PROCESS ECONOMICS. 3 credits. (3-0).

Corequisite, 323. Economic analyses of chemical processes, equipment selection and cost estimation.

420:441. PROCESS AND EQUIPMENT DESIGN.

3 credits. (3-0).

Prerequisites, 440, 353 and 430. Design of chemical process equipment; optimization of process variables and sequence of operations; and consideration of costs, safety requirements, and environmental and energy effects.

420:442. PLANT DESIGN. 3 credits. (1-2).

Prerequisite, 441. Integration of process and equipment design into a total plant design; including economic justification, site selection, and plant layout. Case study or I.A.Ch.E. Student Contest Problem.

420:461/561. SOLIDS PROCESSING. 3 credits. (3-0).

Prerequisite, 323 or permission. Comprehensive problems in sedimentation, fluidization, drying and other operations involving treatment of particulate solids.

420:462/562. DISTILLATION. 3 credits. (3-0).

Prerequisite, 323 or permission. Multicomponent calculational techniques applied to the design of distillation equipment. Extractive and azeotropic distillation.

420:463/563. AIR POLLUTION CONTROL.

3 credits. (3-0).

Prerequisite, permission. Basic methods and applications of air pollution control in the chemical process industries.

420:464/564. WATER POLLUTION CONTROL. 3 credits. (3-0).

Prerequisite, permission. Waste treatment methods as applied to the chemical process industries.

420:466/566. ANALOG COMPUTATIONS.

3 credits. (3-0).

Prerequisite, 345:236. Discussion of the use of analog computation in chemical engineering including programming and operational techniques.

420:497. HONORS PROJECT. 1-4 credits.

Prerequisite, special permission. An individual creative project pertinent to Chemical Engineering culminating in an undergraduate thesis, supervised by a faculty member of the Chemical Engineering Department. May be repeated for up to a total of 9 credit hours.

420:499. CHEMICAL ENGINEERING RESEARCH.

1 to 4 credits. (0-1 to 4).

GRADUATE COURSES

420:600. MOMENTUM TRANSPORT I.

3 credits. (3-0).

Prerequisite, 323 or permission. The momentum, continuity, and energy equations. Exact and approximate solutions using vector and tensor notation. Applications to typical laminar flow systems.

420:604. TRANSPORT PHENOMENA. 3 credits. (3-0).

Prerequisite, 321 or permission. Systematic presentation of the conservation of momentum, energy and mass at both the microscopic and macroscopic levels. Illustrative examples and analogies are presented.

420:605. ENERGY TRANSPORT I. 3 credits. (3-0).

Prerequisite, 323 or permission. Conduction and forced convection heat transfer. Analytical and graphical solutions.

420:610. DIFFUSIONAL OPERATIONS.

3 credits. (3-0).

Prerequisite, 323 or permission. Discussion of molecular mass transport, forced and natural convection as applied to mass transfer, the analogies between mass, momentum, and heat transport, simultaneous heat and mass transfer.

420:611. ABSORPTION AND EXTRACTION.

3 credits. (3-0).

Prerequisite, 610. Discussion of design techniques for absorption, adsorption, and extraction processes. Multicomponent absorption and extraction.

420:615. REACTION ENGINEERING. 3 credits. (3-0).

Prerequisite, 430 or permission. Kinetics of homogenous systems. Reactor design. Non-ideal flows.

420:620. CLASSICAL THERMODYNAMICS.

3 credits. (3-0).

Prerequisite, 325 or permission. Discussion of the laws of thermodynamics. Prediction and correlation of thermodynamic data. Phase and reaction equilibria.

420:626. MATHEMATICAL MODELS AND METHODS. 3 credits. (3-0).

Prerequisite, 345:236 or permission. Discussion of methods used to develop mathematical models for chemical engineering problems and their analytical solutions.

420:627. CALCULATION METHODS. 3 credits. (3-0).

Prerequisite, 345:236 and permission. Discussion of numerical and optimization techniques in the solution of chemical engineering problems.

420:630. PROCESS DYNAMICS I. 3 credits. (3-0).

Prerequisite, 435 or permission. Discussion of the dynamic response of processes, controllers, and sensing elements, and stability criteria. Application to control of simple chemical

processes.

420:635. CHEMICAL ENGINEERING OF POLYMERS I. 3 credits. (3-0).

Prerequisite, 323 or permission. Study of the plastics industry with emphasis on the application of common unit operations in the production of plastics.

420:650. TOPICS IN DESIGN. 3 credits. (3-0).

Prerequisite, 345:236 or permission. Topics in advanced chemical engineering plant or process design such as catalysis, cryogenics, high pressure technology, high vacuum technology, estimation of physical properties, advanced process economics, special unit operations.

420:698. SPECIAL PROBLEMS. 2-6 credits.

(May be repeated for a total of 6 credits.)

Prerequisite, permission of department head. For qualified candidates for the M.S.Ch.E. degree. This course is designed to allow a student to expand a particular area of interest by consultation with a faculty member and independent study beyond available course work. Credit is dependent upon nature and extent of project as determined by supervisor and department head. May be repeated for a maximum of 6 credits.

420:699. CHEMICAL ENGINEERING RESEARCH.

1 to 9 credits. (0-1 to 9).

For properly qualified candidates for Master's degree. Supervised original research in a specific area of chemical engineering to be selected on a basis of availability of staff and facilities.

420:701. MOMENTUM TRANSPORT II.

3 credits. (3-0).

Prerequisite, 600. Discussion of boundary layer formation, turbulent flow phenomena, and non-isothermal flow. Topics of current interest.

420:702. NON-NEWTONIAN FLOW. 3 credits. (3-0).

Prerequisite 600. Rheological behavior of non-Newtonian fluids. Viscometry. Applications to engineering design.

420:706. ENERGY TRANSPORT II. 3 credits. (3-0).

Prerequisite, 605. Heat transfer in boundary layers. Natural convection phenomena. Radiation.

420:713. SPECIAL TOPICS IN TRANSPORT PROCESSES. 3 credits. (3-0).

Prerequisite, 345:236 or permission. Topics in advanced mass, energy and momentum transfer processes such as dialysis, electro dialysis, thermal diffusion, boiling fluids, two-phase fluid flow.

420:716. ADVANCED REACTION ENGINEERING.

3 credits. (3-0).

Prerequisite, 615. Kinetics of heterogenous systems. Fluidized reactors. Non-ideal models applied to reactor design.

420:721. ADVANCED THERMODYNAMICS.

3 credits. (3-0).

Prerequisite, 620. An introduction to statistical and non-equilibrium thermodynamics with application in chemical engineering.

420:728. SPECIAL TOPICS IN ADVANCED CALCULATIONS. 3 credits. (3-0).

Prerequisite, 345:236 or permission. Advanced calculation techniques applied to the solution of complex problems in chemical engineering operations.

420:731. PROCESS DYNAMICS II. 3 credits. (3-0).

Prerequisite, 630. Discussion of advanced concepts in control

of chemical processes such as design of cascade control, feed forward control and numerical control systems.

420:736. CHEMICAL ENGINEERING OF POLYMERS II. 3 credits. (3-0).

Prerequisite, 635. Advanced concepts of mass and energy transport involving the manufacture and uses of plastics.

420:771. POLLUTION CONTROL ENGINEERING.

3 credits. (3-0).

Prerequisite, 464/564. Advanced waste treatment methods as applied to the chemical process industries.

420:794. ADVANCED SEMINAR IN CHEMICAL ENGINEERING. 1-5 credits.

Prerequisite, permission of Department Head. Advanced projects, readings and other studies in various areas of chemical engineering. Intended for students seeking the Ph.D. in Engineering degree. May be repeated up to a maximum of 9 credits.

420:897. PRELIMINARY RESEARCH.

1-15 credits. (May be repeated for a total of 1-15 credits.)

Prerequisite, approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

420:898. DOCTORAL DISSERTATION. 1-15 credits.

Prerequisite, completion of preliminary examination and approval of Advisory Committee. Original research by a Ph.D. candidate. May be taken more than once.

430: CIVIL ENGINEERING

430:130 ENGINEERING DESIGN:

CIVIL ENGINEERING. 2 credits. (2-0).

Introduction of the freshman engineering student to problem-solving techniques in Engineering design. Required of all entering Electrical Engineering Freshman.

430:201. STATICS. 4 credits. (4-0).

Prerequisite, 365:101; corequisite, 345:234. Forces resultants, couples. Equilibrium of force systems. Distributed forces. Centers of gravity. Analysis of simple structures. Friction. Moments of inertia. Method of virtual work. Kinematics.

430:202. INTRODUCTION TO MECHANICS OF SOLIDS. 4 credits (4-0).

Prerequisite, 201. Axial force, bending moment diagrams, axial stress and deformation; stress-strain diagrams; generalized Hooke's law; torsion; flexural stress; flexural shearing stress; compound normal and shearing stresses; state of stress at a point; principal stresses; Mohr's circle of stress; beam deflections by double integration and moment area; statically indeterminate problems for axial loads, torsion, beams; columns.

430:230. SURVEYING. 5 credits. (3-2).

Principles of route, construction and land surveying. Use of tape, level, transit and electronic surveying equipment. Computation of land areas and earthwork quantities.

430:306. THEORY OF STRUCTURES. 4 credits. (4-0).

Prerequisite, 202. Stability and determinacy; statically determinate trusses and frames; approximate frame analysis; influence lines; moving loads; virtual work analysis of frames, rings, and trusses; moment area theorem; theorem of three moments; moment distribution for continuous beams and multibay-multistory frames; influence lines for statically indeterminate structures.

430:307. MECHANICS OF SOLIDS. 3 credits. (3-0).

Prerequisite, 202. Inelastic torsion analysis of circular bars;

twisting of solid noncircular bars and thin-walled hollow members; bending of unsymmetrical sections; inelastic beam bending; beams of two materials; curved beams; shear center; strain transformation; yield criteria, thin shells of revolution; skew bending; inelastic beam bending; Castigliano's theorem; conjugate beam.

430:311. SOIL MECHANICS. 4 credits. (3-1).

Prerequisites. 202 or permission. Stresses and displacements in soil mass as an elastic body. Settlement and consolidation. Soil strength. Stability and limiting equilibrium of soil structures. Laboratory study of properties of soils.

430:312. FOUNDATIONS. 4 credits. (4-0).

Prerequisite, 311. Soil exploration. Groundwater flow. Spread footings, combined footings, mat-foundations. Design of pile foundations. Caissons. Retaining walls, sheet-piling, cofferdams. Earthworks. Tunneling.

430:341. HYDRAULIC ENGINEERING. 4 credits (4-0).

Prerequisite, 460:310. Flow in closed conduits and open channels. Design of piping systems. Pipe network analysis. Analysis and design of pumping facilities. Open channel hydraulics. Backwater and channel delivery computations. Wastewater collection systems. Groundwater hydraulics.

430:342. WATER RESOURCES. 3 credits. (3-0).

Prerequisite, 341. Surface water hydrology. Hydrologic and hydraulic routing. Hydrologic simulation. Reservoir planning and design. Flood plain planning and management. Facilities planning for water resources conservation. Preparation of Environmental Impact Statements

430:343. WATER SUPPLY AND WASTEWATER DISPOSAL. 4 credits. (4-0).

Prerequisite, 315:112, 430:341 or permission. 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.

430:350. URBAN PLANNING. 3 credits. (3-0).

Historical developments in urban planning; urban planning techniques and patterns; comprehensive master planning studies; planning regulations; design problems; class projects; class project presentations.

430:351. TRANSPORTATION ENGINEERING. 4 credits. (4-0).

Prerequisite, junior standing. Transportation and government; multimodal transportation systems, planning requirements and techniques, introduction to traffic engineering; introduction to design of highways, railroads, airports and harbors.

430:352. HIGHWAY DESIGN. 3 credits. (3-0).

Prerequisite, 351. A step by step study of the practice of modern highway design, highway construction techniques and practices.

430:380. ENGINEERING MATERIALS LABORATORY. 1 credit. (0-1).

Prerequisite, 202. A study of laboratory instrumentation and standard techniques in the testing of engineering materials. Data analysis.

430:401-402. STEEL DESIGN I AND II.

3 credits each.

Prerequisite, 306. Tension members, compression members, beams. Combined axial and flexural loads. Plate girders. Plastic design. Riveted, bolted and welded connections. Complete design.

430:403-404. REINFORCED CONCRETE DESIGN I AND II. 3 credits each.

Prerequisite, 306. Design of flexural members by elastic and ultimate strength procedures. Columns, footings, retaining walls. One-way, two-way, and flat slabs. Creep, shrinkage, and temperature effects. Pre-stressed concrete beams.

430:405/505. ADVANCED MECHANICS OF MATERIALS I. 3 credits. (3-0).

Prerequisite, 306. Three-dimensional stress, basic theory of elasticity, theories of failure, shear center, unsymmetrical bending, curved beams, beams on elastic foundations, circular plates.

430:406/506. ADVANCED MECHANICS OF MATERIALS II. 3 credits. (3-0).

Prerequisite, 306. Rectangular plates (Navier, finite differences), membrane theory of shell analysis, torsion of noncircular sections, general Castigliano theorem, buckling of columns and beam-columns.

430:414. DESIGN OF EARTH STRUCTURES. 3 credits. (3-0).

Prerequisite, 312. Criteria for design of earth structures, including earth dams, highway fills, cofferdams, etc. Analysis of embankment foundation stability. Embankment construction techniques and field instrumentation for monitoring soil movements and stability. Seepage analysis and methods for seepage control. Stabilization of foundation soils.

430:418/518. ENGINEERING GEOPHYSICS. 3 credits. (2-1).

Prerequisites, 311 and 337:101. Theory and application of geophysics and geophysical methods as applied to Civil Engineering. Study of seismology, earth's magnetic and electrical fields, gravity, and radioactivity. Conventional and geophysical methods of subsurface exploration and testing and identification of earth materials.

430:421. ENVIRONMENTAL ENGINEERING 4 credits. (4-0).

Prerequisite, 343. The engineering aspects involved in the control of the environment of the citizen. Includes communicable disease control, air pollution, industrial hygiene, milk and food sanitation, radiological health, solid milk and food sanitation, radiological health, solid waste disposal.

430:424. WATER-WASTEWATER LABORATORY. 1 credit (0-1).

Prerequisite, 343 or permission. Laboratory analysis of water and wastewater.

430:425. ENVIRONMENTAL ENGINEERING LABORATORY. 3 credits. (1-2).

Selected physical, chemical, and bacteriological analysis of raw and treated water and waste waters.

430:426/526. ENVIRONMENTAL ENGINEERING DESIGN. 3 credits. (3-0).

Analysis of various environmental control systems for water and waste water treatment. Economic analysis with the use of computer programming for the evaluation of various regional, metropolitan and urban areas to determine the most economical system for water supply and pollution control.

430:441. HYDRAULIC DESIGN. 4 credits (4-0).

Prerequisite, 341 or senior standing. Collection and critical evaluation of hydraulic data related to an actual design problem selected by the instructor. Development and analysis of design alternatives. Preparation of engineering reports.

430:443/543. APPLIED HYDRAULICS I.*4 credits. (4-0).*

Prerequisite, 441 or permission. Hydraulics of natural water processes including: river engineering, coastal hydraulics, stream channel mechanics, sedimentation.

430:444/544. APPLIED HYDRAULICS II. 4 credits (4-0).

Prerequisite, 443/543 or permission. Determination of design flows. Flow through bridge openings and other obstacles. Hydraulics of drainage areas, overland flow, runoff from urbanized areas.

430:451. INTRODUCTION TO MATRIX ANALYSIS OF STRUCTURES. 3 credits. (3-0).

Prerequisites, 306 and 445:206. 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.

430:452. INTRODUCTION TO STRUCTURAL VIBRATIONS. 3 credits. (3-0).

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. Idealized structural system. Elasto-plastic systems. Model analysis.

430:461. HIGHWAY ECONOMICS AND ADMINISTRATION. 4 credits. (4-0).

Prerequisite, 352. The study of highway administration and management with regard to its development and practice as established by the state and federal highway agencies. Analysis of methods in evaluating highway taxation. Discussion of cost allocation studies and methods in evaluating the economic feasibility of highway routes.

430:463. TRANSPORTATION PLANNING.*3 credits. (3-0).*

Prerequisite, 351. Theory and techniques for development, analysis, and evaluation of alternative transportation systems plans. Development of tools and professional techniques to solve transportation problems with emphasis on urban areas.

430:471. CONSTRUCTION ADMINISTRATION.*3 credits. (3-0).*

Prerequisite, senior standing or permission of Department. Construction specifications. Preparation of construction specifications. Preparation of construction documents. Bidding and bonds. Construction management and supervision. Application of Critical Path Method (CPM). Agreements and contracts. Report writing.

430:472. CONSTRUCTION ENGINEERING.*4 credits. (4-0).*

Prerequisite, senior standing or permission of Department. Planning of construction operations. Construction equipment and their selection. Safety engineering.

430:473. CONSTRUCTION MATERIALS.*3 credits. (2-1).*

Prerequisites, 380 and 420:305. Composition, structure and mechanical behavior of structural materials such as concrete, wood, bituminous materials, plastics and composite materials. Discussion of applications and principles of evaluating material properties.

430:482. HYDRAULICS LABORATORY.*1 credit. (0-1).*

Prerequisite, 341. Individual assignments of model studies by using wave channel, hydraulic flume, water table equip-

ped with hydrogen bubble generator, and sediment transport channel. Reduction and presentation of laboratory data.

430:491. C. E. SYSTEMS DESIGN. 3 credits. (3-0).

Prerequisite, senior standing. Systems approach to engineering problems. Basic financial tools. Basic statistics and optimization. Mathematical programming and operations research methods. Project planning and scheduling methods. Decision Analysis. Simulation. Project management and control. Specification preparation, estimating and bidding. design of complex Civil Engineering projects.

430:492. SPECIAL PROJECTS. 3 credits. (3-0).

Prerequisite, senior standing and permission. Directed individual or group research or study in the student's field of interest. Topic subject to approval by advisor.

430:497. HONORS PROJECT. 1-4 credits.

Prerequisite, senior standing in Honors Program. An individual creative project of design relevant to Civil Engineering, supervised by a faculty member of the Civil Engineering Department. May be repeated for up to a total of 9 credit hours.

GRADUATE COURSES

430:601. THEORY OF ELASTICITY I.*3 credits. (3-0).*

Prerequisite, 505. Analysis of stress and strain; equilibrium equations; constitutive equations for isotropic, anisotropic and composite materials; formulation of boundary value problems; Airy stress functions, energy principles and variational methods. Application to plane problems.

430:603. THEORY OF PLASTICITY I.*3 credits. (3-0).*

Prerequisite, 505 or 601. Fundamentals of plasticity; concept of yield and associate constitutive equations in the theory of elastic-plastic solids including those for elastic-perfect plastic solids and plastic solids with strain-hardening behavior. Application to torsion and plane problems.

430:605. THEORY OF PLATES. 3 credits. (3-0).

Prerequisite, 405/505. Pure bending of plates, small deflection theory, solutions for various edge conditions, plates on elastic foundations, large deflection theory.

430:608. MATRIX ANALYSIS OF STRUCTURES I.*3 credits. (3-0).*

Prerequisites, 306 and 445:206. Not open to students who have credit for course 451. Advanced FORTRAN programming. Matrix algebra and solution of simultaneous equations. Flexibility analysis of structures. Stiffness analysis of structures. Effects of temperature, prestrain and support displacements. Computer formulation of stiffness analysis.

430:609. MATRIX ANALYSIS OF STRUCTURES II.*3 credits. (-0).*

Prerequisite, 608. Advanced computational techniques and programs for stiffness analysis. Local and global stiffness matrices for framed structures. Automatic dead load analysis. Direct computation of member end actions. Non-rigid joints for plane and space frames. Inclined supports. Nonprismatic members. Axial flexural interactions. Rectangular plane frames.

430:611. ADVANCED SOIL MECHANICS I.*3 credits. (3-0).*

Prerequisite, 312. Study of physical and chemical properties of clays, rheology and plasticity, soil-water systems, soil structure, and soil stabilization techniques.

430:612. ADVANCED SOIL MECHANICS II.*3 credits. (3-0).*

Prerequisite, 611. Theories of compressibility and consolidation, shear strength theories, water flow in soils, soil freezing and permafrost, and techniques for rigorous solutions to soil problems.

430:614. FOUNDATION ENGINEERING I.*3 credits. (3-0).*

Prerequisite, 611. Foundation bearing capacity and settlement analysis, and design of shallow and deep foundations. Analysis and design of piles and pile groups.

430:615. FOUNDATION ENGINEERING II.*3 credits. (3-0).*

Prerequisite, 614 or permission. Theory and design of retaining structures. Stability analysis and design concepts for earth structures. Soil-structure interaction theory and applications to underground structures including conduits, tunnels, and shafts.

430:616. FOUNDATION ENGINEERING III.*3 credits. (3-0).*

Prerequisite, 615 or permission. Advanced methods of foundation construction including dewatering, soil stabilization, freezing, and pile sinking techniques. Cofferdams, underpinning, and other special problems.

430:618. ROCK MECHANICS. 3 credits. (3-0).

Prerequisite, 601 or permission. Mechanical nature of rocks; linear elasticity and application to rock problems; inelastic behavior of rocks, time dependence, and the effects of pore pressure; experimental characterization of rock properties; failure theory and crack propagation.

430:620. SANITARY ENGINEERING PROBLEMS.*3 credits.*

Prerequisite, 343. The application of both laboratory methods and theory to the solution of sanitary engineering problems involving water pollution, stream regeneration, special industrial wastes, detergents, and others.

430:621. INDUSTRIAL WASTE TREATMENT.*3 credits (3-0).*

Prerequisite, permission. Analysis of problems arising from industrial water pollution. Analysis of methods of treatment with specific applications and the study of cost-effectiveness to meet water quality criteria.

430:622. WATER TREATMENT PLANT DESIGN.*3 credits (3-0).*

Prerequisite, permission. Design of water treatment plants for potable, industrial and commercial uses. Development of water sources, treatment methods and financing will be used to design the best practical methods in terms of cost-benefits.

430:623. WASTEWATER TREATMENT PLANT DESIGN. 3 credits (3-0).*3 credits (3-0).*

Prerequisite, permission. Application of theory and fundamentals to the design of wastewater treatment plants. System design methods will be used for the biological and chemical stabilization of wastewater to meet water quality criteria. Economic analyses will be made to determine best practical designs to be utilized.

430:624. ENGINEERING MANAGEMENT OF WATER UTILITIES. 3 credits (3-0).

Prerequisite, permission. A comprehensive study of the various functions of the water utility and the engineering management operations pertaining to the intricate and com-

plex processes. The fundamentals of responsibility and the duties are offered to students who seek the engineering fundamentals applicable to water utility systems.

430:640. ADVANCED FLUID MECHANICS.*3 credits. (3-0).*

Prerequisite, 460:310. Basic equations of fluid mechanics in general coordinates. Navier-Stokes equation, its solution by various simplifying assumptions; slow viscous flow, potential flow, etc. Theoretical considerations concerning solutions of typical fluid mechanics problems. Theory of turbulence.

430:641. ADVANCED HYDRAULICS.*3 credits. (3-0).*

Prerequisite, 640. Flow of liquids and gases in pipes. Analysis of pipe networks with various methods. Water hammer, pressures, oscillation in pipe networks. Solution of problems with the method of characteristics.

430:644. OPEN CHANNEL HYDRAULICS.*3 credits. (3-0).*

Prerequisite, 640. Applications of basic principles of fluid mechanics to flow in open channels; criteria for analysis of uniform, gradually varied and rapidly varied flows; design problems including applications of digital computers.

430:645. SEDIMENT TRANSPORT. 3 credits. (3-0).

Prerequisite, 644. The study and formulation of movement and transportation of solid granular particles in or through liquid bodies. Design of rivers and reservoirs with respect to sediment load. Hydrodynamics of fluid-particle systems in such as open channels and closed conduits.

430:646. COASTAL ENGINEERING. 3 credits. (3-0).

Prerequisite, 640. Theory of wave motion. Analysis of periodic and solitary waves. Study of tsunamis, storm surges and harbor oscillations. Effects of structures on waves.

430:650. ENERGY METHODS. 3 credits. (3-0).

Prerequisite, 505. General concepts and principles; work and energy; virtual work and Castigliano's theorems; variational approach and variational methods; potential and complementary energy; use of energy methods for the solutions of engineering problems; special problems.

430:651. PLASTIC ANALYSIS I. 3 credits. (3-0).

Prerequisite, 306. Analysis and design of beams and frames made of ductile material on the basis of the ultimate load; plastic bending of beams; limit loads of statically indeterminate structures; fundamental theorems of limit analysis; general methods for determining the limit load; variables influencing the value of plastic moment; instability phenomena.

430:653. ELASTIC STABILITY I. 3 credits. (3-0).

Prerequisite, permission. Buckling of bars, beam-columns and frames. Buckling of compressed rings and curved bars. Lateral buckling of beams.

430:655. PRESTRESSED CONCRETE.*3 credits. (3-0).*

Prerequisite, 404. Prestressing systems and anchorages. Loss of prestress. Design for flexure. Shear, bond, bearing. Beam deflections. Structural applications.

430:657-658. DYNAMICS OF STRUCTURES I AND II.*3 credits each. (3-0).*

Rigorous analysis of one and two degrees of freedom systems. Elasto-plastic and plastic analysis. Damping. Multiple and infinite degree of freedom systems. Members with variable moment of inertia. Equivalent systems and the dynamic hinge concept. Transfer matrices. Earthquake

analysis, blast analysis, moving loads. Model analysis. Special topics.

430:661. ADVANCED ENGINEERING MATERIALS I. 3 credits.

Prerequisite, 505 and 601. Principles governing structure and mechanical behavior of materials with application to elasticity, plasticity, viscoelasticity and nonlinear creep. Mechanical properties of engineering materials such as metals, plastics, composites and cementitious materials. Discussion of methods of analysis, fabrication and testing.

430:685. TRAFFIC CONTROL ENGINEERING. 3 credits. (3-0).

Prerequisite, permission. Information retrieval and analysis of human and vehicular characteristics; the roadway element; system control and optimization of highways and intersections; planning and design of new traffic facilities including ways and terminals.

430:691. SPECIAL PROBLEMS I. 3 credits.

Prerequisite, graduate standing and permission. Supervised research or directed individual study in the student's major field. Topic selected by the student, subject to approval by advisor.

430:692. SPECIAL PROBLEMS II. 3 credits.

Prerequisite, 691 and permission. Continuation of 691. Individual research should lead to final report of publishable quality.

430:699. MASTER'S THESIS. 1-9 credits.

Prerequisite, permission. Research and thesis on some suitable topic in civil engineering as approved by the department. Defense of thesis is final examination.

430:702. THEORY OF ELASTICITY II. 3 credits.

Prerequisite, 601. Solution methods of complex variables, integral transforms, Green's functions, approximate solution methods; study of potential theory and its application to three-dimensional elasticity; solutions of problems in the infinite and semi-infinite domains.

430:704. THEORY OF PLASTICITY II. 3 credits.

Prerequisite, 603. Thermoplasticity, plastic behavior of solids under cyclic loading; slip line fields and soil mechanics problems. Uniqueness theorem, variational principles in plasticity. Special topics and problems.

430:706. SHELL STRUCTURE. 3 credits. (3-0).

Prerequisite, 605. General theory of thin shells. Analysis of domes, and shell walls. Shells of double curvature. Practical design problems.

430:707. FINITE ELEMENT METHODS.

3 credits. (3-0).

Prerequisites, 608, 505 or permission. Plane stress, plane strain stiffness matrices. Bodies of revolution subject to symmetrical and nonsymmetrical loads. Improved elements in two dimensional analysis. Three dimensional analysis. Bending of plates. General shells. Axisymmetric shells subjected to symmetrical and nonsymmetrical loads.

430:717. SOIL DYNAMICS. 3 credits. (3-0).

Prerequisite, 614, or permission. Vibration theory relating to soils, soil structures, and foundations and applications to engineering problems. Design of foundations for dynamic loading including impact, pulsating, and blast loads.

430:745. THEORY OF SEEPAGE.

3 credits. (3-0).

Prerequisite, 643. Laplace's equation, its solution by analytic and numerical methods. Conformal transformation of regions with fixed and free (implicit) boundaries. Direct and inverse relaxation. Simplified solutions. Applications to

ground-water seepage, heat flow, electric potential fields, and fluid dynamic problems.

430:747. OCEAN ENGINEERING. 3 credits.

Prerequisite, 646. Behavior of waves in shoaling waters and lakes. Wave diffraction. Characteristics of wind waves, swells and tides. Analysis of wave forces on offshore and shore structures.

430:752. PLASTIC ANALYSIS II. 3 credits. (3-0).

Prerequisite, 651. Limit analysis of rotationally symmetric plates and shells; constitutive equations for rigid perfectly plastic material; lower bound and upper bound theorems; complete solutions; approximate yield conditions; multiple loads; yield conditions for shells; circular plates, cylindrical shells; conical shells; spherical shells; shallow shells; extensions and limitations of limit analysis.

430:754. ELASTIC STABILITY II. 3 credits.

Prerequisite, 653. Torsional buckling, buckling of thin plates. Buckling of shells, icelastic buckling.

430:759. DYNAMICS OF PLATES AND SHELLS.

3 credits. (3-0).

Prerequisites, 658 or permission. Vibration of membranes, plates and shells with various boundary conditions. Dynamic response of plates and shells subjected to external dynamic forces. Special problems.

430:760. VISCOELASTICITY. 3 credits. (3-0).

Prerequisite, 601. Linear theory of viscoelasticity; viscoelastic models; hereditary integrals; viscoelastic beams; vibrations, axial impact; buckling of columns; viscoelasticity in three dimensions.

430:762. ADVANCED ENGINEERING MATERIALS II. 3 credits.

Prerequisite, 661. Dislocation theory; advanced treatment of plastic deformation, creep and fatigue; failure theory; fracture phenomena for brittle and ductile materials; crack propagation. Application to engineering materials.

430:782. TRANSPORTATION PLANNING AND MODELS. 3 credits.

Prerequisite, permission. Regional and metropolitan transportation studies; land use, traffic generation, distribution, and assignment models.

430:785. THEORY OF TRAFFIC FLOW. 3 credits.

Prerequisite, permission. A scientific approach to the study of traffic phenomena with emphasis on applications. Deterministic and stochastic models of traffic flow; optimization of intersection controls; computer simulation of traffic problems; accident statistics.

430:794. ADVANCED SEMINAR IN CIVIL ENGINEERING. 1-5 credits.

Prerequisite, of Department Head. Advanced projects, reading and other studies in various areas of civil engineering. Intended for students seeking the Ph.D. in Engineering degree. May be repeated up to a maximum of 9 credits.

430:897. PRELIMINARY RESEARCH.

1-15 credits. (May be repeated for a total of 1-15 credits).

Prerequisite, approval of Advisory Committee. Preliminary Investigation of Ph.D. dissertation subject.

430:898. DOCTORAL DISSERTATION. 1-15 credits.

Prerequisite, completion of Preliminary Examination and approval of Advisory Committee. Original research by a Ph.D. candidate. May be taken more than once for credit.

440: ELECTRICAL ENGINEERING**440:140. ENGINEERING DESIGN: ELECTRICAL ENGINEERING.** *2 credits. (2-0).*

Introduction of the freshman engineering student to problem-solving techniques in Engineering design. Required of all entering Electrical Engineering Freshmen.

440:233. CIRCUITS I. *4 credits. (4-0).*

Corequisite, 345:233. Fundamentals of circuit analysis including loop and nodal methods, phasor techniques, resonance phenomena, and polyphase circuits.

440:234. CIRCUITS II. *3 credits. (3-0).*

Prerequisites, 233, 445:206. A continuation of circuit analysis including magnetic coupling in circuits, network theorems. Fourier methods, transfer functions. Laplace and Fourier transforms.

440:321. PHYSICAL ELECTRONICS I.

3 credits. (3-0).

Prerequisites, 352, 365:301, 420:305. Introductory quantum mechanics, statistical distributions and band theory of solids as they apply to semiconductor devices. Dielectric and magnetic properties of engineering materials.

440:331. CIRCUIT FUNDAMENTALS.

3 credits. (3-0).

Prerequisites, 345:236, 365:203, or 103, 445:206. A course in circuit analysis for Non-EE majors including loop and nodal methods, phasor techniques, resonance phenomena, and polyphase circuits.

440:335. CIRCUITS III. *3 credits. (3-0).*

Prerequisite, 234. Introduction to the use of Fourier, Laplace and State Variable techniques to analyze the dynamic operation of circuits.

440:336. CIRCUITS IV. *3 credits. (3-0).*

Prerequisite, 335. Application of Fourier, Laplace and State Variable approaches to establish frequency and time domain expressions for steady state and transient responses in an electrical circuit. Role of Bessel's functions in certain electrical problems.

440:337. CIRCUITS V. *3 credits. (3-0).*

Prerequisite, 336. Use of operational methods in the solution for the response due to a general form of a periodic excitation. Application of Complex Variable functions to electrical problems.

440:340. ELECTRICAL MEASUREMENTS I.

3 credits. (2-1).

Prerequisite, 233. Study of DC meters, potentiometers, ohmmeters, galvanometers, balanced and unbalanced Wheatstone bridges.

440:341. ELECTRICAL MEASUREMENTS II.

3 credits. (2-1).

Prerequisites, 340 and 445:206. Study of AC meters and bridges. Evaluation of errors involved in measurements.

440:342. ELECTRICAL MEASUREMENTS III.

3 credits. (3-0).

Prerequisite, 341. Analysis and characteristics of temperature and displacement transducers.

440:345. ILLUMINATION. *3 credits. (3-0).*

Fundamentals of illumination and principles underlying specifications and designs for adequate electrical lighting.

440:351. ELECTROMAGNETIC FIELDS I.

3 credits. (3-0).

Prerequisite, 345:234. Static and dynamic electric and mag-

netic fields are treated on the vector basis with a final topic of Maxwell's equations in point and integral forms.

440:352. ELECTROMAGNETIC FIELDS II.

3 credits. (3-0)

Prerequisite, 351. An extension of dynamic electromagnetic fields with applications including particle dynamics and propagation equations.

440:353. ELECTRICAL MACHINERY I.

4 credits. (3-1).

Prerequisites, 234 and 352. Magnetic circuits involving saturation of iron. Principles of electromechanical energy conversion. Basic rotating machines.

440:354. ELECTRICAL MACHINERY II.

4 credits. (3-1).

Prerequisite, 353. The theory of electrical machinery neglecting saturation. Transformer connections under balanced load. Regulation and basic control of machines.

440:357. CONTROL AND APPLICATION OF ELECTRICAL MOTORS. *4 credits. (3-1).*

Prerequisite, 354. Magnetic control of motors accelerating and decelerating times, duty cycles, control theory and application for given problems.

440:359. TRANSMISSION LINES AND NETWORKS.

4 credits. (3-1).

Prerequisite, 336. Steady state and transient analysis of distributed parameter circuits. Low and high frequency applications. Networks for transmissions. Laboratory.

440:365. ELECTRONICS I. *4 credits. (3-1).*

Prerequisite, 335. Physics of electron devices. Semiconductors, vacuum tubes, and gas tubes. Rectification. Laboratory.

440:366. ELECTRONICS II. *4 credits. (3-1).*

Prerequisite, 365. Circuit analysis of electron devices in the frequency domain. Voltage amplifiers, power amplifiers, and oscillators. Laboratory.

440:367. ELECTRONICS III. *4 credits. (3-1).*

Prerequisite, 366. Time domain analysis of electron devices. Modulation and transmitters, Demodulation and receivers. Wave-shaping, wave-form generation and pulse analysis. Laboratory.

440:368. ELECTRONIC FUNDAMENTALS.

3 credits. (2-1).

Prerequisite, 331. A course for non-EE majors covering vacuum and semiconductor devices. Applications including amplifiers, oscillators, timing circuits, and industrial electronic equipment.

440:369. INDUSTRIAL ELECTRONICS I.

3 credits. (3-0).

Prerequisites, 366, 354. Application of electronic devices at power levels is intended for those specializing in the "power" area of Electrical Engineering rather than "electronic" areas.

440:371. CONTROL SYSTEMS I.

3 credits. (3-0).

Prerequisite, 336, 353. Introduction to servomechanisms and feedback principles. Modeling and response of feedback control systems. Stability analysis of linear systems.

440:372. CONTROL SYSTEMS II.

3 credits. (2-1).

Prerequisite, 371. Synthesis and compensation techniques for linear control systems. Analysis and design of discrete-data systems. Introduction to non-linear control theory.

440:373. CONTROL SYSTEMS I LABORATORY.*1 credit (0-1).*

Corequisite, 371. Experiments include analog simulation, computation and basic servo mechanism.

440:374. CONTROL SYSTEMS II LABORATORY.*1 credit (0-1).*

Prerequisite, 371.

440:381. ELECTRICAL MACHINERY**FUNDAMENTALS. 3 credits. (2-1).**

Prerequisite, 331. A course for non-EE majors stressing the practical aspects of AC and DC machinery and associated schematic diagrams.

440:382. INTRODUCTION TO ELECTRIC POWER.*3 credits. (2-1).*

Prerequisite, 233 and permission of Instructor. Sources of energy; steam and hydroelectric generating stations and auxiliaries; transmission of electric power; power systems protection; lightning phenomenon; power distribution. The course involves visits to generating stations, substations, and manufacturing plants in Ohio, Pennsylvania, and New York.

440:385. ENERGY CONVERSION. 3 credits. (3-0).

Prerequisite, 440:351. Electro-mechanical and direct energy conversion techniques. Emphasis will be placed on principles of operation of energy conversion devices and their integration into practical systems.

440:391. ELECTRICAL ENGINEERING PROBLEMS.*1-3 credits.*

Prerequisite, permission of department head. Select comprehensive problems, supervised discussions and computation periods, May be taken more than once.

440:401/501. ENGINEERING ECONOMY.*3 credits. (3-0).*

Prerequisite, 325:244 and senior standing in Engineering. This course is designed to present the subject of engineering economics as distinguished from classical economic theory. Business organization, value and use of money, amortization, depreciation, economic selection and replacement. Plant operating factors, utility rates. Engineering bids and specifications. Stress in the course is placed on solving problems.

440:422/522. PHYSICAL ELECTRONICS II.*3 credits. (3-0).*

Concepts of semiconductor physics with applications to circuit design.

440:426. INTRODUCTION TO LASERS.*3 credits.*

Prerequisite, 336, 352. Introduction to the basic concepts of maser (laser) action; emission processes and their roles in laser action; types of lasers; presentation of generalized operating criteria.

440:438. CIRCUITS VI. 3 credits. (3-0).

Prerequisite, 337. Steady state and transient response of circuits in time and frequency domain via use of Fourier, Laplace, and State Variable methods.

440:444. COMMUNICATION SYSTEMS ANALYSIS.*3 credits. (3-0).*

Prerequisite, 351, 367. Communications systems and equipment; noise, modulation; antennas and propagation; repeater, telemetry and navigational systems and equipment.

440:445. RANDOM SIGNAL ANALYSIS.*3 credits. (3-0).*

Prerequisite, senior standing or consent of instructor. Ap-

plications of elementary set theory, discrete and continuous sample spaces; applications of probability, random variables, limit theorems, distribution functions, and density functions; applications of stochastic processes, random signals, system function, impulse responses, power spectrum functions, and correlation functions.

440:446. COMMUNICATION THEORY I.*3 credits. (3-0).*

Prerequisite, 445 and permission. Spectral analysis and Fourier transforms; random variables and processes; amplitude, frequency, and pulse modulation systems; representations of noise in modulation systems; threshold in frequency modulation, data transmission; communication system and noise calculations.

440:447. COMMUNICATION THEORY II.*3 credits. (3-0).*

Prerequisite, 446. Continuation of 446.

440:448. RADAR SYSTEM ENGINEERING.*3 credits. (3-0).*

Prerequisite, 352, 359, 366. Introduction to the basic concepts of radar and the underlying principles; followed by discussion of the general problems involved in the implementation of those principles; specific types of radar systems.

440:453. ELECTROMAGNETIC FIELDS III.*3 credits. (3-0).*

Prerequisite, 352 or permission. Advanced field theory including boundary value problems and non-linear fields. Applications of Maxwell's equations.

440:456. ANTENNAS. 3 credits. (3-0).

Prerequisite, 352. Application of electromagnetic theory to radiation and propagation. Introduction of the concept of far and near fields, radiation patterns, directivity, radiation resistance, bandwidth, and gain. Considerations of special antennas including dipole, loop, arrays, and slots.

440:457/557. MICROWAVES I. 3 credits. (3-0).

Prerequisite, 352. Dynamic fields, Maxwell's equations, and the wave equations. Field analysis of waveguides. Microwave sources.

440:458/558. MICROWAVES II. 3 credits. (3-0).

Prerequisite, 457/557. Microwave components. Techniques of microwave measurements. Microwave systems.

440:459/559. MICROWAVE LABORATORY.*1 credit. (0-1).*

Corequisite, 458/558. Laboratory to accompany 458/558.

440:461. COMPUTER CIRCUITRY I.*4 credits. (3-1).*

Prerequisite, 366. Analysis of computer circuits. Introduction to the use of Boolean Algebra and mapping techniques in analyzing switching circuits.

440:462/562. COMPUTER CIRCUITRY II.*3 credits. (3-0).*

Prerequisite, 367 and 461/561. Electronic circuitry considerations in logic circuits, methods of sequential and threshold logic analysis and synthesis, development of computer arithmetic elements, memory and storage devices.

440:463/563. COMPUTER CIRCUITRY III.*3 credits. (3-0).*

Prerequisite, 462/562. Applications of logic circuits in the modern digital electronic computer and in digital communication systems. Computer organization and control, input-output devices and interface standards, advanced topics in computers.

440:465. INDUSTRIAL ELECTRONICS II.*3 credits. (3-0).*

Prerequisite, 369. This is a continuation of 369, intended for electrical engineering students specializing in "power" areas.

440:467/567. PULSE AND DIGITAL WAVEFORMS.*3 credits. (3-0).*

Prerequisite, 366. A course in switching waveforms to fill the increased need for computer and communication usage.

440:473/573. CONTROL SYSTEMS III.*3 credits. (3-0).*

Prerequisite, 372. The state variable description of control systems and the concepts of controllability and observability. The state-transition technique for system design. Introduction to optimal control. Application of the computer in the operation of control systems.

440:480/580. SYMMETRICAL COMPONENTS I.*3 credits. (3-0).*

Prerequisite, 354. Per unit method as applied to power system calculations. Fundamental principles of symmetrical components as applied to the analysis of unbalanced electrical circuits.

440:484. ELECTRICAL MACHINERY III.*3 credits. (3-0).*

Prerequisite, 354. The realistic electrical machine. Waveforms and machine windings. Saturation in machines. Unbalanced loads on transformers. Transients in machines.

440:485. ELECTRICAL MACHINERY**LABORATORY III. 1 credit. (0-1).**

Corequisite, 484. Laboratory to accompany 484.

440:487. ELECTRIC ENERGY SYSTEM THEORY I.*3 credits. (3-0).*

Prerequisite, 480, 371. Corequisite, 337, or permission. Fundamental concepts of electric power systems and definitions for energy conversion devices therein; system models, load flow analysis, and basic operational features; computer solutions.

440:488. ELECTRIC ENERGY SYSTEM THEORY II.*3 credits. (3-0).*

Prerequisite, 487. Energy systems under abnormal conditions; optimum dispatch and control; faults; stability theory; computer solutions.

440:493/593. SEMINAR IN ELECTRICAL**ENGINEERING. 1, 2 or 3 credits.**

Prerequisite, permission of department head. Special topics in Electrical Engineering. May be taken more than once.

440:497. HONORS PROJECT. 1-4 credits.

Prerequisite, senior standing in Honors Program. An individual creative project or design relevant to Electrical Engineering, supervised by a faculty member of the Electrical Engineering Department. May be repeated for up to a total of 9 credit hours.

GRADUATE COURSES**440:609. SEMICONDUCTOR APPLICATIONS I.***3 credits. (3-0).*

Prerequisite, 422/522. Application of semiconductor devices in electronic circuits.

440:610. SEMICONDUCTOR APPLICATIONS II.*3 credits. (3-0).*

Prerequisite, 609. Application of semiconductor devices in waveforming circuits.

440:621. PROTECTIVE RELAYING. 3 credits. (3-0).

Prerequisite, 681 or permission. The principles and application of relays as applied to the protection of power systems.

440:623. PHYSICAL ELECTRONICS III.*3 credits. (3-0).*

Prerequisite, 522. Static and dynamic behavior of p-n junction and junction transistors. Theory of avalanche and Zenar breakdown. FET pnpn diode and Gunn effect oscillator.

440:630. LINEAR CIRCUIT ANALYSIS.*3 credits. (3-0).*

Prerequisite, graduate standing. Generalized operational methods, time domain analysis, state variable methods and matrix techniques applied in circuit analysis.

440:631. NETWORK SYNTHESIS I. 3 credits. (3-0).

Prerequisite, 630. Energy relations in passive networks; complex variable theory, realizability and synthesis of driving point impedance and transfer functions.

440:643. SIGNAL AND DATA ANALYSIS.*3 credits. (3-0).*

Prerequisite, 341 or by consent of Instructor. Analysis, interpretation, and smoothing of engineering data through application of statistical methods. Introduction to probability concepts.

440:646. CRITICAL ASPECTS OF MEASUREMENTS.*3 credits. (3-0).*

Prerequisite, 630. Brief review of electrical measurement devices and transducers. Consideration of measurement lags. Sampling and digital recording.

440:647. STATISTICAL COMMUNICATION I.*3 credits. (3-0).*

Prerequisite, 445 or 643 or permission. Applications of statistics to the detection and estimation of signals in communication systems; consideration is given to linear and non-linear systems with random inputs; also included are narrow-band systems, noise figure, meansquared-error filter, modulation theory and discrete and continuous signals in information theory.

440:648. STATISTICAL COMMUNICATIONS II.*3 credits. (3-0).*

Prerequisite, 647. Continuation of 647.

440:653. ELECTROMAGNETIC FIELDS.*3 credits. (3-0).*

Prerequisite, graduate standing. Introduction to advanced electromagnetic concepts at the graduate level.

440:654. ADVANCED ELECTROMAGNETIC FIELDS.*3 credits. (3-0).*

Prerequisite, 653. Application of Maxwell's equations continued. Propagation equations and antenna analysis.

440:656. ADVANCED ANTENNA THEORY.*3 credits. (3-0).*

Prerequisite, 653. Analysis of core complicated radiating structure, including topics in array theory, cylindrical antennas, surface wave radiation and slot antennas. Theoretical relationships involving bandwidth, energy storage, impedance, etc. will be discussed in detail. Numerical techniques will be discussed.

440:671. DISCRETE CONTROL SYSTEMS.*3 credits. (3-0).*

Prerequisite, 674 and 473/573 or permission. Theory and techniques for the analysis and design of discrete control system. Z-transform technique, stability analysis, frequency

response. Optimization of discrete control system. Digital computer control.

440:672. SYSTEMS ANALYSIS. 3 credits. (3-0).

Prerequisite, 643. Application of operations research methods and optimization approach to engineering problems. Linear and dynamic programming, queuing, and Monte Carlo techniques.

440:674. CONTROL SYSTEM THEORY.

3 credits. (3-0).

Prerequisite, 573. The stability problem. State variable feedback. Advanced topics in linear synthesis.

440:675. NON-LINEAR CONTROL THEORY.

3 credits. (3-0).

Prerequisite, 674. Techniques for the determination of stability for non-linear systems such as describing functions analysis, the second method of Liapunov, and Popov frequency locus techniques.

440:676. RANDOM PROCESS ANALYSIS.

3 credits. (3-0).

Prerequisite, 674. Analysis and design of control systems with stochastically defined input. Introduction to estimation filters.

440:680. SYMMETRICAL COMPONENTS II.

3 credits. (3-0).

Prerequisite, 480/580. Simultaneous faults or symmetrical power systems. Positive, negative, and zero sequence impedance calculations of apparatus and lines.

440:681. STEADY STATE ANALYSIS OF POWER SYSTEMS. 3 credits. (3-0).

Prerequisite, 680. General circuit constants, power circle diagrams, steady state stability, load flow.

440:682. TRANSIENT ANALYSIS OF POWER SYSTEMS. 3 credits. (3-0).

Prerequisite, 680. Sudden application of load to machines. Transient and dynamic stability.

440:683. ECONOMIC OPERATION OF POWER SYSTEMS. 3 credits. (3-0).

Prerequisite, BSEE and 455:206 or equivalent. Analytical and computing techniques for economic operation of a large power system. System representation, transmission loss, coefficients, control of reactive and active power flow. Matrix methods. Application of digital techniques, transmission losses as function of voltage phase angle. Introduction to the method of diakoptics.

440:684. SURGE PROTECTION OF ELECTRICAL SYSTEMS. 3 credits. (3-0).

Prerequisite, 480/580. The phenomena of lightning and switching surges on electrical systems. The protection of systems and apparatus by line design, the application of protective devices and insulation coordination.

440:686. ADVANCED ELECTRICAL MACHINERY. 3 credits. (3-0).

Prerequisite, 484. Advanced topics relative to reactances and transient performance of electrical machinery.

440:692. SPECIAL PROBLEMS. 1 to 6 credits.

Prerequisite, permission of department head. For qualified graduate students. Supervised research or investigation in student's major field of training or experience. Credit dependent upon nature and extent of project. May be taken more than once.

440:699. MASTER'S THESIS. 1 to 9 credits.

Prerequisite, permission of department head. Research and

thesis on some suitable topic in Electrical Engineering.

440:751. SPECIAL TOPICS IN ELECTROMAGNETICS

I. 3 credits. (3-0).

Prerequisite, 654. Introduction to advanced techniques and in analyzing field problems. Topics will include application of Green's functions techniques to cylindrical and spherical geometries and related boundary value problems. Stationary phase and saddle point techniques and their use in radiation problems. Variational methods and their use in scattering problems.

440:752. SPECIAL TOPICS IN ELECTROMAGNETICS

II. 3 credits. (3-0).

Prerequisite, 751. Continuation of the methods developed in 751. This sequence of two courses at the doctoral level will satisfy the special needs of the person whose chosen field is electromagnetic field theory with an emphasis on mathematical foundations.

440:776. OPTIMAL CONTROL I. 3 credits. (3-0).

Prerequisite, 674. Formulation of the optimization problem; application of variational calculus, maximum principle and the optimality principle to the control problems.

440:777. OPTIMAL CONTROL II. 3 credits. (3-0).

Prerequisite, 776. Computational techniques in optimization and applications of optimal control.

440:778. ADAPTIVE CONTROL. 3 credits. (3-0).

Prerequisite, 777. The problems of system identification, performance criteria and decision-making; the implementation and application of adaptive control.

440:779. ADAPTIVE TOPICS IN CONTROL SYSTEMS.

3 credits. (3-0).

Prerequisite, 778. Discussions of recent advances in control systems.

440:794. ADVANCED SEMINAR IN ELECTRICAL ENGINEERING. 1, 2 or 3 credits.

Prerequisite, permission of department head. Advanced level coverage of various specialized topics. Intended for students seeking the Ph.D. in Engineering. May be taken more than once.

440:897. PRELIMINARY RESEARCH.

1-15 credits. (May be repeated for a total of 1-15 credits.) Prerequisite, approval of Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

440:898. DOCTORAL DISSERTATION. 1-15 credits.

Prerequisite, completion of preliminary examination and approval of Advisory Committee. Original research by a Ph.D. candidate. May be taken more than once.

445: COMPUTER SCIENCE

445:201. INTRODUCTORY FORTRAN PROGRAMMING. 3 credits. (3-0).

Introduction to use of digital computers, designed for students who have not studied calculus. (No credit for persons having completed 445:206.)

445:202. COBOL PROGRAMMING. 3 credits. (3-0).

Prerequisite, Business major or permission. The use of COBOL and other business-oriented computer programming language on digital computers.

445:206. FORTRAN PROGRAMMING FOR SCIENTISTS AND ENGINEERS. 3 credits. (3-0).

Prerequisite, 345:231 or 202:336. Introduction to the application and use of stored program digital computers. In-

tended for students majoring in Engineering or the physical sciences. (No credit for persons having completed 201.)

445:306. INTRODUCTION TO ASSEMBLY LANGUAGE PROGRAMMING. 3 credits. (3-0).

Prerequisite, 206. Introduction to programming on machine and assembly language levels. Symbolic coding and assembly systems. Macros, Debugging Procedures.

445:320. ANALOG COMPUTERS. 3 credits. (2-1).

Prerequisite, 440:233, and 345:236 or 440:331. (No corequisite). Basic concepts involved in the solution of scientific and engineering problems via the analog computer.

445:407. INTRODUCTION TO SYSTEMS PROGRAMMING. 3 credits. u(3-0).

Prerequisite, 306. Introduction to machine organization, operating systems, job control language, loaders, and assemblers.

445:432. INTRODUCTION TO SYSTEM SIMULATION. 3 credits. (3-0).

Prerequisite, 461. Problem formulation, modeling, solution techniques, analysis and interpretation of results; statistical techniques, simulation languages; applications.

445:461. COMPUTER METHODS IN SCIENCE AND ENGINEERING. 3 credits. (3-0).

Prerequisite, 206 or equivalent knowledge of programming in Fortran IV, and 345:236. The efficient use of the modern digital computer to the solution of linear and non-linear problems encountered in Science and Engineering. Solutions for roots of equations, and the use of the computer in interpolation, numerical differentiation and integration, matrix multiplication and inversion, and the calculation of determinants. The proper use of the *Sub-Routine, Common, and Equivalence* statements, overlay techniques, etc.

445:493/593. SEMINAR IN COMPUTER SCIENCE. 1, 2 or 3 credits.

Prerequisite, permission of department head. Special topics in Computer Science. May be taken more than once.

GRADUATE COURSES

445:631. SYSTEM SIMULATION ON DIGITAL COMPUTERS. 3 credits. (3-0).

Prerequisites, 345:236, some computer programming and permission. Problem formulation, modeling, solution techniques, analysis and interpretation of results; computer integration of differential equation systems; Monte Carlo methods, simulator languages; applications.

445:660. COMPUTER APPLICATION I. 3 credits. (3-0).

Prerequisites, 206 and 345:236. Organization of scientific and engineering problems for computer adaptation. Subject matter selected from various branches of science and engineering.

445:661. COMPUTER APPLICATION II. 3 credits. (3-0).

Prerequisite, 660. Extension of 660 into more complex problems selected by students on the basis of interest.

445:692. SPECIAL PROBLEMS. 1-6 credits.

Prerequisite, permission of department head. For qualified graduate students. Supervised research or investigation in student's major field of training or experience. Credit dependent upon nature and extent of project. May be taken more than once.

445:794. ADVANCED SEMINAR IN COMPUTER SCIENCE. 1, 2, 3 credits.

Prerequisite, permission of department head. Advanced

level coverage of various topics. Intended for students seeking the Ph.D. in Engineering. May be taken more than once.

460: MECHANICAL ENGINEERING

460:125. ENGINEERING GRAPHICS I. 3 credits. (1-2).

Freehand sketching techniques. Orthographic projection and pictorial representation of typical machine elements.

460:126. ENGINEERING GRAPHICS II. 2 credits. (0-2).

Prerequisite, 125. Introduction to formal design drawing. Graphical Communication.

460:160. ENGINEERING DESIGN: MECHANICAL ENGINEERING. 2 credits. (2-0).

Introduction to the freshman engineering student to problem-solving techniques in Engineering design. Required of all entering Mechanical Engineering Freshmen.

460:300. THERMODYNAMICS I. 4 credits. (4-0).

Introduction of basic concepts of Thermodynamics, the pure substance, the system, and the laws of Thermodynamics.

460:301. THERMODYNAMICS II. 4 credits. (4-0).

Prerequisite, 300. Entropy, inequality of Clausius, the irreversible process, irreversibility, availability, cycle analysis.

460:305. THERMAL SCIENCE. 3 credits. (3-0).

Corequisite, 345:234. Credit not allowed for both 300 and 305. Introduction to the first and second laws of thermodynamics, perfect gas relationships, properties, introduction to conduction, convection and radiation heat transfer.

460:310. FLUID MECHANICS. 4 credits. (4-0).

Corequisite, 322. Properties and behavior of gases and liquids at rest and in motion. The energy equation. Flow in conduits. Forces on body submerged in moving fluid.

460:315. HEAT TRANSFER. 4 credits. (4-0).

Prerequisite, 310. Fundamentals of heat transfer by conduction, convection, radiation, and combination of these.

460:320. KINEMATIC ANALYSIS OF MECHANISMS. 4 credits. (3-1).

Prerequisite, 345:236. Displacements, velocities, accelerations and introduction to forces in plane motion mechanisms. Introduction to design of gears, gear trains and cams.

460:322. DYNAMICS. 4 credits. (4-0).

Prerequisite, 430:201. Kinetics of particles and rigid bodies. Acceleration, work, energy, momentum and impulse.

460:336. ANALYSIS OF MECHANICAL COMPONENTS. 4 credits. (4-0).

Prerequisite, 430:202. Analysis of stress due to static, dynamic, thermal, and time dependent loads.

460:337. DESIGN OF MECHANICAL COMPONENTS. 4 credits.

Prerequisite, 336, 380. Application of stress analysis and failure theory to design of mechanical components.

460:360. ENGINEERING ANALYSIS I. 3 credits. (3-0).

Prerequisite, 345:236. Application of ordinary differential equations to the solution of problems in Mechanical Engineering.

460:361. ENGINEERING ANALYSIS II. 3 credits. (3-0).

Prerequisite, 360. Special topics in the "closed-form" analysis of problems in Mechanical Engineering.

460:380. MECHANICAL PROPERTIES OF MATERIALS. 3 credits. (3-0).

Prerequisite, 430:202. Structures of common metallic materials and the study of their macroscopic mechanical behavior. Theories of failure.

460:390. FLUID MECHANICS LABORATORY I.

1 credit. (0-1).

Prerequisite, 310. Demonstration of flow measuring devices, pump characteristics and measurement of pressure drop in pipes, valves and other piping components.

460:391. AERODYNAMICS LABORATORY.

1 credit. (0-1).

Prerequisite, 301, 310. Demonstration of aerodynamic principles in subsonic and supersonic flow. Wind tunnel operation.

460:392. AIR CONDITIONING LABORATORY.

1 credit. (0-1).

Prerequisite, 302. The application of the principles of thermodynamics, heat transfer and fluid mechanics to analyze a practical air conditioning unit.

460:393. INTERNAL COMBUSTION ENGINES LABORATORY. 1 credit. (0-1).

Prerequisite, 301. A study of the application and performance of reciprocating and rotary engines.

460:394. HEAT TRANSFER LABORATORY.

1 credit. (0-1).

Prerequisite, 315. An experimental investigation of certain conduction, convection and radiation heat transfer processes.

460:395. ACOUSTICS LABORATORY. 1 credit. (0-1).

Prerequisites, 325, 425 and permission. Noise measurement equipment — function and operation. Spectral and statistical analysis of sound. Physiology of hearing and noise criteria.

460:396. COMPUTER METHODS LABORATORY.

2 credits. (0-2).

Prerequisite, 361. 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.

460:398. VIBRATIONS AND DYNAMICS LABORATORY. 1 credit. (0-1).

Prerequisite, 320 and permission. Laboratory study of vibrations and dynamics including periodic forces, resonance and magnification, damping, critical speeds, torsional vibration, rotor balancing, self-induced vibrations, dynamic response and acceleration, impulse impacts and the dynamics of machine elements.

460:399. TURBOMACHINERY LABORATORY.

1 credit. (0-1).

Prerequisites, 301, 310. Experimental determination of performance characteristics of turbines, compressors and fans by thermodynamic and fluid dynamic measurements.

460:400. DESIGN OF ENERGY SYSTEMS.

3 credits.

Corequisite, 460:315. Analysis and design of systems for energy exchange. Emphasis will be placed on performance of energy system components and their integration into complex practical systems. A design project will be required.

460:401. THERMAL SYSTEM COMPONENTS.

3 credits. (3-0).

Prerequisites, 460:315, 411. 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.

460:410/510. ENVIRONMENTAL CONTROL.

3 credits. (3-0).

Prerequisites, 302 and 315, or permission. Thermodynamics of gas mixtures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling and humidity.

460:411/511. COMPRESSIBLE FLUID MECHANICS.

3 credits. (3-0).

Prerequisites, 301, 310. Introduction to the effects of fluid compressibility in one-dimensional flows, Subsonic and supersonic flows of a perfect gas in nozzles, diffusers and ducts including shockwaves, friction effects and effects of heat transfer.

460:413/513. TURBOMACHINERY. 3 credits.

Prerequisite, 411/511. Thermodynamic and fluid dynamic analysis of rotary compressors and turbines with applications to jet propulsion, gas turbines, pumps and fans.

460:415/515. ENERGY CONVERSION. 3 credits. (3-0).

Some topics from the fields of internal combustion engines, cycle analysis, modern conversion devices.

460:416/516. HEAT TRANSFER PROCESSES. 3 credits.

Prerequisite, 315. Continuation of 315. Analysis and design of heat transfer equipment. Natural convective heat transfer. Combined modes of heat transfer, heat transfer with a change of phase.

460:422/522. EXPERIMENTAL STRESS ANALYSIS I.

3 credits. (3-0).

Prerequisite, 430:202 or 430:305. Experimental methods of determining stress or strain. Use of brittle lacquer, strain gages and photoelasticity.

460:423/523. INTRODUCTION TO ASTRONAUTICS.

3 credits.

Prerequisites, 310, 322. Introduction to rocket propulsion, including basic equations, staging and types of rockets. Introduction to orbital mechanics including satellite orbits, ballistic flight and inner-planetary transfer orbits.

460:425/525. ENGINEERING ACOUSTICS I. 3 credits.

Prerequisite, 431/531. Energy of vibration, analysis by Fourier's Theorem, phase and mechanical impedance concepts, wave propagation and reflection, plane waves, spherical waves and radiation impedance.

460:430/530. ENGINEERING DYNAMICS I.

3 credits. (3-0).

Prerequisite, 322. Engineering applications of: systems of particles, work, energy, Lagrangian mechanics, rigid body kinetics, the inertia tensor.

460:431/531. VIBRATIONS. 4 credits. (4-0).

Prerequisite, 345:236. Undamped, damped, and forced vibrations for systems having a single degree of freedom.

460:432. DYNAMICS OF MACHINERY. 3 credits. (2-1).

Prerequisites, 320, 430:202. Dynamic analysis of components and machines, dynamic forces and reactions. Balancing of rotating and reciprocating masses. Analysis and design of gear trains and cams.

460:440. AUTOMATIC CONTROLS I. 3 credits. (3-0).

Prerequisite, 345:236. Complex variables and Laplace transforms. Mathematical models of physical systems. Transient systems analysis and steady-state sinusoidal analysis.

Analog simulation of linear systems.

460:441. AUTOMATIC CONTROLS II. *3 credits.* (3-0).
Prerequisite, 440. Transfer functions. First and second order systems. System accuracy and error analysis. Stability criteria. Polar and log-frequency plots.

460:442/542. INDUSTRIAL AUTOMATIC CONTROL. *3 credits.* (3-0).
Prerequisite, 441 or permission. Theory and operation of basic control mechanisms. Analysis and design of mechanical hydraulic, pneumatic and fluidic control systems. Practical techniques for optimizing system performance.

460:443/543. SYSTEM ANALYSIS AND CONTROL. *3 credits.* (3-0).
Prerequisite, 441 or permission. Mathematical modeling of engineering systems; techniques for synthesis of controllers for systems with multi-degrees of freedom and varying parameters. Optimum switching.

460:460. MECHANICAL DESIGN I. *3 credits.* (3-0).
Prerequisites, 301, 310, 336; 315 desirable. The design process. Creativity and inventiveness. The tools of decision-making probability, reliability, optimization.

460:461. MECHANICAL DESIGN II. *3 credits.* (3-0).
Prerequisite, 460. The interdisciplinary aspects of design. Case studies and projects.

460:462/562. PRESSURE VESSEL DESIGN. *3 credits.* (3-0).
Prerequisite: permission of instructor. An introduction to modern pressure vessel technology is presented. Topics covered include basic structural considerations, materials and their environment and design-construction features.

460:490. CONTROLS AND SYSTEMS LABORATORY I. *1 credit.* (0-1).
Prerequisite 441. Measurement of parameters for first and higher order systems. Experimental study of the effect of controllers on the stability and performance of systems.

460:491. CONTROLS AND SYSTEMS LABORATORY II. *1 credit.* (0-1).
Prerequisite 441. Selected topics in the experimental analysis of control and systems performance.

460:493. MECHANICAL ENGINEERING MEASUREMENTS LABORATORY. *2 credits.* (0-2).
Developments of methods to measure temperature, pressure, flow rate, viscosity and motion. The course includes both lecture and laboratory experience and emphasizes the calibration and accuracy of the appropriate instruments.

460:494. MECHANICAL ENGINEERING LABORATORY. *2 credits.*
Prerequisite, 460:493. Laboratory experiments in the areas of dynamics, measurements, thermodynamics, fluids, and heat transfer.

460:495. MECHANICAL ENGINEERING PROBLEMS. *1-3 credits.* (May be repeated for a total of 5 credits.)
Prerequisite, senior standing. Investigation of a project by individual or small student groups. Detailed formal report required.

460:496. SPECIAL TOPICS. *1-3 credits.*
(May be repeated for a total of 3 credits.)
Prerequisite, permission. Brief description of current content to be announced in schedule of classes.

460:497. HONORS PROJECT. *1-4 credits.*
Prerequisite, senior standing in Honors Program. An in-

dividual creative project in thermal science, mechanics or design relevant to Mechanical Engineering, supervised by a faculty member of the Mechanical Engineering Department. May be repeated up to a total of 9 credit hours.

460:498. EXPERIMENTAL INVESTIGATIONS - IN MECHANICAL ENGINEERING. *1-5 credits.* (0-1-5).
Individual independent laboratory investigations in areas relevant to Mechanical Engineering. Students must suggest their own projects and make appropriate arrangements with a Mechanical Engineering faculty member for supervision.

GRADUATE COURSES

460:600. GAS DYNAMICS I. *3 credits.*
Prerequisite, 411/511 or permission. Derivation of basic equations for flow of a compressible fluid. Topics from one-dimensional flow. Two-dimensional irrotational flow. Method of small perturbations. Method of characteristics.

460:608. THERMODYNAMICS I. *3 credits.*
Prerequisites, 302, 345:236; 345:432 desirable. Extension and generalization of the basic concepts of thermodynamics. Thermodynamic systems and states. Criteria for equilibrium. Third law.

460:610. DYNAMICS OF VISCOUS FLOW I. *3 credits.* (3-0).
Derivation and solution of equations governing viscous flow. Applications include unsteady flows, slow viscous flows, parallel flows, lubrication theory and introduction to laminar boundary layers.

460:615. CONDUCTIVE HEAT TRANSFER. *3 credits.* (3-0).
Prerequisites, 315, 345:236; 345:432 desirable. Study of the one-two and three-dimensional heat conduction equation. Development of theoretical, graphical and analog techniques for analysis and design.

460:617. RADIATIVE HEAT TRANSFER. *3 credits.* (3-0).
Prerequisites, 315, 345:236, (345:432 desirable). A study of the governing radiation laws. Black and real systems, geometric factors, gray enclosures, non-gray systems, gaseous radiation, radiation equipment.

460:620. EXPERIMENTAL STRESS ANALYSIS II. *3 credits.* (3-0).
Prerequisite, 422/522. Dynamic strain measurement and design of transducers using electrical resistance strain gages. Techniques for measuring surface strain.

460:621. EXPERIMENTAL STRESS ANALYSIS III. *3 credits.* (3-0).
Prerequisite, 422. Reflective photoelasticity. Moire fringe techniques for large strains. Special topics in experimental stress analysis.

460:622. CONTINUUM MECHANICS. *3 credits.* (3-0).
Analysis of stress and deformation at a point. Derivation of the fundamental equations by applying the basic laws of conservation of mass, energy and momentum in mechanics and the laws of thermodynamics. Relations between stress and strain and strain rate. Specialized laws affecting the stress-strain relationships. Extensions to polar materials.

460:623. APPLIED STRESS ANALYSIS I. *3 credits.* (3-0).
Prerequisite, 622. Continuation of Continuum Mechanics with specific applications to solid media. Development of energy theorems due to Reissner, Washizu and generalized

Hamilton's principle. Solutions of static and dynamic problems are developed using complex variables, integral equations, integral transforms and potential theory.

460:625. ANALYSIS OF MECHANICAL COMPONENTS. 3 credits. (3-0).

Theories of failure. Determination of strength-static loading, fatigue, creep and stress rupture. Determination of stress-torsion, contact stress, and thermo-elastic problems.

460:629. NON-LINEAR ENGINEERING PROBLEMS I. 3 credits. (3-0).

Study of non-linear ordinary differential equations governing various phenomena of mechanics. Analysis of phase space trajectories and singularities of autonomous systems. Development of approximate analytical solution procedures (perturbation techniques, method of weighted residuals, et cetera). Study of the response of nonautonomous systems. Stability considerations via standard techniques (Hill's equation, Routh-Hurwitz, Liapunov).

460:630. MECHANICAL VIBRATIONS I. 3 credits. (3-0).

Prerequisite, 431/531 or equivalent. The study of vibrations of multi-degree of freedom systems, including free and forced vibrations, damped and transient response, normal mode vibrations, and matrix iteration techniques.

460:633. ENGINEERING DYNAMICS II. 3 credits. (3-0).

Prerequisite, 430/530. Engineering applications of: Euler's differential equation, Hamilton's principle, the principle of Manpertuis oscillatory motion, phase space and the Hamilton-Jacobi equation.

460:634. 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 the human ear, Fourier analysis of steady state and transient noise.

460:640. LARGE-SCALE SYSTEMS. 3 credits. (3-0).

Prerequisite, permission. Introduction to complex multi-disciplinary systems. Concepts in modeling of large systems. Techniques in analysis, control, and optimization of interconnected hierarchical systems. Examples in such areas as physical, economic, transportation, business, ecological, educational and social systems.

460:660. ENGINEERING ANALYSIS I. 3 credits. (3-0).

Prerequisite, 360 or permission. Applications of differential equations to engineering problems in heat transfer, stress analysis, fluid flow, dynamics, and vibrations, including the use of Fourier series, Sturm-Liouville systems, Bessel and Legendre equations, Laplace transformations, and complex variables.

460:680. POLYMER PROCESSING. 3 credits. (3-0).

Prerequisite, 310 or permission. Study of process engineering in the polymer conversion industry, emphasizing the analytical treatments of heat transfer, mass flow, mixing, shaping, and molding of polymeric materials.

460:681. DESIGN OF RUBBER COMPONENTS.

3 credits. (3-0).

Prerequisite, permission. Study of the principles of the design of elastomeric products, emphasizing analytical treatments of the elastic behavior and mechanisms of failure of resilient mountings, springs, seals, bearings, and tires.

460:695. SPECIAL PROBLEMS IN MECHANICAL ENGINEERING. 1-6 credits.

Prerequisite, permission of department head. For qualified candidates for graduate degree. Supervised research in student's major field of training or experience. Credit de-

pendent upon nature and extent of project as determined by supervisor and department head.

460:699. MASTER'S THESIS. 1-6 credits.

Prerequisite, permission. Research and thesis on some suitable topic in mechanical engineering.

460:700. GAS DYNAMICS II. 3 credits.

Prerequisite, 600 or equivalent. Continuation of 600. Oblique shocks. Axisymmetric supersonic flow. Hypersonic and transonic flow. Hodograph methods. Unsteady flow. Selected topics in advanced Gas Dynamics.

460:708. THERMODYNAMICS II. 3 credits.

Prerequisite, 608 or permission. Advanced topics of classical thermodynamics, statistical and irreversible thermodynamics.

460:710. DYNAMICS OF VISCOUS FLOW II. 3 credits.

Prerequisite, 610 or permission. Integral methods in boundary layer analysis. Introduction to turbulence. Developing flows. Turbulent boundary layers. Practical methods of solution of boundary layer problems.

460:716. CONVECTION HEAT TRANSFER I. 3 credits.

Prerequisite, 315, 345:236, (345-432 desirable). Study of the equations for convective heat transfer and the conditions associated with the equations. Techniques for analysis and design.

460:717. CONVECTION HEAT TRANSFER II. 3 credits.

Prerequisite, 716. Topics include heat transfer to liquid metals as well as high Prandtl number fluids, and hydrodynamically and thermally unsteady conditions.

460:719. ADVANCED HEAT TRANSFER. 3 credits.

Prerequisite, permission. Special topics and problems in conduction, convection, or radiation.

460:720. APPLIED STRESS ANALYSIS II. 3 credits.

Prerequisite, 623. Continuation of Applied Stress Analysis I. Development of approximate solution techniques including asymptotic methods, the method of weighted residuals (Rayleigh Ritz's, Galerkin's, Trefftz's, collocation, least square, etc.) and finite elements.

460:725. THERMOELASTICITY. 3 credits. (3-0).

Prerequisite, 430:602. Thermoelastic equations, thermal stresses, dynamical thermal stress problems. Papkovitch potentials, variational methods.

460:726. NON-LINEAR CONTINUUM MECHANICS. 3 credits.

Prerequisites, 622 or permission. Finite deformation and strain, stress, constitutive equations, strain energy functions. The solution of finite deformation problems, hypoelasticity, electroelasticity and micro-polar theories.

460:729. NON-LINEAR ENGINEERING PROBLEMS II. 3 credits. (3-0).

Prerequisite, 629. A continuation of 629. Study of non-linear partial differential equations governing various phenomena of mechanics. Development of a variety of solution techniques, method of weighted residuals, method of lines, perturbation techniques and finite element and difference procedures.

460:730. MECHANICAL VIBRATIONS II. 3 credits.

Prerequisite, 630. Continuation of 630. Advanced topics concerning vibrations of damped and undamped systems. Matrix methods in vibration analysis. Approximate and numerical methods.

460:731. RANDOM VIBRATIONS. 3 credits.

Prerequisite, 630 or equivalent. Stationary random pro-

cesses and their transmission through linear time-invariant systems. Interaction of random vibration with three mechanisms of failure.

460:741. ADVANCED CONTROL TOPICS.

3 credits (3-0).

Prerequisite, 440:674, or permission. Advanced theory of control systems. Discussion of recent research such as Optimal Controls for engineering systems with time delay and distributed parameters and large-scale systems.

460:742. STABILITY THEORY OF CONTROL SYSTEMS. *3 credits (3-0).*

Prerequisite, 440:675 or permission. Definitions and concepts of stability. Methods of applications for control problems in engineering. Stability of engineering systems with time delays.

460:760. ENGINEERING ANALYSIS II. *3 credits (3-0).*

Prerequisite, 660 or permission. Analysis of engineering problems to include matrices, linear transformations, potential theory, conformal mapping, and numerical analysis.

460:763. ADVANCED METHODS IN ENGINEERING ANALYSIS. *3 credits.*

Prerequisite, 760 or permission. Applications of finite differences, finite element methods, variational methods, integral methods, and similarity transforms to complex engineering problems in heat transfer, fluid mechanics, and vibration.

460:794. ADVANCED SEMINAR IN MECHANICAL ENGINEERING. *1-6 credits.*

Prerequisite, permission of Department Head. Advanced projects and studies in various areas of mechanical engineering. Intended for students seeking the Ph.D. in Engineering degree. May be repeated up to a maximum of 9 credits.

460:897. PRELIMINARY RESEARCH. *1-15 credits.*

(May be repeated for a total of 1-15 credits.)

Prerequisite, approval of Advisory Committee. Preliminary Investigation of Ph.D. dissertation subject.

460:898. DOCTORAL DISSERTATION. *1-15 credits.*

Prerequisite, completion of Preliminary Examination and approval of Advisory Committee. Original research by a Ph.D. candidate. May be taken more than once for credit.

498: CONSTRUCTION TECHNOLOGY

498:351. CONSTRUCTION QUALITY CONTROL.

3 credits (3-0).

Prerequisites, 335, 236, 239 or permission. Effective quality control benefits all parties involved in the construction process. This course is designed for those owners, contractors, or consultant personnel directly concerned with quality control.

498:352. FIELD MANAGEMENT. *4 credits (4-0).*

Prerequisites, 298:222, 245, 233 or permission. An essential function of the construction contractor is close management control of field operations. The emphasis of this course is directed to the planning, scheduling, and controlling of the field work and the responsibility of getting the project completed within the time and cost requirements.

498:353. LEGAL ASPECTS OF CONSTRUCTION.

4 credits (4-0).

Study of the proper business relationships to the business of contracting, with its many entwining relationships, the relative liabilities of the many parties in the construction industry, and finally the property rights of abutting or adjacent parcels of land incidental to construction.

498:354. FOUNDATION CONSTRUCTION METHODS.

4 credits (4-0).

Prerequisites, 298:234, 235. Introduction to soil mechanics and soils exploration as related to construction. Emphasis on foundation construction methods and practice in the interest of safety and suitable economy.

498:461. CONSTRUCTION FORMWORK. *4 credits (4-0).*

Prerequisite, 298:234 or permission. Introduction to specifications for the design and construction of field structures. Emphasis on the design and construction of formwork and temporary wood structures.

498:462. MECHANICAL SERVICE SYSTEMS.

4 credits (4-0).

This course is an introduction to the materials and equipment used in the mechanical systems of buildings. Subjects covered include heating, ventilating, air conditioning, water and waste systems.

498:463. ELECTRICAL SERVICE SYSTEMS.

4 credits (4-0).

This course is an introduction to the materials and equipment used in the electrical and acoustical systems of buildings. Subjects covered include illumination, electrical sources, materials and distribution, and acoustical problems and materials.

The College of Education

510: EDUCATIONAL FOUNDATIONS

510:156. EDUCATION IN AMERICAN SOCIETY.

3 credits.

Nature and purposes of education in American society including description of its distinctive features and analysis of factors determining its character.

510:157. HUMAN DEVELOPMENT AND LEARNING.

4 credits.

Prerequisite, 375:141. A study of the principles underlying the intellectual, emotional, social and physical growth and development of the human organism; and of the learning process with its implications for the instructional procedures.

510:350. TESTS AND MEASUREMENTS. 3 credits.

Prerequisite, 510:157. Various methods and devices employed in comprehensive and continuous evaluation. Some attention given to treatment and interpretation of scores.

510:401. PROBLEMS IN EDUCATION. 4 credits.

Prerequisite, Senior status in Education. Involves the senior student in a critical approach to the more general problems of education as a scholarly discipline, as a social undertaking, and as a profession. This course, which crosses divisional boundaries, assists the preservice teacher to evaluate educational practice in the light of philosophy of education.

510:409. INDEPENDENT STUDY. 1 to 4 credits.

Prerequisite: Consent of advisor and faculty supervisor. The specific area of inquiry within Humanistic and Behavioral Foundations of Education will be determined in advance by the student and the faculty supervisor.

510:410. AUDIO-VISUAL EDUCATION. 3 credits.

To acquaint teachers of all levels with the wide variety of visual and auditory aids available and the techniques for their respective use. Learning to operate projectors and sound reproducers, to locate materials available and to construct materials for one's own specific use.

510:412/512. DESIGN AND PRODUCTION OF INSTRUCTIONAL MATERIALS. 4 credits.

This course covers the design and preparation and adaptation of selected formats of media materials. Students will have the opportunity to examine the relevant research in the educational technology field as a background to design and produce media software including opaque materials, overhead projection transparencies, audio recordings, and slide sequences.

510:420. INDIVIDUALIZED INSTRUCTION IN THE SCHOOLS. 3 credits.

Patterns of individualized instruction and related research will be reviewed to establish the potential and limitations of each approach. Students will formulate programs of individualized instruction in their major subject areas.

510:431-434/531-534. WORKSHOP. 1-5 credits each.

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

510:450/550. EDUCATIONAL INSTITUTES.

1-5 credits.

Special courses designed as in-service up-grading programs,

frequently provided with the support of national foundations.

GRADUATE COURSES

510:600. PHILOSOPHIES OF EDUCATION. 4 credits.

An examination of basic philosophical problems which underlie the broad educational questions that confront society. This course provides a foundation upon which a critical understanding can be developed of fundamental questions of modern society and education.

510:602. BEHAVIORAL BASES OF EDUCATION.

4 credits.

Prerequisites, 157 or equivalent, 375:141 or equivalent. An introduction to the study of principles underlying the scientific investigation of educational processes.

510:603. TECHNIQUES OF RESEARCH. 5 credits.

Research methods and techniques commonly used in education and psychology; preparation of research reports.

510:606. COMPARATIVE EDUCATION. 3 credits.

Comparative study of philosophies, organization, administration, curricula and methods of foreign schools, including those in England, France, Germany, the Soviet Union, representative countries of the Middle East and Latin America, stressing those phases which have special significance for American education.

510:609. INDEPENDENT STUDY. 1 to 4 credits.

(May be repeated to a maximum of 8 credits.)

Prerequisite, consent of advisor and the supervisor of the independent study. The specific area of study will be determined in accordance with the student's program and professional goals.

510:610. EDUCATIONAL COMMUNICATION AND TECHNOLOGY. 3 credits.

To familiarize the student with current practices and recent advances in educational communication and educational Technology, including familiarization with educational media centers, programmed learning, educational television, computer assisted instruction and computer data processing for education.

510:611. TOPICAL SEMINAR IN THE CULTURAL FOUNDATIONS OF EDUCATION. 4 credits.

(May be repeated for a total of 8 credits.)

Issues and subjects related to the study of educational institutions, theories and/or ideas. Different topics will be offered from time to time.

510:613-614-615. FIELD EXPERIENCE — MASTER'S.

1 to 3 credits each.

Prerequisite: Consent of advisor and faculty supervisor. A structured experience related to the student's professional development and secured in an educational setting.

510:620. SEMINAR IN HUMAN DEVELOPMENT AND EDUCATION. 4 credits.

(May be repeated for a total of 8 credits.)

Prerequisite, undergraduate course in human development or consent of the instructor. A study of the developmental characteristics of humans with particular emphasis upon the interaction between age levels, behavior patterns and educational factors.

510:630. ADULT EDUCATION. 3 credits.

A survey course for public school teachers and administrators as well as for those engaged full time in Adult Education. Historical background including European influences and their relation to rapid developments in the field during the last decade. Emphasis on current programs throughout the United States.

510:631. OPERANT CONTROL OF STUDENT BEHAVIOR. 4 credits.

This course is designed to show classroom applications of behavior control methods. Teachers will learn how to eliminate disruptive behaviors which often prevent quality teaching. They will be required to select target misbehaviors, to determine the causes (in terms of the history of reinforcement), carry out a comprehensive review of the literature relating to the selected target behavior, develop a plan for changing the behavior, carry out the plan, evaluate the results, and submit a written report of these activities.

510:699. RESEARCH IN EDUCATION. 1 to 6 credits.

Prerequisite: Consent of advisor and faculty supervisor. An in-depth study of a research problem within Humanistic and Behavioral Foundations of Education.

510:701. HISTORY OF EDUCATION IN AMERICAN SOCIETY. 4 credits.

The historical development of education in the American social order, with special emphasis on the social, political, and economic setting.

510:702. SEMINAR: MODERN THEORIES OF EDUCATION. 3 credits.

Prerequisite, 600 or equivalent. An examination of the major theoretical frameworks and ideologies that form the foundation of modern educational thought. Emphasis is given to modern theories and their implications for contemporary educational policy and practice.

510:703. EDUCATION AND SOCIAL TRENDS. 3 credits.

Study of contemporary political, economic and social trends and their effects on educational policies and practices.

510:705. INTERDISCIPLINARY SEMINAR. 4 credits.

Concepts, principles, and points of view derived from the areas of sociology, economics, political science, and labor-management relations, designed to strengthen the background of specialists in professional education.

510:709. SEMINAR: HISTORY AND PHILOSOPHY OF HIGHER EDUCATION. 4 credits.

Prerequisite, 600. History and Philosophy related to the genesis and development of higher education in the Western World, with special emphasis given to higher education's development in the United States.

510:710. TEACHER BEHAVIOR AND INSTRUCTION. 4 credits.

Prerequisite, 602, 701 recommended. An intensive survey of theoretical and empirical literature involving the teacher and conceptions of instruction. Students will formulate testable hypotheses about teacher behavior and practice systematic observation techniques in either a classroom or laboratory setting for the purpose of developing the reliability and validity required in theory construction.

510:711. STATISTICS IN EDUCATION. 4 credits.

Statistical methods and techniques used in the field of measurement and by research workers in education.

510:713. ADVANCED EDUCATIONAL STATISTICS. 4 credits.

Prerequisite, 711. A second level statistics course related to quantification in the behavioral sciences. General areas included are testing of statistical hypotheses, experimental design, analysis of variance and nonvariance, factor analysis and introduction to nonparametric statistics.

510:721. LEARNING PROCESSES. 4 credits.

A study of the principles underlying classroom learning processes with particular emphasis upon teaching as the means of modifying pupil behavior.

510:801. RESEARCH SEMINAR.

3 credits. (May be repeated for a total of 6 credits).

Prerequisites, 603, 711, permission of Adviser and Instructor. Limited to Doctoral Students. Intensive study of designs applicable to research problems in Education. Study of problems related to proposed dissertation research.

510:809. INDEPENDENT STUDY. 1 to 4 credits.

(May be repeated to a maximum of 8 credits.)

Prerequisite: Consent of advisor and faculty supervisor. The specific area of inquiry within Humanistic and Behavioral Foundations of Education will be determined in advance by the student and the faculty supervisor.

510:890. RESEARCH PROJECT IN SPECIAL AREAS. 1 to 3 credits.

Prerequisite: Consent of advisor and faculty supervisor. A critical and in-depth study of a specific problem in Educational Foundations.

520: ELEMENTARY EDUCATION**520:100. STUDENT PARTICIPATION. 1 credit.**

Planned field experience emphasizing tutorial settings in reading and other curricular areas.

520:141. HANDICRAFTS IN ELEMENTARY SCHOOL. 3 credits.

Prerequisite: 710:191. A broad range of experiences through the manipulation of various craft mediums which will enrich the curriculum of the elementary school.

520:200. STUDENT PARTICIPATION. 1 credit.

Planned field experiences emphasizing field settings where students work with small groups in the elementary school classroom.

520:286. CHILDREN'S LITERATURE. 5 credits.

A survey of materials for children in prose, poetry and illustrations from early historical periods to modern types; criteria of selection and methods of presentation are critically examined.

520:300. STUDENT PARTICIPATION. 1 credit.

Planned field experience where students work in both small group and large group settings in the elementary school environment.

520:305. FIELD EXPERIENCE. 1 to 4 credits.

Prerequisite: permission of the advisor. Independent field work in an area selected by the student's advisor and based on student's needs.

520:310. INTRODUCTION TO EARLY CHILDHOOD EDUCATION. 3 credits.

Prerequisite, 740:265. Basic programs in early childhood education. Purposes of programs and personnel involved.

520:311. CURRICULUM FOR PRESCHOOL LEARNING CENTERS. *3 credits.*

Prerequisite, 310. Curricular and instructional techniques in mathematics, science, language arts, social studies and music are examined with emphasis on early learning as a foundation for later growth.

520:321. ART FOR THE GRADES. *3 credits.*

Prerequisite, 520:141. Art requirements in elementary grades; laboratory work to give teachers a knowledge of materials and mediums and skill in handling them.

520:323. MUSIC TEACHING IN THE ELEMENTARY SCHOOL. *3 credits.*

Prerequisite, 750:253. To establish the theoretic foundations of the teaching and supervision of music in grade K-6.

520:324. FIELD EXPERIENCE IN ELEMENTARY SCHOOL MUSIC. *3 credits.*

Independent field work in music education selected and supervised by student's advisor.

520:330. EARLY ELEMENTARY EDUCATION I. *3 credits.*

Prerequisite, 510:157. Aims to develop a forward-looking viewpoint in the education of young children. Materials, techniques and practices are examined which furnish opportunities to explore Kindergarten-Primary Education.

520:331. EARLY ELEMENTARY EDUCATION II. *3 credits.*

Prerequisite, 330. Emphasis is placed on the curricular offerings of typical Primary schools. Language Arts, Science, Social Studies are emphasized.

520:332. EARLY ELEMENTARY EDUCATION III. *3 credits.*

Prerequisite, 331. The professional problems of teaching in the kindergarten-primary grades are explored. Small group discussion and classroom visitations are correlated to bring theory and practice into working perspective.

520:333. SCIENCE FOR THE ELEMENTARY GRADES. *5 credits.*

Prerequisite 510:157. For the prospective teacher of science in the elementary school; development of a point of view toward science teaching and study of methods of presenting science material.

520:334. TEACHING ART IN THE ELEMENTARY SCHOOL. *3 credits.*

Prerequisite, art education major, junior standing; elementary education majors, 141 and 321. Visual arts in the elementary school. Art education concepts with a studio orientation including history of art education, developmental stages, curriculum and organization, methods, evaluation and research, and practical participation (classroom teaching).

520:335. THE TEACHING OF READING. *5 credits.*

Prerequisite, 510:157 and 520:337. Reading program for the elementary school, together with modern methods of teaching reading at the various levels.

520:336. TEACHING OF ELEMENTARY SCHOOL MATHEMATICS. *5 credits.*

Prerequisite, 510:157. Trends in arithmetic instruction in elementary school. Procedures for the development of mathematical concepts and skills.

520:337. TEACHING THE LANGUAGE ARTS. *7 credits.*

Prerequisite, 510:1 7 and 520:286. Materials, grade alloca-

tions and methods for teaching oral and written expression, reading, spelling and handwriting in elementary grades.

520:338. THE TEACHING OF SOCIAL STUDIES. *5 credits.*

Prerequisite, 510:157. Social studies program in the elementary school and the varied means of implementing the program.

520:339. PRINCIPLES OF DIAGNOSTIC TEACHING OF READING. *5 credits.*

Prerequisite, 335. Nature of reading problems in a classroom setting. Methods and materials employed in a corrective reading program by the classroom teacher.

520:360. NURSERY SCHOOL LABORATORY. *4 credits. (2-4).*

Prerequisite, 740:265. Concentrated study and experience in nursery school programming under the direction of supervising teachers.

520:365. COMPREHENSIVE MUSICIANSHIP FOR ELEMENTARY CLASSROOM TEACHERS I. *3 credits.*

Designed to afford prospective classroom teachers the opportunity to develop their individual capacity for musical expression and the technique for teaching elementary musical concepts.

520:366. COMPREHENSIVE MUSICIANSHIP FOR ELEMENTARY CLASSROOM TEACHERS II. *3 credits.*

Prerequisite, 365. A continuation of 365 in the integration development of individual musical expression and teaching techniques.

520:402. STUDENT TEACHING. *6-9-12 credits.*

Prerequisite: senior status. Planned teaching experience (in elementary school, elementary art, or elementary music) selected and supervised by the Student Teaching Office.

520:403. STUDENT TEACHING SEMINAR. *2 credits.*

Prerequisite: senior status. In conjunction with Student Teaching. Synthesis of contemporary problems encountered during student teaching experience. An exchange of ideas regarding the role of the new teacher entering the profession.

520:409. INDEPENDENT STUDY. *1 to 4 credits.*

Prerequisite: permission of the advisor. Specific area of curriculum investigation pertinent to elementary education as determined by the student's academic needs.

520:411/511. CREATIVE TECHNIQUES FOR EXPLORING CHILDREN'S LITERATURE. *3 credits.*

Prerequisite: 520:286 or permission of the instructor. An examination of various techniques to aid in children's response to literature. The techniques of storytelling, creative dramatics, readers' theater, and choral speaking will be used to aid understanding and appreciation of children's literature. Criteria for selection of stories will be included. Class participants will be expected to use these techniques with children.

520:431-434/531-534. WORKSHOP. *1-5 credits each.*

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

520:435/535. ACTIVITIES TO INDIVIDUALIZE SOCIAL STUDIES. *3 credits.*

Prerequisite; 520:338. A development of materials and activities (learning games, simulation games, simulations, learning stations, programmed field trips, and map activities) to provide a teacher with a variety of techniques in order to develop an individualized, student-involved social

studies program.

520:436/536. GEOMETRY AND MEASUREMENT IN ELEMENTARY SCHOOL MATHEMATICS. 4 credits.

Prerequisite, 336. Trends in geometry and measurement instruction in the elementary school. Procedures for the development of important geometric concepts and measurement skills.

520:437/537. STRUCTURE OF THE NUMBER SYSTEM IN ELEMENTARY SCHOOL MATHEMATICS. 4 credits.

Prerequisite, 336. Advanced topics in mathematics and techniques in the elementary school. Procedures for the development of important arithmetic concepts and computational skills.

520:438/538. MATERIAL AND LABORATORY TECHNIQUES IN ELEMENTARY SCHOOL MATHEMATICS. 4 credits.

Prerequisite, 336 or permission of Instructor. Applied mathematics in the elementary school. Construction and applications of mathematical models. Procedures for the development of important mathematical concepts through the laboratory approach.

520:439/539. PROPERTIES OF NUMBERS IN ELEMENTARY SCHOOL MATHEMATICS. 4 credits.

Prerequisite, 336 or permission of the Instructor. An investigation of those number properties that help explain how the laws of arithmetic work. Procedures for the development of important arithmetic concepts and computational skills.

520:440/540. CONTEMPORARY ELEMENTARY SCHOOL SCIENCE PROGRAMS. 3 credits.

Prerequisite, 333. Contemporary elementary school science programs are critically analyzed and selected portions are used in classroom simulation.

520:450/550. EDUCATIONAL INSTITUTES.

1-5 credits.

Special courses designed as in-service up-grading programs, frequently provided with the support of national foundations.

520:451. ELEMENTARY EDUCATION. 4 credits.

Evaluation of recent trends and practices in elementary education. Language Arts and Social Studies will be emphasized. Required for those converting from other certificates to elementary.

GRADUATE COURSES

520:609. INDEPENDENT STUDY. 1 to 4 credits.

(May be repeated to a maximum of 8 credits.)

Prerequisite: permission of the advisor. Selected area of independent investigation as determined by the advisor and related to the student's academic needs.

520:613-614-615. FIELD EXPERIENCE — MASTER'S.

1 to 3 credits each.

Prerequisite: permission of the advisor. On the job experience related to the student's course of studies.

520:630. ELEMENTARY SCHOOL CURRICULUM AND INSTRUCTION. 3 credits.

Application of the findings of recent research to curriculum building and procedures in teaching.

520:640. THEORY AND PRACTICE IN ELEMENTARY MATHEMATICS. 3 credits.

A comparative analysis and evaluation of the purposes and

programs of experimental mathematics programs for the elementary schools with application of the findings to instructional methods and materials.

520:641. DIAGNOSIS AND TREATMENT OF PERFORMANCE DIFFICULTIES IN ELEMENTARY SCHOOL MATHEMATICS.

4 credits.

A study of diagnostic and prescriptive strategies dealing with correction of math problems experienced by elementary students.

520:645. EDUCATION IMPLICATIONS OF ELEMENTARY SCIENCE. 3 credits.

Prerequisite, graduate standing. An examination of the influence of new curricular designs in elementary science. Emphasis shall be placed on inquiry, investigation and discovery and their impact on the total elementary school curriculum. An examination of trends in elementary education and related strategies in elementary science.

520:650. EDUCATION AND THE YOUNG CHILD.

3 credits.

Prerequisite; graduate standing. The course content will center on the educational settings of young children from birth through five years old. Special emphasis will be on the relationships between the curriculum objectives and the stage age of the child. The philosophies on which the programs are based will be examined.

520:699. RESEARCH IN EDUCATION. 1 to 6 credits.

Prerequisite: permission of the advisor. An in-depth research investigation. Student must be able to demonstrate necessary competencies to deal with a research problem in elementary education.

520:732. SUPERVISION OF INSTRUCTION IN THE ELEMENTARY SCHOOL. 3 credits.

A study of supervisory role of the elementary principal and other supervisory personnel. Consideration of the particular aspects of supervision at the elementary school level in relation to general supervisory practices.

520:780. SEMINAR IN ELEMENTARY EDUCATION.

3 credits. (May be repeated.)

An intensive examination of the following disciplines in elementary education: Children's Literature, Curriculum Development, Language Arts, Math, Reading, Science, Social Studies, Early Childhood, Critical Analysis of Children's Literature.

520:781. RESIDENCY SEMINAR — DEPARTMENT OF ELEMENTARY EDUCATION. 3 credits.

Prerequisite: permission of the advisor. An in-depth examination of contemporary research efforts in the various disciplines of elementary education.

520:809. INDEPENDENT STUDY. 1 to 4 credits.

(May be repeated to a maximum of 8 credits.)

Prerequisite: permission of the advisor. Area of study is approved and directed by the student's advisor.

520:810-811-812. FIELD EXPERIENCE — DOCTORAL.

1 to 3 credits each.

Prerequisite: permission of the advisor. An intensive job related experience pertinent to the student's needs. Student must be able to demonstrate on the job skills of leadership and supervision.

520:890. RESEARCH PROJECT IN SPECIAL AREAS. 1 to 3 credits.

Prerequisite: permission of the advisor. An in-depth investigation of a specific problem pertinent to elementary education.

520:899. DISSERTATION. *1 to 30 credits.*

Prerequisite: permission of the advisor. Thorough study and in-depth analysis of a research problem in elementary education.

525: READING**525:340. DEVELOPMENTAL READING IN CONTENT AREAS.** *5 credits.*

Prerequisite, 520:335 or 530:425. Nature of reading skills relating to content subjects. Methods and materials needed to promote reading achievement in content subjects by the classroom teacher.

525:341. LABORATORY PRACTICUM IN READING. *5 credits.*

Prerequisites, 340 and 520:339. Laboratory experience with classroom, small groups and individual situations. Students diagnose, implement procedures and follow prescribed reading improvement practices; supervised practices; independent work; written reports.

525:412/512. MATERIALS AND ORGANIZATIONS FOR READING INSTRUCTION. *5 credits.*

Prerequisites, 520:335, 339 or permission. The professional problems of selection and evaluation of reading materials and classroom organizations are explored. Small-group activities and classroom visitations are correlated to provide both theory and practice for students.

GRADUATE COURSES**525:680. TRENDS IN READING INSTRUCTION.***3 credits.*

Prerequisite, 520:335 or 530:425 or permission. Survey and analysis of trends in reading instruction in terms of current research.

525:681. DIAGNOSIS OF READING PROBLEMS.*5 credits.*

Prerequisites, 680 or 520:335 or permission. Relation of growth to reading development and reasons for retardation. Implementation of diagnostic techniques by developing case studies in a supervised setting.

525:682. CORRECTION OF READING PROBLEMS.*5 credits.*

Prerequisite, 681. Incorporating formal and informal procedures for screening disabled readers. Study of materials and techniques for improving reading performance.

525:683. CLINICAL PRACTICES IN READING I.*4 credits.*

Prerequisite, 682. The nature and etiology of reading difficulties experienced by selected children. Supervised practices and independent work with children in conjunction with staff from other related disciplines. Case study techniques and diagnostic reports will be employed.

525:684. CLINICAL PRACTICES IN READING II.*4 credits.*

Prerequisite, 683. Students learn advanced procedures in diagnosing and correcting reading disabilities by working with referrals experiencing extreme reading retardation. Supervised practice; independent work; case study reports and lesson logs employed.

525:692. ADVANCED STUDY AND RESEARCH IN READING INSTRUCTION. *5 credits.*

Prerequisites, 520:335 or 530:425; 590:603 and teaching ex-

perience. Surveys of research, comparison and evaluation of programs, design and development of projects in reading through group and individual study.

525:693. SUPERVISION AND CURRICULUM DEVELOPMENT IN READING INSTRUCTION.*3 credits.*

Prerequisites, 530:619 or 520:630; teaching experience. Study of reading relative to total curriculum; procedures for developing reading program in all curriculum areas; examination of children's literature and related instructional reading by supervisors and consultants.

530: SECONDARY EDUCATION**530:200. EXPLORATORY EXPERIENCES IN SECONDARY SCHOOLS.** *1-3 credits.*

(May be repeated for a maximum of 3 credits.)

Field work with secondary school pupils, teachers and other professional personnel.

530:305. FIELD EXPERIENCE. *1 to 4 credits.*

Prerequisite, upper college standing. Supervised work with youngsters, individually and in groups in school and/or community settings.

530:310. PRINCIPLES OF SECONDARY EDUCATION. *4 credits.*

Prerequisites, 510:156, 510:157.

Designed to familiarize the pre-service teacher with the nature of secondary education and the act of teaching in the secondary schools.

530:311. INSTRUCTIONAL TECHNIQUES IN SECONDARY EDUCATION. *4 credits.*

Techniques of planning, instruction and evaluation in various secondary teaching fields.

530:316. METHODS IN TEACHING ART. *4 credits.*

Prerequisite, completion of the required course for art teachers and quality point ratio of 2 in the field. Study of trends and procedure in teaching and in supervision; relation of art to the home, school and community; observation in selected schools is required.

530:321. JUNIOR HIGH AND MIDDLE SCHOOL EDUCATION. *3 credits.*

Designed to provide students with a knowledge and understanding of junior high and middle school education with ability to interpret it to other educators, to parents, and to pupils.

530:325. GENERAL MUSIC IN THE SECONDARY SCHOOL. *2 credits.*

Prerequisite, 520:323. To establish the theoretic foundation of teaching non-public performance oriented music classes at the junior and senior high school levels, including the aesthetic approach to music, related arts programs, as well as the traditional music concept.

530:326. FIELD EXPERIENCE IN INSTRUMENTAL MUSIC. *3 credits.*

Prerequisites, 750:253 and 750:361. Required of all instrumental majors, excluding piano majors, conducted in cooperation with area schools. Students spend a specified amount of time in observation-participation experiences in public school music classrooms.

530:374. PRINCIPLES OF SHORTHAND INSTRUCTION. *2 credits.*

Prerequisite, Shorthand 254:173 and a quality point ratio of 2 in the field. Methods of presentation in shorthand and

transcription. Demonstration and observations required. A theory test in the field must be passed before credit will be given for the course.

530:402. STUDENT TEACHING. 6, 9, 12 credits.

Corequisite, 403; prerequisite, 311 or equivalent. Also permission of advisor. Directed teaching under supervision of directing teacher and University supervisor.

530:403. STUDENT TEACHING SEMINAR.

2 credits.

Corequisite, 402.

530:409. INDEPENDENT STUDY. 1 to 4 credits.

Prerequisite: Permission of advisor and supervisor of independent study. Area of study is determined by student's needs.

530:425/525. READING PROGRAMS IN SECONDARY SCHOOL. 3 credits.

Relationship of reading to human development; materials, class organization and procedures for developing reading improvement programs for high school and college students.

530:431-434/531-534. WORKSHOP. 1-5 credits each.

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

530:450/550. EDUCATIONAL INSTITUTES. 1-5 credits.

Special courses designed as in-service up-grading programs, frequently provided with the support of national foundations.

530:476/576. VOCATIONAL COOPERATIVE OFFICE EDUCATION. 3 credits.

Principles of program construction, organization, implementation, evaluation, improvement, and development of program guides in cooperative office education.

530:477/577. INTENSIVE VOCATIONAL OFFICE EDUCATION. 3 credits.

Principles of program construction, organization, improvements, implementation, evaluation, and development of program guides.

GRADUATE COURSES

530:609. INDEPENDENT STUDY. 1 to 4 credits.

(May be repeated to a maximum of 8 credits.)

Prerequisite: Permission of advisor and supervisor of independent study. Area of study is determined by student's needs.

530:613-614-615. FIELD EXPERIENCE — MASTER'S. 1 to 3 credits each.

Prerequisite: Permission of advisor and supervisor of field experience. On-the-job experience related to the student's program of studies.

530:619. SECONDARY SCHOOL CURRICULUM AND INSTRUCTION. 3 credits.

Application of the findings of recent research to curriculum building and procedures in teaching.

530:699. RESEARCH IN EDUCATION.

1 to 6 credits.

Prerequisite: Permission of advisor. An 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.

530:721. SUPERVISION OF INSTRUCTION IN THE SECONDARY SCHOOL. 3 credits.

Consideration of the unique elements of the secondary school organization and purpose which make supervision of instruction within its framework a special case. Definition of the supervisory leadership role in improving instruction at the secondary school level and development of a practical theory of secondary school supervision.

530:780. SEMINAR IN SECONDARY EDUCATION.

3 credits. (May be repeated.)

An intensive examination of a particular area of secondary education.

530:781. RESIDENCY SEMINAR. 3 credits.

A one-hour weekly meeting for those Secondary doctoral students in residence. Three quarter hours will be earned over a period of three consecutive quarters.

530:809. INDEPENDENT STUDY. 1 to 4 credits.

(May be repeated to a maximum of 8 credits.)

Prerequisite: Permission of advisor and director of independent study. Area of study is determined by student's needs.

530:810-811-812. FIELD EXPERIENCE — DOCTORAL.

1 to 3 credits each.

Prerequisite: Permission of advisor and director of field experience. An intensive job-related experience pertinent to the student's needs. Student must be able to demonstrate skills and leadership abilities in and on the job situation.

530:890. RESEARCH PROJECT IN SPECIAL AREAS. 1 to 3 credits.

Prerequisite: Permission of advisor. A critical and in-depth study of a specific problem in secondary education.

530:899. DISSERTATION. 1 to 30 credits.

Prerequisite: Permission of the advisor. A specific research problem that requires the student to apply research skills and techniques pertinent to the problem being studied.

540: TECHNICAL AND VOCATIONAL EDUCATION

540:301. OCCUPATIONAL EMPLOYMENT EXPERIENCE AND SEMINAR. 2-6 credits.

Provides the instructor with knowledge of current industrial or business practice at a level minimally commensurate with that associated with the employment expectations of graduates of technical programs for which the prospective instructor is being prepared. To be graded on a mandatory credit/noncredit basis.

540:305. FIELD EXPERIENCE. 1 to 4 credits.

Prerequisite, upper college standing. Supervised work with youngsters, individually and in groups in school and/or community settings.

540:351. CONSUMER HOMEMAKING METHODS.

4 credits.

Organization of home economics in secondary schools. Emphasis on methodology, techniques, development of concepts, utilization of audio-visual materials and comprehensive evaluation procedures.

540:402. TECHNICAL EDUCATION PRACTICUM.

6 credits.

Corequisite: 403. Prerequisite: 410, 421, 430 or equivalent. Also, permission of advisor. Directed teaching under supervision of directing teacher and University supervisor.

540:403. TECHNICAL EDUCATION PRACTICUM SEMINAR. 2 credits.

Corequisite, 402

540:405/505. VOCATIONAL EDUCATION FOR YOUTH AND ADULTS. 3 credits.

Principles, purposes, a brief history and operation of current vocational education for youth and adults. Includes study of the social, economic and political influences that stimulate the growth and expansion of vocational education.

540:409. INDEPENDENT STUDY. 1 to 4 credits.

Prerequisite: Permission of advisor and supervisor of independent study. Area of study is determined by student's needs.

540:410/510. POSTSECONDARY TECHNICAL EDUCATION. 3 credits.

Designed to introduce the student with the nature, purpose, and philosophy of technical education as a part of higher education. The course includes the type of institutions offering two-year technical education programs and examines their organization, administration, curriculum, personnel, and student services.

540:421/521. INSTRUCTIONAL TECHNIQUES IN TECHNICAL EDUCATION. 5 credits.

Selected topics in instructional techniques appropriate to post-secondary technical education. Emphasis is placed on instructional methods and techniques in the classroom and laboratory including tests and measurements.

540:430/530. COURSE CONSTRUCTION IN TECHNICAL EDUCATION. 3 credits.

The procedure of breaking down an occupation to determine the teachable content in the laboratory and the classroom; and developing this content into an organized course of study arranged according to an instructional sequence of difficulty.

540:431-434/531-534. WORKSHOP. 1-5 credits each.

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

540:440. LIFE-SPAN AND COMMUNITY EDUCATION. 3 credits.

A course designed for persons engaged in providing educational services in the community. Included are an examination of the community education concept, its historical background, the current status of community education, and the roles of various personnel and agencies.

540:450/550. EDUCATIONAL INSTITUTES.

1-5 credits.

Special courses designed as in-service up-grading programs, frequently provided with the support of national foundations.

540:451/551. HOME ECONOMICS JOB TRAINING.

3 credits.

Prerequisite, 530:351. Concept development in vocational home economics. Emphasis on job training, program development, operational procedures; skill and knowledge identification, training profiles, job description and analysis. Construction of individualized study guides. In-school and on-the-job observations.

540:470/570. COOPERATIVE WORK — EXPERIENCE EDUCATION PROGRAM. 3 credits.

A study of cooperative work-experience education programs in secondary and post-secondary education.

GRADUATE COURSES**540:609. INDEPENDENT STUDY. 1 to 4 credits.**

(May be repeated to a maximum of 8 credits.)

Prerequisite: Permission of advisor and supervisor of independent study. Area of study is determined by student's needs.

540:610. COMMUNICATION WITH BUSINESS AND INDUSTRY. 3 credits.

Techniques of establishing better communications between technical education and business and industry. Emphasis is placed on the advisory committee, coordination functions, and working with local professional associations in the community.

540:613-614-615. FIELD EXPERIENCE — MASTER'S 1 to 3 credits each.

Prerequisite: Permission of advisor and supervisor of field experience. On-the-job experience related to the student's program of studies.

540:661. EDUCATION FOR BUSINESS IN HIGHER EDUCATION. 3 credits.

An examination of the many patterns and problems of education for business in institutions of higher education; adult education technical institutes, community colleges, private business schools, collegiate schools of business, and graduate schools of business.

540:690-691-692. INTERNSHIP TEACHING AND SEMINAR. 4 credits each.

Teaching at least one-half time under supervision from the University and the school system. Includes a two-hour seminar each week.

540:699. RESEARCH IN EDUCATION.

1 to 6 credits.

Prerequisite: Permission of advisor. An 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 vocational education.

555: PHYSICAL EDUCATION**555:101. FUNDAMENTALS OF ARCHERY/BOWLING. 2 credits.**

Acquisition and development of skill and knowledge of activities.

555:102. FUNDAMENTALS OF BADMINTON/VOLLEYBALL. 2 credits.

Acquisition and development of skill and knowledge of activities.

555:103. FUNDAMENTALS OF SOCCER/FIELD HOCKEY. 2 credits.

Acquisition and development of skill and knowledge of activities.

555:104. FUNDAMENTALS OF SWIMMING/CANOEING. 2 credits.

Acquisition and knowledge of activities.

555:105. FUNDAMENTALS OF TRACK AND FIELD. 2 credits.

Acquisition and development of skill and knowledge of activities.

555:115. FUNDAMENTALS OF WRESTLING, RUGBY (Men Only).

2 credits.

Acquisition and development of skill and knowledge of ac-

tivities.

555:120. FUNDAMENTALS OF BASKETBALL (Women Only).

1 credit.

Acquisition and development of skill and knowledge of activities.

555:130. PHYSICAL EDUCATION ACTIVITIES FOR ELEMENTARY SCHOOL CHILDREN.

3 credits.

An in-depth study of the physical education activities and the teaching methodology as they pertain to the teaching of physical education in the elementary school setting.

555:140. PHYSICAL EDUCATION ACTIVITIES I.

3 credits.

The emphasis is upon developmental activities in educational gymnastics and tumbling along with knowledge and application of the principles of physical conditioning programs.

555:141. PHYSICAL EDUCATION ACTIVITIES II.

3 credits.

A combination of lifetime sport and team sport activities including golf, tennis, team handball, and speedball.

555:142. PHYSICAL EDUCATION ACTIVITIES III.

2 credits.

The emphasis is upon development and exploration of movement through dance, with particular focus in the areas of folk, square, and social dance.

555:150. RECREATIONAL ACTIVITIES. 3 credits.

The acquisition of knowledge, skill, and teaching techniques for recreational activities applicable to school physical education programs, camps and park programs, senior citizen groups, and similar private and public groups.

555:155. ORGANIZATION AND ADMINISTRATION OF RECREATION. 3 credits.

Administration, budgets, management of individual playgrounds, the neighborhood recreation center and community activities.

555:193. METHODS OF TEACHING PHYSICAL EDUCATION.

3 credits.

Corequisite, 530:200 (1-3 credits) must be taken the same quarter. Application of teaching methods for physical education and comparison of practical situations in teaching to theoretical considerations in the classroom.

555:194. SPORTS OFFICIATING. 3 credits.

This course is designed to acquaint the aspiring sports official and/or coach with the rules and court/field mechanics required to effectively referee various interscholastic sports. Requirements include field experience in the university intra-mural program.

555:201. KINESIOLOGY. 3 credits.

Prerequisites: 310:147-148-149. The application of principles of anatomy to the movement of the human body in motion.

555:202. PHYSIOLOGY OF EXERCISE.

3 credits.

Prerequisites, 310:147, 148, 149. A study of the physiological effects of exercise relative to physical education activities and athletics.

555:211. FIRST AID.

2 credits.

An extensive First Aid course, more comprehensive than the standard First Aid class which gives practice in the immedi-

ate and temporary care of injuries and sudden illness.

555:245. INSTRUCTIONAL TECHNIQUES IN ELEMENTARY PHYSICAL EDUCATION.

3 credits.

Prerequisites: 555:130, 140, 193. Provides practical teaching situations in which the student teaches several lessons to peers in a closely-supervised class. The activities taught are those applicable to elementary physical education programs.

555:246. INSTRUCTIONAL TECHNIQUES IN SECONDARY PHYSICAL EDUCATION.

3 credits.

Prerequisites, 555:193, 140, 141, 142, 101, 102, 103, 104, 105, 115, 120. Provides practical teaching situations in which the student teaches several lessons to peers in a closely-supervised class. The activities taught are applicable to secondary physical education programs.

555:300. EXERCISE PHYSIOLOGY OF THE MIDDLE-AGED AND OLDER ADULT.

2 credits.

Designed to develop a cognition of the physiological benefits derived from a lifetime of routine, quality physical activity, the various modalities and techniques of physical activities, and the design and administration of activity programs for middle-aged and older adults.

555:305. FIELD EXPERIENCE. 1 to 4 credits.

Prerequisite, permission of the advisor. Independent field work in an area selected by the student's advisor and based on student's needs.

555:307. THEORY AND TECHNIQUE OF TRACK COACHING.

2 credits.

Theory, techniques and practices related to the coaching of track and field. One hour lecture, two hours laboratory.

555:310. THEORY AND TECHNIQUE OF SOCCER COACHING. 2 credits.

Theory, techniques, and practices related to the techniques of soccer coaching. One hour lecture, two hours laboratory.

555:312. THEORY AND TECHNIQUE OF BASKETBALL COACHING. 2 credits.

Theory, techniques and practice related to different systems and techniques of coaching basketball. One hour lecture, two hours laboratory.

555:313. THEORY AND TECHNIQUE OF BASEBALL/SOFTBALL. 2 credits.

Theory, technique and practice related to the different ways of coaching baseball/softball. One hour lecture, two hours laboratory.

555:314. THEORY AND PRACTICE OF SWIMMING. 3 credits.

Analysis of strokes, dives and related skills; methods and practice in teaching of swimming.

555:315. THEORY AND TECHNIQUES OF GYMNASTICS. 2 credits.

Theory, techniques, and practice related to the different ways of coaching gymnastics. One hour lecture, two hour laboratory.

555:320. THEORY AND TECHNIQUE OF TEACHING VOLLEYBALL. 2 credits.

Theory, technique, and practices related to the techniques of coaching volleyball. One hour lecture, two hour laboratory.

555:325. THEORY AND TECHNIQUE OF FOOTBALL COACHING.*2 credits.*

Theory, techniques, and practices related to the different systems of coaching football. One hour lecture, two hours laboratory.

555:326. THEORY AND TECHNIQUE OF WRESTLING COACHING.*2 credits.*

Coaching philosophy, theory, techniques, and practices related to the coaching of wrestling. One hour lecture, two hours laboratory.

555:334. GAMES AND RHYTHMS FOR ELEMENTARY GRADES. 3 credits.

One lecture and two laboratory periods each week. Lectures on theories of play, child development and supervision responsibilities with classroom teachers in the program of Physical Education. Laboratories give an opportunity for analysis and teaching games for the various age groups. For majors in Physical Education.

555:335. MOVEMENT EXPERIENCES FOR ELEMENTARY CHILDREN. 3 credits. (2-2).

The nature of basic movement education, tumbling and gymnastics for the elementary child.

555:336. PHYSICAL EDUCATION ACTIVITIES FOR PRE-SCHOOL CHILDREN.*3 credits.*

The pre-school child's developing growth patterns, needs, and implications for physical education activity will be developed. Periods of actual activities and analysis of effective teaching techniques will also be stressed. Two lectures and two laboratory periods each week.

555:340. CARE AND PREVENTION OF ATHLETIC INJURIES.*3 credits.*

Prerequisites, 555:201 and 555:202. Theory and practice in scientific manipulation of the muscles as related to the prevention and treatment of athletic injuries.

555:345. ADAPTIVE PHYSICAL EDUCATION. 3 credits.

Prerequisites, 310:147, 148, 149. Current theories and practices relating to the needs of physically handicapped children.

555:350. ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION.*3 credits.*

Organization and administration of Physical Education programs.

555:351. ORGANIZATION AND ADMINISTRATION OF ATHLETICS.*3 credits.*

Organization and administration of Athletic programs.

555:352. ORGANIZATION AND ADMINISTRATION OF INTRAMURAL PROGRAMMING.*3 credits.*

Study of the basic ingredients required for administering successful intramural programs.

555:353. CAMPING AND OUTDOOR EDUCATION. 3 credits.

Camping skills and counseling techniques. Camp administration, school camping and outdoor education.

555:402. STUDENT TEACHING. 6-9-12 credits.

Only on credit/noncredit basis.

Prerequisite: senior status. Planned teaching experience, selected and supervised by the Student Teaching Office.

555:403. STUDENT TEACHING SEMINAR.*2 credits.*

Prerequisite: senior status. In conjunction with Student Teaching. Synthesis of contemporary problems encountered during the student teaching experience. An exchange of ideas regarding the role of the new teacher entering the profession.

555:409. INDEPENDENT STUDY. 1 to 4 credits.

Prerequisite: permission of the advisor. Specific area of curriculum investigation pertinent to physical education as determined by the student's academic needs.

555:431-434/531-534. WORKSHOP. 1-5 credits each.

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

555:436/536. ADAPTED PHYSICAL EDUCATION TASKS FOR THE LEARNING DISABLED CHILD.*scf33 credits.*

Teaching methods and materials necessary to structure developmental tasks for the learning disabled child; designed for persons preparing to teach elementary school physical education and special education.

555:450/550. EDUCATIONAL INSTITUTES.*1-5 credits.*

Special courses designed as in-service up-grading programs, frequently provided with the support of national foundations.

GRADUATE COURSES

555:601. ADMINISTRATION OF HEALTH, PHYSICAL EDUCATION ATHLETICS AND RECREATION.*5 credits.*

Organization, administration, and evaluation of health and physical education programs in school or community. Administrative policies and problems of athletic programs, varsity and intramural, at the elementary, secondary and collegiate levels. Organization and administration of recreation programs.

555:603. CURRICULUM PLANNING IN HEALTH AND PHYSICAL EDUCATION. 3 credits.

Analysis of the objectives, procedures and trends in health and physical education curricula and the principles and procedures for developing sound programs.

555:605. PHYSIOLOGY OF MUSCULAR ACTIVITY AND EXERCISE. 3 credits.

A study of the functions of body systems and the physiological effects of exercise. Laboratory experiences will accompany lectures and discussions.

555:606. MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION. 3 credits.

Prerequisite, 590:603. An analysis of basic mathematical procedures used to interpret test results and practical applications of tests in the measurement and evaluation of physical education programs.

555:608. SUPERVISION OF PHYSICAL EDUCATION. 3 credits.

Principles involved in the supervision of physical education programs. Procedures and techniques of supervision of

physical education classes at the elementary and secondary levels.

555:609. INDEPENDENT STUDY. *1 to 4 credits.*

(May be repeated to a maximum of 8 credits.)

Prerequisite, consent of advisor and the supervisor of the independent study. The specific area of study will be determined in accordance with the student's program and professional goals.

555:613-614-615. FIELD EXPERIENCE — MASTER'S.

1 to 3 credits each.

Prerequisite: permission of the advisor. On the job experience related to the student's course of studies.

555:699. RESEARCH IN EDUCATION.

1 to 6 credits.

Prerequisite: permission of the advisor. An in-depth research investigation. Student must be able to demonstrate necessary competencies to deal with a research problem in physical education.

556: OUTDOOR EDUCATION

556:450/550. APPLICATION OF OUTDOOR EDUCATION TO THE SCHOOL CURRICULUM.

5 credits.

Prerequisite, 40 quarter hours of Professional Education Courses in student's first teaching field. The course provides knowledge, skills, and techniques useful in the application of outdoor education to the school curriculum.

556:452/552. METHODS, MATERIALS AND RESOURCES FOR TEACHING OUTDOOR EDUCATION. *5 credits.*

Prerequisite, 40 quarter hours of Professional Education courses in student's first teaching field. The course involves the student in methodologies unique to outdoor education, which incorporate a multi-sensory and practical approach to learning. The student will also become acquainted with instructional materials and resources which permit expansion of the curriculum beyond the school building. Knowledge and practical use of methods, materials and resources will be emphasized.

556:454. RESIDENT OUTDOOR EDUCATION.

3 credits.

Prerequisites, 450 and 452. The course emphasizes skills, program considerations, and organizational techniques unique to an extended, overnight, resident outdoor education program. Practical experience will be gained on location at a resident facility for at least five days and four nights. Emphasis is upon the use of the outdoor education resident program as an integral, yet unique component of the total outdoor education curriculum.

GRADUATE COURSES

556:656. PRACTICUM IN OUTDOOR EDUCATION.

5 credits.

Prerequisites, 450/550 and 452/552. The course is designed to provide the student with closely supervised practical experience in conjunction with regularly scheduled classroom meetings. The laboratory experience will consist of active participation with an established outdoor education program. In addition, the student will meet with a University faculty member two hours per week as a regular class.

557: HEALTH EDUCATION

557:101. PERSONAL HEALTH. *3 credits.*

The application of current scientific principles and facts pertaining to healthful, effective living. Personal health problems and needs of students — mental health, human sexuality, maintaining a healthy body, nutritional problems, disease, stimulants and depressants, and consumer health.

557:320. COMMUNITY HYGIENE. *4 credits.*

Personal and community hygiene, nutrition, disease prevention and control, mental and emotional health and problems of medical care. For Health and Physical Education majors and minors.

557:321. ORGANIZATION AND ADMINISTRATION OF SCHOOL HEALTH. *3 credits.*

Organization of health education, with special reference to national, state and local control. Staff, program, budget, health and safety, facilities and other phases of administration.

557:322. METHODS AND MATERIALS IN TEACHING HEALTH EDUCATION. *3 credits.*

Current materials for elementary and secondary school grades; integration and correlation of health education in the education of school children; survey of community, state and federal agencies concerned with health of school-age children.

560: EDUCATIONAL GUIDANCE AND COUNSELING

560:410. PERSONNEL SERVICES IN SCHOOL AND SOCIAL WORK. *3 credits.*

Prerequisite, Senior standing. A basic introduction to the background, role and function, techniques, and selected issues in the personnel field. Particularly helpful for students who may be considering entering the field of social work, pupil personnel or college personnel at the graduate level.

560:426/526. CAREER EDUCATION. *4 credits.*

Study of career education models and components (the individual and his environment, decision making, work adjustment skills, economic trends, etc.) and examination of procedures for their incorporation into regular elementary and secondary school programs.

560:431/531. WORKSHOPS (COUNSELING AND SPECIAL EDUCATION). *1-5 credits each.*

560:432/532. WORKSHOPS (COUNSELING AND SPECIAL EDUCATION). *1-5 credits each.*

560:433/533. WORKSHOPS (COUNSELING AND SPECIAL EDUCATION). *1-5 credits each.*

560:434/534. WORKSHOPS (COUNSELING AND SPECIAL EDUCATION). *1-5 credits each.*

560:450/550. EDUCATIONAL INSTITUTES COUNSELING AND SPECIAL EDUCATION).

1-5 credits each.

GRADUATE COURSES

560:600. SEMINAR IN GUIDANCE. *3 credits.*

(To be taken by counseling candidates in conjunction with

602 or immediately thereafter.) A series of individual and group experiences designed to evaluate and select applicants for graduate preparation in counseling.

560:601. STUDENT PERSONNEL SERVICES IN HIGHER EDUCATION. *3 credits.*

An overview of student personnel services in higher education; their evolution and growth, philosophy, organization; and administration.

560:602. ORIENTATION TO GUIDANCE SERVICES. *3 credits.*

Background and development of pupil personnel services, basic concepts related to pupil personnel work, current programs in elementary and secondary schools and present status and trends in pupil personnel services.

560:603. GUIDANCE IN THE ELEMENTARY SCHOOL. *3 credits.*

Foundation of guidance in the elementary school guidance services in the elementary school and the utilization of guidance and counseling in the elementary school.

560:611. COUNSELING SERVICES IN HIGHER EDUCATION. *3 credits.*

Prerequisite, 601 or permission of instructor. A comprehensive and detailed study of counseling services operating in institutions of higher education, including historical development and philosophy underlying the development of counseling services in American colleges and universities; and the psychological needs and problems of the college student.

560:613-614-615. FIELD EXPERIENCE — MASTER'S. *1-3 credits each.*

Structured on the job experience in a counseling program.

560:616. CAREER GUIDANCE: THEORY AND PRACTICE. *4 credits.*

This course gives an overview of the world of work, educational opportunities, theories of career development, career guidance resources and career guidance programs.

560:617. THE INTERVIEW. *3 credits.*

Prerequisite, 619, or permission. Emphasis is placed upon the characteristics and interviewing role of the guidance counselor, various counseling approaches, the counseling interview and the philosophy of counseling within an educational institution. (Should be elected preceding 621).

560:618. COUNSELING: THEORY AND PHILOSOPHY. *3 credits.*

An examination of selected counseling theories with emphasis on their relevancy for use by the counselor in the school setting.

560:619. TECHNIQUES OF COUNSELING. *3 credits.*

Study of the following guidance tools and techniques and their application in guidance programs, objective and subjective measurement devices, cumulative record systems, case study and case conference, the interview.

560:620. GROUP COUNSELING. *3 credits.*

The first half of the course deals with the place of group guidance in schools, techniques the counselor used in group guidance and materials appropriate to group guidance. The second half of the course deals with educational guidance, especially the planning of an educational program from junior high school through senior high school and college or the appropriate post-high school plan.

560:621. PRACTICUM IN COUNSELING. *5 credits.*

Prerequisite, 619. Supervised counseling experience with in-

dividuals and small groups.

560:623. EVALUATION AND DIAGNOSIS OF LEARNING PROBLEMS. *4 credits.*

Study and measurement of factors leading to learning problems with some attention to remedial procedures.

560:624. CONSULTANT: COUNSELING AND SPECIAL EDUCATION. *4 credits.*

An examination of the consulting function as it relates to teachers, parents, school specialists and community agencies. Practice experiences in consulting are included.

560:625. SEMINAR IN COUNSELING AND SPECIAL EDUCATION. *3 credits.*

An examination of the unique and shared aspects of pupil personnel and special education services with intensive consideration to multi-disciplinary team functioning.

560:670. INDEPENDENT STUDY. *1-4 credits.* (May be repeated to a maximum of 12 credits.)

Prerequisite, consent of advisor and supervisor of the independent study. The specific area of investigation will be determined in accordance with the student's needs.

560:699. RESEARCH IN EDUCATION. *1-6 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.

560:701. ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES. *3 credits.*

Study of the principles and practices in the organization and administration of pupil personnel programs, roles and functions of the counselor, school psychologist, and other pupil personnel workers, problems peculiar to this area, and evaluation and research as it pertains to pupil personnel services.

560:702. ADVANCED PRACTICUM IN STUDENT COUNSELING. *3 credits.* (May be repeated to a maximum of 9 credits.)

Supervised experiences in individual and group counseling of students in the field and in the pupil personnel center. Periodic counseling sessions with the practicum supervisor are also provided for candidates.

560:703. SEMINAR IN SCHOOL GUIDANCE AND COUNSELING. *4 credits.*

An examination and discussion of topics related to major areas in this field such as the counselor as a professional, the counselor as a person and issues in guidance and counseling.

560:704-705. SEMINAR IN PUPIL PERSONNEL RESEARCH. *3 credits each.*

Prerequisites, 590:713, approved of Doctoral Committee. Provides an extensive background in selected areas of pupil personnel services and includes criteria for evaluation and application of research findings.

560:706-707-708. INTERNSHIP IN COUNSELING SUPERVISION. *3 credits each.*

Experience in supervising the counseling done by master's degree candidates in guidance and counseling. Further supervised experiences in individual and group counseling of students in the field and in the pupil personnel center are also provided.

560:709. INTERNSHIP IN FIELD RESEARCH. *3 credits.*

Prerequisite, 705, 590:603, and approval of Doctoral committee. Designed for Ph.D. candidates nearing completion of their program, the course provides advanced research ex-

perience related to practical problem situations in the public school system.

560:800. INDEPENDENT STUDY.

1-4 credits. (May be repeated to a maximum of 12 credits.) Prerequisite, consent of advisor and supervisor of the independent study. The specific area of investigation will be determined in accordance with the student's needs.

560:810-811-812. FIELD EXPERIENCE — DOCTORAL.

1-3 credits each.

Field experience in a counseling program.

560:890. RESEARCH PROJECT IN SPECIAL AREAS.

1-3 credits.

Study, analysis and reporting of a counseling problem.

560:899. DISSERTATION. 1-30 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.

561: SPECIAL EDUCATION

561:201. STUDENT PARTICIPATION — EDUCABLE MENTALLY RETARDED. 1 credit.

Prerequisite, Sophomore standing and permission. The student will be involved in systematic observation and participation in a class for Educable Mentally Retarded children. This experience will be a prerequisite to student teaching in the area of Educable Mental Retardation.

561:202. STUDENT PARTICIPATION — LEARNING DISORDERS. 1 credit.

Prerequisite, Sophomore standing and permission. The student will be involved in systematic observation and participation in a class for children with learning disorders. This experience will be a prerequisite to student teaching in the area of Learning Disorders.

561:203. STUDENT PARTICIPATION — ORTHOPEDICALLY HANDICAPPED. 1 credit.

Prerequisite, Sophomore standing and permission. The student will be involved in systematic observation and participation in a class for Orthopedically Handicapped children. This experience will be a prerequisite to student teaching in the area of Orthopedic Handicaps.

561:204. STUDENT PARTICIPATION — TRAINABLE MENTAL RETARDATION. 1 credit.

Prerequisite, Sophomore standing and permission. The student will be involved in systematic observation and participation in a class for Trainable Mentally Retarded children. This experience will be a prerequisite to student teaching in the area of Trainable Mental Retardation.

561:305. FIELD EXPERIENCE. 1-4 credits.

Prerequisite, upper college standing. Supervised work with youngsters, individually and in groups in school and/or community settings.

561:402. STUDENT TEACHING. 6-9-12 credits.

Corequisite, 403; prerequisite, 530:311 or equivalent. Student teaching under supervision of directing teacher and University supervisor.

561:403. STUDENT TEACHING SEMINAR.

2 credits.

Corequisite, 402.

561:409. INDEPENDENT STUDY. 1-4 credits.

Prerequisite: Consent of advisor and supervisor of the inde-

pendent study. The specific area of investigation will be determined in accordance with the student's needs.

561:431-434/531-534. WORKSHOP. 1-5 credits each.

Opportunity for individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

561:440/540. DEVELOPMENTAL CHARACTERISTICS OF EXCEPTIONAL INDIVIDUALS. 4 credits.

Prerequisites, 375:141 and 510:157. A survey of the etiology, diagnoses, classification, and developmental characteristics of a typical individuals.

561:441/541. DEVELOPMENTAL CHARACTERISTICS OF EDUCABLE MENTALLY RETARDED INDIVIDUALS. 4 credits.

Prerequisite, 440/540. A survey of the etiology, diagnoses, classification, and developmental characteristics of educable mentally retarded individuals.

561:442/542. DEVELOPMENTAL CHARACTERISTICS OF TRAINABLE MENTALLY RETARDED INDIVIDUALS. 4 credits.

Prerequisite, 440/540. A survey of the etiology, diagnoses, classification, and developmental characteristics of trainable mentally retarded individuals.

561:443/543. DEVELOPMENTAL CHARACTERISTICS OF LEARNING DISABLED INDIVIDUALS. 4 credits.

Prerequisite, 440/540. A survey of the etiology, diagnoses, classification and developmental characteristics of learning disabled individuals.

561:444/544. DEVELOPMENTAL CHARACTERISTICS OF INTELLECTUALLY GIFTED INDIVIDUALS.

4 credits.

Prerequisite, 440/540. A survey of the etiology, diagnoses, classification, and developmental characteristics of intellectually gifted individuals.

561:445/545. DEVELOPMENTAL CHARACTERISTICS OF ORTHOPEDICALLY HANDICAPPED INDIVIDUALS. 4 credits.

Prerequisite, 441/541. A survey of the etiology, diagnoses, classification, and developmental characteristics of orthopedically handicapped individuals.

561:446/546. DEVELOPMENTAL CHARACTERISTICS OF BEHAVIORALLY DISORDERED INDIVIDUALS. 4 credits.

Prerequisite, 443/533. A study of the etiology, diagnoses, classification and developmental characteristics of socially and emotionally maladjusted individuals.

561:450/550. EDUCATIONAL ADJUSTMENT FOR PRESCHOOL AND PRIMARY LEVEL EXCEPTIONAL INDIVIDUALS. 4 credits.

Prerequisites, Plan 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. A study of diagnostic prescriptive service delivery systems designed to accommodate the developmental patterns of preschool and primary level exceptional children.

561:451/551. EDUCATIONAL ADJUSTMENT FOR INTERMEDIATE LEVEL EXCEPTIONAL CHILDREN. 4 credits.

Prerequisite, 450/550 except for secondary certification minors. A study of diagnostic prescriptive service delivery systems designed to accommodate the developmental patterns of intermediate level exceptional children.

561:452/552. EDUCATIONAL ADJUSTMENT FOR SECONDARY LEVEL EXCEPTIONAL CHILDREN.*4 credits.*

Prerequisite, 451/551. A study of diagnostic prescriptive service delivery systems designed to accommodate the developmental patterns of secondary level exceptional children.

561:453/553. RECREATIONAL PROGRAMS FOR EXCEPTIONAL CHILDREN.*4 credits.*

A study experience which examines craft and outdoor recreational programming for exceptional individuals.

561:454/554. EDUCATIONAL ADJUSTMENT FOR TRAINABLE MENTALLY RETARDED INDIVIDUALS.*4 credits.*

Prerequisite, 442/542. A study of programs, services, and training techniques designed to accommodate the developmental patterns of trainable mentally retarded individuals.

561:455/555. EDUCATIONAL ADJUSTMENT FOR INTELLECTUALLY GIFTED INDIVIDUALS.*4 credits.*

Prerequisite, 444/544. A study of programs, services, and educational experiences designed to accommodate the developmental patterns of intellectually gifted individuals.

561:456/556. CLASSROOM BEHAVIOR MANAGEMENT FOR EXCEPTIONAL CHILDREN.*4 credits.*

Prerequisite, 451/551. A review of behavioral management principles and the development of application models for exceptional children in the classroom.

561:457/557. CLINICAL TEACHING PRACTICUM: CHILDREN WITH LEARNING PROBLEMS.*4 credits.*

Prerequisites, 450/550 or 451/551 or 452/552. May be repeated for a total of eight credit hours. A supervised clinical teaching experience with individuals or small groups of problem learners. The experience will be designed to familiarize and give practice to the special teacher in diagnostic and remedial teaching techniques devised in conjunction with pupil personnel resources.

561:459/559. SEMINAR: INVITATIONAL STUDIES IN SPECIAL EDUCATION.*1-3 credits.*

May be repeated for a total of six credits. A quarterly topical study with a varied array of disciplinary input. Staffing will be invited members of allied and contributing professions who are active in the management of exceptional children.

561:499/599. EDUCATIONAL INSTITUTES.*1-5 credits.*

Special courses designed as in-service up-grading programs, frequently provided with the support of national foundations.

GRADUATE COURSES

561:600. SEMINAR IN SPECIAL EDUCATION.*3 credits.*

Prerequisite, twenty credits of graduate study in Special Education. A critical examination of practices and pertinent research related to or in special educational fields.

561:601. SEMINAR: SPECIAL EDUCATION CURRICULUM PLANNING.*3 credits.*

Prerequisite, Certification in an area of special education. A study of curriculum planning practices unique to special education classes and services. Emphasis will be placed on the high incidence handicapped populations of mental retardation and learning disabilities. Appropriate curriculum objectives for selected areas of instruction as well as effective

organizational programs will be examined.

561:602. SUPERVISION OF INSTRUCTION-SPECIAL EDUCATION.*3 credits.*

Prerequisite, Certification in an area of special education. A study of administration and supervisory practices unique to special education classes and services.

561:604. EDUCATIONAL ASSESSMENT OF EXCEPTIONAL CHILDREN.*3 credits.*

Prerequisite, valid teaching certificate in special education or permission of the instructor. The course provides an overview of the psycho-diagnostic approach in the assessment of handicapped individuals and stresses methods by which varieties of formal assessment techniques are drawn together to provide the basis for individual academic remedial programming.

561:605. PROGRAM MANAGEMENT FOR EXCEPTIONAL INDIVIDUALS.*3 credits.*

Prerequisite, valid teaching certificate in special education or permission of the instructor. A course designed to improve the skills of the special education teacher in using the resources of the total school system in support of educational programming for exceptional children.

561:606. EDUCATIONAL AND MANAGEMENT STRATEGIES FOR PARENTS OF EXCEPTIONAL CHILDREN.*3 credits.*

Prerequisite, valid teaching certificate in special education or permission of the instructor. This course examines the various components of total services for handicapped children and provides the student with skills in dealing with parents so program adjustment might be facilitated.

561:607. PROGRAM DEVELOPMENT IN SPECIAL EDUCATION.*3 credits.*

Prerequisite, valid teaching certificate in special education or permission of the instructor. The course provides strategies for community analysis, case finding, funding sources and practices, program models and the mechanics of developing service systems in special education.

561:608. COMPARATIVE PROGRAM MODELS AND SERVICE DELIVERY SYSTEMS IN SPECIAL EDUCATION.*3 credits.*

Prerequisite, valid teaching certificate in special education or permission of the instructor. The course is designed to acquaint graduate students with service systems models both current and in the future. Trends of service delivery, rationale for use, cooperative service agreements and the mechanics of model operation are examined.

561:609. SPECIAL EDUCATION AND SOCIAL CHANGE.*3 credits.*

Prerequisite, valid teaching certificate in special education or permission of the instructor. This course provides information for teachers, supervisors and administrators about the major changes taking place in special education as a result of court decisions and legislation at the state and federal levels.

561:613-614-615. FIELD EXPERIENCE — MASTER'S.*1-3 credits each.*

On the job experience in a special education program.

561:670. INDEPENDENT STUDY.*1-4 credits.*

(May be repeated to a maximum of 12 credits.)

Prerequisite, consent of advisor and supervisor of the independent study. The specific area of investigation will be determined in accordance with the student's needs.

561:699. RESEARCH IN EDUCATION.*1-6 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.

561:790. RESEARCH PROJECT IN SPECIAL AREAS.*1-3 credits.*

Study, analysis and reporting of a special education problem.

562: SCHOOL PSYCHOLOGY**562:431/531. WORKSHOPS (SCHOOL PSYCHOLOGY).***1-5 credits each.***562:432/532. WORKSHOPS (SCHOOL PSYCHOLOGY).***1-5 credits each.***562:433/533. WORKSHOPS (SCHOOL PSYCHOLOGY).***1-5 credits each.***562:434/534. WORKSHOPS (SCHOOL PSYCHOLOGY).***1-5 credits each.***562:450/550. EDUCATIONAL INSTITUTES (SCHOOL PSYCHOLOGY).** *1-5 credits each.***GRADUATE COURSES****562:601. SEMINAR: ROLE AND FUNCTION OF THE SCHOOL PSYCHOLOGIST.** *3 credits.*

A seminar and independent study course on the role and function of the School Psychologist. Part of the course will be tailored to meet individual needs of trainees. Enrollment will be concurrent with the trainee's internship.

562:602. COGNITIVE FUNCTION MODELS FOR PRESCRIPTIVE EDUCATIONAL PLANNING.*4 credits.*

Prerequisite, admission to school psychology program. A review of cognitive function models and development of their application to assessment of difficulties in processing classroom instruction.

562:604. EDUCATIONAL DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS. *4 credits.*

Prerequisites, 602 and consent of instructor. A study of current standardized tests applicable to the assessment of learning problems in individual children.

562:613-614-615. FIELD EXPERIENCE — MASTER'S. *1-3 credits each.*

On the job experience in a school psychology program.

562:670. INDEPENDENT STUDY. *1-4 credits.*

(May be repeated to a maximum of 12 credits.)

Prerequisite, consent of advisor and supervisor of the independent study. The specific area of investigation will be determined in accordance with the student's needs.

562:679. PRACTICUM IN SCHOOL PSYCHOLOGY.*5 credits.*

Prerequisites, 602, 604 and consent of instructor. A laboratory experience in the psycho-educational study of individual children who have learning problems in school.

562:680-681-682. INTERNSHIP IN SCHOOL PSYCHOLOGY. *3 credits each.*

Full-time work under the supervision of a qualified school psychologist for a complete academic year according to the provisions of the State Department of Education. Additional

readings and activities required.

562:683. FIELD SEMINAR I: CURRENT ISSUES AND ASSESSMENT. *3 credits.*

Prerequisites, 562:680/681/682 current enrollment in any of these internship experience courses, or permission of instructor. A consideration of pertinent topics in the practice of school psychology with emphasis upon field-based problems and issues of a practicing school psychologist.

562:684. FIELD SEMINAR II: OBSERVATION OF CLASSROOM ENVIRONMENT. *2 credits.*

Prerequisites, 562:680/681/682 current enrollment in any of these internship experience courses, or permission of instructor. A consideration of pertinent topics in the practice of school psychology with emphasis upon field-based problems and issues of a practicing school psychologist.

562:685. FIELD SEMINAR III: ROLE MODELS. *2 credits.*

Prerequisites, 562: 680/681/682 current enrollment in any of these internship experience courses, or permission of instructor. A consideration of pertinent topics in the practice of school psychology with emphasis upon field-based problems and issues of a practicing school psychologist.

562:699. RESEARCH IN EDUCATION. *1-6 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.

562:790. RESEARCH PROJECT IN SPECIAL AREAS.*1-3 credits.*

Study, analysis and reporting of school psychology problem.

563: INNER-CITY EDUCATION**563:401/501. PREPARATION FOR TEACHING IN INNER CITY SCHOOLS.** *4 credits.*

Designed to help prepare students to teach in the inner city. It will provide knowledge of the background and culture of inner city youth, examine the role of the teacher, consider techniques of discipline and classroom management, and explore methods, materials, motivational techniques, and ways of individualizing instruction. Special consideration will be given to sensitization and humanizing the classroom.

563:481/581. SOCIOLOGICAL FOUNDATIONS OF INNER-CITY SCHOOL PROBLEMS. *5 credits.*

The basic characteristics of the inner-city; deterioration, social stratifications, value patterns, etc. and their effects on the school and the educational process.

563:482/582. CHARACTERISTICS OF INNER-CITY YOUTH. *5 credits.*

The physical, emotional, social and intellectual traits of children in the core areas of our large metropolitan centers.

GRADUATE COURSES**563:686. SEMINAR: EDUCATING THE DISADVANTAGED.** *4 credits.*

A survey of the educational problems usually found in inner-city schools. Field work (tutorial, playgrounds, home visitation) with disadvantaged children will be required.

570: SCHOOL ADMINISTRATION**570:431/531. WORKSHOPS (EDUCATIONAL ADMINISTRATION).***1-5 credits each.***570:432/532. WORKSHOPS (EDUCATIONAL ADMINISTRATION).***1-5 credits each.***570:433/533. WORKSHOPS (EDUCATIONAL ADMINISTRATION).***1-5 credits each.***570:434/534. WORKSHOPS (EDUCATIONAL ADMINISTRATION).***1-5 credits each.***570:450/550. EDUCATIONAL INSTITUTES.***1-5 credits each.***GRADUATE COURSES****570:601. PRINCIPLES OF EDUCATIONAL ADMINISTRATION 4 credits.**

Theory and practices of educational administration in state and county systems, cities and rural district. School law, organizing, administration, finance, pupil accounting, planning and completion of school buildings.

570:604. SCHOOL AND COMMUNITY RELATIONS.*3 credits.*

Principles and practices in maintaining cooperative relationships between the schools and the public.

570:605. DECISION-MAKING THEORY AND PRACTICE IN EDUCATIONAL ADMINISTRATION.*4 credits.*

A study in the theory underlying the process of decision-making in educational administration and an examination of some of the methods used in choosing between alternatives. This will involve delving into operations research and systems analysis, and examining such decision-making aids as PERT, PPBS, the Critical Path Method and computer analysis.

570:606. EVALUATION OF EDUCATIONAL INSTITUTIONS. 4 credits.

Laboratory course in which the evaluation of educational institutions will be made by use of up-to-date techniques and criteria.

570:607. LEGAL BASIS OF EDUCATION. 3 credits.

Prerequisite, 601. The legal principles underlying American education as reflected in statutory provisions and the decisions of our courts. Some specific attention given to Ohio law.

570:608. PRINCIPLES OF SCHOOL FINANCE.*3 credits.*

Prerequisite, 601. Study of financial operations of school systems including tax and other income, expenditures and budgeting.

570:609. INDEPENDENT STUDY. 1-4 credits.*(May be repeated to a maximum of 8 credits.)*

Prerequisite, consent of advisor and the supervisor of the independent study. Area of study is determined by student's needs.

570:610. PRINCIPLES OF EDUCATIONAL SUPERVISION. 5 credits.

Study of the principles, organizations and techniques of supervision with a view to the improvement of instruction.

570:611. SUPERVISION OF STUDENT TEACHING.*3 credits.*

Primarily for supervising teachers in the guidance of student teachers. Topics include: readiness for student teaching; student teacher, directing teacher and college supervisor relationships, use of the conference, demonstration and observation; helping student teachers through evaluation.

570:620. SECONDARY SCHOOL ADMINISTRATION.*3 credits.*

Prerequisite, 601. Problems, procedures and principles of organization and administration in secondary school.

570:621. FIELD EXPERIENCE FOR THE SECONDARY SCHOOL ADMINISTRATOR. 1-3 credits.*(May be repeated for a total of 3 credits.)*

On the job experience in a public school system working with administrators and/or supervisors.

570:631. ELEMENTARY SCHOOL ADMINISTRATION.*3 credits.*

Prerequisite, 601. Problems, procedures and principles of organization administration and supervision in elementary schools.

570:641. FIELD EXPERIENCE FOR THE SUPERINTENDENT.*3 credits.*

Prerequisite, completion of most course work in program requirements. Designed to help students who are preparing for the superintendency to gain experience in those task areas which are in the direct responsibility of the superintendent. Students work directly in a central office position under the direction of an experienced administrator. Their tasks will constitute administrative exercises cooperatively developed by the university, the supervising administrator and the student.

570:651. FIELD EXPERIENCE FOR SUPERVISORS.*3 credits.*

Prerequisite, completion of all course work except research problem. Designed to help students test and develop understandings and skills in supervision. Students will participate in selected task areas which reflect supervisory responsibilities. The tasks will be developed cooperatively by the appropriate school administrator, college advisor, and student.

570:661. FIELD EXPERIENCE FOR THE ELEMENTARY ADMINISTRATOR. 1-3 credits.*(May be repeated for a total of 3 credits.)*

On the job experience in a public school system working with administrators and/or supervisors.

570:662. FIELD EXPERIENCE FOR THE ELEMENTARY ADMINISTRATOR.*3 credits.*

This course will entail supervised, on the job, administration experience, in each of the administrative task areas: staff personnel, pupil personnel, curriculum, community relations, finance and physical facilities.

570:699. RESEARCH IN EDUCATION.*1-6 credits.*

Prerequisite: Permission of advisor. An 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.

570:701. SCHOOL BUILDING AND CONSTRUCTION. *3 credits.*

Prerequisite, 601. Designed mainly for the potential superintendent, executive head of post-Master's student in administration.

570:702. SCHOOL BUSINESS ADMINISTRATION. *3 credits.*

A study of school business administration as a part of the total administrative pattern, and as a creative planning process designed to facilitate instruction.

570:703. ADMINISTRATION OF STAFF PERSONNEL. *3 credits.*

Guidelines, techniques, and procedures for helping the administrator to become a democratic leader. Duties and responsibilities of the staff as participants in administrative activity.

570:704. ADMINISTRATIVE ORGANIZATION IN EDUCATION. *3 credits.*

The principles and theory underlying effective administration organization in the educational setting. Special attention will be directed toward communication and evaluation as organization processes.

570:710. PRINCIPLES OF CURRICULUM DEVELOPMENT. *4 credits.*

An overview of the instructional programs of a school in terms of basic purposes, functions and structures necessary to study and interpret these instructional programs.

570:715. EDUCATIONAL ORGANIZATIONAL INFORMATION PROCESSING. *4 credits.*

A course designed primarily for the graduate education student majoring in administration. The course will include concepts of modern systems and their educational applications. Material relevant to equipment, personnel, facility and organizational planning will also be presented. The course is designed to provide general background rather than specific technical training. The student interested in the latter should also take courses in computer science, CAI, or data processing.

570:730. SEMINAR IN SCHOOL ADMINISTRATION. *4 credits.*

Prerequisites, 601 and 510:603. Focus will be on recent research in administration and educational administration theory.

570:731. SEMINAR: PROBLEMS OF THE SCHOOL ADMINISTRATOR. *3 credits.*

An examination of some of the major problems that face the chief administrator as he works with schools of today. Practicing educational administrators will share with the students their experiences with current educational problems and the many practical solutions of these problems.

570:732. ORGANIZATIONAL COMMUNICATIONS AND THE SCHOOL ADMINISTRATOR. *4 credits.*

Prerequisites, 601, 604. The relationship between formal and informal educational organization and communication needs; the contribution of communication media to communication in education and the refinement of communication skills among school administrators.

570:733. THE EDUCATIONAL ADMINISTRATOR AND PLANNED CHANGE. *4 credits.*

Prerequisites, 601, 704. Relationship between technological and social change and needed changes in education; theo-

ries, principles and mechanisms in planned educational change.

570:740. THEORIES OF EDUCATIONAL SUPERVISION. *4 credits.*

Prerequisites, 610; 520:732 or 530:721. Explanation and examination of various theories of supervision; sample models which implement existing theories.

570:745. PRACTICUM IN EDUCATIONAL ADMINISTRATION: URBAN SETTING. *4 credits.*

Prerequisite, completion of at least three-fourths of a doctoral program. A practicum of doctoral students in Educational Administration. The focus will be on the problems of education in the inner city from the viewpoint of the educational administrator.

570:746. POLITICS, POWER, AND THE SCHOOL ADMINISTRATOR. *4 credits.*

The impact of formal and informal community power structures and of influential persons on educational planning and decision making.

570:747. PRACTICUM: COMPETING AND COMPLEMENTARY SOCIAL SYSTEMS. *4 credits.*

Designed to bring the superintendent into direct contact with those individuals who are responsible for other community services; and to acquaint the practitioner with the various community agencies and to suggest desirable relationships between them and the school.

570:750. FIELD EXPERIENCE IN SCHOOL PLANT PLANNING. *3 credits.*

Prerequisites, 701 or permission; resident status. Selected field experience in the art of planning school plants. Particular emphasis will be placed on the analysis of data supplied by selected school systems concerning school enrollments, evaluation of school plants and the financial status of the district. In addition, visitations will be made to school districts for curriculum consultations, building and site evaluation, and meetings with boards of education and the general public.

570:809. INDEPENDENT STUDY.

1-4 credits. (May be repeated to a maximum of 8 credits.)

Prerequisite: Permission of advisor. An 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.

570:850-851-852. INTERNSHIP IN EDUCATIONAL ADMINISTRATION. *3 credits each.*

Work under a practicing administrator involving experience in optimum number of administrative tasks. Includes seminars and written work.

570:890. RESEARCH PROJECT IN SPECIAL AREAS. *1-3 credits.*

Prerequisite: Permission of advisor. A critical and in-depth study of a specific problem in educational administration.

570:899. DISSERTATION. *1-30 credits.*

Prerequisite: Permission of the advisor. A specific research problem that requires the student to apply research skills and techniques pertinent to the problem being studied.

580: SPECIAL EDUCATIONAL PROGRAMS

580:435/535. WORKSHOP IN ECONOMIC EDUCATION. 1-4 credits.

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

580:436/536. WORKSHOP IN READING. 1-4 credits.

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

580:437/537. WORKSHOP IN ARITHMETIC. 1-4 credits.

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

580:438/538. WORKSHOP ON EXCEPTIONAL CHILDREN. 1-4 credits.

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

580:439/539. WORKSHOP IN PHYSICAL SCIENCE. 1-4 credits.

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

580:440/540. WORKSHOP IN SOCIAL STUDIES. 1-4 credits.

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

580:480/580. INTERNATIONAL SCHOOL STUDY. 5-9 credits.

On-the-scene study of education in foreign countries, usually by concentrating on the study of schools in one restricted geographical area.

585: EDUCATIONAL TECHNOLOGY

585:100. INTRODUCTION TO PUPIL PERSONNEL WORK. 3 credits.

Introduces the student to the broad areas of pupil personnel

work. The purposes, needs, scope and character of pupil personnel services will be explored.

585:104. SEMINAR IN PUPIL PERSONNEL. 3 credits.

Prerequisite, to be taken by students in conjunction with or immediately after 100. A series of group experiences designed to assist the individual in answering the question, "Should I prepare to become a Pupil Personnel Technologist?"

585:105. PUPIL PERSONNEL SERVICE ROLES. 3 credits.

Prerequisites, 100 and 104. Emphasis will be on the educational technician in supplementing the services provided by the various professional specialties comprising pupil personnel service.

585:120. MECHANICS OF THE LANGUAGE ARTS PROGRAM. 4 credits.

Basic skills involved in the Elementary Language Arts Program.

585:201. INFORMATION SERVICES IN GUIDANCE AND SPECIAL EDUCATION. 3 credits.

Prerequisites, 105. Emphasis on the organization and status of informational services as they relate to the activities of the educational technologist.

585:207. MECHANICS OF STUDENT APPRAISAL. 3 credits.

Introduction to group appraisal with major emphasis placed on assisting certified personnel in group test administration, scoring and the recording of test results.

585:213. ORIENTATION OF THE EDUCATIONAL TECHNICIANS TO THE SECONDARY SCHOOL. 3 credits.

Designed to provide the student preparing for the role of an educational technician with a framework for understanding secondary education.

585:260. SPECIAL EDUCATION TECHNOLOGY. 3 credits.

A survey of selected procedures and materials employed in classrooms especially designed and operated for exceptional children.

585:280. EDUCATION TECHNICIAN FIELD EXPERIENCE. 5 credits.

A supervised field experience in the school setting designed for educational technician enrollees only. The course may be repeated once.

The College of Business Administration

620: ACCOUNTING

620:221-222. PRINCIPLES OF ACCOUNTING.

4 credits each.

Sequential. Accounting concepts and techniques essential to administration of a business enterprise; principles of proprietorship, partnership, and corporation accounting; analysis and interpretation of financial statements and reports.

620:270. MANAGERIAL ACCOUNTING. 4 credits.

Prerequisite 222 and either 325:246 or 325:201. For non-accounting majors only. (Accounting majors do not receive credit toward graduation for this course). Accounting as an information system that provides the significant financial data needed by management for decision-making, planning and control as well as for reporting to outside interests.

620:290. COST ACCOUNTING. 4 credits.

Prerequisites, 222 and 325:246 or 325:201. Theory and practice of accounting for material, labor and overhead expenses, with particular reference to budgeting and standard costs.

620:317-318. INTERMEDIATE ACCOUNTING.

5 credits each.

Sequential; prerequisite, 222. Accounting theory and problems of statement preparation and interpretation; financial statement analysis; statement of funds.

620:355. INTRODUCTION TO ELECTRONIC DATA PROCESSING. 5 credits.

An introduction to the fundamentals of data processing, including a survey of computer applications in management.

620:390. ADVANCED COST ACCOUNTING.

4 credits.

Prerequisite, 290. Emphasis on standard cost procedure and other advanced cost accounting problems.

620:391. BUDGETING. 4 credits.

Prerequisite, 401 or 290. Principles and policies for budgeting and control of expenses and capital investments.

620:401. ACCOUNTING SURVEY. 5 credits.

Primarily for postbaccalaureate students with no previous accounting background.

620:410. TAXATION FOR THE NON-ACCOUNTANT.

5 credits.

Open to all students in the University except account majors. (Accounting majors will not receive credit toward graduation for this course.) This course is designed to provide a basic knowledge of the structure and applications of both individual and business income taxation, as well as their significance for managerial and personal decision making. Topics include taxation of individual income, capital gains and losses, income averaging, gift and estate taxation, taxation of corporations and partnerships.

620:420/520. ADVANCED ACCOUNTING. 5 credits.

Prerequisite, 318. Accounting theory and advanced problems in partnerships, insolvency, estate and trusts, accounting and consolidated statements.

620:425. CURRENT DEVELOPMENTS IN ACCOUNTING. 5 credits.

Prerequisite, 318. In-depth study of official pronounce-

ments issued by the Committee on Accounting Procedure, the Accounting Principles Board, the Financial Accounting Standards Board, and the Securities and Exchange Commission; current developments in accounting theory.

620:430-431/530-531. TAXATION I & II. 5 credits.

Sequential. Prerequisite, 318. First quarter deals with the current tax law as it applies to individuals and proprietorships. Second quarter discusses federal income tax problems of partnerships and corporations and includes a survey of state and local taxes.

620:440/540. AUDITING. 5 credits.

Prerequisites, 290, 318. A study of the problems of the auditor as a member of the staff (internal) and as an external or public accountant. Emphasis is placed on auditing standards and procedures.

620:454. ACCOUNTING SYSTEMS. 5 credits.

Prerequisites, 290, 318 and permission of instructor. Principles of the design and installation of accounting systems, procedures and methods. Emphasis is placed on data processing and systems analysis.

620:460. CONTROLLERSHIP PROBLEMS.

5 credits.

Prerequisites, 290, 318. An examination of accounting and control techniques, including budgetary control, direct costing, and problems requiring the use of advanced tools of decision making.

620:470/570. GOVERNMENTAL AND INSTITUTIONAL ACCOUNTING. 5 credits.

Prerequisite, 318. Application of accounting principles and procedures to problems of budgets, appropriations, and funds in governmental units, educational institutions, and hospitals.

620:471/571. WORKSHOP IN ACCOUNTING.

1-5 credits.

Opportunity for group study under faculty guidance in the subject area of accounting. May not be used to meet undergraduate or graduate accounting major requirements. May be used for elective credit only with the permission of the instructor or department. May be repeated.

620:480/580. ACCOUNTING PROBLEMS. 4 credits.

Prerequisite, 318. Individual research on an advanced accounting problem in area of student's particular interest.

620:485. CPA PROBLEMS-COMMERCIAL LAW.

2 credits.

Study of the general principles of law applicable to those areas of law which appear as questions in the commercial law section of the CPA examination. The areas that appear most frequently will receive emphasis, but the areas which appear less frequently will also be discussed.

620:486. CPA PROBLEMS-ACCOUNTING PRACTICE. 4 credits.

The study of approaches for solving the various types of problems which appear on the accounting practice section of the CPA examination. Topics will be emphasized which appear most frequently on the CPA examination.

620:487. CPA PROBLEMS-TAXATION.

1 credit.

Survey of Federal Tax Law as it pertains to the CPA ex-

amination, with emphasis on recent tax developments.

620:488/588. CPA PROBLEMS — AUDITING.

3 credits.
Prerequisite, 440/540.

620:489/589. CPA PROBLEMS — THEORY. *3 credits.*

Prerequisites, 430/530, 440/540. Application of auditing and accounting theory through the study of advanced problems.

620:490. INTERNSHIP IN ACCOUNTING. *5 credits.*

Prerequisite, permission of Instructor. On-the-job experience with cooperating industrial and public accounting firms. Individual assignment made by supervising faculty member. Weekly reports and term paper.

620:491. SEMINAR IN ACCOUNTING. *1-3 credits.*

Prerequisite, permission of instructor.

GRADUATE COURSES

620:601. FINANCIAL ACCOUNTING. *5 credits.*

Accounting concepts, methods, and procedures involved in managing a business enterprise. The course is intended to provide accounting background for graduate study in business administration.

620:610. ACCOUNTING MANAGEMENT AND CONTROL. *5 credits.*

Prerequisite, 401 or equivalent. Emphasis is placed on the role of accounting as a tool of management planning and control in the areas of production, finance, marketing and general administration.

620:630. TAX RESEARCH AND PLANNING.

5 credits.
Prerequisite, 431 or equivalent. This course is concerned with the impact of the Federal income, estate, trust, and gift tax laws on personal and business tax planning. Its purpose is to develop research competence for a tax practitioner involving complex tax problems.

620:637. ADVANCED ACCOUNTING THEORY.

5 credits.
Prerequisite, 318. This course invites a critical examination of accounting concepts and standards. Current trends are discussed.

620:640. ADVANCED AUDITING. *5 credits.*

Prerequisite: 440/550 or equivalent. Conceptual foundations, government regulation and litigation, statistical methods, computer systems, current and prospective developments, and current research apropos of professional auditing.

620:655. INFORMATION SYSTEMS. *5 credits.*

Prerequisites, 355 and 610. An examination of accounting information systems design theory including system elements, principles, techniques of systems review, design and implementation. Includes insight into real world data processing, sources and uses of information, information flow networks, planning and control processes and the role of the accountant as generator and communicator of information.

620:670. COST CONCEPTS AND CONTROL.

5 credits.
Prerequisite, 610. Attention is focused on the problems of determining cost data appropriate to various decisions and the examination of the efficiency of decision, particularly from the perspective of cost. Emphasis is placed on the analysis and control of costs.

620:680. INTERNATIONAL ACCOUNTING.

5 credits.
Prerequisite, 610. International variations in accounting standards and reporting problems; auditing problems in the multinational firm.

620:698. SEMINAR IN ACCOUNTING. *5 credits.*

Prerequisite, a total of 25 Phase II-III graduate credits in Business. This course enables the student to undertake a program of independent research and writing supervised by his faculty advisor and leads to a finished major paper which should be completed within one year from the time of enrollment in the course.

640: FINANCE

640:314. CREDITS AND COLLECTIONS. *3 credits.*

Nature and fundamentals of credit investigation and analysis, credit extension, collection operations, collection aids and problems.

640:318. RISK MANAGEMENT AND INSURANCE.

4 credits.
Beginning with the concept of risk and risk management function in a firm, the principles of insurance are developed in the property, marine, casualty, and business interruption areas. The principles of life and health insurance are related to the employee benefit program of the firm.

640:320. THE LEGAL ENVIRONMENT OF BUSINESS.

5 credits.
A course designed to give the student a basic understanding of legal reasoning and analysis within the business system. Discussions include court systems and procedures; the various legal relationships of citizens and society; the various business organizations; commercial transactions; and the legal aspects of government regulation of business.

640:321. BUSINESS LAW I. *5 credits.*

Descriptive and analytical materials presenting the business system within a legal framework. Discussions are designed to develop legal reasoning and understanding of the adjudicative process within the substantive areas of contractual obligation, agency relationships, partnerships, corporations, accountant's legal responsibility, federal securities regulation, and anti-trust law.

640:322. BUSINESS LAW II. *4 credits.*

Prerequisite, 321. A continuation of descriptive and analytical materials, involving applications of law from the Uniform Commercial Code in the area of sales, commercial paper, and secured transactions. Additional discussions include legal interests in real property, wills, estates, trusts, personal property, bailments, insurance, suretyship, bankruptcy and labor law.

640:338. FINANCIAL INTERMEDIARIES. *5 credits.*

A study is made of the flows of funds. The role of major financial intermediaries on the demand and supply side of funds is analyzed. The function of the money and capital markets is reviewed with emphasis on the outlook for changes in interest rates and their impact upon the administration of specific financial intermediaries.

640:343. INVESTMENTS. *5 credits.*

Prerequisite, 371. The range of investment media is explored, alternative investment programs are considered and the role of securities markets through which these goals can be achieved is studied. The course includes limited discussions of analysis of securities and portfolio management.

640:371. BUSINESS FINANCE. 5 credits.

Prerequisites, 620:222 (or 401) and 325:247 or 325:201 and 202. A basic course dealing with the problems of the business firm from the financial manager's point of view. Topics include planning and managing the sources and uses of short-term and long-term funds, capital budgeting, and optimum financial structure.

640:400. INVESTING IN REAL ESTATE. 5 credits.

Prerequisite, 371. Real Estate: A study in real estate decision-making and analyses of real estate problems. Examines and environment and variables of the associated decision-making process, its background, the specialists on decision-making, with an emphasis on the purchase and financing decisions.

640:410. PERSONAL FINANCIAL MANAGEMENT. 5 credits.

Open to all students (Finance majors — free elective credit only).

Reviews and analyzes the many personal financing decisions made by individuals. Areas of study include money management, credit acquisition, insurance program development, investment analysis, and pension evaluation.

640:425. BUSINESS AND SOCIETY. 5 credits.

Prerequisite, senior standing. A conceptual course which considers the financial, economic, legal, and socio-political implications of business in our contemporary society. Issues involving such questions as changing social values, public policies related to business, and the economic and legal framework for business decisions are discussed.

640:436. COMMERCIAL BANK MANAGEMENT. 5 credits.

Prerequisite, 338. A study of administrative policy determination and decision making within the commercial bank. Policy making in the areas of liquidity, loan and security investment, and sources of funds are studied through the use of the case method and a computer simulation game.

640:447. SECURITY ANALYSIS. 5 credits.

Prerequisite, 343. An in-depth study is made of the analytical tools used to analyze financial statements and fixed-income securities. The primary focus is on the valuation of common stocks with some theoretical models tested by the use of empirical data.

640:479. PROBLEMS IN FINANCE. 5 credits.

Prerequisites, 371 and senior standing. The case method is utilized to cover a variety of topics from business finance. Emphasizes the application of analytical techniques from texts and journal readings to the solution of complex problems in financial management.

640:491/591. WORKSHOP IN FINANCE. 1-5 credits.

Group studies of special topics in the Department of Finance. May not be used to meet undergraduate or graduate major requirements in Finance. May be used for elective credit only with permission of instructor or department. May be repeated.

GRADUATE COURSES

640:602. MANAGERIAL FINANCE. 5 credits.

Prerequisites, 620:222 (or 620:601) and 325:600 or 325:201-202. An integrated view of managerial finance constituting an in-depth examination of the problems and operations of the business firm from the financial manager's

point of view. Topics include analysis, planning, control and management of both working capital and financial structure, capital budgeting, risk analysis and dividend policy.

640:633. MANAGEMENT OF FINANCIAL INSTITUTIONS. 5 credits.

Prerequisite, 674. A study of the administration of financial institutions in the U.S. Economy. The focal point of study is policy determination and administrative decision making in the individual financial institution.

640:645. INVESTMENT ANALYSIS. 5 credits.

Prerequisite, 674. Emphasis is placed on security valuation, approaching the problem from the point of view of risk elements and by purpose to be served rather than by legal distinctions only. Investment timing and portfolio management for institutions is stressed.

640:650. ADMINISTERING COSTS AND PRICES. 5 credits.

Prerequisites, 325:600 or equivalent. The purpose of the course is to provide an understanding of the techniques used by managers in reaching both short and long-run decisions in these areas. The course explores the areas of decision-making on costs and prices which determine business profitability.

640:655. GOVERNMENT AND BUSINESS. 5 credits.

Prerequisite, 602 or equivalent. Public policy with regard to business institutions and issues in the United States are considered from an economic, legal, and political framework.

640:665. COMPARATIVE INDUSTRIAL RATIONALE. 5 credits.

Prerequisite, 674. An institutional approach to the study of industrial organization. Consideration is given to the determinants of these industrial structures and an effort will be made to evaluate the market relationship between structure and market performance. Industrial organization under various economic and political systems will be considered.

640:674. FINANCIAL MANAGEMENT AND POLICY. 5 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.

640:676. MANAGEMENT OF THE FINANCIAL STRUCTURE. 5 credits.

Prerequisite, 674. Emphasizes the determination of the volume and composition of the sources of funds. The primary attention is directed to the cost of capital for specific sources of financing, dividend policy and joint investment financing decision. Other topics include repurchase of securities, acquisitions and mergers and their impact on the value of the common equity.

640:678. CAPITAL BUDGETING. 5 credits.

Prerequisite, 674. This course attempts to integrate the various theories of capital budgeting into a comprehensive conceptual scheme. Theoretical concepts and practical applications will be blended for a better understanding of capital problems.

640:681. INTERNATIONAL BUSINESS FINANCE. 5 credits.

Prerequisite, 602. Financial policies and practices of companies involved in multinational operations, considers management of working capital and permanent assets, return on investments and capital budgeting for the global firm.

640:698. SEMINAR IN FINANCE. 5 credits.

Prerequisites, 674 and a total of 25 Phase II-III graduate credits. Research projects, group reports and discussions.

650: MANAGEMENT**650:263. PRODUCTION ORGANIZATION. 3 credits.**

Prerequisite, sophomore standing. Principles and techniques of organization as they relate to effective production and operations management.

650:302. INDUSTRIAL PLANTS. 3 credits.

Prerequisite, 301. A study of the manufacturing work system in general, covering the nature of materials used in manufacturing, processes applied, and the economic considerations relevant to the management of manufacturing.

650:340. INTRODUCTION TO COMPUTER APPLICATIONS FOR BUSINESS. 4 credits.

Prerequisite, None (445:201 or its equivalent is recommended). Emphasis will be given to solving business problems through simple written programs or adaptation to more complex "canned programs." Topics included are applications of flowcharting and business language as applied to problems in the functional areas of business.

650:348. QUANTITATIVE BUSINESS ANALYSIS I. 4 credits.

Prerequisite, 345:140, 145, 150, 160, 165, 170, 180, 185, 195. Statistical analysis applied to business data including coverage of probability theory, probability distributions, sampling, estimation, and hypothesis testing.

650:349. QUANTITATIVE BUSINESS ANALYSIS II. 4 credits.

Prerequisite, 348. Continues coverage of quantitative methods applied to business decision-making. Topics included are Bayesian decision-making, regression and correlation analysis, time series, index numbers, analysis of variance, and nonparametric statistics. Some attention is also given to multiple regression analysis.

650:350. PERSONNEL MANAGEMENT. 3 credits.

Prerequisites, two courses in psychology or sociology. Investigation of individual and group behavior in the business environment and the analysis of personnel programs and policies, communications and practices in relationship to the effect upon productivity, organizational effectiveness and the satisfaction of personal objectives.

650:351. PERSONNEL FUNCTIONS. 3 credits.

Prerequisite, 350. Principles and practices of line and staff executives in managing the recruiting, interviewing, testing, selecting, developing, appraising, compensating, utilizing, and maintaining of an effective and satisfied work force.

650:352. MANAGEMENT TRAINING AND DEVELOPMENT. 3 credits.

Prerequisite, 350. Investigation of the principles, objectives, methodologies and perspectives of the process of manager development and its relationships to organizational effectiveness.

650:361. PRODUCTION AND SYSTEMS MANAGEMENT. 5 credits.

Prerequisite, 348, 325:202. This is a basic course for management majors and is structured to be a terminal course in production for other Business Administration students or for students in related disciplines. Emphasis on the design and analysis of operations systems, utilizing scientific decision-making methodology and examining the information needs.

Includes management's use of time estimation, sampling, breakeven and marginal analysis, payoff matrices and capital considerations. Students will take part in a non-classroom project involving the solution of a meaningful management problem associated with the operation of an organization. Cases, exercises and problems supplement classroom discussion.

650:362. PRODUCTION AND OPERATIONS MANAGEMENT. 5 credits.

Prerequisite, 361, 372, and any computer course, such as 445:201 or 340. This course is a continuation of 361, Production and Systems Management. The course introduces the use of models to deal with problems of production scheduling, materials management, quality control, distribution and project management. Models introduced will include linear programming, PERT and simulation. Classroom discussion will be supplemented by extensive use of cases, exercises and problems requiring the use of canned computer programs for analysis.

650:364. BUSINESS OPERATIONAL PLANNING. 3 credits.

Prerequisites, 301 and 349. The use of current statistical and economic techniques for planning the over-all operation of a business firm. Consideration is given to both internal and external factors which influence the short-run and long-range economic success of a business firm.

650:372. MANAGEMENT-ORGANIZATION AND BEHAVIOR. 4 credits.

Prerequisite, two courses in psychology or sociology. The course deals with the traditional management model and the traditional organization structure. Discussion of management as a system, the behavioral model, and current organization theory including matrix organization and project management.

650:404. PRODUCTION PLANNING AND CONTROL. 3 credits.

Prerequisites, 349 and 136 credits. Production planning and forecasting; centralized production control; scheduling; routing and dispatching; types of manufacture in relation to types of production control. Representative systems of production control. Application of quantitative methods to production control.

650:405. QUALITY CONTROL. 3 credits.

Prerequisites, 349 and 136 credits. Quality control and inspection in the organization structure; the inspection function; collection and use of inspection data, application of statistical methods to quality control and use of control charts.

650:447/547. ADVANCED STATISTICS. 3 credits.

Prerequisite, 349. Sampling theory and application, random sampling, stratified sampling, systematic and cluster sampling, area and multistage sampling, ratio estimates, sampling in time series.

650:456/556. MANAGEMENT PROBLEMS. 4 credits.

Prerequisite, Senior standing (or graduate standing and 371). The student applies modern management principles, practices and theory to an actual problem in industry.

650:469/569. PERSONNEL RELATIONS. 3 credits.

Prerequisites, 350, 325:247 or 325:201-202 or 325:243 or equivalent. Analysis of management, union and employee objectives, attitudes, and strategy, as they affect the conduct of business and the economy. Stress placed on individually assigned readings and reports.

650:471. WORKSHOP IN MANAGEMENT. *1-5 credits.*
Group studies of special topics in Management. May not be used to meet undergraduate major requirements in Management. May be used for elective credits only. May be repeated with permission of instructor or department.

650:473. BUSINESS POLICY. *5 credits.*
Prerequisites, 160 credits and all other business core program courses. This advanced course is designed to integrate the specialized areas of business administration. The rational decision-making skills of the top manager and analytical skills are enhanced through intensive case analysis and a computer business game. Investigated are questions of business environment, strategy, objectives, evaluation, and control.

650:490. SMALL BUSINESS MANAGEMENT SEMINAR. *4 credits.*

Prerequisite, senior level standing in the College of Business Administration or permission of instructor. Study of the fundamental principles and concepts essential to the operations of small business. Emphasis is placed upon the planning and evaluation of the financial, marketing, production and personnel systems of the smaller firm in our free enterprise economy. Learning methodologies include empirical field analysis, as well as the use of case analysis of authentic firms.

650:499. SEMINAR IN MANAGEMENT. *1-5 credits.*

Prerequisites, Senior standing and Department Head permission. This course provides a means for individualized study in management from which the student can derive significant value.

GRADUATE COURSES

650:600. MANAGEMENT CONCEPTS, PRACTICE AND THEORY. *4 credits.*

Administrative and operative management principles applicable to all organizations. Study of objectives, policies, function, leadership, organizational structure, coordination and control. *Prerequisite to MBA courses.*

650:601. QUANTITATIVE DECISION MAKING. *5 credits.*

Prerequisites, Finite Math or equivalent. Open to graduate students who have not had the undergraduate equivalent. Not open to those graduate students who have completed QBA I and II (348 and 349).

650:640. QUANTITATIVE METHODS IN OPERATIONS MANAGEMENT. *4 credits.*

Prerequisite, 601 or equivalent. This course is designed to give students pursuing the MBA degree greater insight into the essential techniques of quantitative analysis with particular emphasis on the operations or production aspect of business.

650:651. MANAGEMENT OF INTERNATIONAL OPERATIONS I. *3 credits.*

Prerequisite, 658 or 668. This course deals with the institutional environment of International Business — the parameters of the international business system which hold the system together and which the individual businessman cannot materially alter within a near or a medium range of time.

650:652. MANAGEMENT OF INTERNATIONAL OPERATIONS II. *3 credits.*

Prerequisite, 651. A feature of this course is the use of the international operations simulation game developed at the

University of Chicago and also used at Stanford. This is a major business simulation exercise oriented toward the specific problems of international business management. Modern theory of economics and political development discussed in relation to the game.

650:658. ORGANIZATIONAL BEHAVIOR. *4 credits.*

Prerequisites, 372 or 600. An in-depth investigation of the factors which influence human behavior in business organizations. Special emphasis will be given to applications of relevant research and theories of individual and group behavior, motivation, leadership, communication, and role theory, within the framework of production technology and organizational relationships found in business firms. Laboratory assignments.

650:663. INDUSTRIAL RELATIONS. *3 credits.*

Prerequisite, 600 or equivalent. The purpose of the course is to present the rights and duties of management in dealing with labor and the economic consequences of union and management in dealing with labor and the economic consequences of union and management policies and practices. The course also deals with administrative activity in terms of human relationships involved.

650:665. EXECUTIVE DECISIONS. *3 credits.*

Prerequisite, 668. Theory underlying decision-making with particular attention to the qualification of the decision-making process.

650:666. OPERATIONS RESEARCH. *3 credits.*

Prerequisite, 665. Operations research as viewed by the manager supervising its use and how it can be used to aid in making higher level decisions.

650:667. MANUFACTURING AND OPERATION ANALYSIS. *3 credits.*

Prerequisite, 665. Emphasis is on analysis of economic problems of production and operations, management use of such techniques as programming, economic model building and simulation.

650:669. THE LEADERSHIP ROLE IN ORGANIZATION. *3 credits.*

Prerequisite, 658. Leadership styles as seen in classical methods, two dimensional grids, multidimensional scales and as interaction with situational factors. Training and development methods for managers in industry evaluated. Role playing, in-basket, sensitivity, T-groups, organizational labs and conflict resolution. Critical review of assessment procedures and psychology of leadership. Small group laboratory assignments.

650:670. ORGANIZATIONAL THEORY AND POLICY FORMULATION. *3 credits.*

Prerequisite, 669. The study of organization structure and process, interactions of formal and informal systems, communications, job satisfaction and control patterns. Contemporary theories reflecting how people behave in organizations. Organizational lab assignments.

650:675. APPLIED INDUSTRIAL STATISTICS I. *3 credits.*

Prerequisite, 447/547. A review of statistical techniques in quality control, including multiple regression and correlation.

650:676. APPLIED INDUSTRIAL STATISTICS II. *3 credits.*

Prerequisite, 675. Analysis of variance and covariance, industrial design and analysis of experiments, introduction to response surfaces.

650:684. BUSINESS STRATEGY AND POLICY FORMULATION. 4 credits.

Prerequisites, to be scheduled during the last quarter of the individual's MBA program and the previous completion of the core discipline requirements. This course focuses on the integration of the theoretical and practical knowledge acquired in previous graduate business administration core discipline courses. The student is required to appraise then analyze the operations of a firm through the case method. Attention is given to understanding the company's relative skills, existing operations, competitive environment, legal considerations, marketing, finance, control systems, organizational structure, management, and the firm's functional strengths and weaknesses within the social and economic environment. Corporate strategy for both the short and long run are evaluated. Instruction will be by the case method.

650:698. GRADUATE SEMINAR IN MANAGEMENT. 2-5 credits.

Prerequisite, a total of 25 Phase II-III graduate credits. This is a course for the Master's degree candidate in management during his last two quarters. It enables the student to undertake a program of independent study and reading delineated and supervised by his faculty advisor and leads to a finished major paper which should be completed within one year from the time of enrollment in the course.

660: MARKETING**660:300. MARKETING PRINCIPLES. 4 credits.**

Prerequisite, 325:201-202 or permission. This broad course integrates commodity, institutional, functional and managerial concepts of the marketing process to provide the student with a total framework of economic activity.

660:320. PHYSICAL DISTRIBUTION. 4 credits.

Prerequisite, 300. A basic course in the source, movement and storage of goods, including emphasis on the economics of transportation and the requirements of an effective system.

660:330. INTERNATIONAL MARKETING. 4 credits.

Prerequisite, 300. Students concentrate on principles of international trade, balances, and import and export distribution machinery. The course pinpoints characteristics and potentials of various foreign markets.

660:340. MERCHANDISING. 4 credits.

Prerequisite, 300. Initially reviews and applies the basic concepts of presenting merchandise to the customer, with special emphasis on the individual entrepreneur and the small, regionalized chain. Next, this course focuses on large, national firms and chains. Attention is devoted to the implications of mass marketing for the firms' resources and its impact on other functional stress.

660:350. ADVERTISING. 4 credits.

Prerequisite, 300. Basic principles of a marketing communication system are developed, with emphasis on media selection and feedback requirements. The roles of research and trade requirements are stressed.

660:360. INDUSTRIAL MARKETING. 4 credits.

Prerequisite, 300. Following principles of modern marketing management, this course focuses on the development of local, regional and national markets. Particular emphasis is placed on problems of industrial goods manufacturers.

660:370. PURCHASING. 4 credits.

Prerequisite, 325:201-202. This course deals with "market-

ing in reverse," and includes such topics as buying the right quantity, inspection and quality control, and sources and assurance of supply.

660:440. RETAIL MANAGEMENT PROBLEMS. 4 credits.

Prerequisite, 340. The problems and opportunities involved in the application of management principles to a broad variety of retail organizations. Environmental influences as they affect retailing are explored in depth.

660:450. ADVERTISING CASES AND PROBLEMS. 4 credits.

Prerequisite, 350. Case analysis of specific corporate experience in consumer and industrial goods, and in the institutional setting. Each student develops a contemporary case for discussion and analysis.

660:470/570. SALES ADMINISTRATION. 4 credits.

Prerequisite, 350 or 360. Advanced consideration of the firm's marketing mix as it is applied to and adjusted to marketing objectives and policies and their implementation and control.

660:480/580. MARKETING CASES AND PROBLEMS. 4 credits.

Prerequisite, 470 or its equivalent. Detailed case analysis of corporate marketing problems, most of which involve all of the marketing inputs and allied internal and external forces and resources.

660:490/590. MARKETING RESEARCH. 4 credits.

Prerequisites, 300, 650:348. Through lectures, cases and team projects, students are taught to detect and evaluate actionable forces in the marketplace. Emphasis is placed on investigation appropriate to the economics of the situation.

660:495/595. WORKSHOP IN MARKETING. 1-5 credits.

Group studies in special topics in Marketing. May not be used to meet undergraduate or graduate major requirements in Marketing. May be used for elective credit only with permission of instructor or department.

660:499. SEMINAR. 1-4 credits.

Prerequisite, permission of the instructor. This course provides a means for individualized in depth study of a marketing problem or problems from which the student can derive significant benefit.

GRADUATE COURSES**660:600. MANAGERIAL MARKETING. 4 credits.**

Designed for graduate students with no previous credit in marketing. This introductory course provides a perspective of the role, contributions and functions of marketing in contemporary economic society.

660:629. THE INTERNATIONAL BUSINESS ENTERPRISE. 4 credits.

Prerequisite, 325:600 or equivalent. This first course in the program provides a comprehensive overview of International Business emphasizing the interactions between the multi-national environmental setting and the firm's decision making process. Students are assigned specific research topics.

660:630. INTERNATIONAL MARKETING POLICIES. 4 credits.

Prerequisite, 600. Within a planning framework, the course explores some of the problems in formulating and implementing multinational marketing strategies emphasizing the

resolution of conflict. Students are assigned specific research papers.

660:639. CONTEMPORARY PROBLEMS IN INTERNATIONAL BUSINESS. *4 credits.*

Prerequisite, 629 and permission of instructor. Topical problems (such as international investment and expropriation of fiscal harmonization in common markets) are selected for independent research and classroom discussion.

660:660. MARKETING MANAGEMENT AND POLICY. *4 credits.*

Prerequisite, 600. This basic survey stresses company functions in relation to demand and consumer factors, and the cost of operational elements that determine profitable operation. The corporate viewpoint is emphasized, as are considerations of quantitative analysis and programming. Especially recommended for those with a limited marketing background.

660:670. MARKETING PLANNING. *4 credits.*

Prerequisite, 660. In the context of a dynamic domestic marketing environment, students develop extensive marketing plans, both short- and long-run, for major U.S. corporations. Specific attention is directed to an appreciation of the complexity of the marketing task and its interrelationship with a wide variety of business and environmental forces.

660:680. MARKETING THEORY. *4 credits.*

Prerequisite, 660. A course designed (1) to acquaint the student with those theoretical works from the areas of marketing, economics, psychology, sociology and cultural anthropology which have some relevance to a general theory of marketing; (2) to assess the available empirical works in terms of their theoretical implication; (3) to project the practical significance of a general marketing theory to the management of the firm; and (4) to evaluate the use of marketing as an instrument for national economic development.

660:689. SEMINAR IN INTERNATIONAL BUSINESS. *4 credits.*

Prerequisite, 629 and a total of 25 Phase II-III graduate credits. This course permits the MBA candidate to independently analyze a significant international business problem culminating in a major paper to be completed within one year from the time of enrollment in the course.

660:699. SEMINAR IN MARKETING. *4 credits.*

Prerequisite, a total of 25 Phase II-III graduate credits. This cap-stone course permits the M.B.A. candidate to undertake a carefully delineated program of independent study and reading which leads to a finished major paper. Students are encouraged to share progress reports with their colleagues. The seminar work must be completed within one year from the time of enrollment in the course.

The College of Fine and Applied Arts

710: ART

710:105. UNDERSTANDING ART. 5 credits.

A study of the uses different societies have found for art and how the social and technological levels of the society have affected the kind of art they make. The course is divided between lectures, studio activities, and field trips. No credit toward major or teaching field in art.

710:122. SCULPTURE I. 5 credits.

A studio course intended to develop manipulative skills and aesthetic judgment while working with several types of materials. Relatively simple tools and technologies are introduced.

710:131. DRAWING I. 5 credits.

Freehand drawing experience with an orientation to elements and principles of visual organization. Limited media.

710:144. TWO-DIMENSIONAL DESIGN. 5 credits.

Lecture and studio experience in two-dimensional design. Experimentation with systems for purposeful organization of visual elements. Study of visual theory including color theory.

710:191. DESIGN. 3 credits.

Basic principles of creative design and color theory. Discussion and studio. No credit toward major or teaching field in art.

710:200. SURVEY OF HISTORY OF ART I. 5 credits.

Prerequisite, Sophomore standing or permission of the instructor. Architecture, sculpture, painting and the minor arts from Primitive sources through the Gothic time period in Europe.

710:201. SURVEY OF HISTORY OF ART II. 5 credits.

Prerequisite, 200 or permission of the instructor. Architecture, sculpture, painting and the minor arts from the Renaissance through the 1960's, primarily in Western Art.

710:213. PRINTMAKING I: LITHOGRAPHY. 3 or 5 credits.

Prerequisite, 131. Use of the lithographic stone and metal plate as printmaking media. Stone and plate preparation, lithographic drawing materials and techniques, paper registration, and the printing press will be covered. Emphasis on aesthetic theory, technique, and related history.

710:214. PRINTMAKING I: SERIGRAPHY. 3 or 5 credits.

Prerequisite, 131. Silk screen printmaking. Theory and use of stencil process, registration, and printing procedures. Emphasis on aesthetic theory, technique, and related history.

710:215. PRINTMAKING I: RELIEF. 3 or 5 credits.

Prerequisite, 131. Relief printmaking using found objects, synthetic materials, photo-techniques, as well as traditional woodcut and linoleum engraving. Emphasis on aesthetic theory, technique, and related history.

710:216. PRINTMAKING I: INTAGLIO. 3 or 5 credits.

Prerequisite, 131. Intaglio printmaking using drypoint

engraving, aquatint, and soft-ground techniques. Emphasis on aesthetic theory, technique, and related theory.

710:222. SCULPTURE II. 5 credits.

Prerequisite, 122. Continuing development of knowledge of materials and tools for aesthetic purposes. Increasing emphasis on the individual's own artistic capabilities.

710:231. DRAWING II. 3 or 5 credits.

Prerequisite, 131. Continuation of Drawing I. In-depth exploration of a wide range of techniques and media. Attention to controlled descriptive drawing and space illusion and their aesthetic applications.

710:232. INSTRUMENT DRAWING. 5 credits.

Prerequisite, 131. The creative uses of mechanical drawing processes for visually descriptive purposes. Proficiency in the use of mechanical drawing instruments is stressed. Both practical and theoretical drawing styles will be undertaken.

710:233. LIFE DRAWING. 3 credits.

Prerequisite, 131. A study of the perceptual problems in drawing from the life model. Study of the skeletal, muscular and mechanical nature of the human figure and the application of the knowledge to the resolution of aesthetic problems using the human figure as a motif.

710:245. PAINTING I: POLYMER ACRYLIC. 3 or 5 credits.

Prerequisites, 131 and (144 or 286 or 224:245). A study of the technical and aesthetic problems involved in polymer acrylic painting. The student may pursue, through lecture and experimentation, the transparent and opaque uses of this water-based paint.

710:246. PAINTING I: WATER COLOR. 3 or 5 credits.

Prerequisites, 131 and (144 or 286 or 224:245). A studio course in the theory and technique of water color painting. A study of traditional transparent water color methods, and experimentation with less conventional approaches to aqueous media.

710:247. PAINTING I: OIL. 3 or 5 credits.

Prerequisites, 131 and (144 or 286 or 224:245). A study of the technical and aesthetic problems involved in oil painting. A painterly orientation toward the plasticity of form as mediated by color.

710:254. CERAMICS I. 3 or 5 credits.

Prerequisite, 122 or 131 or 144. Clay processing, wheel throwing and hand construction techniques. Theory and use of kilns. Glazing and decorating techniques. Beginning chemistry of clay and glazes.

710:266. METALSMITHING I. 3 or 5 credits.

Prerequisites, 122 or 131 or 144. A studio experience in which the student is introduced to the tools and fundamental techniques of metalworking: lost-wax casting, fabrication, chasing, and forging.

710:268. ENAMELING ON METAL. 3 or 5 credits.

Prerequisite, 266. A studio course in which the student investigates the inherent aesthetic qualities of color and tex-

ture resulting when molten, colored glass is applied to metal surfaces.

710:275. PHOTOGRAPHY I.

5 credits.

Prerequisite, 122 or 131 or 144. A lecture, studio, and laboratory course in which the student studies and experiences fundamental characteristics of photo-sensitive materials, the chemistry of photography, optical systems, and photographic equipment. Photography is studied as an art medium.

710:283. DRAWING TECHNIQUES. *5 credits.*

Prerequisite, 232. The course includes advanced drawing and presentation techniques commonly used in graphic design. Various presentation and design problems will be encountered stressing the use of selected drawing methods and processes.

710:284. INTRODUCTION TO GRAPHIC DESIGN.

5 credits.

Prerequisites, 131 and (231 or 144 or 233 or 245 or 246 or 247). Studio experience in the use of tools and materials of the commercial graphic artist. Elementary design problems in commercial graphic design.

710:286. COMMERCIAL DESIGN THEORY. *5 credits.*

Prerequisite, 284. A basic course in visual problem solving emphasizing the visual movements in, and the graphic elements of, single as well as multiple images. Equal emphasis is given to existing and created images.

710:288. LETTER FORM AND TYPOGRAPHY. *5 credits.*

Prerequisite, 232 and 286. Letter symbols studied in terms of communication and aesthetic awareness. History of letter forms, hand lettering, alphabet design, contemporary type faces, reproduction processes.

710:293. WEAVING I. *5 credits.*

Prerequisite, 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.

710:300. ART SINCE 1945. *5 credits.*

Prerequisite, 201 or permission of the instructor. Consideration of the significant development of visual art forms since World War II in architecture, sculpture, printing, photography, metal, textile, ceramics, printmaking, and graphic design.

710:302. ART IN EUROPE DURING THE 17TH AND 18TH CENTURIES. *5 credits.*

Prerequisite, 201 or permission of the instructor. A study and analysis of major European examples of architecture, landscape design, painting, prints and sculpture from the beginning of the 17th century until approximately 1850.

710:303. RENAISSANCE ART IN ITALY. *5 credits.*

Prerequisite, 201 or permission of the instructor. A study of architecture, painting and sculpture of Italy during the thirteenth through the sixteenth centuries.

710:304. ART IN EUROPE DURING THE NINETEENTH CENTURY. *5 credits.*

Prerequisite, 204, or permission of instructor. A study and analysis of the major developments in the visual arts in Europe from 1800 to 1900.

710:305. ART FROM 1900 TO 1945. *5 credits.*

Prerequisite, 204, or permission of instructor. A study of the significant developments in the visual arts from approximately 1900 to 1945.

710:317. PRINTMAKING II.

3 or 5 credits.

Prerequisite, 213 or 214 or 215 or 216 in the appropriate process. A continuation of studio work in printmaking with concentration in one process designated by letter as follows: A. Lithography, B. Serigraphy, C. Relief, D. Intaglio. May be repeated for a total of 20 credits when a different process is indicated.

710:322. SCULPTURE III. *5 credits.*

Prerequisite, 222. A continuation of studio work in sculpture with concentration in one area of material manipulation as designated: A. Welding, B. Carving, C. Modeling, D. Construction, E. Casting. Course may be repeated when a different area is indicated.

710:331. DRAWING III. *3 or 5 credits.*

Prerequisite, 231, or permission of instructor. Drawing III continues the concerns for visual organization and technical proficiency with materials begun in Drawing I and II, but places more emphasis upon the use of imagination and development of ideas in drawing.

710:333. ADVANCED LIFE DRAWING. *3 credits.*

Prerequisite, 233. Additional studio course in drawing from the human figure. Individual interpretation of the human figure, using numerous media and drawing techniques. Emphasis upon aesthetic structure and the formal realization of personal intention. May be repeated for a total of 9 credits.

710:348. PAINTING II. *3 or 5 credits.*

Prerequisites, 144 and (245 or 246 or 247 in the appropriate medium). A continuation of painting with concentration in one medium designated by letter as follows: A. Polymer Acrylic, B. Water Color, C. Oil. Course may be repeated for a total of 15 credits, but limited to a maximum of 5 credits in a given medium.

710:354. CERAMICS II. *3 or 5 credits.*

Prerequisite, 254. Continuing development of skills in clay and glaze manipulation and kiln control. Student is encouraged to choose either a general survey of subject matter or a concentrated area of personal interest. May be repeated for a total of 10 credits.

710:366. METALSMITHING II.

3 or 5 credits.

Prerequisite, 266. Continuation of experiences first presented in introductory course. Development of skills and expansion of technical knowledge. Production of holloware is introduced. May be repeated for a total of 10 credits.

710:368. ADVANCED ENAMELING. *3 or 5 credits.*

Prerequisite, 268. Continuation of enameling on metal. Development of personal aesthetic values. Advanced techniques with metal foils, champleve, cloisonne, limoge, and grisaille processes. May be repeated for a total of 15 credits.

710:375. PHOTOGRAPHY II.

3 or 5 credits.

Prerequisite 275. Projects utilizing photographic media and tools are designed to expand the student's awareness of visual qualities and order, both in the subject and in the photographic image. Student must own or have use of a camera with controllable shutter, lens diaphragm, and focus. Course may be repeated for a total of 10 credits.

710:387. ADVERTISING DESIGN I. *5 credits.*

Prerequisites, 275 and 288. Creative exploration of visual problems of the market place. Projects offer exercise in developing design skills from concept through final comprehensive presentation.

710:388. ADVERTISING DESIGN II. 5 credits.

Prerequisites, 283, 375 and 387. Continuation from Advertising Design I. More complex projects including mechanical preparation of finished art for various printing processes.

710:389. ADVERTISING DESIGN III. 5 credits.

Prerequisite, 388. Continuation from Advertising Design II. Advanced level projects including development of all visual design phases of promotional campaigns. Problem solving for specific areas of graphic design within mechanical limitations of art reproduction.

710:393. WEAVING II. 3 or 5 credits.

Prerequisite, 293. Continuation of Weaving I. Advanced off-the-loom and loom techniques. Spinning. Emphasis on creative and experimental approaches. May be repeated for a total of 15 credits.

710:400/500. ART IN THE UNITED STATES BEFORE WORLD WAR II. 5 credits.

Prerequisite, 201 or permission of the instructor. Consideration of the development of art in the United States from earliest evidences to approximately World War II.

710:401. SPECIAL TOPICS IN HISTORY OF ART. 1 to 5 credits.

Prerequisite, 201 or permission of instructor. A lecture course in which the subject is specified each time the course is offered. Course focuses upon an art movement, time period, the production of a single artist, or a specific art medium.

710:402/502. WORKSHOP IN ART. 1-6 credits.

402 may be repeated to maximum of 12 credits; 502 may be repeated to a maximum of 18 credits. Prerequisite, advanced standing in Art or permission. Group investigation of a particular phase of art which is not offered by other courses in the curriculum.

710:405/505. HISTORY OF ART SEMINAR. 1-5 credits.

Prerequisite, fifteen hours in Art History or permission of the instructor. Lecture, individual research and evaluation, group discussion related to a specific time period or to an artistic problem. May be repeated for credit when a different subject is indicated.

710:409/509. SPECIAL PROBLEMS IN HISTORY OF ART. 1-5 credits.

Prerequisite, Twenty hours in Art History and permission of instructor and Department Head. Individual research in art history centered around a limited topic, such as a specific time period, the history of specific techniques, a single artist, or a movement in art history. No more than 10 credits will be counted toward major. May be repeated for credit when a different subject is indicated.

710:418. ADVANCED PRINTMAKING. 3 or 5 credits.

Prerequisite, 317 in the appropriate process. 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, May be repeated for a total of 20 credits.

710:422. SCULPTURE IV. 5 credits.

Prerequisite, 322 in the appropriate area. Emphasis on individual development within specific sculpture disciplines. Before a discipline new to the student may be pursued in this advanced level course the student must complete the 322, Sculpture III course in the appropriate area. May be repeated for a total of 25 credits.

710:434. DRAWING IV. 3 or 5 credits.

Prerequisite, 331 or permission of instructor. An in-depth study of drawing for the advanced art student. Emphasis upon interpretive and inventive drawing using the widest possible range of media and techniques. An exploration of the conceptual aspects of drawing, and their correlation with studio activity. May be repeated for a total of 15 credits.

710:449. ADVANCED PAINTING. 3 or 5 credits.

Prerequisite, 348 in the appropriate medium. An advanced level painting course. An opportunity to explore polymer acrylic, or oil, or water color painting techniques, and experiment with the aesthetics of color, form, and style. Concentration in one medium designated by letter as follows: A. Polymer Acrylic, B. Water Color, C. Oil. May be repeated for a total of 15 credits.

710:454. ADVANCED CERAMICS. 3 or 5 credits.

Prerequisite, 354. Instructor guided advanced study for persons wishing to develop professional competence. Student works on individual projects. May be repeated for a total of 25 credits.

710:455. CLAY-FIBRE-METAL SEMINAR. 3 credits.

Prerequisite, Permission of instructor. An open format seminar designed to explore ideas in clay, fibre, and metal art through reading, discussion and production.

710:466. ADVANCED METALSMITHING. 3 or 5 credits.

Prerequisite, 366. Investigation in-depth of aesthetic and technical problems of metalsmithing. Student works on individual projects under guidance from instructor. Electroforming techniques are introduced at this level. May be repeated for a total of 25 credits.

710:475. ADVANCED PHOTOGRAPHY. 3 or 5 credits.

Prerequisite, 375. Photographic media, light, and photographic equipment are manipulated experimentally to produce creative graphic images. Student works under guidance of instructor on advanced individual projects. Course may be repeated for a total of 25 credits.

710:480. ADVANCED GRAPHIC DESIGN. 5 credits.

Prerequisite, 389. Student works on advanced level individual projects under supervision of instructor. May be repeated for a total of 15 credits.

710:484. ILLUSTRATION. 5 credits.

Prerequisite, 389 or permission of instructor. The application of painting and drawing skills and aesthetic sensitivity to specific Commercial illustration and editorial art assignments.

710:486. PACKAGING DESIGN. 5 credits.

Prerequisite, 389 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 the development of conventional and experimental package design.

710:488. PORTFOLIO DESIGN. 5 credits.

Prerequisite, To be taken during last quarter before graduation in Graphic Design. A course to help prepare the student for job interviews, and to prepare a professional portfolio.

710:490. STUDIO PROBLEMS. 3 or 5 credits.

Prerequisite for art majors, advanced standing in area chosen and permission of instructor. Prerequisite for non-art majors, permission of instructor. Investigation in depth of aesthetic and technical problems within a student-selected area of specialization. Student must present in writing a proposed study plan and time schedule for instructor approval. Course may be repeated for credit.

710:491. SPECIAL TOPICS IN STUDIO ART.*3 or 5 credits.*

Prerequisite, Advanced standing or permission of the instructor. Group investigation of a particular phase of art which is not offered by other courses in the curriculum.

710:499. HONORS IN ART. 3 or 5 credits.

To be used for research in the honors program established by the student and his advisor(s). May be repeated for a total of 15 credits.

740: HOME ECONOMICS AND FAMILY ECOLOGY

740:121. TEXTILES. 3 credits.

Basic study of natural and man-made fibers. Emphasis upon physical properties, selection and care; attention given to design and manufacture.

740:123. CLOTHING CONSTRUCTION. 3 credits.

Fundamental principles of pattern alteration, construction and fitting of garments. Individual preparation of portfolio illustrating various construction techniques.

740:133. NUTRITION FUNDAMENTALS. 3 credits.

Basic nutrition principles and application to comparative nutritive and caloric value. Planning well balanced diets and utilization of exchange list.

740:141. FOOD FOR THE FAMILY. 4 credits. (2-4).

Application of nutrition to meal planning; problems in selecting, budgeting and preparing food; table etiquette, meal service.

740:147. HOME ECONOMICS SURVEY. 2 credits.

Survey of history and development of home economics with emphasis on professional and career opportunities.

740:158. HOUSE FURNISHINGS. 3 credits.

Principles which contribute to the satisfactory selection and arrangement of home furnishings. Discussion of furniture, carpeting, window treatments, household textiles, storage and various accessories used in the home with relation to utilization, cost and upkeep.

740:159. FAMILY HOUSING. 3 credits.

A study of various types of dwellings in relation to family values and needs. Attention given to planning and evaluating dwellings, understanding of various costs and construction methods. Evaluation of materials and services available; study of maintenance involved in various types of dwellings.

740:200. MARRIAGE AND FAMILY RELATIONS.*2 credits.*

A survey of problems and trends regarding marriage and family in today's society. Development of criteria for self-identity and marriage readiness through understanding of the responsibilities involved in husband-wife and parent-child relations. Not open to Home Economics majors or persons taking 201.

740:201. RELATIONAL PATTERNS IN MARRIAGE AND FAMILY. 5 credits.

Study of familial interaction in various life styles with emphasis on self-discovery changing roles, developmental tasks, family life cycles and socio-economic and cultural influence upon the individual and family.

740:204. SURVEY OF APPLIED HOME ECONOMICS IN THE COMMUNITY. 2 credits.

Directed study and observation of on-going community and business programs in home economics related areas including housing, management, food and nutrition, clothing selection and care, personal development, family budgeting and parent-effectiveness.

740:218. HOME NURSING. 3 credits.

Understanding of the physical emotional and functional changes of the sick and elderly. Development of knowledge and ability needed to teach home nursing at the high school level. Emphasis on the prevention of spread of communicable diseases, and care of elderly. Course taught by a registered nurse.

740:245. BASIC NUTRITION AND FOODS.*4 credits. (2-4).*

Basic study of the composition of common foods, their places in the diet. Principles involved in selection, purchase and preparation of food. Emphasis on retention of food nutrients in the preparation and preservation of foods.

740:246. BASIC NUTRITION AND FOODS.*4 credits. (2-4).*

Continuation of 245.

740:250. COMBINING MARRIAGE AND CAREER.*2 credits.*

Each year an increasing number of American women consider it necessary, wise or preferable to combine a career and marriage. This course is a study of the problems and/or advantage encountered in such a combination with emphasis on solutions for coping with such a life style.

740:255. FATHERHOOD: THE PARENT ROLE.*2 credits.*

A study of the historical development of societal stereotyped behavior as it affects the father role and his interactive relationship with other family members in contemporary society. Conjugal and parent-child relationships and their influences on the development of children are examined with emphasis on the male perspective in changing sex-roles.

740:265. CHILD DEVELOPMENT. 5 credits. (4-2).

Physical, social, mental and emotional development of the child from prenatal through five. Observation of children in child care and preschool centers.

740:275. THEORY AND GUIDANCE OF CHILDREN'S PLAY. 3 credits.

Prerequisite or concurrent, 265. Study of the importance of play in the child's social, emotional, intellectual and physical growth. Emphasis on the instructor as the facilitator in learning through guiding indoor and outdoor play of preschool children.

740:285. CREATIVE EXPRESSION PROGRAMS FOR CHILD CARE CENTERS. 3 credits.

Prerequisite, 265, 275. An appreciation of the utilization of expressive media to help a child express his individuality and communicate his ideas about himself and his world. Manipulation of materials as they are used to develop the child's inventiveness. Putting theory into practice for children ages 2-5 years.

740:295. ADMINISTRATION OF CHILD CARE CENTERS. 5 credits.

Prerequisite, 265, 275, 285. The study of principles, concepts and procedures involved in operating child care programs, including curriculum innovation and implementation,

parental involvement and recording children's progress. Analysis of interaction of instructional personnel, other staff members and volunteers.

740:301. CONSUMER EDUCATION. 5 credits.

Effective utilization of personal and family resources. Identification of alternatives and problems in family budgeting. Current trends in consumerism as they affect families in various socio-economic situations.

740:304. ADVANCED CLOTHING. 3 credits.

Prerequisite, 123. Advanced theory and methodology of garment construction with emphasis on custom dressmaking techniques, new fabrics. Analysis of special construction techniques and alteration problems for patterns and ready-to-wear. (Open to Home Economics Majors only.)

740:305. TAILORING. 3 credits.

Prerequisite, 304. Construction of suit, coat or ensemble with lining.

740:306. FLAT PATTERNS. 3 credits.

Prerequisite, 305. Application of principles of design and construction. Adaptation of standard patterns to individual's proportions. Theory and experience in flat pattern design.

740:311. CONTEMPORARY NEEDLE ARTS.

3 credits.

Prerequisite, 123 or permission of instructor. (Jr. or Sr. standing). A course emphasizing the use of appropriate textiles, yarns and needles in the creation of various items for purposes of enhancing leisure time or as earning skills.

740:314. INTRODUCTION TO FOOD SYSTEMS MANAGEMENT. 6 credits.

Prerequisite, junior standing in the Coordinated Undergraduate Program or permission of the Program Director. An introductory course in Food Systems Management with planned clinical experiences coordinated to identify initial concepts.

740:316. NORMAL NUTRITION. 5 credits.

(Dietetics Majors only). Prerequisite 246, 315:131. Composition, metabolism and physiological functions of food nutrients; nutritive requirements for individual life span; use of exchange lists; interpretation of research findings; field service; individual research paper.

740:317. HISTORIC COSTUME. 3 credits.

Chronological study of costume from ancient to modern times as a source of inspiration for contemporary dress and the theater with consideration of cultural forces that affected the development.

740:328. INTRODUCTION TO NUTRITION IN MEDICAL SCIENCE. 5 credits.

Prerequisite, 316; CUP students only. Orientation of the Dietetic student to the field of Medical Science. Clinical identification of, and initial participation in the implementation of, therapeutic health-care concepts. The study of nutritional implications of pathological conditions and the construction of diets for specific disease conditions.

740:340. MEAL SERVICE. 3 credits. (2-4).

Prerequisites 246, 316, or 133, 141. Goals in management of resources in relation to marketing, meal preparation and service; appropriate forms of service for various types of meals. Limited preparation of foods from various regions and countries of the world.

740:342. COMMUNITY INVOLVEMENT IN HOME ECONOMICS. 2-5 credits.

Development of managerial expertise through personal experience in dealing with the family as an ecological system. Selected participation sites in business and industry, hospitals, community agencies and with individual families with special managerial problems.

740:347. CAREER ENTRY, ADVANCEMENT AND ALTERNATIVES. 2 credits.

Designed for the major who has selected a specialization within the profession of Home Economics and Family Ecology. The course emphasizes professionalism, ethics, career entry routes, career development designs and career alternatives. Designed to create an awareness of the need to recognize changing career patterns, individual responsibility and acceptance of new challenges in a changing job market.

740:362. HOME MANAGEMENT THEORY. 4 credits.

Operation and function of home. Theories of home management relation to utilization of human and material resources in the promotion of family well-being.

740:380. INTRODUCTION TO COMMUNITY NUTRITION. 5 credits.

Prerequisites, 740:316, junior standing in the Coordinated Undergraduate Program in Dietetics, or permission of the Program Director. Initial orientation of the dietetic student to nutrition programs in community health-care facilities with clinical observations scheduled. Basic nutritive requirements during pregnancy, lactation, infancy, childhood, adolescence, and for the elderly; an investigation into popular diet plans and diet foods.

740:381. INSTITUTIONAL TECHNIQUES: DIETETICS. 5 credits.

Prerequisite 316. Emphasis on relevant theories, resources, and techniques for the effective oral and written communication of nutrition information to individuals and groups to meet educational objectives; clinical experiences.

740:395. TAILORING FOR MEN. 3 credits.

Prerequisite 123. Fundamentals of tailoring for men. Construction of a suit jacket and slacks. Emphasis on alterations, construction techniques and fabric selection. Prior experience with clothing construction is necessary.

740:401/501. FAMILY LIFE PATTERNS IN THE ECONOMICALLY DEPRIVED HOME.

3 credits.

Study of family life orientation and life style patterns among the economically deprived with an emphasis on the impact of socio-economic and psychological deprivation on family members throughout the family life span.

740:404. WORKSHOP IN HOME ECONOMICS AND FAMILY ECOLOGY. 1-5 credits.

May be repeated to a maximum of 8 credits. Prerequisite, at least Junior standing. An investigation on a current issue or topic in specified areas of Family and Child Development, Food and Nutrition, Programming and Instruction in Home Economics and Textiles or Clothing which are not offered through other courses.

740:412. INSTITUTIONAL MANAGEMENT.

4 credits.

Prerequisites 416. Organization, and management of quantity food service; criteria regarding personnel practices; food purchasing, sanitation and safety.

740:414. FOOD SYSTEMS MANAGEMENT.*15 credits.*

Prerequisite, 312; CUP students only. Coordination of clinical experiences with advanced concepts in the management of dietetic service systems relating to the achievement of nutritional care goals; preparation of the dietitians for entry level staff positions.

740:415. EQUIPMENT. 4 credits.

Selection, use and care of modern household equipment. Survey of commercial equipment used in home economics related professions.

740:416. QUANTITY FOOD PREPARATION.*5 credits.*

Prerequisites 246, 340, or 228:123, 136, 236. Scientific principles and methods of preparation for different types of service of food in quantity. Use and care of equipment. Some individual projects.

740:419/519. CLOTHING COMMUNICATION.*3 credits.*

Study of social-psychological and economical aspects of clothing selection. Emphasis on research pertaining to personality development, social and personal identity through dress. Concerns of various age levels and various cultural groups regarding dress.

740:420/520. EXPERIMENTAL FOODS.*4 credits. (2-4).*

Prerequisites 246, 310:207, 315:131. A scientific approach to experimental food preparation under controlled conditions. Group and individual research following an understanding of standard experimental procedure.

740:421. SPECIAL PROBLEMS IN HOME ECONOMICS. 1-5 credits.

Additional study or apprentice experience in a specialized field or preparation; group and individual experimentation.

740:422. ADVANCED HOME MANAGEMENT.*4 credits.*

Five weeks residence in home management home; practical problems in management of time, money and energy; experience in group living. Married students may select special managerial problems on a nonresidency basis.

740:426. THERAPEUTIC NUTRITION. 3 credits.

Prerequisites 316, 420, and 310:207. Application of principles of normal nutrition to diet in disease. Effects of pathological conditions on the planning of modified diets to meet nutritional needs.

740:428. NUTRITION IN MEDICAL SCIENCE.*15 credits.*

Prerequisite, 740:326 CUP students only. Coordination of advanced concepts in therapeutic nutrition with clinical experiences relating to achievement of health-care goals. Preparation of the dietitian for entry level staff positions.

740:439. FASHION. 3 credits.

Prerequisite, senior standing. Economic and social aspects of the fashion industry including study of growth, promotion and impact of cultural influences. Review of European and American fashion scene including recent trends and developments.

740:449. DRAPING AND DESIGN. 3 credits.

The designing of original garments through drapery of flat material on a form. Construction of form to correspond with individual measurements.

740:450/550. DEMONSTRATION TECHNIQUES.*2 credits.*

Prerequisite, majors only. Designed to give theoretical background and practical experience in the organization and performance of demonstrations. Emphasis on competencies and confidence in the coordination of materials, motion and speech through the art of presentation.

740:458. PRACTICUM IN HOME FURNISHINGS.*3 credits.*

Prerequisite, 158. A course designed to further knowledge of traditional and contemporary interiors with emphasis upon individual application to specific learning situations. Various furniture refinishing and custom-making techniques are discussed.

740:460/560. ORGANIZATION AND SUPERVISION OF CHILD CARE CENTERS. 3 credits.

Prerequisite, permission of Instructor. Theory and principles for establishing and operating centers for infants and young children.

740:470. TECHNIQUES OF PROMOTION FOR HOME ECONOMICS. 3 credits.

A survey of writing needs in the field of Home Economics. Actual experience in writing food and fashion columns, product interpretation for packaging, leaflet enclosures, advertising, press releases and radio-television scripts.

740:480. COMMUNITY NUTRITION. 16 credits.

Prerequisite, 740:338. CUP students only. Coordination of clinical experiences in community health-care programs with advanced nutrition concepts relating to the achievement of nutrition-care goals. Preparation of the dietitian for entry level staff positions.

740:481. PROFESSIONAL SEMINAR: DIETETICS.*2 credits.*

Prerequisite, preparation for employment, CUP student or permission. Seminar on professionalism for the dietitian; update on nutritional legislation and educational materials; concerns of the dietitian in implementation of expertise.

740:485/585. SEMINAR IN HOME ECONOMICS.*2-5 credits. (May be repeated to a total of 10 credits. Maximum of 3 credits in Graduate Degree Program.)*

Prerequisite, permission. Exploration and evaluation of current developments, research trends and implications in specified areas of home economics. Intensive investigation of problematic areas as related to changing role of the profession and changing society. Problematic concern will be announced and described as offered.

GRADUATE COURSES**740:601. FAMILY IN TRANSITION. 3 credits.**

Current theories and concepts of family interaction, family crisis and breakdown and alternative patterns of family adjustment and organization. Attention given to research and trends in family life and sex education. Implications for teaching.

740:602. FAMILY: ESTABLISHMENT AND ADJUSTMENT. 3 credits.

Study of family patterns and problems during early years of marriage with emphasis on interpersonal competence, emerging family patterns and practices. Examination of theory and research.

740:603. FAMILY: MIDDLE AND LATER YEARS.*3 credits.*

Study of family patterns and problems during the middle

and later years of life with emphasis on psychological and biological changes and economic and social adequacy. Research and trends in gerontology.

740:604. WORKSHOP IN HOME ECONOMICS AND FAMILY ECOLOGY. 1-5 credits.

May be repeated up to a total of 5 credits. Prerequisite, permission of Head of the Department. An investigation on a topical issue of contemporary concern in the area of Family and/or Child Development. Seminars will be described as offered and will integrate theories, concepts, research findings with outside readings and evidence of applicability to professional areas of interest or endeavors.

740:616. INFANT AND CHILD NUTRITION. 3 credits.

Prerequisites, 265 and 133 or 316. Study emphasizes current research trends in physiology of the infant and young child in relation to nutritional requirements and feeding practices.

740:651. FAMILY LAW. 3 credits.

Study of laws which control and protect individuals within the family unit. Emphasis on current trends and legal rulings. Course taught by an attorney-at-law.

740:660. PROGRAMMING FOR CHILD CARE CENTERS. 3 credits.

Study of principles and procedures involved in program development for child care centers. Examination of current programs available for children from conception through first two years. Implications Literary analysis, application and evaluation are stressed.

740:665. DEVELOPMENT IN INFANCY. 3 credits.

Prerequisite, 265, or permission. Analysis of research and theoretical framework regarding infant development from conception through first two years. Implications for guidance and education. Laboratory and seminar.

740:682. INDIVIDUAL INVESTIGATION IN FAMILY LIFE. 2-5 credits.

Prerequisite, permission of graduate adviser only. Individual pursuit and analysis in a specific area of student's interest and design under direction of a faculty adviser. Literary analysis, application and evaluation are stressed.

740:683. INDIVIDUAL INVESTIGATION IN CHILD DEVELOPMENT. 2-5 credits.

Prerequisite, permission of graduate adviser only. Individual pursuit and analysis in a specific area of student's interest and design under direction of a faculty adviser. Literary analysis, application and evaluation are stressed.

740:690. INTERNSHIP IN FAMILY AND CHILD DEVELOPMENT. 8 credits.

Prerequisite, permission of advisor. A community-based experience designed to supplement classroom studies. Students work with selected agency personnel and clientele in programs designed to meet the needs of children and/or families.

740:699. THESIS. 8 credits.

Prerequisite, permission of advisor. Preparation of a thesis pertaining to a selected research project in the area of family or child development.

750: MUSIC*

750:101. INTRODUCTION TO MUSIC THEORY. 2 credits.

Credit not applicable toward degree for music majors. A

course designed to correct deficiencies of background of the student anticipating Theory I. Material covered includes basic notation scales, metrical and key signatures, internal chord formation and symbols, and performance terms and symbols.

750:104. CLASS PIANO I. 2 credits.

Prerequisite, 101 or permission. Designed for students with no previous keyboard experience to learn rudimentary keyboard skills such as playing scales, chords, arpeggios and melodic patterns as well as simple music.

750:105. CLASS PIANO II. 2 credits.

Prerequisite, 104 or permission of the instructor. Course Description: A continuation of the work begun in Class Piano I.

750:106. CLASS PIANO II. 2 credits.

Prerequisite, 105 or permission of the instructor. Course Description: A continuation of the work begun in Class Piano II.

750:107. CLASS VOICE I. 2 credits.

Prerequisite, 101 or permission. Minimum memorization and solo singing requirement — five songs. Voice literature emphasis — folk songs, ballads, spirituals, sacred songs and easy art songs in English. (Note: the art song may be sung in the original foreign language, providing the student is thoroughly familiar with the language involved.) Practice emphasis — practice guidance, proper posture, breath support, ease, naturalness, free tone, tonal color variation, mood and style orientation through listening to and singing six suggested "basic model songs."

750:108. CLASS VOICE II. 2 credits.

Prerequisite, 107. Minimum memorization and solo singing requirement — five songs. Vocal literature emphasis — folk songs, ballads, spirituals, sacred songs and simple songs in English. (Note: the art song may be sung in the original foreign language providing the student is thoroughly familiar with the language involved.) Practice emphasis — legato and sostenuto, efficiency in tonal production, clarity of articulation and application of the "Principles of Production in Tonal Progression" in Lesson 16.

*Four music education courses are offered through the College of Education (numbered 520:323 and 324, 530:325 and 326) for music education majors.

750:109. CLASS VOICE III. 2 credits.

Prerequisite, 108. Minimum memorization and solo singing requirements — six songs. Vocal literature emphasis — old Italian and old English songs, art songs in English or foreign language if the student is conversant with the language. Practice emphasis — agility and flexibility, Lyric Bel-Canto style, extending compass and dynamic range, perfecting intonation, recitative style and delivery.

750:151-152-153. THEORY I, II, III. 3 credits each.

Sequential; prerequisite, 101 or permission. Study and creative use of the elements of music; investigation of the music of major composers of the classic and romantic eras; introduction to earlier musical practices and contemporary music.

750:154-155-156. MUSIC LITERATURE I, II, III. 2 credits each.

Sequential. Familiarization of student with large body of musical material from all branches of music writing; for vocal and instrumental, solo and ensemble, symphonic and choral groups. Special attention given to style and structural procedures by principal composers. Designed for students

with some musical background. (Students seeking a non-professional, music appreciation course should refer to 301, 302 and 303.)

750:157. STUDENT RECITAL. *1 hour, 0 credit.*

(Freshmen and Sophomores).

Required each quarter of all music majors. A weekly meeting of music students with members of the faculty, providing lectures, discussion of problems in the general area of performance, and, for selected students, the opportunity for ensemble playing and singing, conducting, accompanying, solo performance and the practice of stage deportment before an audience.

750:160-161-162. SIGHT-SINGING AND EAR TRAINING I, II, III. *2 credits each.*

Prerequisites, 101 or permission of instructor. Vocal mastery of major and minor scales, all intervals convenient to the vocal range, broken chords, problems of rhythm, meter, tempo, dynamics, modulation, and part singing. Singing will be done both with and without syllables and numbers. Aural recognition of these fundamental materials, a necessary adjunct to both accurate vocal performance and general musicianship, will be a part of the study.

750:201. FUNDAMENTALS OF MUSIC. *3 credits.*

Introduction to the fundamentals of music as related to the elementary classroom, including ear-training, sight-singing, creativity and functional piano. This course is prerequisite for 520:322 (non-majors only).

750:251-252-253. THEORY IV, V, VI. *3 credits each.*

Sequential; prerequisite, 153. IV: Renaissance vocal counterpoint. V: Baroque instrumental counterpoint. VI: Form and analysis of music of all eras.

750:254-255-256. STRING INSTRUMENT TECHNIQUES. *2 credits each.*

Sequential; prerequisite, 153. Learning the fundamentals of technique, tone production, methods, and materials pertaining to the violin, viola, cello, and string bass; culminating in heterogeneous string ensemble activities.

750:260-261-262. KEYBOARD HARMONY I, II, III. *2 credits each.*

Prerequisites, 106 or equivalency and 153. The essentials of basic theory and harmony practically applied at the keyboard, accompaniment, improvisation, transposition, modulation and sight reading.

750:263. SERVICE PLAYING FOR ORGANISTS. *2 credits.*

Prerequisite, 261. Emphasis on performance in class by each student, with criticism and constructive comment by the instructor and other class members. Work outside class would include a minimum of reading and a maximum of practice of the skill being studied.

750:301. MUSIC APPRECIATION: EARLY AND BAROQUE (TO 1750). *2 credits.*

750:302. MUSIC APPRECIATION: CLASSICAL AND ROMANTIC (LATE 18TH AND 19TH CENTURIES). *2 credits.*

750:303. MUSIC APPRECIATION: MUSIC OF OUR TIMES 20TH CENTURY. *2 credits.*

301, 302 and 303 are designed as electives for the general student (the non-music major) to provide an introductory survey of the art of music.

750:305. MARCHING BAND ORGANIZATION AND TECHNIQUE. *2 credits.*

Prerequisite, 751:104 or permission of instructor. This course

deals with problems involved in charting a complete pregame or half-time show for the marching band. All aspects of the band on the field are discussed including placement of instruments, systems for charting formations and drill, show planning (including sources for themes, etc.) script writing and special visual effects. Any problems a marching band director might expect to encounter while working with his band or planning shows will be discussed. Students will be required to originate a complete half-time show each week (continuity sheet only, no charts etc.) By the end of the quarter each student will be required to write a complete half-time show including script, charts, a drill, a picture formation, an entrance routine to the field, an exit from the field, a full script sheet and a prop sheet.

750:306. MARCHING BAND ARRANGING. *2 credits.*

Prerequisite, 153 and 751:104 or permission. Learning to arrange effectively for the marching band, including optimum registration of instruments, style, and familiarity with all the problems involving sound with an outdoor marching band. The course will include a discussion of scoring for the concert band as it relates to scoring for the marching band.

750:307. TECHNIQUES OF STAGE BAND PERFORMANCE AND DIRECTION. *3 credits.*

Prerequisite, permission of instructor. This course provides for basic experiences relating to conducting, rehearsal techniques, improvisation, performance, repertoire, and other matters pertaining to the organization and direction of stage bands. Students are assumed to have knowledge of the rudiments of music.

750:351-352-353. MUSIC HISTORY I, II, III. *3 credits each.*

Sequential; prerequisites, 153 and 156. Development of music from ancient to modern times; scores, recordings and live performance as illustrative material.

750:354. WOODWIND INSTRUMENT TECHNIQUES. *2 credits.*

Prerequisite, 153. Playing of woodwind instruments. Basic techniques for clarinet, flute, oboe and bassoon are presented and practiced.

750:355. BRASS-PERCUSSION INSTRUMENTS. *3 credits.*

Prerequisite, 153. Playing of brass and percussion instruments. Basic techniques for trumpet, French horn, trombone, tuba, snare drum, timpani, xylophone, bells, chimes, and other percussion instruments are presented and practiced.

750:356. MUSIC IN THE TEACHING OF RETARDED AND HANDICAPPED PEOPLE. *3 credits.*

Prerequisite: instructor's permission. This course is to provide opportunity for students to study the application of music to the exceptional person. Summary and synthesis of research in Music Therapy and application of results through observation/participation experiences are emphasized.

750:357. STUDENT RECITAL.

1 hour, 0 credit. (Juniors and Seniors).

See 157 for description.

750:358. FUNCTIONAL CLASS GUITAR. *3 credits.*

Prerequisite, knowledge of music rudiments and permission of instructor. This course provides the foundations of guitar skills, as related to informal singing and its use in school classrooms. Students are assumed to have knowledge of the rudiments of music.

750:360. CHORAL TECHNIQUES. 3 credits.

Prerequisites, 153, 361. Techniques employed in choral conducting securing attacks, releases, dynamic and tempo changes, voice classification; methods of securing correct intonation; analysis of choral literature; developing and maintaining a choral organization.

750:361. CONDUCTING. 3 credits.

Prerequisite, 153. Technique and practice in conducting, including beat patterns, fermatas, tempo change, attacks and releases, score reading through the use of small and large ensembles with reference to public school music.

750:362. CHORAL ARRANGING. 3 credits.

Prerequisites, 253, 353, or permission of the instructor. This course is designed to provide the student with an understanding of the principles of choral arranging and composition in all idioms and styles, and to aid him in developing the knowledge and skills needed for arranging and composing choral music.

750:371. ANALYTICAL TECHNIQUES I. 3 credits.

Prerequisites, 251, 252, and 253. Techniques for the analysis of musical scores from all eras of western music history, with major emphasis placed upon works of the Baroque, Classical and Romantic periods. Analytical techniques involve the study of the musical parameters of pitch, duration, timbre and intensity as well as an analysis of form and texture and a knowledge of the harmonic language of a musical score.

750:374. ANALYTICAL TECHNIQUES II. 3 credits.

Prerequisite, 371. A continuation of 371.

750:402/502. WORKSHOP IN MUSIC. 1-6 credits.

May be repeated for a maximum of 7 credits. Prerequisite, permission. Investigation of a topic in Music Education, Theory, Composition, History, or Church Music not offered in the regular curriculum. A topic is to be selected by faculty for summer offering. Graduate students must fulfill additional requirements as designated by the instructor.

750:451/551. INTRODUCTION TO MUSICOLOGY. 3 credits.

Prerequisite, 353. Comparative musicology; acoustics; psychology and physiology of music; aesthetics; theory of music theory; historical musicology.

750:452. COMPOSITION. 3 credits.

Prerequisite, 253. Study and creative use of the major styles and idioms of musical composition of the twentieth-century.

750:453/553. BIBLIOGRAPHY AND RESEARCH. 3 credits.

Prerequisite, 353. 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.

750:454. ORCHESTRATION. 3 credits.

Prerequisites, 253, 256, 354, and 355. Theory of instrumentation ranging from small ensembles to full band and orchestras.

750:455/555. ADVANCED CONDUCTING. 3 credits.

Prerequisites, 361, 454. Baton technique and problems relating to the practice, reading and preparation of scores; organization of orchestra and band, problems in programming and practice conducting larger instrumental ensembles.

750:460/560. REPERTOIRE AND PEDAGOGY: VOICE. 4 credits.

Prerequisite, permission of the instructor. A study in depth

of subjects dealing with the teaching of voice; the physiology of the vocal instrument, principles governing vocal production and their application to vocal pedagogy; Baroque, Classical, Romantic and Contemporary Art Song and Area Literature.

750:461/561. REPERTOIRE AND PEDAGOGY:**PIANO AND HARPSICHORD. 4 credits.**

Prerequisite, permission of the instructor. Designed for the future keyboard teacher; a study of the standard teaching repertoire and practical teaching methods: some supervised teaching of children and/or adults.

750:462/562. REPERTOIRE AND PEDAGOGY:**ORGAN. 4 credits.**

Prerequisite, permission of the instructor. A survey of organ literature with representative works from the fourteenth century to the present, including discussion of characteristic forms, historical significance, and general musical worth. The music will also be examined to illustrate principles and methods of teaching applied at various levels of organ study as well as performance practices and problems. Some supervised teaching.

750:463/563. REPERTOIRE AND PEDAGOGY:**STRING INSTRUMENTS. 4 credits.**

Prerequisite, permission of the instructor. A study in depth of the four bowed string instruments, dealing with their teaching, and the close relationships they share. Despite the obvious difference in physical application of the cello and bass from the violin and viola, methods of bowing, sound production and coloring are closely related. Application of the four instruments to solo, chamber, and orchestral playing.

750:464/564. REPERTOIRE AND PEDAGOGY: WIND**AND PERCUSSION INSTRUMENTS. 4 credits.**

Prerequisite, permission of the instructor. A survey of wind and percussion instrument literature with representative works from the total repertory for each instrument. Music will be examined to illustrate principles and methods of teaching applied at various levels of study as well as performance practices and problems.

750:471. COUNTERPOINT. 3 credits.

Prerequisite, permission of the Instructor. Designed to give the student of theory-composition the necessary knowledge and skills for understanding the contrapuntal practices and procedures of various style periods. Music for analysis will focus upon the vocal counterpoint of the Renaissance, the instrumental counterpoint of the late Baroque, and contrapuntal practice in the nineteenth and twentieth centuries. Major composers from each period will be represented.

750:472. ADVANCED ORCHESTRATION. 3 credits.

Prerequisite, 454. The study of techniques of orchestration and orchestral style as found in major works from the classical orchestra of Haydn and Mozart through the modern orchestra of Stravinsky, Bartok, Berg, and Schoenberg.

750:490. INDEPENDENT STUDY IN MUSIC.

2-3 credits. (May be repeated to a total of 6 credits.)

Prerequisite, senior standing and permission of the head of the department. Music majors only. Independent study under the supervision of specially selected faculty members in a subject area bearing on the student's own goals.

GRADUATE COURSES

750:601. CHORAL LITERATURE. 3 credits.

A study in depth of the style, structure, technical demands, manner of setting the text, and special performance prob-

lems found in masters-works by the great choral composers of nine centuries. The influence of extra-musical factors which are peculiar to a composer or to his age will also be considered.

750:604. DEVELOPMENT OF OPERA. 3 credits.

A course dealing with the growth and development of opera from its beginning, with emphasis on the social, cultural and intellectual forces that shaped it. Included will be a detailed examination of stylistic and structural changes as well as performance practices from Manteverdi's *Orfeo* to the present.

750:605. SEMINAR IN MUSIC OF THE MIDDLE AGES AND RENAISSANCE. 3 credits.

Prerequisite, permission of the instructor. A study in depth of the styles, structures, methods of composition, functions, performance practices, and evolution of medieval and Renaissance music. Notation, technical demands, and aesthetic principles of the music are studied with manuscript facsimiles, modern editions, recordings and live performance of musical examples. At least two project papers are expected in areas of special interest.

750:606. SEMINAR IN MUSIC OF THE 17TH AND 18TH CENTURIES. 3 credits.

Prerequisite, permission of the instructor. Historical and stylistic analysis of baroque and classic music; study in depth of special examples, from recordings, scores, and live performance; continuation and synthesis of approaches normal to study of music history and music theory; selected readings related to each student's particular field of interest; project papers.

750:607. SEMINAR IN MUSIC OF THE 19TH AND 20TH CENTURIES. 3 credits.

Prerequisite, permission of the instructor. Historical and stylistic analysis of the music of the 19th and 20th centuries; study in depth of specific examples, from recordings, scores, and live performance; continuation and synthesis of approaches normal to study of music history and music theory; selected readings related to each student's particular fields of interest; project papers.

750:608. SEMINAR IN MUSIC OF THE WESTERN HEMISPHERE. 3 credits.

Prerequisite, permission of the instructor. A study of the different influences which have moulded the music of nations, geographical regions and ethnic groups of the Western Hemisphere. Designed to gain through musical insights a better understanding of the peoples of the New World and of their cultures as well as specific knowledge of the stylistic elements of their musical art. Use of phonograph recordings; study of musical examples; research in areas of specific interest to the individual student.

750:609. TECHNIQUES OF 20TH CENTURY COMPOSITION. 4 credits.

Prerequisite, permission of the instructor. Study of the principal styles of 20th century music by means of background reading concerning the formation, development, and significance of each style, the foremost composers and their compositions, listening to recordings or live performances, class discussion, analysis of the musical procedures and techniques involved, and finally, original composition. Emphasis on the creative approach. At the close of the course, the student will have produced ten or twelve compositions illustrating the leading types of contemporary music.

750:611 and 530:611. FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION. 4 credits.

Prerequisite, permission of the instructor. A study of the basic philosophical, historical, sociological and psychological concepts around which public school music programs function.

750:612 and 530:612. PRACTICES AND TRENDS IN MUSIC EDUCATION. 4 credits.

Prerequisite, permission of the instructor. An in-depth exploration of current and innovative practices and trends in music education, the dissemination of the findings of research in music education as they are related to prevailing situations and problems in the public school music programs.

750:613. MUSIC IN THE URBAN COMMUNITY. 4 credits.

Prerequisites, graduate standing and 398:600 or 398:621 or other course recommendations determined by faculty advice in consultations with staff members in the Center for Urban Studies and the Department of Music in order to establish adequate background in urban affairs. Development of an awareness of the unique nature of the urban community and of the techniques, methods and materials necessary for the successful teaching and supervision of music in that environment. Required observations and part-time assisting in Inner-City school music programs.

750:614. MEASUREMENT AND EVALUATION IN MUSIC. 3 credits.

Prerequisite, 510:350 or equivalent. A course designed to explore in depth the principles of music aptitude, and music achievement, valid and reliable instruments for measuring them, elementary statistics as applied to music testing and basic guidelines for music test construction. Students are required to administer, analyze and interpret two separate testing projects dealing with some aspect of music.

750:640. ADVANCED PROBLEMS IN MUSIC. 2-4 credits.

(May be repeated for 12 credits.)

Prerequisite, permission of the Graduate Advisor. Studies or research projects related to problems in music.

750:647. MASTER'S CHAMBER RECITAL. 1 credit.

The Composition student will present a recital of chamber music compositions (at least one-half hour in length) written while in residence at The University of Akron. The student will actively organize and coordinate the recital and will also participate either as performer or conductor.

750:648. MASTER'S THESIS. 3 credits.

Prerequisites, completion of all other course work pertaining to the degree, the master's comprehensive examination, and permission of the Music Department graduate faculty. The selection of the supervising faculty members or member must be done with the approval of the department head. Original research in some phase of music pertaining to the candidate's major area of concentration resulting in a major work of expository writing.

750:649. MASTER'S RECITAL. 3 credits.

Prerequisites, completion of at least two quarters of graduate study in applied music, all other course work, the master's comprehensive examination and permission of the

Music Department graduate faculty and the private instructor. A full recital on the chosen major instrument. The program must be of a decidedly advanced level of difficulty over that of the student's baccalaureate recital. The student will be expected to be knowledgeable of the materials' technical, historical, and theoretical aspects. He will also be expected to provide in a formal paper a critical analysis of the works he has chosen before undertaking the public performance.

751: MUSICAL ORGANIZATIONS

No fee is charged for enrollment of qualified students in music organizations. Enrollment may be repeated each semester for credit as indicated.

751:101. UNIVERSITY SINGERS.

1 credit. (3 hours a week).

A mixed chorus. Membership by audition. Numerous appearances throughout the year, on campus, at various civic organizations, broadcasting stations and social groups, as well as public performances. Two performances annually of major choral works with the Akron Symphony Orchestra and Chorus. Previous choral experience and music-reading skill necessary.

751:102. UNIVERSITY EVENING CHORUS.

1 credit. (3 hours a week).

Membership by audition. Prospective members are advised to contact the Music Department at least two weeks before the beginning of the quarter. To provide musical experience as one of the options available to Evening Session students in the Fine Arts, persons registering for the course during the Evening Sessions would become part of the Akron Symphony Chorus which performs two or three times annually with the Akron Symphony Orchestra.

751:103. UNIVERSITY SYMPHONY ORCHESTRA.

1 credit. (3 hours a week).

An organization devoted to the study of orchestral literature; presents Fall and Spring concerts, as well as "pops" concerts; special programs, such as Christmas, Easter, and Commencement; performs with guest conductors and soloists of national reputation as well as outstanding students soloists. Membership through audition; also available for evening session students.

751:104. UNIVERSITY BAND. *1 credit.* (6 hours a week).

The University Marching Band is organized in the fall of the year (first quarter) and plays for all football games. It is open to all qualified students, both men and women. The Symphony Band functions after the football season and continues for the rest of the year. Membership in both the Symphony and Marching Bands through audition with the Director of Bands.

751:105. CHORAL ENSEMBLE.

1 credit. (2 hours a week).

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.

751:106. BRASS ENSEMBLE. *1 credit.* (2 hours a week).

Membership by audition. Must be a member of the University Band or Orchestra. Study and performance of literature for brass ensemble from all periods of music history. Frequent public concerts. For advanced brass players.

751:107. STRING ENSEMBLE.

1 credit. (2 hours a week).

Membership by audition. Must be a member of the Univer-

sity Orchestra. Study and performance of literature for string ensemble by the master composers. Designed to develop a high sense of musicianship among string players and to familiarize the student with string ensemble literature through performance.

751:108. OPERA WORKSHOP.

1 credit. (4 hours a week).

Membership by audition. Musical and dramatic group study of excerpts from the operatic repertoire. Includes an annual production of a standard opera and/or contemporary chamber work with staging, costumes, and scenery. Students must secure the approval of their University voice instructor before enrolling.

751:109. PERCUSSION ENSEMBLE.

1 credit. (2 hours a week).

Membership by audition. Must be a member of the University Band or Orchestra. Study and performance of literature for various percussion groups. Designed to develop skill in ensemble performance on a wide variety of percussion instruments, particularly in the growing modern repertory for such groups.

751:110. WOODWIND ENSEMBLE.

1 credit. (2 hours a week).

Membership by audition. Must be a member of the University Band or Orchestra. Study and performance of literature for a variety of woodwind groups; literature taken from several periods and styles in music history. Designed to develop the skills of the woodwind performer through ensemble performance and to increase his knowledge and understanding of woodwind literature.

751:111. CHAMBER ORCHESTRA.

1 credit. (2 hours a week). (May be repeated for credit).

Prerequisite, permission of instructor. An organization designed to train instrumentalists in the performance of orchestral music for small ensembles. Membership by audition, open to students with advanced ability.

751:112. MEN'S GLEE CLUB.

1 credit. (2 hours a week). (May be repeated for credit).

Prerequisite, permission of instructor. A choral organization designed to perform a wide range of compositions written for men's voices and representing various musical styles and periods. Membership by permission of the director.

751:113. WOMEN'S GLEE CLUB.

1 credit. (2 hours a week). (May be repeated for credit).

Prerequisite, permission of instructor. A choral organization designed to perform a wide range of compositions written for women's voices and representing various musical styles and periods. Membership by permission of the director.

751:114. KEYBOARD ENSEMBLE.

1 credit. (2 hours a week). (May be repeated for credit).

Prerequisite, permission of instructor. Study and performance of a wide variety of chamber music. Designed to develop a keen sense of the musicianship required of keyboard performers in ensemble. Registration required of all music majors whose primary performance area is piano, organ or harpsicord.

751:115. JAZZ ENSEMBLE. *1 credit.*

(May be repeated to 12 credits.)

This ensemble provides experience in jazz ensemble performance. Students are assumed to have knowledge of the rudiments of music and some experience in jazz performance. The ensemble also provides rehearsal and performance opportunities for student composers. The Jazz Ensemble rehearses twice weekly for 1.5 hours per rehearsal.

752: APPLIED MUSIC*2 or 4 credits each quarter.*

(Undergraduate or Graduate)

Students must contact the Music Department and consult with the applied music instructor before registering for course work.

All music majors must perform annually before an applied music jury on each instrument which he studies privately for credit. The non-music major studying applied music will appear before a jury at the discretion of his private teacher.

Credit is earned on the basis of two credits per quarter for one thirty-minute lesson per week and ninety minutes practice per day. Enrollment may be repeated each quarter for credit.

752:021. PERCUSSION. *2 or 4 credits.***752:022. CLASSICAL GUITAR.** *2 or 4 credits.***752:023. HARP.** *2 or 4 credits.***752:024. VOICE.** *2 or 4 credits.***752:025. PIANO.** *2 or 4 credits.***752:026. ORGAN.** *2 or 4 credits.***752:027. VIOLIN.** *2 or 4 credits.***752:028. VIOLA.** *2 or 4 credits.***752:029. CELLO.** *2 or 4 credits.***752:030. STRING BASS.** *2 or 4 credits.***752:031. TRUMPET/CORNET.**
*2 or 4 credits.***752:032. FRENCH HORN.**
*2 or 4 credits.***752:033. TROMBONE.** *2 or 4 credits.***752:034. BARITONE.** *2 or 4 credits.***752:035. TUBA.** *2 or 4 credits.***752:036. FLUTE/PICCOLO.**
*2 or 4 credits.***752:037. OBOE/ENGLISH HORN.**
*2 or 4 credits.***752:038. CLARINET/BASS CLARINET.**
*2 or 4 credits.***752:039. BASSOON/CONTRABASSOON.**
*2 or 4 credits.***752:040. SAXOPHONE.** *2 or 4 credits.***752:041. HARPSICHORD.** *2 or 4 credits.*

The catalog description for each of the above courses will read as follows:

Applied Music for students below the minimum level of performance skills expected for credit at the 752:100 level or above. Designed for students 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.

752:121-221-321-421/521. PERCUSSION.**752:122-222-322-422/522. CLASSICAL GUITAR.****752:123-223-323-423/523. HARP.****752:124-224-324-424/524. VOICE.****752:125-225-325-425/525. PIANO.****752:126-226-326-426/526. ORGAN.****752:127-227-327-427/527. VIOLIN.****752:128-228-328-428/528. VIOLA.****752:129-229-329-429/529. CELLO.****752:130-230-330-430/530. STRING BASS.****752:131-231-331-431/531. TRUMPET OR CORNET.****752:132-232-332-432/532. FRENCH HORN.****752:133-233-333-433/533. TROMBONE.****752:134-234-334-434/534. BARITONE.****752:135-235-335-435/535. TUBA.****752:136-236-336-436/536. FLUTE OR PICCOLO.****752:137-237-337-437/537. OBOE OR ENGLISH HORN.****752:138-238-338-438/538. CLARINET OR BASS CLARINET.****752:139-239-339-439/539. BASSOON OR CONTRABASSOON.****752:140-240-340-440/540. SAXOPHONE.****752:141-241-341-441/541. HARPSICHORD.****752:442. PRIVATE LESSONS IN MUSIC COMPOSITION.***2 credits. (May be repeated for a total of 12 credits.)*

Prerequisite, 750:253 and 353. Private instruction in composition. Primarily offering the students whose concentration is in theory composition.

752:642. APPLIED COMPOSITION. *2-4 credits.*
(May be repeated for a total of 12 credits.)

Prerequisite, undergraduate degree with a major in music. Private instruction in Composition offered primarily for students majoring in Composition at the graduate level, and graduate students in other areas of music (music education, performance, history and literature, etc.) interested in taking Composition lessons.

760: MASS MEDIA COMMUNICATION**760:141. INTERCOLLEGIATE DEBATE.** *1 credit.*
(May be repeated for a total of 4 credits.)

Study and practice on the current national intercollegiate debate proposition and participation in the university's forensic program.

760:145. ORAL ARGUMENT. *2 credits.*

Emphasis on legislative debate practice, addressed to current issues, in addition to study of the theory of argument and analysis of logical processes.

760:190. PUBLIC SPEAKING. *3 credits.*

Prerequisite, 110:105. Training in types of public address; performances and individual criticism.

760:201. NEWS WRITING. *3 credits.*

Prerequisite, 110:112. Writing of news stories; applying theory through discussions, illustrative material; actual writing for publication.

760:202. INTRODUCTION TO JOURNALISM.*4 credits.*

Prerequisite, 110:112. This course will consider the whole field of contemporary American journalism and explain the functions of those agencies through which news and views reach the general public. It will examine the economic, and regulatory conditions which govern both the print and electronic media in the United States.

760:203. RADIO AND TELEVISION NEWS WRITING.*3 credits.*

Prerequisite, 110:112. Principles and practice in the preparation of radio and television news and documentaries. Fundamentals of electronic news writing and news gathering, practice in news delivery techniques and voice control in studio situations.

760:204. EDITING. *3 credits.*

Prerequisite, 201. Copyreading, headline writing, proofreading, makeup, type and typography, printing machines and processes, newspaper methods and systems.

760:206. FEATURE WRITING. *3 credits.*

Prerequisite, 110:112. Short newspaper and magazine articles; preparation of articles for publication; human interest situations; extensive writing with class discussion.

760:245. ARGUMENTATION. *3 credits.*

Theory of argument, analysis of logical processes.

760:252. ETHICAL PERSUASION. *3 credits.*

Moral responsibility of the speaker; motivational forces in persuasive discourse; and, an introduction to propaganda analysis.

760:281. INTRODUCTION TO RADIO AND TELEVISION. *4 credits.*

Prerequisite, 175. Audience analysis research. Special projects in message design and development with practical radio and TV production experience.

760:282. COMMUNICATION MEDIA: RADIO. *4 credits.*

Prerequisite, 281. A study of the history, nature and function of educational and commercial broadcasting with practical production experience in studios and on location.

760:283. COMMUNICATION MEDIA: TELEVISION.*4 credits.*

Prerequisite, 281 or permission of instructor. The function, structure, and influence of television as a communication medium with practical production experience in studios and on location.

760:284. AN INTRODUCTION TO FILM**TECHNIQUES.** *4 credits.*

This course introduces the undergraduate student to full appreciation of total film concepts through recognition of the multiplicity of particular techniques contributing to motion picture production.

760:288. COMMUNICATION MEDIA: FILM. *4 credits.*

The techniques, limitations and potentials of film production. Students will learn script writing, directing, lighting and makeup for the camera as a medium with practical production experience in studios and on location.

760:301. COMMUNICATION MEDIA: PRINT.*3 credits.*

Prerequisites, 760:201 or permission of instructor. This is an advanced course in writing and editing news, features and analysis for the print media. The course will take a

behavioral approach to communication of information and ideas and will acquaint students with the analysis and presentation of quantitatively derived information.

760:303. PUBLICITY WRITING. *3 credits.*

Prerequisites, 760:201 or permission of instructor. This course will acquaint the student with the journalistic functions of public relations in our society and will explain the basic theories and principles involved in publicity writing and media placement. Additionally, it will provide students with experience in preparing publicity messages for various media.

760:309. PUBLICATIONS PRODUCTION. *3 credits.*

Prerequisite, 110:112. Fundamental course for persons engaged in production of publications in scholastic and business organizations. Consideration of a variety of processes for reproducing the printed word and related illustrations including photo-engraving, lithography, letterpress, rotogravure, mimeographing, and other forms of duplication.

760:310. INTERCULTURAL COMMUNICATION.*3 credits.*

Prerequisite, none. This course would constitute a survey of the field of intercultural communication. Topics discussed will include language and nonverbal communicative elements in international, transracial, and other cross-cultural communication settings.

760:335. PUBLICATIONS SUPERVISION. *3 credits.*

Prerequisites, 110:112. Basic course for advisers of high school and college newspapers, magazines, and yearbooks as well as those students preparing for those positions. Problems relating to staff selection and administration, supervisory techniques, business and financial operations, and mechanical functions.

760:344. PUBLIC DISCUSSION. *4 credits.*

Techniques of discussion in terms of skills of the effective discussion leader and participant.

760:351. SURVEY OF SPEECH COMMUNICATION.*3 credits.*

This course views man as "the animal that communicates by means of language." It attempts to present and explain the stages and varieties of speech communication involved in that view of man, and the important influences that determine and form his speech communication habits.

760:380. MASS MEDIA COMMUNICATION**INTERNSHIP.** *2-12 credits.*

Permission: no more than 2 hours of credit per quarter without special permission; full 12 hours of credit for a quarter by permission of the Dean of the College. Provides the student with supervised experience and on the job training in mass media communications related organizations on and off campus.

760:383. THE TELEVISION PRODUCER. *4 credits.*

Prerequisite: permission of instructor. In-depth study of the role of the producer in the complexities of developing a television program from inception to completion. The student as producer will be responsible for obtaining and supervising the writers, directors, talent, artists, and crew of the program. Budgets will be a major concern of the course.

760:384. SPEECH-COMMUNICATION RESEARCH I.*4 credits.*

The role of mass media as it relates to modern communication theory. Special projects in research.

760:385. AMERICAN FILM HISTORY:**THE BEGINNING TO 1945.***4 credits.*

The purpose of the course is to acquaint the undergraduate student with the historical developments of film and film concepts. This will be done by showing representative samples of various films from differing times and styles. This course ends with the films of 1945.

760:386. AMERICAN FILM HISTORY:**1945 TO THE PRESENT. 4 credits.**

This course continues the student's survey of film history and film concepts begun in 385.

760:391. AMERICAN SPEECHES. 3 credits.

The aim of this course is to help students understand the interrelationship of American discourse and American history. Students will examine how both the style and content of discourse have been influenced by the major shaping forces of our history. Further, there will be specific examination of how speech-making played an important role in the growth and development of the Republic. Students will read and discuss selected speeches, documents, and other background materials in the time period of the eighteenth and nineteenth centuries.

760:392. CONTEMPORARY SPEECHES. 3 credits.

A survey and critical review of speakers, their speeches, and audience reactions on significant issues since WWII.

760:393. INTERPERSONAL COMMUNICATION.*4 credits.*

Theory and practice in essential elements of interpersonal communication. Emphasis on attitudes in the interpersonal setting, transactional communication, nonverbal communicative elements, listening. Includes also an introduction to current research in intrapersonal communication — biofeedback instrument and non-instrument assisted self-communication. Team taught.

760:402/502. WORKSHOP IN MEDIA. 1-5 credits.

May be repeated for a maximum of 8 credits. Prerequisite, advanced standing or permission. Group study or group projects investigating a particular phase of media which is not covered by other courses in the curriculum.

760:410. ORGANIZATIONAL COMMUNICATION.*4 credits.*

An introduction to the communication problems inherent in a complex organization. Each student will (1) design a communication study of a complex organization, (2) implement this design through an actual organization and (3) report findings and draw conclusions about the communication structure of that organization.

760:439. PRACTICUM: MASS MEDIA COMMUNICATION. 1-18 credits.*(May be repeated for a total of 18 credits.)*

Prerequisite, permission of department head. The practicum provides the advanced senior student with the opportunity to undertake a complex special project, under the direction of a full-time faculty member, on or off campus. Specific hours are assigned by adviser with approval of the department head.

760:440/540. DIRECTION OF FORENSIC ACTIVITIES. 3 credits.

Prerequisite, 145 or 245. This course centers about instituting organizing and managing forensic activities including, for example: debating, original oratory, extempore speaking, and interpretive reading. The content includes discussion of

such matters as team organization and tournament management.

760:445/545. THEORY OF ARGUMENT. 3 credits.

Prerequisite, 245. This course centers about a rigorous treatment of the theory and practice of argument in human oral discourse.

760:454/554. GROUP PROCESSES AND CONFERENCE LEADERSHIP. 4 credits.

Group Communication theory and conference leadership as applied to individual projects and seminar reports.

760:481. PERSUASION AND PROPAGANDA**ANALYSIS. 3 credits.**

Prerequisite, 252 or permission of instructor. The theory and analysis of oral communication as designed to modify attitudes and behavior. Emphasis on recognition and understanding of propaganda.

760:483. SURVEY OF BROADCAST STATION DEPARTMENTS. 4 credits.

Prerequisites, 282 and 283 or permission. This course is designed to give the senior student an understanding of the several departments in a radio/television station; how they function, how they relate to one another, and how each contributes to program development.

760:484. REGULATIONS IN MASS MEDIA.*4 credits.*

An in-depth concentration on government regulations and self-regulatory bodies in the fields of broadcasting, film and the print media. Rules and regulations of the Federal Communication Commission, the Federal Trade Commission, the National Association of Broadcasters Code, federal and state censorship, self-regulation in film, libel and slander, "pressure groups," and the copy-right law are all studied.

760:488/588. CINEMATOGRAPHY WORKSHOP.*5 credits.*

This course is designed to give filming experience to 15 carefully selected students. The point of emphasis is on communication through film, color and sound. It is not a technical course in camera maintenance.

760:490/590. INTRODUCTION TO ANALYSIS OF PUBLIC DISCOURSE. 4 credits.

Study of the goals and philosophy of rhetorical evaluation. Available for graduate credit only with approval of Head of Department.

760:491/591. INTRODUCTION TO RHETORICAL THEORY. 3 credits.

This course focuses on selected authors such as Plato, Aristotle, Cicero, George Campbell, Hugh Blair and Kenneth Burke. The goal of the course is to introduce students to some of the principal works and authors in the history of rhetorical theory and to examine the issues and questions central to those theories, including such questions as what is the nature of practical reasoning, what is the nature of rhetorical proof, what are the ends of rhetoric and what is the relationship between a rhetorical theory and related ethical, political and epistemological writing. These and other topics are discussed in terms of the selected authors.

GRADUATE COURSES

760:600. INTRODUCTION TO GRADUATE STUDIES: MASS MEDIA COMMUNICATION. 3 credits.

A study of the basic research methods used in Mass Media Communication. Students will present oral seminar reports

and written research papers to indicate competence in the several research methods.

760:601. INTRODUCTION TO QUANTITATIVE RESEARCH IN SPEECH COMMUNICATION. *4 credits.*
Prerequisite, 345:671. Corequisite, 345:672. This course is designed to introduce graduate students in the Theatre and the Communication Arts to the application of empirical and statistical methods to their field of study. The course presents basic principles of design and execution in quantitative studies of the variables pertinent to aesthetic and public discourse.

760:605. GRADUATE RESEARCH IN MASS MEDIA COMMUNICATION. *1-9 credits.*
(May be repeated for a total of 9 credits.)
Prerequisite, 600 and approval of project prospectus. Performance of research on problems found in Mass Media Communication.

760:606. COMMUNICATION PROBLEMS IN THE BASIC SPEECH COURSE. *1 credit.*
This course is designed to train graduate students in the methods and materials of the introductory speech course. Required of all teaching graduate assistants.

760:610. SEMINAR IN COMMUNICATION PROBLEMS. *3 credits.*
(May be repeated for a total of 6 credits.)
This course examines major areas of concern in communication theory and practice. Instruction emphasizes concentrated research in organizational communication, psychology of the audience, and cross-cultural communication.

760:631. SPEECH-COMMUNICATION FOR THE EDUCATIONAL ADMINISTRATOR. *4 credits.*
A survey of theory applicable to interpersonal speech-communication and a practical application of speech-communication skills. The student will use case studies comparing successful speech-communications situations.

760:680. SPECIAL PROBLEMS IN COMMUNICATION AND MASS MEDIA. *3 credits.*
(May be repeated for a total of 6 credits.)
Problem analysis, investigation and evaluation of a major interest area related to communication theory, the mass media, or interpersonal communication.

760:681. ADVANCED PERSUASION AND PROPAGANDA ANALYSIS. *3 credits.*
Prerequisite, 481 or permission of the instructor. Detailed analysis of complex systems in persuasion and propaganda, particularly as related to information control.

760:683. MASS MEDIA RESEARCH SEMINAR. *3 credits.*
A study of experimental design in mass media, its development and use. Students will study the research literature on experiments in mass media. Students will be expected to develop and administer an experimental study, related to educational or commercial radio-TV or films.

760:684. SURVEY OF COMMUNICATION THEORY. *3 credits.*
A study of the dimensions of the field of communication: information analysis, social interaction and semantic analysis.

760:685. SCHOOL ADMINISTRATOR COMMUNICATION DESIGN IN THE MASS MEDIA. *4 credits.*
This course is designed to teach the school administrator communication development for the media in order to take

full advantage of the potentialities of radio, TV, and films for message impact.

760:686-687-688. STUDIES IN COMMUNICATIONS MEDIA. *4 credits each.*
Practicum in communication media with emphasis on production, message design and impact analysis. These courses are designed to give the students an opportunity to experiment with new production and message concepts which are not extensively used in the media today.

760:690. CLASSICAL RHETORICAL THEORY. *3 credits.*
Studies in classical and medieval rhetoric.

760:691-692. CRITICAL STUDIES IN AMERICAN PUBLIC ADDRESS I, II. *3 credits each.*
Prerequisite, 490/590. Rhetoric criticism of speeches of American orators from the colonial period to the present.

760:695. SEMINAR IN RHETORICAL CRITICISM. *4 credits.* (May be repeated for a total of 8 credits.)
This is a variable content seminar which may be repeated for 8 credits total. Each quarter will devote study to rhetorical implications of some specific topic, period or movement, e.g. the Attic Oratory, or the rhetoric of the 1972 Presidential campaign. This course provides the opportunity for close study of a wide variety of discourse and allows maximum flexibility responsive to the special interests of both students and faculty.

760:696. SEMINAR IN MODERN AND CONTEMPORARY RHETORICAL THEORY. *3 credits.*
(May be repeated for a total of 6 credits.)
Prerequisite, 690.

760:699. RESEARCH AND THESIS. *1-9 credits.*
(May be repeated for a total of 9 credits.)
Prerequisite, permission of the department head.

770: SPEECH PATHOLOGY AND AUDIOLOGY

770:110. INTRODUCTION TO SPEECH DISORDERS. *4 credits.*
An overview of the various types of speech disorders: their incidence, etiology and characteristics. Basic concepts and principles underlying speech pathology.

770:111. INTRODUCTION TO PHONETICS. *3 credits.*
An introduction to the International Phonetic Alphabet, and an overview of articulatory phonetics.

770:130. BASES AND STRUCTURE OF LANGUAGES. *4 credits.*
An introduction to the linguistic bases of speech and language: phonological, morphological, syntactical and semantic. Social and psychological variables in the communicative process as they apply to the therapeutic environment will be presented.

770:140. INTRODUCTION TO AUDIOLOGY. *4 credits.*
Normal anatomy and physiology of the hearing system and the acoustics of hearing. Survey of the field of audiology. The nature of hearing problems.

770:210. APPLIED PHONETICS. *4 credits.*
Prerequisite, 770:111. Training to allophonic transcription. Analysis of sound substitutions, distortions and dialectal variations. Study of Distinctive Feature Systems.

770:211. INTRODUCTION TO SPEECH**SCIENCE. 3 credits.**

Study of the anatomical, physiological and physical principles involved in the production, transmission, and reception of the speech signal.

770:230. SPEECH AND LANGUAGE DEVELOPMENT. 4 credits.

Prerequisite, 130 or permission. A study of language development including acquisition of comprehension and production of phonology, syntax and semantics. Approaches to the use of language in learning and thinking.

770:241. PRINCIPLES OF AUDIOMETRY. 4 credits.

Prerequisite, 140. Introduction to the psychoacoustic principles which underlie basic audiometric tests; principles of speech audiometry, masking and impedance audiometry.

770:242. AURAL REHABILITATION I. 3 credits.

Prerequisite, 770:140. Introduction to philosophy and methods of aural rehabilitation for children and adults; emphasis on auditory training and equipment, current auditory approaches, speech conservation and hearing aid use.

770:243. AURAL REHABILITATION II. 3 credits.

Prerequisite, 770:242. Introduction to speechreading principles and procedures; history of speechreading methods and study of current speechreading philosophies and methodologies; study of multisensory approaches to aural rehabilitation; comparison of oralism vs. total communication methods.

770:250. OBSERVATION AND CLINICAL METHODS. 1 credit.

Prerequisite, 110. Observation of speech and hearing disorders in a variety of clinical settings; introduction to general methods of clinical procedures.

770:271. LANGUAGE OF SIGNS I. 4 credits.

Fundamental expressive and receptive skills in manual communication; introduction to the various sign systems; the philosophy of total communication and orientation to aspects of deafness; conversational sign language and developing speed and comprehension of fingerspelling skills. Laboratory.

770:321. SPEECH PATHOLOGY I. 4 credits.

Prerequisites, 110 and 210. Study of articulation disorders including etiology, symptomatology, evaluation and therapeutic procedures.

770:322. SPEECH PATHOLOGY II. 4 credits.

Prerequisites, 310:260 and 770:110. Study of the pathology, diagnosis, and therapy for cleft palate, voice disorders and stuttering.

770:323. SPEECH PATHOLOGY III. 4 credits.

Prerequisites, 310:260 and 770:110. Study of the pathology, diagnosis and therapy for neurologically related disorders (e.g., aphasia, dysarthria, cerebral palsy).

770:330. LANGUAGE DISORDERS: ETIOLOGY. 3 credits.

Prerequisite: 230. Focus on etiology and the effect of symbolic, cognitive, and interpersonal language disorders of children viewed as correlates or sequelae of central nervous system dysfunction or emotional disturbance. Similarities and contrasts in the communication problems of the child with aphasia, dysarthria, and cerebral palsy, exogenous mental retardation, and the emotionally disturbed child.

770:331. LANGUAGE DISORDERS: EVALUATION AND THERAPY. 4 credits.

Prerequisite, 330. Study of children's language disorders including identification, evaluation procedures, intervention and remediation programs.

770:340. AUDIOLOGIC EVALUATION. 3 credits.

Prerequisite, 241. The "test battery" approach to audiometry is explored; techniques of case finding and handling of difficult-to-test cases; competency with all tests in the battery is required.

770:350. CLINICAL PRACTICUM: ARTICULATION. 2 credits.

Prerequisite, 321. Supervised clinical practicum in Articulation. Emphasis will be upon therapy procedures, diagnostic techniques and preparation of reports.

770:351 CLINICAL PRACTICUM: LANGUAGE 2 credits.

Prerequisite, 331. Supervised clinical practicum in language. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports.

770:352. CLINICAL PRACTICUM: AURAL REHABILITATION. 2 credits.

Prerequisite, 240. Supervised clinical practicum in hearing rehabilitation. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports.

770:370. LANGUAGE OF SIGNS II. 2 credits.

Prerequisite, 271, and permission of instructor. Advanced work in signs and fingerspelling with emphasis upon additional sign vocabulary acquisition and development of expressive and receptive skills. Stress is on continued skill building in conversing with deaf adults.

770:430/530. ASPECTS OF NORMAL LANGUAGE DEVELOPMENT. 4 credits.

Prerequisite: (May not be taken by majors in Speech Pathology and Audiology). An introduction to the acquisition and development of comprehension and production of language-phonologically, semantically and syntactically. Course also relates language acquisition to the perceptual development of the child and looks at the function of language in the individual, family, and school.

770:450. INTRODUCTION TO SPEECH AND HEARING DIAGNOSTICS. 4 credits.

Prerequisite, Senior Status. A general introductory course devoted to a discussion of the role of the speech and hearing clinician in differential diagnosis. Special emphasis is placed on case history taking, and the administration of standardized and informal procedures in the diagnosis of communicative disorders.

770:451. CLINICAL PRACTICUM: HEARING DIAGNOSTICS. 2 credits.

Prerequisite: 340. Supervised clinical practicum in hearing diagnostics. Emphasis will be upon diagnostic procedures and preparation of reports.

770:452. INTERNSHIP IN SPEECH PATHOLOGY AND AUDIOLOGY. 12 credits.

Prerequisite, Permission of the Director of the Speech and Hearing Center. This course affords an opportunity for in-depth clinical experience in a variety of clinical settings outside The University of Akron Speech and Hearing Center. The student is afforded on the job experience with specialized case populations.

770:460/560. SPEECH AND HEARING DISORDERS IN THE PUBLIC SCHOOLS. 3 credits.

Nature, causes and treatment of speech, hearing, and language disorders in public schools. Special reference to the role of the classroom teacher in identifying and referring students with suspected problems and in working with the school clinician.

770:461. ORGANIZATION AND ADMINISTRATION OF PUBLIC SCHOOL SPEECH AND HEARING PROGRAMS. 3 credits.

Prerequisite, Senior standing; open to majors in Speech Pathology and Audiology only. This course is designed for the speech and hearing clinician who plans to work in the public school system. It covers the following areas with particular reference to the 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 Department of Education in the State of Ohio.

770:480. SEMINAR IN COMMUNICATIVE DISORDERS. 3 credits.

Prerequisite, senior standing. This course provides a vehicle for detailed study and discussion of the various communicative disorders.

770:481. SPECIAL PROJECTS.

1-4 credits. (May be repeated for a total of 4 credits.)

Prerequisite, permission of the instructor. Individual or group projects related to any of the problems of communicative disorders.

770:482. WORKSHOP IN COMMUNICATIVE DISORDERS. 1-5 credits.

May be repeated for a maximum of 10 credits. Prerequisite, permission. Group investigation of a particular phase of speech pathology and/or audiology which is not offered by other courses in the curriculum.

770:483/583. COMMUNICATION DISORDERS OF THE GERIATRIC POPULATION. 4 credits.

An examination of the communication disorders that exist in the geriatric population. Focus will be on etiology, symptomatology, and concomitant rehabilitative procedures. This course is designed for the student interested in the aging population and is not open to majors in Speech Pathology and Audiology.

GRADUATE COURSES**770:601. ADMINISTRATION OF SPEECH AND HEARING PROGRAMS. 3 credits.**

The organization and management of speech and hearing progress in voluntary and official agencies.

770:602. SUPERVISORY TRAINING IN SPEECH PATHOLOGY AND AUDIOLOGY. 3 credits.

Prerequisite: Permission of Instructor. Philosophy and methodology in the supervision of speech and hearing services. Preparation of advanced students for employment as supervisors in different work settings.

770:610. INSTRUMENTATION IN SPEECH PATHOLOGY AND AUDIOLOGY. 3 credits.

Principles and use of clinical and research instrumentation in speech and hearing.

770:611. RESEARCH METHODS IN COMMUNICATIVE DISORDERS I. 3 credits.

Introduction of experimental design in the field of com-

municative disorders.

770:612. RESEARCH METHODS IN COMMUNICATIVE DISORDERS II. 3 credits.

Prerequisite, 611. Advanced experimental methods; development of a research study.

770:620. ARTICULATION. 3 credits.

Historical background, current theories, and research related to the etiology, diagnosis, and treatment of articulatory disorders.

770:621. COMMUNICATIVE DISORDERS IN CLEFT PALATE. 3 credits.

Historical background, current theories and research related to the etiology, diagnosis, and treatment of mental retardation.

770:622. COMMUNICATIVE DISORDERS IN MENTAL RETARDATION. 3 credits.

Historical background, current theories and research related to the etiology, diagnosis, and treatment of cleft palate.

770:623. COMMUNICATIVE DISORDERS IN CEREBRAL PALSY. 3 credits.

Historical background, current theories and research related to the etiology, diagnosis and treatment of cerebral palsy.

770:624. APHASIA. 3 credits.

Historical background, current theories and research related to the etiology, diagnosis and treatment of adult aphasia.

770:625. COMMUNICATIVE DISORDERS OF CHILDREN. 4 credits.

Oral and aural language deviations; their etiologies, pathologies and remediation.

770:626. VOICE PATHOLOGY. 4 credits.

Prerequisite, permission of instructor. Background and current research related to the etiology, diagnosis and therapy for various disorders of voice.

770:627. STUTTERING: THEORIES AND THERAPIES. 4 credits.

Reading and discussion of selected theories and therapies related to stuttering.

770:628. TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS.

3 credits. (May be repeated for a total of 6 credits.)

Prerequisite, permission of director of Speech and Hearing.

770:629. TOPICS IN SPEECH PATHOLOGY. 3 credits.

Historical background, current theories, and research related to the etiology, diagnosis and treatment of selected speech and language disorders.

770:638. SEMINAR IN LANGUAGE AND SPEECH OF THE HEARING IMPAIRED. 3 credits.

Study of the development of language and speech in hearing impaired children, emphasizing a psycholinguistic approach, and means of intervention; study of the communicative processes of hearing impaired adults: the effect of conditions of minimum auditory stimulation and acoustic feedback on speech and language; methods of speech conservation.

770:639. ADVANCED CLINICAL TESTING. 3 credits.

Theoretical basis for pure tone and speech tests and masking. Review of classical and selected current literature relative to the above audiometric tests.

770:640. SPECIAL TESTS. 3 credits.

Prerequisite, 639. Administration and interpretation of site-of-lesion test batteries; underlying psychoacoustic principles.

770:641. AMPLIFICATION. 3 credits.

Prerequisite, 639. Components of amplification system; methods of evaluating hearing aid performance.

770:642. PEDIATRIC AUDIOLOGY. 3 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.

770:643. INDUSTRIAL AUDIOLOGY. 3 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 & Health Act (OSHA) Regulations.

770:644. AURAL REHABILITATION IN CHILDREN. 3 credits.

Prerequisite, 639 or permission of instructor. Language development in the severely hearing impaired and deaf child; habilitative and rehabilitative techniques of auditory training and speech reading for children.

770:645. IMPEDANCE TESTING. 3 credits.

Prerequisite, 639 or permission of instructor. Theoretical principles of acoustic impedance measurements; otologic correlates and tympanometric, compliance and acoustic reflex test results; use of impedance audiometry as a site-of-lesion test.

770:646. MEDICAL AUDIOLOGY. 3 credits.

Prerequisite, 639 or permission of instructor. The relationship between audiology and otology; the application of clinical audiology in a medical environment; auditory test patterns in various aural pathologies.

770:647. EXPERIMENTAL AUDIOLOGY. 3 credits.

Prerequisite, 9 credits or permission. Principles of psychoacoustics. Review of instrumentation and research techniques. Study of significant literature in the field.

770:648. SEMINAR IN AUDITORY REHABILITATION. 3 credits.

Prerequisite, 240 or permission. Study of the auditory perception skills of hearing impaired individuals, with emphasis on speech perception and processing; examination of various current methodologies for training hearing impaired individuals to make use of their residual hearing, and techniques to assess auditory perception and processing skills by the hearing impaired; the use of the tactile sense and sensory aids in aural rehabilitation will be discussed, along with current speechreading research.

770:649. TOPICS IN ADVANCED AUDIOLOGY. 3 credits. (May be repeated for a total of 9 credits.)

Prerequisite, 6 credits audiology or permission. Selected current topics in clinical and experimental audiology. Emphasis on review of current literature.

770:650. ADVANCED CLINICAL PRACTICUM; DIFFERENTIAL DIAGNOSIS. 1 credit.

Supervised clinical practicum diagnostic procedures.

770:651. ADVANCED CLINICAL PRACTICUM; VOICE. 1 credit.

Supervised clinical practicum in the habilitation of voice disorders.

770:652. ADVANCED CLINICAL PRACTICUM; FLUENCY. 1 credit.

Supervised clinical practicum in the rehabilitation of disorders of fluency.

770:653. ADVANCED CLINICAL PRACTICUM; APHASIA. 1 credit.

Supervised clinical practicum in the rehabilitation of aphasia.

770:654. ADVANCED CLINICAL PRACTICUM; AURAL REHABILITATION. 1 credit.

(repeatable to 2 credits).

Supervised clinical practicum in aural rehabilitation procedures.

770:655. ADVANCED CLINICAL PRACTICUM; HEARING DIAGNOSTICS. 1 credit.

(repeatable to 2 credits).

Supervised clinical practicum in hearing diagnostics.

770:656. EXTERNSHIP IN SPEECH PATHOLOGY AND/OR AUDIOLOGY.

3-6 credits. (May be repeated for a total of 6 credits.)

Clinical practicum in a selected area center.

770:680. SPECIAL PROBLEMS: SPEECH PATHOLOGY AND/OR AUDIOLOGY.

1-4 credits. (May be repeated for a total of 9 credits.)

Prerequisite, permission of instructor. Guided research or reading in selected topics in speech pathology, audiology or language disorders.

770:682. WORKSHOP IN COMMUNICATIVE DISORDERS. 1-5 credits.

May be repeated for a maximum of 6 credits. Prerequisite, permission. Group investigation of a particular phase of speech pathology and/or audiology which is not offered by other courses in the curriculum.

770:694. RESEARCH AND THESIS.

3 credits. (May be repeated for a total of 9 credits.)

Prerequisite, permission of the Department Head.

775: SOCIAL WORK**775:270. POVERTY IN THE UNITED STATES 4 credits.**

For persons wishing to understand and/or intending to work in inner city and other poverty areas of the U.S. — a survey.

775:276. INTRODUCTION TO SOCIAL WELFARE. 5 credits.

Survey of the field of Social Welfare with special emphasis on the place of social work in the welfare system. Introduction of concepts relative to the place of welfare in our society and an examination of welfare as a social institution.

775:401/501. SOCIAL WORK PRACTICE I. 4 credits.

Prerequisites, 775:276 or permission of instructor. Methods, concepts and processes of contemporary social work practice with emphasis on working with individuals and families.

775:402/502. SOCIAL WORK PRACTICE II. 4 credits.

Prerequisites, 775:276 or permission of instructor. Methods, concepts and processes of contemporary social work practice with emphasis on working with groups.

775:403/503. COMMUNITY ORGANIZATION (SOCIAL WORK PRACTICE III). 4 credits.

Prerequisite, permission. An examination of community

organization as a social work process. Students learn to assess problems and project program to meet them.

775:421. FIELD EXPERIENCE IN A SOCIAL AGENCY. 3-12 credits. (3 credits minimum and 12 credits maximum — total in consecutive quarters only.)

Corequisite, 422, prerequisite, 373 or permission. Individual placement in selected community and social service agencies for supervised experience in casework, group work, community organization, corrections and similar fields. Student must enroll in 422 concurrently. Student must register intent and receive permission to take the course with the course instructor during the quarter prior to enrollment. Primarily for senior majors. Required for social work certification.

775:422. FIELD EXPERIENCE SEMINAR. 2 credits.

Corequisite, 421, prerequisite, 373 or permission. Careful examination of the integration of academic and methodological studies into professional practice. Required in any quarter for which a student is enrolled in 421. Not open to others.

775:450/550. SPECIAL NEEDS AND SERVICES IN LATER ADULTHOOD AND AGING.

4 credits.

Prerequisites, 775:276 and 775:401. Application of knowledge and principles of social work profession practice to understanding and development of social services to meet needs of aging and later maturity individuals, families, and communities and the institutions serving them and their relatives.

775:451/551. SOCIAL WORK IN CHILD WELFARE. 4 credits.

Prerequisite, 775:276 or permission. In depth exploration of the structure and functioning of social services designed to help children and the practice of social work in child welfare settings. Consideration of 1) supportive services, 2) supplementary services, and 3) substitutive care.

775:452/552. SOCIAL WORK AND MENTAL HEALTH. 4 credits.

Prerequisites, 775:276 and 375:400, or permission. Issues, organization, development, methodologies of current professional social work practices in mental health settings.

775:465/565. SUPERVISION AND ADMINISTRATION IN SOCIAL SERVICES. 4 credits.

Prerequisite, 775:401 or 775:403 or permission of instructor. Beginning advisory and administrative theory and practices for social workers and other social service and community agency personnel.

775:480/580. SPECIAL TOPICS IN SOCIAL WORK AND SOCIAL WELFARE. 1-4 credits.

Prerequisites, 775:401 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. Topics and credits variable.

775:490/590. INDIVIDUAL INVESTIGATIONS IN SOCIAL WORK AND SOCIAL WELFARE.

1-4 credits (repeatable to 6 credits).

Prerequisite, permission and prearrangement with the instructor. Individual readings, research or projects in an area of interest in social welfare theory/or institutional operations or in Social Work practice, under the guidance of a Social Work faculty member. Preparation of a report paper appropriate to the nature of the topic. For Social Work majors.

775:495/595. SOCIAL WORK WORKSHOP.

1-5 credits.

(May be repeated for a maximum of 6 credits.)

Prerequisite, permission of the instructor. Group investigation of a particular phase of Social Work or Social Welfare which is not offered by other courses in the curriculum.

GRADUATE COURSES

775:601. SEMINAR IN SOCIAL WORK METHODOLOGY. 4 credits.

An examination of the concepts and methods utilized in contemporary social work practice.

780: THEATRE ARTS AND DANCE

780:116. BALLET ANALYSIS I. 3 credits.

Prerequisite, permission of Instructor. Required of all ballet majors in their freshman year. A lecture and laboratory course designed to prepare the dancer to understand his body and its function in artistic performance.

780:117. BALLET ANALYSIS II. 3 credits.

Prerequisite, Ballet Analysis I. Required of all ballet majors in their freshman year. A lecture and laboratory course designed to prepare the dancer to understand his body and its function in artistic performance.

780:121-221-321-421. CHAMBER BALLET. 2 credits each.

(Each number may be repeated for a total of 6 credits.)

Prerequisite, permission of instructor, limited to students who are members of the Chamber Ballet. Rehearsal, general preparation, and public performance of the University Chamber Ballet.

780:122. BALLET TECHNIQUE I. 5 credits.

(May be repeated for a total of 15 credits).

Prerequisite, permission of instructor. The theory and practice of ballet, stressing fundamentals of vocabulary, structure and placement. Emphasis on individual development of style.

780:124. INTRODUCTION TO BALLET. 2 credits.

(May be repeated for a total of 6 credits.)

Designed for students with little or no previous training, a course in the basic exercises of classical ballet with emphasis on body placement, rhythmic and muscular awareness and the building of strength.

780:126/127/128. CHOREOGRAPHY: IMPROVISATION I, II, III.

2 credits each.

Sequential — An experimental approach will be used in the beginning to reacquaint the senses with pure unstructured movement. The emphasis will be toward inner space in the early exercises leading to texture and group space as the course progresses and finally to student-led structures as basis for improvisation contrasting organic and chance approaches.

780:175. ORAL INTERPRETATION I. 4 credits.

Oral interpretation of the printed page with special emphasis on poetry and prose fiction.

780:222. BALLET TECHNIQUE II. 5 credits.

(May be repeated for a total of 30 credits.)*

Prerequisite, permission of Instructor, and 122. Continuation of Ballet Technique I, expanding upon vocabulary and established patterns of balletic movement. Studio lectures on comparative international dance styles.

780:224. FUNDAMENTAL BALLET TECHNIQUE.

3 credits. (repeatable to 18 credits).

Prerequisite, 780:124 (or equivalent) and permission of instructor. (Closed to Ballet Majors). This course is a continuation in training the older (18 years and up) body to function in the geometric patterns necessary to the aesthetics of ballet movement. Meet five days weekly, and serves as a transitional course between *Introduction to Ballet* and *Ballet Technique I* for nonmajors.

780:226/227/228. CHOREOGRAPHY: SOUND AND MOVEMENT I, II, III.

2 credits each.

Sequential — Prerequisites: *Improvisation I, II, III*. An introduction to music structures and their applicability to dance structure. Emphasis on rhythm (simple music notation and score comprehension) and linear aspects of dance/music as well as texture. Use of contrast and parallelism.

780:229. CONTEMPORARY DANCE TECHNIQUE.

2 credits.

Prerequisite: *Ballet Technique I* or permission. (May be repeated for a total of 6 credits.) Class meets twice weekly for two hours of training and will explore at least three approaches. Combinations include variations of these (and others) "classic" approaches: Graham, Humphrey & Weidman & Limon, Holm, Cunningham, Wigman, Erdman, Horton, etc.

780:250. VOICE TRAINING FOR THE THEATRE ARTS. 3 credits.

Prerequisite, permission. The focus of this course will be on the safe and most effective uses of the vocal instrument in its specific application to the stage.*

780:261. INTRODUCTION TO THEATRE. 4 credits.

When two sections of the course are offered during a regular term, students may enroll in either of the following sections:

Section 1 — *Play production*, involving projects relative to University Theatre productions. (This section is especially for students planning to teach theatre courses on the secondary level or to direct plays)

Section 2 — *Aesthetics of theatre* — the stage, dance, film, television, with frequent attendance at a variety of productions in the Akron area.

When only one section is offered during any term, the course content will be adapted to the specific needs of the students enrolled.

780:262. STAGE MAKEUP. 3 credits.

A study of the basic principles of stage makeup, from character analysis to execution of a makeup plan. Laboratory hours.

780:263. SCENE PAINTING. 2 credits.

A laboratory course designed to equip the stage designer — technician with the basic skills of effective painting for the stage.

780:265. BASIC STAGECRAFT. 4 credits.

Basic aspects of stagecraft in terms of production; the stage and its equipment; construction and handling of scenery; theatrical hardware; painting of scenery. Lab hours in conjunction.

780:271. DIRECTING I. 3 credits.

Prerequisite, 780:261. This course focuses on the fundamentals of play directing, including the responsibilities of the director, stage nomenclature, play selection, character analysis, and rehearsals. The one-act form is emphasized.

780:275. ORAL INTERPRETATION II. 4 credits.

Prerequisite, 175 Oral interpretation from the printed page, with special emphasis on poetry and drama, Reader's Theatre.

780:320. DANCE NOTATION. 3 credits.

A beginning study of the Labanotation Method of recording movement both as reading skill and a means of increasing one's perception of movement *per se*. The goal would be to prepare the student to the level of passing the beginning examination of the Notation Bureau.

780:322. BALLET TECHNIQUE III. 5 credits.

(May be repeated for a total of 45 credits.)*

Prerequisite, permission of Instructor and 122 and 222. Continuation of Ballet Technique II, emphasizing development of style and line. Special problems assigned by the instructor, with ample opportunity for experience in the performance circumstance.

780:326/327/328. CHOREOGRAPHY: TRADITIONAL FORMS I, II, III. 2 credits each.

Sequential — Prerequisites: *Sound and Movement I, II, III*. A study and practical application of choreographic principles recorded by earlier Masters: Horst, Humphrey Noverre, etc., as they apply to concert dance today. Group studies emphasized.

780:360. CREATIVE DRAMATICS. 4 credits.

Prerequisite, 261. Focuses on informal dramatic experiences for children from ages five through nine. Emphasis is placed on development of the child's imagination and creativity as well as the use of pantomime and improvisation.

780:362. ADVANCED STAGECRAFT. 4 credits.

Prerequisite, 265. Backstage organization and management in terms of production staff; three-dimensional scenery construction, special scenery and rigging problems. Lab hours in conjunction.

780:364. INTRODUCTION TO STAGE DESIGN. 3 credits.

Prerequisite, permission. Principles of design as applied to dramatic production.

780:365. GRAPHIC ARTS FOR STAGE DESIGN. 3 credits.

Prerequisites, 261 and 364. An investigation of drawing and painting methods and materials useful to the stage designer. Production of sketches, renderings, working drawings and models for the stage.

780:366. ADVANCED STAGE DESIGN. 3 credits.

Prerequisites, 365, 265. A laboratory-theory course surveying architectural styles as they are adapted to the theatre. Practice in applying design elements for the stage for various types and styles of dramatic presentations.

780:367. HISTORY OF THEATRE: GREEK THROUGH PRE-ELIZABETHAN PERIOD. 4 credits.

Prerequisite, 261 or permission of instructor. The physical stage, scene design, styles in acting and production, stage lighting, theatrical convention, dramaturgy and influences on modern theatre.

*Only a total of 60 credits from *Ballet Technique I, II, III, IV* to be taken for credit and apply toward the B.A. degree.

780:368. HISTORY OF THEATRE: ELIZABETHAN PERIOD THROUGH THE 18TH CENTURY. 4 credits.

Prerequisite, 261 or permission of instructor. The physical stage, scene design, styles in acting and production, stage lighting, theatrical conventions, dramaturgy and influences on modern theatre.

780:369. HISTORY OF THEATRE: 19TH CENTURY TO PRESENT. 4 credits.

Prerequisite, 261 or permission of instructor. The physical stage, scene design, styles in acting and production, stage lighting, theatrical convention, dramaturgy and influences on modern theatre.

780:370. THE AMERICAN THEATRE: PLAYS, PLAYERS AND PLAYWRIGHTS. 4 credits.

A study of the development of the American Theatre, from its beginnings in the seventeenth century to the present, with emphasis on the achievements in the twentieth century. Included in the study are plays, playwrights, directors, movements, and innovators in technical theatre.

780:371. DIRECTING II. 3 credits.

Prerequisite, 780:271 or permission. This course emphasizes the preparation of cutting from a full-length play. Included are such concerns as stage movement, pictorial composition, group scenes, analysis of the form and structure of the full-length play.

780:372. ACTING I. 3 credits.

Prerequisites, 780:250 and 780:261. An introduction to the fundamentals of basic stage movement, improvisation, and mime.

780:373. ACTING II. 3 credits.

Prerequisite, 780:372. An expansion of the acting techniques learned in *Acting I*, primarily through exercises combining stage movement with stage speech, both in acting exercises and in short scenes from plays, in order to analyze and develop stage characterizations and to develop techniques of impersonation and characterization.

780:374. ACTING III. 3 credits.

Prerequisites, 780:373 and permission of instructor. An introduction to advanced acting techniques as required in classical plays and complex modern drama. Special emphasis will be placed on stylistic acting techniques, as well as on dialects needed for the stage. At the culmination of the course, the students will prepare an acting project for presentation to an audience.

780:376. THEATRE ORGANIZATION AND MANAGEMENT. 3 credits.

Prerequisite, 780:261. A study of the successful organization and management of the nonprofessional theatre operation.

780:379. THEATRE LABORATORY. 1-2 credits.

(May be repeated to a total of 8 credits.)

A laboratory directly related to the plays mounted by University Theatre. Open only to cast and crews approved by the play director, the technical director, and the Director of the Theatre, who will assign credit depending on scope of assignment. Regular weekly meetings with the technical staff.

780:402/502. WORKSHOP IN THEATRE ARTS.

1-5 credits.

May be repeated for a maximum of 8 credits. Prerequisite, advanced standing or permission. Group study or group projects investigating a particular phase of theatre arts which is not covered by other courses in the curriculum.

780:422. BALLET TECHNIQUE IV. 5 credits.

(May be repeated for a total of 60 credits.)*

Prerequisite, Ballet major and permission of instructor. The fourth year of training will bring dancers up to a professional level of technique and will arrive at the point where technique and interpretation are woven together to produce the artist.

780:423. HISTORY OF THE DANCE. 3 credits.

Prerequisite, Ballet major and permission of instructor. A survey of the most important historical developments in the dance, with emphasis on dance in the theatre.

780:424. MODERN DANCE SEMINAR. 3 credits.

Prerequisite, Ballet major and permission of instructor. An investigation of the many different styles and techniques of modern dance and their influence on present-day choreography.

780:425. DEVELOPMENT OF BALLET. 3 credits.

Ballet origins from Italy to France with various influences through the court of Louis XIV through the Diaghiliev era of today. Each student will do a project in a special area and present it for class discussion. The emphasis will be on technical and choreographic evolution with regard for developments in other art forms as well as socio-economic change.

780:426. TECHNIQUES OF TEACHING BALLET.

3 credits.

Prerequisite, Ballet major and permission of instructor. A lecture course combined with practical work in the classroom, in the basic principles of teaching classical ballet, with emphasis on elementary training.

780:428. CHOREOGRAPHY SEMINAR. 5 credits.

Prerequisites: *Traditional Forms I, II, III*. Preceding the quarter the class is offered the student submits music title, number of dancers and outline to the instructor and these are discussed and revised, where appropriate and dancers are selected for the project (these dancers may receive credit for their work through Practicum). The project rehearsals then proceed as outlined with meetings between choreographer-instructor-dancers as necessary, having a mid-term work-in progress showing and a final afternoon presentation in a theatre (Kolbe).

780:430. REVIEW AND CRITICISM OF THE PERFORMING ARTS. 3 credits.

Prerequisites, 760:330 and permission (the student should have a background in several arts areas). After a preliminary discussion of methodology for written criticism of the performing arts, the student, in cooperation with various critics, actually participates in writing criticisms in several areas of the performing arts (theatre, ballet, film, television, public communication). Meetings are held at the end of the term to discuss the written assignments.

780:460/560. DRAMATIC CRITICISM. 4 credits.

Prerequisites, 367, 368, 369 or permission of instructor. Detailed study of the major documents of dramatic criticism with special emphasis on the relevance of this criticism today.

780:462/562. PLAYWRITING. 3 credits.

Prerequisite, permission of instructor. Principles of dramatic construction through (a) an analysis of the playwright's art and (b) the writing of a short play by the individual student.

*Only a total of 60 credits from Ballet Technique I, II, III, IV to be taken for credit and apply toward the B.A. degree.

780:464. STAGE LIGHTING. 3 credits.

The history of stage lighting; theories and practices of stage illumination.

780:466/566. ADVANCED PROBLEMS IN LIGHTING. 3 credits.

Prerequisites, 464 and permission of instructor. A study of problems confronting the advanced lighting designer and technician.

780:467/567. CONTEMPORARY THEATRE STYLES. 4 credits.

The emergence of Modern Contemporary Theatre; selected examples of 18th and 20th Century plays; writing, scene design and production practices; the departures from Realism.

780:468/568. CHILDREN'S THEATRE WORKSHOP. 4 credits. (May be repeated for a total of 8 credits.)

A study of theatre for the child audience; play selection, scene design and construction, acting, directing. A full-

GRADUATE COURSES

780:600. INTRODUCTION TO GRADUATE STUDIES IN THEATRE ARTS. 3 credits.

A study of the basic research methods used in Theatre Arts. Students will present oral seminar reports and written research papers to indicate competence in the several research methods.

780:605. GRADUATE RESEARCH IN THEATRE ARTS. 1-9 credits.

(May be repeated for a total of 9 credits.)

Prerequisite, 600 and approval of project prospectus. Performance of research on problems found in theatre arts.

780:636. SPECIAL PROBLEMS IN ORAL INTERPRETATION. 4 credits.

Prerequisite, permission. A study of complex problems in both theory and practice faced by the oral interpreter.

780:641. PROBLEMS IN DIRECTING. 4 credits.

An advanced directing course, with special emphasis on complex staging problems from all periods of dramatic literature.

780:642. PROBLEMS IN CONTEMPORARY ACTING. 4 credits.

A study of problems confronting the advanced actor in such areas as environmental theatre, mixed media, non-verbal productions and participatory theatre.

780:660. ADVANCED TECHNICAL THEATRE. 3 credits.

Prerequisite, permission of instructor. Detailed problems in mounting plays on secondary school or university stages.

780:663-664-665. THEATRE SEMINARS. 3 credits each.

(Accumulative to 12 credits.)

780:663. American Theatre.**780:664. Commedia dell'arte.****780:665. Theatre Audiences.****780:666. INTRODUCTION TO ARTS MANAGEMENT. 3 credits.**

This course is designed to acquaint the student with efficient and practical knowledge of theatre arts management, including individual management projects on or off campus. Experts from related fields will be invited to share their knowledge with the class.

780:667-668-669. STUDIES IN DRAMATIC PRACTICE. 3 credits each.

Detailed and selective studies in theatre, with emphasis on dramaturgy, social influences on theatre, auditoria and staging areas technical elements and acting techniques.

780:667. Pre-Elizabethan Theatre.**780:668. Theatre: Elizabethan through 18th century.****780:669. Theatre: 19th and 20th centuries.**

The College of Nursing

820: NURSING

820:273. GENERAL NURSING. 4 credits.

Prerequisites, 375:141, 385:100, 315:131 and permission. The course includes concepts that are fundamental to the nursing process. Philosophical, sociological and historical factors basic to the commitment to professional nursing are initiated. Points of emphasis are the importance of the human person with needs and behavior in health and illness throughout the life cycle and the role of the nurse in local, community and world health problems.

820:274. GENERAL NURSING. 6 credits.

Prerequisites, 273, 310:307, 310:361 and permission. Knowledge and skills essential to the care of the patient in any clinical setting are accorded with the opportunities for application of theory in relationship to interviewing techniques, nutrition, hygiene, teaching varied aspects of comfort measures and rehabilitation. The facets of assessing of patients' needs, planning, implementing and evaluating nursing care are introduced.

820:275. GENERAL NURSING. 6 credits.

Prerequisites, 274, 310:362 and permission. Basic knowledge and skills are enhanced by the introduction of the human behavior of the child and the application of principles and concepts in nursing care, demonstrating the similarity in nursing situations, such as the admission-discharge of patients, interviewing and administration of medications. The problem-solving method in meeting patients' needs is continued. Rehabilitation measures and the use of community resources available for the continuum of care are expanded.

820:276. NURSING PRACTICUM. 4 credits.

Prerequisites, 273, 274, 275 or permission. Application of basic skills essential to the care of the patient in any clinical setting. Opportunities are provided for the student to apply theory from the courses 273, 274, 275. These experiences will be offered in the clinical laboratory and will include a seminar where the student compares and contrasts basic concepts and applies them to the nursing process.

820:278. COLLOQUIUM FOR R.N. STUDENTS.

Prerequisite, 820:275; open to R.N.s only. The Colloquium for R.N. Students will provide the opportunity for discussion and application of the following concepts: professional identity, accountability and responsibility, wellness-illness continuum, therapeutic communication, and teaching-learning process. An opportunity will be provided for the student to utilize the nursing process as a problem-solving methodology for providing health care in a variety of settings. The research process will be integrated through an independent study in which the student will identify a problem, collect and analyze data, make inferences, and propose solutions.

820:310. CULTURAL DIMENSIONS OF NURSING CARE. 3 credits.

Prerequisites, 375:151 and 820:275 or permission. The application of cultural concepts in the delivery of nursing care to individuals, families and communities. Attitudes, values and beliefs in relation to health and illness will be explored. Transcultural health practice in a multi-cultural society will be the focus. This course is built upon the basic core of nursing and continues to address the five needs of man.

820:315. NURSING PATHOPHYSIOLOGY.

3 credits.

Prerequisites, 275 or permission. A broad overview which develops an understanding of disease as a disturbance of normal physiologic processes. This course is built upon the basic core of nursing and continues to address the five needs of man.

820:324. ADULT NURSING THEORY.

5 credits.

Prerequisites, 275 and 276 or permission. 820:315 must be taken preceding or concurrently with Adult nursing. The focus of, this course is the experience of illness as it affects the progress of the individual through the developmental stages of young adult to old age. Concepts included are the health-illness continuum and the nursing process. Common health problems are considered from the standpoint of prevention, acuteness, chronicity, and rehabilitation as they affect the individual, the family, and the community. This course is built on the basic core of nursing and continues to address the five needs of man.

820:325. ADULT NURSING PRACTICE.

6 credits.

Corequisite: Requisite of concurrency with Adult Nursing Theory. The purpose of the course is to continue to develop the student's ability to utilize the components of the nursing process to promote and maintain the adult client's optimal level of health. The student will utilize the concepts presented in Adult Nursing Theory to assess, plan, implement, and evaluate nursing care. Selected learning experiences will be planned to enable the student to meet course objectives.

820:335. MATERNAL-NEWBORN NURSING THEORY. 5 credits.

Prerequisites, 310:448, 375:151, 820:276. 820:315 must be taken preceding or concurrently with Maternal-Newborn Nursing. The study of Maternal-Newborn Nursing with emphasis on the family centered approach. The principles of nursing process are explored in relation to the antepartal, intrapartal and post-partal phases of the maternity cycle. Consideration is given to changing roles of families in response to enculturation. Focus of nursing action is on primary health care including health maintenance and restoration to health. This course is built upon the basic core of nursing and continues to address the five needs of man.

820:336. MATERNAL-NEWBORN NURSING PRACTICE. 6 credits.

Corequisite: Requisite of concurrency with Maternal-Newborn Nursing Theory. Application of the theory of Maternal-Newborn Nursing and the Nursing Process to the care of families during the maternity cycle. Specific learning experiences are provided in a variety of community settings.

820:341. COMMUNITY NURSING (PSYCHIATRIC ASPECTS). 10 credits.

Prerequisites, 324, 325, 335, 336, 345 and 346. Social and community aspects of psychiatry are explored with special attention given to behavioral theories, personality difficulties and clinical application in the care of disturbed patients.

820:345. NURSING OF CHILDREN THEORY.*5 credits.*

Prerequisites 820:276, 310:448 and 375:151. 820:315 must be taken preceding or concurrently with Nursing of Children. A study of the nursing care needs of children — infancy through adolescence. A developmental approach is utilized in the study of principles of health maintenance as well as major health problems of each age group. The focus of the course is upon the nursing process and upon assisting the child and family to cope with the specific needs associated with wellness, illness and rehabilitation. This course is built upon the basic core of nursing and continues to address the five needs of man.

820:346. NURSING OF CHILDREN**PRACTICE. 6 credits.**

Corequisite: Requisite of concurrency with Nursing of Children Theory. Application of the theory presented in 345. The Family Centered Approach is utilized in providing learning experiences in a variety of community agencies: Children's Hospital, Nursery Schools, Clinics and other selected agencies providing services for children.

820:341. COMMUNITY NURSING (PSYCHIATRIC ASPECTS). 10 credits.

Prerequisites, 324, 325, 335, 336, 345 and 346. Social and community aspects of psychiatry are explored with special attention given to behavioral theories, personality difficulties and clinical application in the care of disturbed patients.

820:451. COMMUNITY NURSING (HEALTH AND WELFARE TEAMS). 10 credits.

Prerequisites, 324, 325, 335, 336, 345 and 346. Concepts of public health philosophy, administration, epidemiology and biostatistics are developed. Particular consideration is given to the health needs of the person, the family, and groups of people in the home, the school, at work and in the community.

820:461. ISSUES IN NURSING. 3 credits.

Content in this course is intended to orient the student to current economic, social and educational trends with their influence on contemporary nursing. Nursing organizations and nursing opportunities, legal and professional relationships with their responsibilities are included.

820:471. SEMINAR IN NURSING. 8 credits.

Prerequisites, 324, 325, 335, 336, 345 and 346. An identification and investigation of the major problems in nursing in order to provide an opportunity to increase depth in nursing theory and facilitate the application of all previous learning experiences. Performance of nursing functions of a beginning position, and orientation to the organizational and operational aspects of nursing practice are included.

820:490. INDEPENDENT STUDY. 3-5 credits.

Prerequisites, senior standing and the permission of the instructor. The course provides an opportunity to develop greater depth in an area of nursing through methodology specific to the discipline of nursing.

820:492/592. SPECIAL TOPICS. 1-5 credits.

Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit. May be repeated as new topics are presented.

820:493/593. WORKSHOPS. 1-5 credits.

Group studies of special topics in Nursing. May not be used to meet college undergraduate or graduate major require-

ments. May be used for elective credit only. May be repeated as new topics are presented.

820:494/594. SPECIAL READINGS. 3-5 credits.

Special Readings in an area of concentration may be taken to satisfy elective credit. Special Readings may not be used to satisfy the requirements of the major. Permission to be granted by the student's advisor or Dean.

GRADUATE COURSES

820:600. THEORETICAL BASIS FOR NURSING PRACTICE I. 5 credits.

Prerequisite, departmental approval. This course will be presented to first quarter students enrolled in the graduate nursing program. The student will be able to synthesize, analyze, and transfer learnings of concepts, processes, and theories derived from interdisciplinary subject areas of the natural and behavioral sciences, so as to assess, interview, and evaluate family systems within the community. This course provides a firm basis for advanced clinical practice in the nursing concentration of the student's choice. The student will be expected to select and follow a family through at least three consecutive quarters of the graduate program.

820:601. THEORETICAL BASIS FOR NURSING PRACTICE II. 3 credits.

Prerequisite, *Theoretical Basis for Nursing Practice I*. This course will provide a forum for students from each of their selected areas of nursing concentration to come together to explore cognitive and affective concepts (e.g., social interaction, nursing theory in relation to nursing practice, sociocultural dimensions, developmental norms, etc.) and the inter-relatedness of the needs of individuals, groups, families, and communities for health care.

820:610. CLINICAL INQUIRY I. 3 credits.

An examination of the relationship between selected theories, quasi theories and concepts in nursing practice and empirical verification. Emphasis will be placed on the discovery of knowledge and verification of theory within a context of clinical practice including an introduction to the logic of scientific inquiry.

820:611. CLINICAL INQUIRY II. 3 credits.

Prerequisites, *Statistics* and *Clinical Inquiry I*. Techniques and methods of clinical research including problem formulation, design alternatives, methods of data collection and analysis. Focus on adaptation or research methods to the clinical setting and application of findings to innovation in practice.

820:619. THEORETICAL SYSTEMS OF PERSONALITY DEVELOPMENT AND DISORDERED BEHAVIOR. 4 credits.

This seminar will be used to study the major theoretical personality systems of historical importance to nursing. Explanations provided by each system for normal personality development and for the cause and maintenance of disordered behavior will be examined and compared.

820:620. PSYCHIATRIC MENTAL HEALTH NURSING I. 5 credits.

Prerequisite, *Theoretical Basis for Nursing I*. A combination of seminar and clinical practicum will be used to study theoretical approaches to intervention with individual clients in psychiatric mental health settings including both long-term and crisis intervention.

820:621. PSYCHIATRIC MENTAL HEALTH NURSING II. 5 credits.

Prerequisite, *Theoretical Basis for Nursing II*. This course is

focused on theory and intervention with formal and informal groups with emphasis upon differentiation between content and process in group interaction and normal and pathological responses in groups. Practicum requires experience in leading and co-leading formal groups and management of informal groups with concomitant review of clinical data by faculty and classmates.

820:622. PSYCHIATRIC MENTAL HEALTH NURSING III. 5 credits.

Prerequisite, *Psychiatric Mental Health Nursing I and II*. A course on theory and practice in relation to intervention with rural and urban families who are clients of mental health and other community health facilities. Practicum requires intervention with a family with review of clinical experience by faculty and seminar groups.

820:623. PSYCHIATRIC MENTAL HEALTH NURSING IV. 5 credits.

Prerequisites, first-year course requirements and *Psychiatric Mental Health Nursing III*. A course on theory and practice in community systems including institutions, neighborhoods, and political and economic systems. Field experience in communication in large systems and evaluation of programs of intervention.

820:630. FAMILY HEALTH NURSING I. 5 credits.

Prerequisite, *Theoretical Basis for Nursing I*. A combination of seminar and clinical practicum will be used to study theoretical approaches to direct nursing intervention while developing basic competencies in the major primary nursing process methodologies employed by family health nurse clinicians in preventive and promotive health care maintenance settings.

820:631. FAMILY HEALTH NURSING II. 5 credits.

Prerequisite, *Theoretical Basis for Nursing Practice II*. A combination of seminar and clinical practicum focusing on the nursing process through which consistent use is made of identifiable skills and cognitions. Emphasis will be placed on nursing roles in multidisciplinary health teams within the framework of primary, secondary and tertiary care systems which promote continuity of care within the health-illness continuum. The student will select one clinical area of focus as well as the point of entry into the health care system.

820:632. FAMILY HEALTH NURSING III. 5 credits.

Prerequisites, *Family Health Nursing I and II*. A focus on theory and practice in relation to family health nurse clinician intervention with families who are clients in a selected health care delivery system within an urban or rural setting. In the practice area, the student will be encouraged toward self-direction in the assessment, planning and implementation of health services to individuals and families. Opportunities will be made available for focusing course work and clinical experience on particular populations and settings of the student's choice.

820:633. FAMILY HEALTH NURSING. 5 credits.

Prerequisites, first-year course requirements and *Family Health Nursing III*. Theory and practice focusing on community systems of health care delivery involving institutions, neighborhoods, social systems and the political and economic systems that support them. Learning opportunities will emphasize independent study methods and individualized program planning. The experience will include direct intervention with individuals, groups and families in interdisciplinary practice and indirect care opportunities through consultation, program planning, group teaching and evaluation of programs of intervention.

820:640. PATHOPHYSIOLOGY AND PHARMACODYNAMICS. 4 credits.

Investigation and discussion of common alterations in physiologic processes. Their clinical manifestations, and appropriate pharmacotherapeutic measures. Nursing and medical interventions based on pathophysiology and modern advances in nursing, biological, and medical sciences.

820:641. NURSING OF THE ADULT I. 5 credits.

Prerequisite, *Theoretical Basis for Nursing Practice I*. Clinical and theoretical investigations of complex nursing problems with focus on recent advances in nursing, biological, and medical sciences. Common paradigm conditions involving cardiovascular, metabolic, hematological, neuromuscular, respiratory, and renal systems will be studied. A foundation will be provided for the development of health appraisal and clinical judgment skills.

820:642. NURSING OF THE ADULT II. 5 credits.

Prerequisite, *Theoretical Basis for Nursing Practice II*. Depth analyses of common paradigm conditions involving the above body systems in terms of their implications for nursing. Interrelationships with associated conditions will be considered. Acquisition of health appraisal skills and development of clinical proficiency will be emphasized.

820:643. NURSING OF THE ADULT III. 5 credits.

Prerequisite, *Nursing of the Adult I and II*. Acute aspects of common paradigm conditions, and techniques and technology utilized in solving nursing care problems. Emphasis on the development of expertise in health appraisal and clinical judgment skills in acute care settings. Application of current nursing, biological, and medical research and indications for clinical nursing research.

820:644. NURSING OF THE ADULT IV. 5 credits.

Prerequisites, first-year course requirements and *Adult Nursing III*. Long-term aspects of common paradigm conditions, and techniques and technologies utilized in solving complex nursing care problems. Emphasis on the development of expertise in health appraisal and clinical judgment skills, patient education, continuity of care, and collaboration in a variety of settings. Application of nursing, biological, and medical research and indications for clinical nursing research.

820:670-671. NURSING ELECTIVES I AND II. 3 credits each, 6 credits total.

Prerequisite, completion of all required first-year courses. Selected topics and areas of interest to faculty and students will be available as electives. Examples are: *Legal Aspects of Nursing, Advanced Health Appraisal, and The Problem of Substance Abuse*.

820:680, 681, 682. CLINICAL SPECIALIZATION I (3), II (3), and III (4).

Prerequisite, first-year requirements. Individually planned practicum in which the student performs in the role of a clinical specialist in a setting selected by the student and his preceptor. Ongoing seminar focused on the role, position, and function of the clinical specialist as well as current trends and issues regarding specialization in nursing.

820:691. CURRICULUM AND TEACHING IN NURSING. 3 credits.

Prerequisite, first-year requirements. Concepts in curriculum development with a focus on philosophical commitments, theoretical frameworks, and educational goals.

820:692. TEACHING AND EVALUATION OF NURSING. 3 credits.

Prerequisite, *Curriculum and Teaching in Nursing*. Concepts of evaluation of educational goals with a focus on student learning opportunities and appraisal of student achievement.

820:693. PRACTICUM IN TEACHING NURSING. 4 credits.

Prerequisite, *Teaching and Evaluation of Nursing*. Guided study and practice in the roles and functions of a teacher in a selected clinical nursing field.

820:694. NURSING ADMINISTRATION I. 3 credits.

A seminar course emphasizing concepts and inquiries as they relate to principles of administrative process and behavior. Use of role theory will be emphasized.

820:695. NURSING ADMINISTRATION II. 3 credits.

A seminar course emphasizing theory in teaching, learning, and the roles of administration in a variety of health care settings.

820:696. PRACTICUM IN NURSING ADMINISTRATION. 4 credits.

Prerequisite, first-year course requirements. Guided study and practice in the roles and functions of a nursing administrator in a selected clinical nursing field.

820:699. THESIS. 6 credits.

Prerequisite, completion of first year of the program. Students must register for a total of 6 credits. The thesis is a report of a faculty supervisor, clinical or nonclinical research investigation, that is suitable for publication and which meets the approval of a thesis committee.

820:698. NONTHESIS OPTION PROJECT. 6 credits.

Students must register for a total of 6 credits and carry out an applied clinical project which meets the approval of a project committee. A project is a report of the application of research findings in a clinical setting, a critical analysis of the literature directed toward a significant nursing problem or individualized projects which meet the approval of a faculty committee.

The School of Law

920: LAW

920:601. LEGISLATION. 4 credits.

No specific prerequisite. A study of legislative process in the context of legislative organization, policy formulation, drafting, statutory construction, constitutional limitations on subject matter and form, and judicial interpretation; illustrative drafting problems to be assigned.

920:602. DEVELOPMENT OF LAW AND LEGAL INSTITUTIONS. 4 credits.

A historical introduction to the development of the Anglo-American legal system.

920:603. LEGAL PROCESS. 4 credits.

Law making by private parties, courts, legislatures and administrative agencies. Statutory interpretation. Coordination of law making techniques.

920:604. MOOT COURT. 2 credits.

Credit is awarded to participants in the National Moot Court Competition, the Philip C. Jessup International Law Moot Court Competition, or other approved moot court project, who satisfy the requirement of either a brief or written argument. Finalists in the foregoing competitions shall be required to represent the School of Law in regional and national competitions, if any. Credit earned in this course shall count toward the maximum allowable credit of ten hours established for course 920:655. Not more than two credits may be awarded for course 920:604, and the course shall not be open to first year students. A "Credit" or "No Credit" grade shall be entered.

920:605. CONTRACTS I. 4 credits.

Formation of simple contracts. Consideration. Discharge. Seal and written obligation. Mistake, Statute of frauds. Parole evidence rule.

920:606. CONTRACTS II. 4 credits.

Prerequisite, 605. Impossibility. Frustration. Conditions. Breach. Beneficiaries. Assignments.

920:607. INSURANCE LAW I. 2 credits.

Fundamental legal principles of insurance of person and property, such as insurable interest, measure of recovery, subrogation, rights of assignees and beneficiaries, warranty, concealment, representation and fraud. Adjustment of claims. Regulation.

920:608. INSURANCE LAW II. 2 credits.

Prerequisite, 607. Continuation of 607.

920:609. GOVERNMENT CONTRACTS. 4 credits.

Prerequisite: 606. Analysis of contracting with governmental units, primarily federal, including the sovereign power to contract and limitations thereon; contract formation and performance, clauses and litigations, with reference to applicable statutes, regulations and executive orders.

920:610. LAW REVIEW INTERNSHIP I.

1 quarter hours credit.

920:611. LAW REVIEW INTERNSHIP II.

1 quarter hours credit.

920:612. LAW REVIEW: STAFF.

1 quarter hours credit.

920:613. LAW REVIEW: EDITORIAL BOARD.

1 quarter hours credit.

920:614. PROPERTY I. 4 credits.

Possession. Means by which title may be obtained. Fixtures.

Emblements.

920:617. TORTS I. 4 credits.

A survey of basic tort law with consideration given to the impact of insurance and modern notions of allocating the cost of unintentionally caused harm on tort doctrines keyed to negligence.

920:618. TORTS II. 4 credits.

Prerequisite, 617. Continuation of 617.

920:619. BASIC BUSINESS ASSOCIATIONS I. 2 credits.

Vicarious liability. Relationships of master and servant, principal and agent and problems of the independent contractor. Scope of employment. Authority and apparent authority. Misrepresentation by an agent. Undisclosed principal. Ratification. Elements of Partnership.

920:620. BASIC BUSINESS ASSOCIATIONS II. 2 credits.

Prerequisite, 619. Continuation of 619.

920:621. INJURIES TO RELATIONS. 4 credits.

Prerequisites, 606 and 618. An intensive study of legal problems related to essentially nonphysical harms as defamation, invasion of privacy, and interference with business, economic and family relations.

920:622. ADMINISTRATIVE PROCESS. 4 credits.

Prerequisite, 686. Traditional politico-legal theories of separation of powers and the administrative process; procedure for rule-making and adjudication; conclusiveness of administrative determination.

920:623. LEGAL RESEARCH AND ADVOCACY I.

1 credit.

Development and integration of skills in legal research, argumentation, writing, and advocacy, through lectures, small group tutorials, writing of legal memorandum and brief, and oral argument.

920:624. LEGAL RESEARCH AND ADVOCACY II.

1 credit.

Prerequisite, 623. Continuation of 623.

920:625. PROPERTY II. 3 credits.

Prerequisite, 614. History of land law (beginning with the Norman Conquest); the types of estates in land, freehold and nonfreehold; concurrent ownership; future interests before and after the Statute of Uses; Statute of Frauds; methods of conveyance; the mortgage of real estate; recording, title registration; covenants; adverse possession.

920:626. PROPERTY III. 3 credits.

Prerequisite, 625. Landlord-tenant relationship, the scope and character of legislation restricting land use, easements, profits, licenses, rights incident to land ownership and law applicable to the insuring of real estate.

920:628. LEGAL PROFESSION I. 1 credit.

The legal profession as an institution. Professional responsibilities of lawyers. Duties and privileges of members of the legal profession. Professional qualifications.

920:629. LEGAL PROFESSION II. 1 credit.

Prerequisite, 628. Continuation of 628.

920:630. MODERN REAL ESTATE TRANSACTIONS. 4 credits.

Prerequisite, 626. A survey of such real estate transactions as condominiums, cooperatives, sales and leasebacks, high credit leases, leasehold mortgage, construction lending, and

syndications, with major emphases on financing and related tax considerations.

920:631. COMMERCIAL TRANSACTIONS: NEGOTIABLE INSTRUMENTS. *4 credits.*

A study of commercial paper and bank deposits and collections under Articles 3 and 4 of the Uniform Commercial Code. Prior uniform acts are studied where relevant to an understanding of the modern law of commercial paper.

920:632. COMMERCIAL TRANSACTIONS: SALES. *3 credits.*

A study of the law of sales of personal property with emphasis on Article 2 of the Uniform Commercial Code. Prior uniform acts are studied where relevant to an understanding of the modern law of sales.

920:633. EVIDENCE I. *3 credits.*

Determination of facts: judicial notice, burden of proof and presumptions. Problems of remoteness and prejudice. Examination of witnesses. Competency and privilege. Opinion evidence. Hearsay rule and its exceptions. Principles related to writings, Parole evidence rule. Illegally obtained evidence.

920:634. EVIDENCE II. *3 credits.*

Prerequisite, 633. Continuation of 633.

920:638. CRIMINAL LAW. *4 credits.*

Nature and source of criminal liability. The act. Mental conditions requisite to criminal responsibility. Specific crimes and defenses thereto. These materials are studied in the light of modern trends and needs.

920:639. SEMINAR IN CORRECTIONS AND PRISONER'S REMEDIES. *3 credits.*

Prerequisite, 638. A study of theoretical and practical aspects of sentencing, punishment, treatment, release and alternatives thereto; developments in the field of prisoner's rights and remedies.

920:640. ADMINISTRATION OF CRIMINAL JUSTICE. *4 credits.*

A study of the administration of criminal justice relating processes of criminal law to the objectives of criminal correction.

920:641. CIVIL PROCEDURE I. *4 credits.*

Survey of civil procedure in state and federal courts with emphasis on jurisdiction of tribunals.

920:642. CIVIL PROCEDURE II. *3 credits.*

Prerequisite, 641. Survey of civil procedure in state and federal courts with emphasis on pleadings, demures, motions and joinder of parties and causes of action.

920:643. CIVIL PROCEDURE III. *3 credits.*

Prerequisite, 642. Survey of trial and appellate practice in state and federal courts. Effect of judgements.

920:644. FEDERAL JURISDICTION AND PROCEDURE. *4 credits.*

Prerequisite, 643. Operation of the federal courts, Jurisdictional problems regarding the subject matter of the action, amount in controversy and removal of actions from state courts. Relationships between state and federal courts. Special procedural problems regarding process, venue and joinder of parties and claims. Appellate jurisdiction and procedure. Original jurisdiction of the Supreme Court.

920:645. PROBLEMS IN TRIAL ADVOCACY. *2 credits.*

Assigned problems requiring the application of rules of pro-

cedure and professional considerations in typical trial contexts.

920:646. LAWYER AS NEGOTIATOR. *3 credits.*

Prerequisite, 920:643. The lawyer's role as negotiator in planning negotiations and determination of strategies to effect objects, weighing legal, economic, behavioristic, ethical, and social factors that condition outcomes.

920:647. AIR LAW. *4 credits.*

The law of modern air transportation in both international and domestic flight. Domestic statutes regulating the use of air space for guided flight and the control of aircraft such as the Federal Aviation Act of 1958 and the Federal Airport Act are considered. Multilateral Conventions such as the Convention on International Civil Aviation and the Convention relating the liability of scheduled aircraft carriers are also analyzed. The growth of decisional law in the field of Torts, Conflict of Laws, and Public International Law as it impacts upon the use of air space is reviewed, and its relation to the emerging area of Outer Space is developed.

920:649. LAW OF CONSUMER CREDIT. *3 credits.*

Prerequisite, 631, Recommended Prerequisite, 632. Study of consumer sale and consumer credit transactions and their regulation, with special attention given to the Consumer Credit Protection Act of 1968, the proposed Uniform Consumer Credit Code, the National Consumer Act, and administrative approaches dealing with problem of individual consumers and classes of consumers.

920:650. SEMINAR IN PRODUCT LIABILITY. *3 credits.*

Prerequisite, 618. Recommended Prerequisite, 632. A research and writing course devoted to the study of legal issues associated with liability for defective products and the developing legal theories and remedies. Examination of government regulation of dangerous and defective products.

920:651. SECURITIES REGULATION. *4 credits.*

Prerequisite, 920:672. State and federal law and the rules of the Securities and Exchange Commission in the issuance and trading of securities; legal and self-regulatory aspects of the securities industry.

920:652. CREDITORS' RIGHTS. *4 credits.*

Enforcement of judgements. Execution, attachment and garnishment. Creditors' bills. Fraudulent conveyances. General assignments for benefit of creditors. Creditors' agreements. Bankruptcy.

920:653. LOCAL GOVERNMENT LAW. *3 credits.*

Nature of municipal corporation. Home rule. Creation. Annexation. Powers. Officers. Zoning Rights of abutters. Contractual and delictual liability. Dissolution.

920:655. INDIVIDUAL STUDIES AND RESEARCH. *1-5 credits. (May be repeated.)*

With permission of the Dean, special problems, projects, or research may be taken for credit under the supervision of a member of the faculty. Credit varies in proportion to the magnitude of the project.

920:656. FAMILY LAW. *4 credits.*

To instruct the student in the major areas of family law and to acquaint him with the theories that have influenced its development. All pertinent Ohio laws will be considered, and attention will also be given to promising statutory approaches in other states. The final section of the course will deal with the functions performed by various agencies which

seek to effect a non-judicial settlement of domestic problems.

920:657. SEMINAR IN PENSION AND PROFIT SHARING. 3 credits.

Recommended prerequisites, 672 and 688. A study of employee benefit plans and arrangements dealing with qualified pension and profit-sharing plans under Section 401 (a) of the Internal Revenue Code, plan for self-employed and professional corporations and associations and non-qualified contracts involving individual employees. (Completion of 672 and 688 highly recommended.)

920:658. SEMINAR IN BUSINESS PLANNING I. 3 credits.

Prerequisite, 672 and 688. An advanced course using the problem approach in the planning of business transactions in the light of the applicable corporate, tax, and securities law consideration. (May be taken independent of 659).

920:659. SEMINAR IN BUSINESS PLANNING II. 2 credits.

Prerequisite 658. An advanced course using the problem approach in the planning of business transactions in the light of the applicable corporate, tax, and securities law considerations.

920:660. SEMINAR IN SELECTED LEGAL PROBLEMS. 1-4 credits. (May be repeated.)

Analysis of special or current problems arising in the field of law from time to time offering opportunities for legal research, effective integration of legal and relevant nonlegal materials, and expository legal writing.

920:661. SEMINAR IN POLITICAL AND CIVIL RIGHTS. 3 credits.

Prerequisite, 686. A study of some of the basic problems in the relationship of the individual to government and in the protection of rights of minority groups.

920:662. SEMINAR IN ESTATE PLANNING. 4 credits.

Prerequisite, 673, 674, 687, 688. Analysis of relevant tax and nontax problems in planning of estates and an examination of dispositive devices in accomplishing the objectives of estate planning.

920:663. PATENT, TRADEMARK AND COPYRIGHT LAW. 3 credits.

A study of the prerequisites to 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, infringements, plagiarism and unfair competition.

920:664. FINANCING STATE AND LOCAL GOVERNMENT. 4 credits.

No specific prerequisite. Planning, programming and budgeting; state and federal aid programs; local property and nonproperty taxes; use of public authorities and special districts; property tax limits and their effects; debt limits; state supervision of local finance.

920:665. LAND USE PLANNING. 3 credits.

Prerequisite, 626. Examination of the assumptions, doctrines, and implications of city planning laws, is to enable the student to analyze effectively the legal and administrative problems involved in allocating and developing land located in metropolitan areas.

920:666. SEMINAR IN JURISPRUDENCE. 4 credits.

Examination and evaluation of principal theories of legal

philosophy. Theories are frequently considered in connection with concrete problems and are evaluated in the light of various goal values.

920:667. SEMINAR IN COMPARATIVE LEGAL SYSTEMS. 3 credits.

A study of contemporary foreign legal systems by a discussion of basic problems in specific areas on a comparative basis.

920:668. LABOR LAW. 4 credits.

Establishment of collective bargaining processes. Representation procedures under the Labor-Management Relations Act. Duty to bargain. Unfair labor practices of labor and management. Legal limitations on economic pressures by management and labor. Illegal processes involved in strikes, picketing, boycotts, lockouts. Jurisdictional disputes. Reporting procedures. Wage and hour provisions. Internal union practices.

920:669. LABOR ARBITRATION AND COLLECTIVE BARGAINING. 4 credits.

Prerequisite, 668. Law and practice of labor arbitration and collective bargaining, including a study of the grievance arbitration process pursuant to collective bargaining agreements.

920:670. SEMINAR IN LEGAL PROBLEMS OF THE POOR. 3 credits.

Study of theoretical and practical problems of legal representation of the poor, in contexts of administration of public welfare, public housing, public education, landlord-tenant relationships, low income buyer, mental illness, the family, civil rights and enforcement of criminal law. Complements field work undertaken in legal aid, but may be taken independent of it.

920:671. Corporations I. 3 credits.

An introduction to the law relating to the conduct of the business enterprise. Emphasis is on the control, management, financing, and governmental regulation of corporations, whether publicly owned or closely held. Management benefits and hazards, asset distributions to shareholders, dissolution and reorganization.

920:672. CORPORATIONS II. 3 credits.

Prerequisite, 671. Continuation of 671.

920:673. WILLS. 3 credits.

Statutes of descent and distribution; making, revocation, republication and revival; lapsed, void, adeemed and satisfied legacies and devices.

920:674. TRUSTS AND ESTATES I. 3 credits.

Nature, creation and elements of a trust; resulting and constructive trusts; termination of a trust; gifts to charity; will substitutes. Nature, characteristics and distinguishing features of reversions; vested and contingent remainders; executory interests; possibilities of reverter and powers of termination; application and significance of the destructibility rule, rule in Shelley's case, and the worthier title doctrine; powers of appointment. construction of limitations in wills and deeds, class gifts, restraints on alienation of property and the rule against perpetuities.

920:675. TRUSTS AND ESTATES II. 3 credits.

Prerequisite, 674. Continuation of 674.

920:676. SEMINAR IN LABOR LAW. 3 credits.

Prerequisite, 668. Selected issues in labor law and labor relations such as internal union affairs, union democracy, bargaining in the public sector, discrimination in employment and topical issues.

920:677. EQUAL OPPORTUNITY LAW. *4 credits.*
Prerequisite, 686. A study of legal developments, primarily federal, affecting discrimination in employment, housing and public accommodations.

920:678. SEMINAR IN INTERNATIONAL TRANSACTIONS AND RELATIONS. *4 credits.*
Legal problems involved in doing business abroad. Entry, holding, property, economic activity and choice of corporate form. Implications of interacting legal systems in such areas as restrictive practices, currency and exchange. The European Common Market: its fundamental legal structure and process. Relations between developed and developing countries are studied reflecting the need for the legal removal of barriers and the promotion of cooperation.

920:679. PROBLEMS IN SECURED TRANSACTIONS. *4 credits.*
Problems of security interests in personal property (chattel mortgages, pledges, trust receipts, etc.) with special emphasis on the Uniform Commercial Code. Selected sections of the Bankruptcy Act are covered where they affect the rights of secured parties. As time permits, a discussion of the problem of priority between security interests and federal tax liens.

920:680. LAW AND SOCIAL CHANGE. *3 credits.*
An examination and study of the influence of law on society and society on law to illuminate contemporary developments in law and legal institutions.

920:681. SEMINAR IN JUDICIAL ADMINISTRATION. *3 credits.*
A study of problems and practices in selection, tenure and removal of judges, selection and responsibilities of court administrators, the effects of devices and procedures used to expedite movement of cases through the litigation process, and analysis of suggested reforms.

920:682. ACCOUNTING FOR LAWYERS. *3 credits.*
Examination of accounting principles in selected legal contexts such as taxation, corporate enterprise and regulation of economic activity, with emphasis on income determination, measurement and evaluation of business capital, and interpretation of accounting statements.

920:683. CONFLICT OF LAWS I. *3 credits.*
Problems of application of private law in jural relationships containing one or more foreign law elements.

920:684. CONFLICT OF LAWS II. *3 credits.*
Prerequisite, 683. Continuation of 683.

920:685. CONSTITUTIONAL LAW I. *3 credits.*
Governmental authority and its distribution under the Constitution, with an introduction to individual rights and liberties.

920:686. CONSTITUTIONAL LAW II. *3 credits.*
Prerequisite, 685. Continuation of 685.

920:687. FEDERAL INCOME TAXATION I. *4 credits.*
Survey of federal income tax law with primary emphasis on individual income. Note. This course may be taken independently of 688.

920:688. FEDERAL INCOME TAXATION II. *4 credits.*
Prerequisite, 687. Survey of federal income with primary emphasis on taxation of business units.

920:689. FEDERAL ESTATE AND GIFT TAXATION. *4 credits.*

A survey of federal estate and gift taxation; relation between federal income tax and the federal taxes on gratuitous transfers; the place of federal taxes in estate planning.

920:690. ANTITRUST LAW. *4 credits.*
Fundamentals of antitrust, including horizontal restraints, vertical restraints, unlawful monopolization and mergers, questions of evidence in price-fixing and boycotts under the Sherman Act, resale restrictions and tie-ins, economics in mergers under the Celler-Kaufman Act, scope of antitrust law and certain exemptions from its application, dealing primarily with patent misuse. That topic will also encompass foreign commerce, regulated industries, and organized labor as time permits.

920:691. LEGAL REGULATION OF COMPETITION. *4 credits.*

Principals of regulated and unregulated sectors of industry aside from antitrust law as such, law of pricing practices in services for the regulated sector and in commodities for the unregulated sector, regulation of entry and rates and an examination of the pertinent public interest and accounting standards. Robinson-Patman Act, including jurisdictional elements and defenses. As time permits, particular regulated industries will be discussed to illustrate variations in types of regulation, and state fair sales and fair trade acts will be compared to the Robinson-Patman Act and the manner of its enforcement.

920:692. ADMINISTRATION OF LAW RELATING TO JUVENILES. *3 credits.*

Legal and social aspects of the administration of laws relating to juvenile neglect, dependency, and delinquency. Organization and functions of juvenile courts, role of the attorney, and practice, before such courts.

920:693. REMEDIES I. *3 credits.*
A comparison of the relief afforded through actions traditionally designated as at law and in equity; the relationships among actions for damages, for restitution (including quasi-contract, constructive trust, equitable lien, and equitable and legal accounting), for specific performance, injunction, rescission, reformation, bill of peace, interpleader, quiet title, and declaratory judgment.

920:694. REMEDIES II. *2 credits.*
Prerequisite, 693. Continuation of 693.

920:695. LEGAL AID. *3 credits.*
Prerequisite, successful completion of forty-two (42) credits and permission of the instructor. This course, which may be repeated once for credit, is designed to provide the student with the opportunity to work in one or more of the following service areas: (1) Summit County Legal Aid Society, (2) Summit County Prosecuting Attorney, and (3) University of Akron School of Law Appellate Review Office. Close supervision by, and consultation with, a faculty member and/or a practicing attorney associated with the above agencies will be a primary goal. A student who successfully completes this course receives academic credit but no letter grade.

920:697. LEGAL CONTROL OF THE ENVIRONMENT. *4 credits.*

Examination of substantive and procedural problems in area of legal control of air and water pollution and effect upon the individual, property, and life. Readings and discussion on common law precedents, federal statutory law, state statutory law, federal administrative agencies, civil actions, constitutional considerations and federal tax incentives.

920:698. INTERNATIONAL LAW. 4 credits.

Note: This course may be taken independent of 699.

Nature and breadth of international law; its sources and subjects, and its relation to municipal law, to individuals, and to international organizations.

920:699. SELECTED PROBLEMS, INTERNATIONAL LAW. 3 credits.

Prerequisite, 698. Intended for students who wish to analyze in depth topical international problems and to develop a working facility with international law research materials in

dealing with concrete international legal problems. In contrast with 698, the emphasis is on the practical rather than the jurisprudential aspects of international law, and is designed to stimulate the student to question traditional approaches to international law and to improve his capability to analyze and prepare short legal opinions within a limited time frame. Such topical subjects as the legal basis for the use of force in limited armed conflicts, the role of the United Nations in peace-keeping operations, and the functions of subsidiary and regional organizations within the International Community will be evaluated.

Interdisciplinary Programs

1010: AFRO-AMERICAN STUDIES

1010:401. GENERAL SEMINAR IN AFRO-AMERICAN STUDIES. 4 credits.

Prerequisite, 340:220 or permission. The exploration and intensive examination of a variety of issues related to role and minority group relations which normally stand outside the compass of any one subject matter area.

1030: ENVIRONMENTAL STUDIES

1030:201. MAN AND THE ENVIRONMENT. 3 credits.

A study of man's relationship with nature, his dependence upon his environment, and his control over it. An interdisciplinary approach, with lectures from various University departments, government, and industry describing their approaches to the environment. This course will not apply toward the major.

1030:401. SEMINAR IN ENVIRONMENTAL STUDIES. 3 credits.

The Seminar will cover a specific environmental topic or topics from an interdisciplinary viewpoint each quarter. The topics selected will be of current interest and will be studied from varying viewpoints. The Environmental Studies Director will coordinate the course and resource persons will be drawn from the University and the surrounding community.

1060: PEACE STUDIES

1060:300. TOPICS IN PEACE STUDIES. 1-4 credits.

Interdisciplinary topics related to peace studies. May be repeated to a total of 4 credits.

1060:301. VALUE CONCEPTS ON PEACE AND WAR. 4 credits.

An interdisciplinary study of attitudes, concepts, and realities regarding war and peace issues.

1060:350. INDEPENDENT STUDY. 1-5 credits.

Detailed study on selected topics related to peace. May be repeated for a total of 5 credits.

1070: HONORS PROGRAM

1070:250. (350, 450). HONORS COLLOQUIUM — HUMANITIES. 2 credits.

Prerequisite, admission to University Honors Program. An interdisciplinary colloquium on important issues in the Humanities.

1070:260, (360, 460). HONORS COLLOQUIUM-SOCIAL SCIENCES. 2 credits.

Prerequisite, admission to University Honors Program. An interdisciplinary colloquium on important issues in the Social Sciences.

1080: MEDICAL STUDIES

1080:201. MEDICAL SEMINAR AND PRACTICUM I. 4 credits.

Prerequisite, 310:197 and permission. Provides field experiences in health care delivery in the geographic area served by the Northeastern Ohio Universities College of Medicine, and The University of Akron. Students are directed in supervised roles of the professional and paraprofessional in meeting the health care needs of the community. Open to first year students in the Phase 1 of the BS/MD program, others by permission.

1080:301. MEDICAL SEMINAR AND PRACTICUM II. 4 credits.

Prerequisite, 201 and permission. A continuation of course 201 and offered at a more advanced level of professional involvement. Open to second year students in the Phase 1 of the BS/MD program, others by permission.

1080:310. SEMINAR ON HUMANITIES IN MEDICAL EDUCATION. 4 credits.

Prerequisite, junior standing in the B.S./M.D. program; other students involved in health care delivery programs eligible by permission. An introduction to the Humanities as they bear upon the history and practice of medicine. The substantive areas may include but not be limited to Appreciation of Arts and Humanities; Human and Social Values; Interpersonal Relationships; Social, Political, Legal Principles; Thanatology; Addiction. The Seminar will draw upon lectures from the University and community, and will include performances, field trips, films and tapes appropriate to the topics discussed.

VII. University Directory

Board of Trustees

MAY 1977

- Mr. Ray C. Bliss 2535 Addyston Road, Akron, Ohio 44313
(Term expires 1984)
- Mr. W. Howard Fort 1928 Oakridge Drive, Akron, Ohio 44313
(Term expires 1978)
- Mr. Vincent H. Johnson 380 W. Fairlawn Blvd., Akron, Ohio 44313
(Term expires 1979)
- Mr. Robert J. Kidney 2993 Vincent Road, Silver Lake, Cuyahoga Falls, Ohio 44224
(Term expires 1981)
- Mr. Ben Maidenburg 2046 Wyndham Road, Akron, Ohio 44303
(Term expires 1977)
- Miss Frances McGovern 550 Woodside Drive, Akron, Ohio 44303
(Term expires 1982)
- Mr. Charles J. Pilliod, Jr. 311 Ely Road, Akron, Ohio 44313
(Term expires 1985)
- Mr. Bernard I. Rosen 277 Hollywood, Akron, Ohio 44313
(Term expires 1980)
- Mr. Malcolm Rowan 2838 S. Park Drive, Silver Lake, Cuyahoga Falls, Ohio 44224
(Term expires 1983)
-

Administrative Officers and Assistants

UNIVERSITY ADMINISTRATION

D. J. Guzzetta, Ed.D., LL.D., D.S.Sc., L.H.D.	President of the University
Noel L. Leathers, Ph.D.	Vice President and Provost
R. Wayne Duff, LL.B.	Vice President for Business and Finance
Ian R. MacGregor, Ph.D.	Vice President for Planning
Richard L. Hansford, M.A.Ed.	Vice President and Dean of Student Services
George W. Ball, B.A.	Executive Director of University Relations and Development

DEANS

Claibourne E. Griffin, Ph.D.*	Dean of the Buchtel College of Arts and Sciences
Coleman J. Major, Ph.D.	Dean of the College of Engineering
H. Kenneth Barker, Ph.D.	Dean of the College of Education and Dean of International Programs
James W. Dunlap, Ph.D.	Dean of the College of Business Administration
Ray H. Sandefur, Ph.D.	Dean of the College of Fine and Applied Arts
Stanley A. Samad, J.S.D.	Dean of the School of Law
Lillian J. DeYoung, Ph.D.	Dean of the College of Nursing
Robert C. Weyrick, M.S.	Dean of the Community and Technical College
John G. Hedrick, M.A.	Dean of Wayne General and Technical College
Position To Be Filled	Dean of Graduate Studies and Research
William A. Rogers, Ed.D.	Executive Dean of Continuing Education and Public Services
Caesar A. Carrino, Ph.D.	Dean of Evening College and Summer Sessions
Thomas Sumner, Ph.D.	Dean of General College

OTHER UNIVERSITY OFFICIALS

Howard R. Baldwin, M.Ed.	Registrar
James P. Banks, B.S.	Development Officer
Mrs. Marilyn J. Carrell, M.S.Ed.	Director of Placement
Clark Biggins, B.S.C.	Director of Purchasing
Donald L. Bowles, B.S.I.M., B.S.Ed.	Assistant to the Vice President for Planning
Allen M. Boyer, B.A.	Director of Alumni Relations and Development Officer
Thomas O. Brown, Ph.D.	Director of Testing and Counseling Bureau
Foster S. Buchtel, M.B.A.	Assistant to the President - Campus
Robert G. Corbett, Ph.D.	Coordinator of Research
William M. Doyle, B.S.B.A.	Director of Staff Personnel
Russel Giersch, B.M.E.	Director of Physical Plant
Robert D. Hahn, M.Ed.	Director of Student Financial Aids
Alberta R. Hensley, B.S.	Assistant to the Executive Director of University Relations and Development
Jay R. Hershey, M.Ed.	Director of Residence Halls
Dudley C. Johnson, Jr., M.S.Ed.	Director of Counseling and Advising
Ted A. Mallo, J.D.	Director, University Legal Services
Thomas T. Miles, Ph.D.	Director of Instructional Media
Henry Nettling, B.S.B.A.	Controller
Mrs. Mary O'Neil, B.A.	Director of University News Service
James O. Oswald, B.S.Ed., B.A.	Director of University Publications
John W. Owen, M.A.	Director of Admissions
Charles F. Poston, Ph.D.	Director of Institutional Research and Academic Personnel
George E. Raymer, M.A.Ed.	Director of Radio and Television Information
Donald E. Sabatino, M.A.Ed.	Director of the Gardner Student Center
H. Paul Schrank, Jr., M.S.	University Librarian
Frank B. Thomas, M.A.	Director of the Computer Center
Mrs. Kathryn Vegso, M.S.Ed.	Assistant to the Vice President and Dean of Student Services
John S. Watt, Ph.D.	Assistant Provost
W. Richard Wright, B.A.	Assistant to the President - Off-Campus

*Effective September 1, 1977

University Emeritus Faculty

MAY 1977

- 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.
- 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.
- MRS. 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.
- EVELYN BAER, *Associate Professor Emeritus of Speech* (1966) (Ret. 1974)
B.A., University of Chicago; M.A., The University of Akron, 1948.
- IRENE C. BEAR, *Professor Emeritus of Home Economics* (1944) (Ret. 1968)
B.S., Illinois Wesleyan University, M.A., Texas State College for Women, 1937.
- HELEN BECKER, *Associate Professor Emeritus of Primary Education* (1949) (Ret. 1968)
B.S., M.A., Ed.D., Columbia University Teachers College, 1949.
- CLARE BEDILLION, *Associate Professor Emeritus* (1968) (Ret. 1975)
B.A., Woman's College of Georgia; M.A., New York University, 1944; Ph.D., University of Michigan, 1974.
- ROBERT C. BERRY, *Director of Placement Emeritus* (1946) (Ret. 1976)
B.S.B.A., The University of Akron, 1942.
- VINCENT J. BIONDO, *Assistant Professor Emeritus of Education* (1968) (Ret. 1976)
B.A., M.A., M.A.Ed., The University of Akron, 1957.
- RENA NANCY CABLE, *Associate Professor Emeritus of Art* (1927) (Ret. 1953)
B.F., M.Ed., The University of Akron, 1931.
- FRANCES A. CLARK, *Associate Professor Emeritus of Accounting* (1946) (Ret. 1974)
B.S., The University of Akron; M.Ed., University of Pittsburgh, 1946.
- KENNETH COCHRANE, *Professor Emeritus of Physical Education* (1948) (Ret. 1973)
B.E., The University of Akron; M.Ed., University of Pittsburgh, 1941.
- GERALD CORSARO, *Professor Emeritus of Chemistry* (1948) (Ret. 1976)
B.S., Fenn College; M.S., Ph.D., Case Western Reserve University, 1944.
- DONALD M. DAVIS, *Associate Professor Emeritus of Transportation* (1966) (Ret. 1977)
B.S.B.A., University of Dayton; M.S., University of North Carolina, 1952.
- EMILY DAVIS, *Professor Emeritus of Art* (1945) (Ret. 1973)
B.A., The Ohio State University; M.A., Columbia University, Teachers College; Ph.D., The Ohio State University, 1936.
- HJALMER W. DISTAD, *Professor Emeritus of Education* (1934) (Ret. 1963)
B.S.Ed., M.A., Ph.D., University of Minnesota, 1926.
- ELDORA FLINT, *Associate Professor Emeritus of Secretarial Science* (1929) (Ret. 1957)
B.E., The University of Akron; M.S.Ed., Syracuse University, 1935.
- VAUGHN W. FLOUTZ, *Professor Emeritus of Chemistry* (1941) (Ret. 1970)
B.A., Olivet College; M.A., Ph.D., University of Colorado, 1932.
- OMER R. FOUTS, *Associate Professor Emeritus of Physics* (1926) (Ret. 1965)
B.A., Wittenberg University; M.A., The Ohio State University, 1925.
- OSSIAN GRUBER, *Assistant Professor Emeritus of Business Administration* (1946) (Ret. 1962)
B.A., University of Minnesota; M.B.A., Northwestern University, 1928.
- EMILE GRUNBERG, *Professor Emeritus of Economics* (1946) (1956) (Ret. 1970)
A.M., M.A., Ph.D., University of Frankfurt, 1930.
- DOROTHY HAMLEN, *Professor Emeritus of Bibliography* (February 1937) (Ret. 1972)
B.A., The University of Akron; B.S.L.S., Case Western Reserve University, 1942.
- LOUIS F. HAMPEL, *Associate Professor Emeritus of Finance* (1933) (1968) (Ret. 1974)
B.S., The University of Akron; M.B.A., Northwestern University, 1931.
- PETER J. HAMPTON, *Associate Professor Emeritus* (August 1954) (Ret. 1975)
B.A., M.A., University of Manitoba (Canada); Ph.D., Case Western Reserve University, 1950.
- LESLIE P. HARDY, *Financial Vice President Emeritus* (1934) (Ret. 1964)
B.S.Ed., Kent State University; M.S.Ed., The University of Akron, 1935; L.H.D., The University of Akron.
- MARY GRACE HARRINGTON, *Associate Professor Emeritus of Bibliography* (1960) (Ret. 1976)
B.A., The University of Akron; B.A.L.S., University of Michigan, 1939.
- IRENE HORNING, *Assistant Professor Emeritus of Biology* (1946) (Ret. 1970)
St. John's Hospital School of Nursing, R.N., 1928; B.S.N., Western Reserve University, 1934.
- MARTHA HOSFELT, *Instructor Emeritus in English* (1961) (Ret. 1977)
B.A., The University of Akron, 1959.

- DONATO INTERNOSCIA, *Professor Emeritus of Modern Languages* (1938) (Ret. 1963)
B.A., Broadview College; M.A., Ph.D., Northwestern University, 1938.
- ALFRED H. JOHNSON, *Associate Professor Emeritus of Education* (1956) (Ret. 1969)
B.S., College of Wooster; M.S., Ph.D., University of Wisconsin, 1956.
- DON A. KEISTER, *Distinguished Professor Emeritus of English* (1931) (Ret. 1971)
B.A., M.A., The University of Akron; Ph.D., Western Reserve University, 1947.
- R. D. LANDON, *Professor Emeritus of Civil Engineering* (February 1946) (Ret. 1963)
C.E., M.S., University of Cincinnati, 1927; P.E., Ohio
- DOROTHY LAUBACHER, *Professor Emeritus of Home Economics* (1950) (Ret. 1977)
B.S., M.A., The Ohio State University; M.L.S., Kent State University, 1967.
- WILL LIPSCOMBE, *Associate Professor Emeritus of Mathematics* (1921) (Ret. 1962)
B.S., Florida State College; M.S., The Ohio State University, 1926.
- MARGARET EVELYN MAUCH, *Professor Emeritus of Mathematics* (1945) (Ret. 1963)
B.S., Huron College; M.S., Ph.D., University of Chicago, 1938.
- ESTELLE B. NAES, *Professor Emeritus of Nursing and Dean Emeritus of the College of Nursing* (1966) (Ret. 1975)
B.S.N., M.S.N.E., Ph.D., Saint Louis University, 1922. R.N.
- SAMUEL C. NEWMAN, *Professor Emeritus of Sociology* (1951) (Ret. 1973)
B.A., University of Pittsburgh; M.A., Oberlin College; Ph.D., The Ohio State University, 1939.
- ROBERT A. OETJEN, *Dean Emeritus of Buchtel College of Arts and Sciences and Professor Emeritus of Physics* (July 1970) (Ret. 1977)
B.A., Asbury College; M.S., Ph.D., University of Michigan, 1942.
- MRS. RUTH PUTMAN, *Assistant Professor Emeritus of English* (1934) (Ret. 1964)
B.A., Howard College; M.A., Western Reserve University, 1938.
- MABEL RIEDINGER, *Distinguished Professor Emeritus of Education* (February 1947) (Ret. 1971)
B.A., Mount Union College; M.A., University of Chicago; Ed.D., Columbia University, Teachers College, 1946 L.H.D., Mount Union College, 1965.
- EDGAR C. ROBERTS, *Assistant Professor Emeritus of English* (1926) (Ret. 1966)
B.S.Ed., M.A., The Ohio State University, 1924.
- CLARA G. ROE, *Professor Emeritus of History* (1947) (Ret. 1959)
B.A., University of Michigan; M.A., University of Chicago; Ph.D., University of Michigan, 1943.
- CECIL A. ROGERS, *University Auditor Emeritus* (1932) (Ret. 1969)
B.S.B.A., The University of Akron, 1932.
- CHARLES ROGLER, *Professor Emeritus of Sociology* (1949) (Ret. 1962)
B.A., M.A., University of Michigan; Ph.D., University of Kansas, 1935.
- MRS. MARGARET F. ROGLER, *Assistant Professor Emeritus of Marketing* (1948) (Ret. 1972)
B.S., University of Nebraska; M.S., University of Denver, 1944.
- LOUIS ROSS, *Professor Emeritus of Mathematics* (February 1946) (Ret. 1977)
B.S., B.A., M.A.Ed., The University of Akron; Ph.D., Case Western Reserve University, 1955.
- ROY V. SHERMAN, *Professor Emeritus of Political Science* (1929) (Ret. 1967)
B.A., M.A., Ph.D., State University of Iowa, 1927.
- KENNETH F. SIBILA, *Professor Emeritus of Electrical Engineering* (February 1940) (Ret. 1977)
B.S.E.E., M.S.E.E., Case Institute of Technology, 1937, P.E., Ohio.
- MARY VERNON SLUSHER, *Associate Professor Emeritus of Accounting* (1947) (1954) (Ret. 1971)
B.S., M.A., Virginia Polytechnic Institute, 1931; C.P.A. Virginia.
- ERNEST A. TABLER, *Associate Professor Emeritus of Mathematics* (1935) (Ret. 1965)
B.S., Kent State University; M.A., Western Reserve University, 1933.
- HELEN S. THACKABERRY, *Assistant Professor Emeritus of English* (1940) (Ret. 1976)
B.A., M.A., State University of Iowa, 1937.
- ROBERT E. THACKABERRY, *Professor Emeritus of English* (1938) (Ret. 1976)
B.A., M.A., Ph.D., State University of Iowa, 1937.
- ERNEST R. THACKERAY, *Distinguished Professor Emeritus of Physics* (1949) (Ret. 1972)
B.A., M.A., University of Saskatchewan (Canada); Ph.D., University of Wisconsin, 1948.
- EVELYN M. TOVEY, *Professor Emeritus of Nursing* (1950) (Ret. 1975)
B.S.N., M.S.N., Case Western Reserve University, 1950; R.N., City Hospital of Akron.
- MRS. AUDRA TUCKER, *Associate Professor Emeritus of Secretarial Science* (1926) (Ret. 1970)
B.A., The University of Akron; M.A., New York University, 1936.
- PAUL E. TWINING, *Professor Emeritus of Psychology* (November 1941) (Ret. 1969)
B.S., Ottawa University; M.A., University of Kansas; Ph.D., University of Chicago, 1938.
- DONALD S. VARIAN, *Associate Professor Emeritus of Speech* (1934) (Ret. 1972)
B.A., M.A., University of Wisconsin, 1934.
- MILTON WALES, *Assistant Professor Emeritus of Mechanical Technology* (1966) (Ret. 1977)
B.S., Louisiana State University; M.Ed., Pennsylvania State University, 1966.
- MRS. FLORENCE N. WHITNEY, *Associate Professor Emeritus of English* (1936) (Ret. 1953)
B.A., Dakota Wesleyan University; M.A., Columbia University, 1913.
- EARL R. WILSON, *Associate Professor Emeritus of Mechanical Engineering* (1929) (Ret. 1968)
B.M.E., The Ohio State University, 1916; P.E., Ohio.
- MARY H. WILSON, *Assistant Professor Emeritus of Home Economics* (April 1943) (Ret. 1972)
B.S., Iowa State College, 1932.

NOTE: The dates in parentheses indicate the beginning of service at The University of Akron; unless otherwise stated, service began in the month of September.

University Faculty and Administration*

MAY, 1976

FULL-TIME

- D. J. GUZZETTA, *President of the University and Professor of Higher Education* (1954 - March, 1968), (August, 1971)
 B.A., Ed.M., Ed.D., University of Buffalo, 1953; LL.D., The University of Akron, 1968; D.S.Sc., Marian College, 1971; LL.D., Kent State University, 1971; L.H.D., Walsh College (Canton, O.), 1972.
- NORMAN P. AUBURN, *Consultant, President Emeritus of the University, and Professor Emeritus of Political Science* (1951)
 B.A., University of Cincinnati, 1927; LL.D., Parsons College, 1945; LL.D., University of Cincinnati, 1952; D.Sc., University of Tulsa, 1957; LL.D., University of Liberia (West Africa), 1959; Litt.D., Washburn University of Topeka, 1961; L.H.D., College of Wooster, 1963; LL.D., The University of Akron, 1971.
- PAUL ABERCROMBIE, *Assistant Director of Purchasing* (1971)
 B.S., B.S.Ed., M.Ed., Miami University (Ohio), 1960.
- IRVING ACHORN, *Professor of Art* (1965)
 B.S., M.A., Kent State University, (1956)
- ALEXANDER L. ADAMS, *Instructor in Physical Education* (1970)
 B.S.Ed., M.S.Ed., The University of Akron, 1970.
- HOBART W. ADAMS, *Professor of Accounting* (1969)
 B.S., Kent State University; M.B.A., D.B.A., Indiana University, 1967.
- MAURICE L. ADAMS, *Associate Professor of Mechanical Engineering* (1977)
 B.S.M.E., Lehigh University; M.Eng.SC., Pennsylvania State University, 1970.
- JOHN THOMAS ADOLPH, *Associate Professor of Physical Education* (1969)
 B.A., The University of Akron; M.Ed., Ohio University; Ph.D., The Ohio State University, 1969.
- DORIS ALDRICH, *Assistant Professor of Home Economics* (1973)
 B.S., M.Ed., Kent State University, 1972.
- RALPH A. ALEXANDER, *Assistant Professor of Psychology* (1973)
 B.A., Arizona State University; M.A., Ph.D., University of Rochester, 1974.
- RONALD E. ALEXANDER, *Associate Professor of Law* (1973)
 B.A., J.D., Ohio State University, 1971.
- GUY S. ALITTO, *Assistant Professor of History* (1976)
 B.A., King's College; M.A., University of Chicago; Ph.D., Harvard University, 1975.
- HOLLIS ALLAN, *Associate Professor of Law* (1972)
 B.A., The University of Akron; J.D., University of Michigan Law School, 1949.
- VIRGINIA ALLANSON, *Assistant Professor of Bibliography and Research Librarian* (October 1968)
 B.S., Purdue University; M.L.S., Kent State University, 1966.
- JUNE M. ALLEMAN, *Instructor in Education* (1973)
 B.A.Ed., M.A.Ed., Western Michigan University, 1972.
- IRIS E. ALLISON, *Adviser of Students* (August 1974)
 B.S., Central State University; M.Ed., Kent State University, 1973.
- ABDUL AMIR AL-RUBAIY, *Associate Professor of Education* (1972)
 B.S., M.A., Eastern Michigan University; Ph.D., Kent State University, 1972.
- BARBARA S. ANANDAM, *Assistant Professor of Nursing* (March 1973)
 B.S., M.S., Boston University, 1964.
- LASCELLES F. ANDERSON, *Associate Professor of Economics and Director of Afro-American Studies* (1966)
 B.A., Howard University; M.A., Ph.D., New School for Social Research (New York), 1971.
- ALEXIS M. ANIKEEFF, *Professor of Psychology* (1967)
 A.B., A.M., University of Michigan; Ph.D., Purdue University, 1949.
- FARAJ ARDALAN, *Lecturer in Modern Languages* (August 1976)
 B.A., Howard University; M.A., M.A., The University of Akron, 1973.
- JOHN ARENDT, *Instructor in Surveying and Construction Technology* (February 1967)
 B.S.M.E., Cleveland State University, 1944.
- MARY ANN ARNELLA, *Instructor in Nursing* (1976)
 B.S.N., St. John College, 1965.
- WALTER E. ARMS, *Associate Professor of Education* (1968)
 B.S., Northwest Missouri State College; M.Ed., University of South Dakota; Ed.D., Indiana University, 1968.
- BARBARA N. ARMSTRONG, *Professor of Home Economics* (1972)
 B.S., M.S. West Virginia University; Ph.D., Ohio State University, 1970.
- BRUCE R. ARMSTRONG, *Assistant Professor of Art* (1971)
 B.F.A., California Institute of the Arts, M.F.A., Washington State University, 1968.
- WILLIAM J. ARN, *Associate Professor of Education* (1967)
 B.S., Ohio Northern University; M.S., Bowling Green State University; Ph.D., Kent State University, 1967.
- ROBIN DIANE ARNOLD, *Assistant Professor of Physical Education (Wayne General and Technical College)* (1972)
 B.S., University of Maryland; M.A., Ohio State University, 1966.

NOTE: The dates in parentheses indicate the beginning of service at The University of Akron; unless otherwise stated, service began in the month of September.

- JOANN M. ARRIETTA, *Advisor of Students* (July 1976)
B.A.Ed., M.A.Ed., The University of Akron, 1975.
- JOHN H. ASHLEY, *Producer/Director for Television Productions* (1973)
B.S., Southern Illinois University; M.S., Indiana University, 1973.
- GLENN A. ATWOOD, *Professor of Chemical Engineering* (1965)
B.S.Ch.E., M.S.Ch.E., Iowa State University; Ph.D., University of Washington, 1963 P.E., Ohio.
- MARY ELLEN ATWOOD, *Assistant Professor of Education and of Home Economics, Director of University Nursery School* (1969)
B.S., Iowa State College; M.S., The University of Akron, 1968.
- RICHARD L. AYNES, *Lecturer in Law* (1976)
B.S., Miami University; J.D., Cleveland State University, 1974.
- GERTRUDE BADGER, *Associate Professor of Education* (1965)
B.S.Ed., B.A., The Ohio State University; M.Ed., Kent State University, 1960.
- ROGER BAIN, *Associate Professor of Geology* (1970)
B.S., M.S., University of Wisconsin; Ph.D., Brigham Young University, 1968.
- DONALD E. BAKER, *Assistant Professor of Secretarial Science (Wayne General and Technical College)* (1973)
B.S.Ed., M.S., Bowling Green State University, 1973.
- J. WAYNE BAKER, *Associate Professor of History* (1968)
B.A., Western Baptist Bible College; B.D., Talbot Theological Seminary; B.A., Pepperdine College; M.A., Ph.D., University of Iowa, 1970.
- FRANK V. BALDO, *Professor of Marketing and Professor of Transportation* (1969)
B.B.A., Fenn College; M.B.A., Case Western Reserve University; Ph.D., Pennsylvania State University, 1968.
- HOWARD R. BALDWIN, *Registrar* (July 1967)
B.P.S.M., Mount Union College; M.Ed., Kent State University, 1960.
- GEORGE W. BALL, *Executive Director of University Relations and Development* (1957)
B.A., Mount Union College, 1943.
- A. FREDERIC BANDA, *Professor of Finance* (1968)
B.S., City College of New York; M.B.A., Ph.D., New York University, 1964.
- JAMES P. BANKS, *Development Officer* (May 1974)
B.S., Ohio University, 1950.
- H. KENNETH BARKER, *Dean of the College of Education, Dean of International Programs and Professor of Education* (1966)
B.A., M.A., University of Louisville; Ph.D., University of Michigan, 1959.
- ANITRA BARKLEY, *Assistant Professor of Speech* (March 1969)
B.A., M.A., The University of Akron, 1969.
- ANNA P. BARNUM, *Assistant Professor in the Community and Technical College* (1970)
B.A., Middlebury College; M.A., University of Vermont, 1969.
- DAVID G. BARR, *Associate Professor of Education* (1967)
B.S., M.A., Kent State University, 1966.
- CHARLES M. BARRESI, *Professor of Sociology* (1966)
B.A., M.A., Ph.D., State University of New York at Buffalo, 1965.
- GERALD V. BARRETT, *Professor of Psychology* (1973)
B.A., Wittenberg University; M.S., Ph.D., Case Western University, 1962.
- PHILLIP E. BARTLETT, *Planning Aide* (1971)
B.A., Kent State University, 1963.
- WALTER BARZDITIS, JR., *Manager of Parking Systems* (April 1970)
B.A., Ripon College, 1950.
- MARIAN BAUER, *Associate Professor of Nursing* (1969)
B.A., Maryville College; M.N., Western Reserve University, 1941. R.N.
- EDWARD L. BAXTER, *Assistant Professor of Business Law* (1974)
A.B., Bowdoin College; J.D., Harvard Law School; LL.M., M.A., Boston University, 1966.
- DONALD E. BECKER, *Assistant Professor of Management* (1959)
B.A., M.A., Oberlin College, 1948.
- JOHN D. BEE, *Associate Professor of Mass Media-Communication* (1969)
B.A., Ohio University; M.A., Ph.D., University of Wisconsin, 1972.
- JAMES D. BELL, *Assistant Professor of Secretarial Science* (1970)
B.S., M.Ed., Kent State University; M.S.Ed., The University of Akron, 1975.
- JUTTA T. BENDREMER, *Instructor in English* (1967)
B.A., Hunter College; M.A., Brooklyn College, 1951.
- EUGENE MOSS BENEDICT, *Assistant professor in the Community and Technical College* (January 1969)
S.T.B., Boston University School of Theology; B.A.Ed., M.A., The University of Akron, 1964.
- DAVID S. BERNSTEIN, *Assistant Professor of Music* (1972)
B.M., M.M., Florida State University; D.M., Indiana University, 1974.
- DONALD K. BERQUIST, *Associate Professor of Accounting* (1968)
B.S.B.A., Youngstown University; M.Acc., The Ohio State University, 1964; C.P.A., Ohio.
- SANDRA LEE BERRY, *Adviser of Students* (July 1971)
B.A., M.A., Michigan State University, 1971.
- CARLA A. BERSANI, *Associate Professor of Sociology* (1965)
B.A., Eastern Michigan University; M.A., University of Michigan; Ph.D., Iowa State University, 1965.
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- WILLIAM H. BEYER, *Professor Mathematics* (1961)
B.S., The University of Akron; M.S., Ph.D., Virginia Polytechnic Institute, 1961.
- MICHAEL BEZBATCHENKO, *Professor of Mechanical Engineering* (June 1949)
B.M.E., The University of Akron; M.S., Case Western Reserve University, 1954; P.E., Ohio.
- CLARK E. BIGGINS, *Director of Purchasing* (April 1967)
B.S.C., Ohio University, 1957.
- PAUL MARTIN BISS, *Assistant Professor of Music* (1972)
B.M., Indiana University; M.S., Julliard School of Music, 1968.
- ROBERT R. BLACK, *Associate Professor of Economics* (1958)
B.A., Carleton College; M.B.A., University of Chicago; Ph.D., University of California at Berkley, 1963.
- PATSY B. BLACKWELL, *Assistant Professor of Speech* (1973)
B.S.Ed., Mississippi College; M.A., Louisiana State University, 1971.
- RALPH O. BLACKWOOD, *Professor of Education* (1967)
B.A., Muskingum College; M.A., Ph.D., The Ohio State University, 1962.
- C. ROBERT BLANKENSHIP, *Instructor in Education and Director of Audio-Visual Services* (1952) (July 1956)
B.S.B.A., The University of Akron; M.S.Ed., Indiana University, 1963.
- BORIS BLICK, *Associate Professor of History* (1964)
B.A., Brooklyn College; M.A., Ph.D., University of Wisconsin, 1958.
- GERALD J. BLUMENFELD, *Professor of Education* (1970)
B.A., Harris Teachers College; M.A., Ed.D., Washington University (St. Louis), 1966.
- GLORIA J. BOGGESS, *Instructor in Speech* (March 1975)
B.S., Purdue University; M.A., University of Iowa, 1970.
- PERRY JANE BOMAR, *Associate Professor of Nursing* (1972)
B.S., The University of Akron; M.S., Case Western Reserve University, 1972; R.N.
- RICHARD K. BONNELL, *Assistant to the Dean of the Evening College and Summer Sessions* (August 1969)
B.A., M.A., The University of Akron, 1972.
- MARTHA A. BOOTH, *Assistant Director of Admissions* (June 1971)
B.S.Ed., The University of Akron, 1971.
- GEORGE MARTIN BOSELA, *Senior Project Leader-Administrative Systems and Programming, Computer Center* (November 1972)
B.S.Ed., Youngstown University; M.S., The University of Akron, 1975.
- ROBERT BOSSAR, *Assistant to Director-Staff Personnel* (October 1974)
B.A., Kent State University, 1970.
- DONALD L. BOWLES, *Assistant to the Vice President for Planning* (February 1959)
B.S.I.M., B.S.Ed., The University of Akron, 1959.
- ALLEN M. BOYER, *Director of Alumni Relations and Development Officer* (November 1966)
B.A., The University of Akron, 1942.
- LARRY G. BRADLEY, *Associate Professor of Education* (1969)
B.A., Muskingum College; M.A., West Virginia University; Ph.D., Ohio University, 1969.
- FRANK BRADSHAW, *Associate Professor of Music* (1968)
B.A., M.A., Bob Jones University, 1950.
- IRVIN W. BRANDEL, *Counselor, Testing and Counseling Bureau* (1969)
B.S., Bowling Green State University; M.A., Michigan State University; Ph.D., The University of Akron, 1975.
- MARKO BRDAR, *Associate Professor of Chemical Technology* (1967)
B.S., M.A., Case Western Reserve University, 1954.
- ROBERT L. BRIECHLE, *Manager, Academic Systems and Programming, Computer Center* (1971)
B.S.E.E., University of Connecticut; M.S., Rensselaer Polytechnic Institute, 1967.
- MERLIN G. BRINER, *Professor of Law* (1970)
B.S.B.A., University of Wichita; J.D., The University of Akron, 1966.
- DAVID R. BRINK, *Instructor in Bibliography and Research Librarian* (December 1976)
B.A., Wabash College, B.D., University of Chicago; M.A., University of Minnesota, 1970.
- THOMAS M. BRITTAIN, *Professor of Mechanical Engineering and Professor of Mechanical Technology* (February 1965)
B.M.E., The University of Akron; M.S., Ph.D., University of Illinois, 1966.
- ALEXANDER BROWN, *Visiting Professor of Mechanical Engineering* (1977)
B.S., M.S., University of Nottingham, Ph.D., Queens University of Belfast, 1967.
- THOMAS O. BROWN, *Adjunct Associate Professor of Education and Director of the Testing and Counseling* (July 1964)
B.S., M.Ed., Mississippi State University; Ph.D., Kent State University, 1968.
- ANGELA ROSE BRUNO, *Associate Professor of Education* (1969)
B.S., Seton Hill College; M.Ed., Indiana University of Pennsylvania; Ed.D., Pennsylvania State University, 1969.
- STANLEY R. BRUNS, *Assistant Professor in the Community and Technical College* (1970)
B.S., Fort Hays Kansas State College; M.A., Central Michigan University, 1970.
- JAMES BUCHANAN, *Assistant Professor of Philosophy* (1971)
B.A., M.A., Ohio University; Ph.D., Pennsylvania State University, 1970.
- FOSTER S. BUCHTEL, *Assistant to the President - Campus and Civilian Coordinator of the Reserve Officers Training Corps; Project Director-Kellogg Team Leadership Development Program* (July 1974)
B.A., The University of Akron; M.B.A., Western Michigan University, 1970.
- DAVID BUCHTHAL, *Associate Professor of Mathematics* (1971)
B.S., Loyola University; M.S., Ph.D., Purdue University, 1971.

- HERMAN M. BUERSCHEN, *Adviser of Students* (July 1971)
B.A., M.A., University of Dayton, 1968.
- DAN LEE BUIE, *Liaison Coordinator* (July 1968)
B.S., M.S., The University of Akron, 1969.
- ARTHUR BURFORD, *Professor of Geology* (1968)
B.A., Cornell University; M.S., University of Tulsa; Ph.D., University of Michigan, 1960.
- VICTOR BURKE, *Assistant Professor of Electrical Engineering* (1975)
B.S., M.S., Ph.D., Case Western Reserve University, 1975.
- JERRY J. BURR, *Instructor in Dance* (1975)
Cleveland College; studied with Robert Joffrey of New York, Dudley DeVos of London, Michele de Lutky and William Millie of Munich.
- DONALD R. BURROWBRIDGE, *Associate Professor of Coordination and Director of the Cooperative Program, College of Engineering* (July 1965)
B.S., University of Wisconsin; M.S., Virginia Polytechnic Institute, 1965.
- JUNE K. BURTON, *Assistant Professor of History* (1971)
B.A., M.A., Stetson University; Ph.D., University of Georgia, 1971.
- DOUGLAS R. BUTTURFF, *Associate Professor of English* (1977)
B.A., University of Pennsylvania; M.A., Georgetown University; Ph.D., University of Illinois, 1968.
- ALBERT C. BUXTON, *Assistant Professor of Electronic Technology* (January 1975)
B.S.E.E., M.S.E.E., Tulane University, 1952.
- DENNIS M. BYRNE, *Assistant Professor of Economics* (1975)
B.S., Villanova University; M.A., Ph.D., University of Notre Dame, 1975.
- ALLEN MANUAL CABRAL, *Assistant Professor of Accounting* (1972)
B.S.B.A., American International College; M.S., Kent State University; J.D., The University of Akron, 1975.
- RICHARD A. CALKINS, *Adviser of Students and Instructor in the Community and Technical College* (1964)
B.A., Westminster College (Pa.), 1961.
- KAREN S. CALVERT, *University Publications Editor* (1972)
B.S.Ed., Mount Union College, 1969.
- DOUGLAS E. CAMERON, *Associate Professor of Mathematics* (1969)
B.A., Miami University; M.S., The University of Akron; Ph.D., Virginia Polytechnic Institute, 1970.
- GERALD R. CAMP, *Associate Professor of Data Processing* (March 1969)
B.A., Case Western Reserve University; M.S., The University of Akron, 1971.
- T. ALLEN CAMPBELL, *Assistant Professor in Physical Education* (August 1968)
B.S., M.S., The University of Akron, 1970.
- MARY CAPOTOSTO, *Assistant Professor of Speech* (1968)
B.A., The University of Akron; M.A., DePaul University, 1967.
- NATHAN F. CARDARELLI, *Associate Professor of General Technology* (1968)
B.S., B.A., M.S., M.A., The University of Akron, 1961.
- CATHY CARON, *Instructor in Nursing* (October 1976)
B.S.N., Russell Sage College; M.S.N., Vanderbilt University, 1976.
- LESLIE G. CARR, *Assistant Professor of Sociology* (1973)
B.S., M.A., University of Alabama; Ph.D., University of North Carolina, 1973.
- MARILYN JEAN CARRELL, *Director of Placement* (October 1972)
B.S., M.S.Ed., The University of Akron, 1972.
- CAESAR A. CARRINO, *Dean of the Evening College and Summer Sessions and Professor of Education* (1967)
B.S., Baldwin-Wallace College; M.S., The University of Akron; Ph.D., Case Western Reserve University, 1965.
- ROBERT C. CARSON, *Associate Professor of Mathematics* (July 1963)
B.S., M.S., Purdue University; Ph.D., University of Wisconsin, 1953.
- CAROL A. CARTER, *Assistant Professor of Aerospace Studies* (1976)
B.A., M.A., University of Arkansas, 1966. Captain. USAF.
- VINCENT H. CASSIDY, *Professor of History* (1969)
B.A., M.A., Ph.D., University of North Carolina, 1957.
- DANA F. CASTLE, *Assistant to the Dean of the School of Law and Lecturer in Law* (March 1974)
B.S., Cornell University; J.D., The University of Akron, 1973.
- STEPHEN S. CASTLE, *Professor of Marketing* (1967)
B.A., Hillsdale College; M.B.A., University of Michigan; Ph.D., Michigan State University, 1964.
- GEORGE F. CELLA, JR., *Assistant Director of Purchasing* (July 1973)
B.A., The University of Akron, 1973.
- TOMASITA M. CHANDLER, *Associate Professor of Home Economics* (1971)
B.A., New Mexico Highlands University; M.S., Ph.D., Texas Women's University, 1970.
- TSE-YUNG CHANG, *Associate Professor of Civil Engineering* (1970)
B.S.C.E., National Taiwan University; M.S., Ph.D., University of California at Berkley, 1966.
- BARBARA S. CHASE, *Assistant Law Librarian, Public Services* (1975)
B.A., M.S.L.S., Catholic University of America, 1975.
- CHIOU-SHIUN CHEN, *Associate Professor of Electrical Engineering* (1968)
B.S., National Taiwan University; M.S., Ph.D., University of Rochester, 1967; P.E., Ohio.
- CHUN-FU CHEN, *Associate Professor of Electrical Engineering* (February 1968)
B.S., National Taiwan University; M.S., University of Tennessee; Ph.D., Vanderbilt University, 1968; P.E., Ohio.
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- MARY ELIZABETH CHESROWN, *Assistant Director of the Institute for Civic Education* (May 1965)
B.A., The University of Akron, 1949.
- BONNY W. CHIRAYATH, *Instructor in Home Economics* (1976)
B.S., University of Massachusetts; M.S., Cornell University, 1967.
- GERALDINE F. CHITTY, *Assistant Registrar* (October 1967)
B.A.Ed., The University of Akron, 1968.
- FRANK L. CHLAD, *Administrative Assistant, Department of Chemistry* (January 1967)
B.B.A., Michigan State University, 1956.
- YONG H. CHO, *Professor of Urban Studies, Professor of Political Science and Associate Director of Center for Urban Studies* (1967)
B.A., Seoul National University (Korea); M.P.A., Ph.D., Syracuse University, 1965.
- HUGH GENE CHRISTMAN, *Associate Professor of Education* (1970)
B.S., Miami University; M.Ed., Ed.D., Pennsylvania State University, 1970.
- ROBERT D. CHRISTMAN, *Project Analyst-Administrative, Computer Center* (1969)
B.S.E.E., The University of Akron, 1972.
- HARRY CHU, *Associate Professor of Physics* (1969)
B.S., Chikung University; M.A., Ph.D., State University of New York at Stony Brook, 1969.
- MAMERTO L. CHU, JR., *Associate Professor of Mechanical Engineering* (1968)
B.S.M.E., Iloilo City University (Philippines); M.S.M.E., Ph.D., University of Houston, 1967.
- BENJAMIN T. F. CHUNG, *Associate Professor of Mechanical Engineering* (1970)
B.S.M.E., Taiwan Provincial Cheng-Kung University; M.S.M.E., Kansas State University; M.S. Math., University of Wisconsin; Ph.D., Kansas State University, 1968.
- STEPHEN J. CHYLINSKI, *Assistant Professor in the Community and Technical College* (March 1971)
B.A., Cleveland State University; M.A., University of Pittsburgh, 1970.
- BARBARA CLARK, *Instructor in Bibliography and Senior Cataloger in the Library* (October 1957)
B.A., The University of Akron, 1950.
- BLANCHE E. CLEGG, *Assistant Professor of Education* (1973)
B.S.Ed., Wayne State University; M.Ed., University of Massachusetts; Ph.D., University of Washington, 1971.
- BARBARA E. CLEMENTS, *Assistant Professor of History* (1971)
B.A., University of Richmond; M.A., Ph.D., Duke University, 1971.
- BERNARD J. CLIFFORD, *Assistant Professor of Social Work* (1969)
B.A., Western Reserve University; M.S.S.W., University of Wisconsin, 1952.
- RUTH CLINEFELTER, *Associate Professor of Bibliography and Research Librarian* (June 1952)
B.A., M.A., The University of Akron; M.A.L.S., Kent State University, 1956.
- JOHN R. COCHRAN, *Associate Professor of Education* (1969)
B.S., M.A., Ph.D., The Ohio State University, 1968.
- JOANN COLLIER, *Assistant Professor of Nursing* (1974)
B.S., Loretto Heights College; M.S., University of Colorado, 1974.
- CHRISTOPHER COLLINS, *Producer/Director, Instructional TV* (August 1975)
B.S., Miami University; M.S. University of Kentucky, 1974.
- ROBERT E. COLLINS, *Associate Professor of Secretarial Science* (1964)
B.A., Glenville State Teachers College (W.Va.); M.A., West Virginia University, 1952.
- W. HENRY CONE, *Associate Professor of Education* (1971)
B.A.E., B.S.A., M.Ed., University of Florida; Ed.D., Harvard Graduate School of Education, 1962.
- VERNON COOK, *Associate Professor of Political Science* (1965)
B.A., The Ohio State University, 1951.
- MADELINE A. COOKE, *Associate Professor of Education* (1969)
B.S., The Ohio State University; M.A., Mexico City College; Ph.D., The Ohio State University, 1969.
- DALE E. COONS, *Associate Professor of Education and Director of Special Education* (1973)
B.S.Ed., Butler University; M.S.Ed., Ph.D., Indiana University, 1970.
- ROBERT G. CORBETT, *Coordinator of Research and Professor of Geology* (1969)
B.S., M.S., Ph.D., University of Michigan, 1964.
- FRANK J. COSTA, *Managing Director of Center for Urban Studies and Assistant Professor of Urban Studies* (1972)
B.A., Kent State University; M.S., Case Western Reserve University; Ph.D., University of Wisconsin, 1974.
- DAVID F. COX, *Associate Professor of Urban Studies and of Philosophy* (1970)
B.A., Morningside College; S.T.B., Ph.D., Boston University, 1953.
- THOMAS J. COYNE, *Associate Professor of Business Economics* (1969)
B.B.A., Marshall University; M.B.A., Kent State University; Ph.D., Case Western Reserve University, 1967.
- WALDEN BLAIN CRABTREE, *Associate Professor of Education* (1968)
B.A., St. Meinrad College (Indiana); M.S.Ed., Ph.D., Indiana University, 1968.
- ROGER B. CREEL, *Associate Professor of Physics* (1970)
B.A., Kalamazoo College; Ph.D., Iowa State University, 1969.
- JAMES L. CRESS, *Assistant Professor of Accounting* (1973)
B.S.B.A., M.B.A., Bowling Green State University, 1964.
- ROBERT J. CROYLE, *Assistant Coordinator of the Appellate Review Office and Staff Attorney, College of Law* (July 1976)
B.A., Alfred University; J.D., The University of Akron, 1976.
- KENNETH G. CUNNINGHAM, *Instructor in Physical Education* (April 1976)
B.S.Ed., University of Cincinnati; M.Ed., Kent State University, 1966.

- FAYE DAMBROT, *Assistant Professor of Psychology* (1967)
B.S., Carnegie Institute of Technology; M.A., The University of Akron, 1966.
- MICHAEL F. d'AMICO, *Associate Professor of Marketing* (1972)
B.S., Georgetown University; M.B.A., Rutgers University; D.B.A., Texas Technical University, 1975.
- ALEX DARBES, *Associate Professor of Psychology* (1968)
B.A., Ph.D., Case Western Reserve University, 1951.
- STEPHEN DARLING, *Associate Professor of Chemistry* (1970)
B.S., University of Wisconsin; M.A., Ph.D., Columbia University, 1959.
- RALPH FRANK DARR, JR., *Associate Professor of Education* (1968)
B.S., Southeast Missouri College; M.A., Washington University; Ph.D., Southern Illinois University, 1967.
- PATRICK A. DARRAH, *Assistant Director of Placement* (August 1976)
B.S., M.S., The University of Akron, 1976.
- PAUL A. DAUM, *Associate Professor of Speech and Theatre Arts* (1965)
B.F.A., Wesleyan College; M.A., The University of Akron, 1964; Ph.D., The Ohio State University, 1973.
- JACK R. DAUNER, *Associate Professor of Marketing* (1971)
B.S., University of Iowa; M.S., Ph.D., St. Louis University, 1970.
- ALEXANDER N. DAVIS, *Instructor in Theatre Arts* (1976)
B.A., The University of Dayton; M.A., The University of Akron, 1975.
- GEORGE D. DAVIS, *Professor of Speech* (1974)
B.S.Ed., Kent State University; M.A., Ph.D., Ohio State University, 1968.
- N. F. DAVIS, *Professor of Management* (1970)
B.S., Lincoln University; M.B.A., Washington University; Ph.D., Indiana University, 1960.
- RUSSELL K. DAVIS, III, *Assistant Professor of Business Management Technology* (1971)
B.S.B.A., M.A., Wayne State University, 1971.
- MARY H. K. DEE, *Assistant Professor in the Community and Technical College* (1970)
B.S., University of the East (Manila); M.A., Central Missouri State College, 1969.
- MARY DEHAVEN, *Assistant Professor of English* (1969)
B.A., University of Wisconsin; M.A., The University of Akron; Ph.D., Case Western Reserve University 1972.
- ROBERT DEITCHMAN, *Assistant Professor of Psychology* (1970)
B.B.A., City College of New York; M.A., Ph.D., University of Tennessee, 1968.
- BERNARD A. DEITZER, *Professor of Management* (January 1967)
B.A., Allegheny College; M.L.L., University of Pittsburgh; Ph.D., The Ohio State University, 1967.
- JAMES L. DENNISON, *Assistant Professor of Physical Education* (July 1965)
B.A., College of Wooster; M.A.Ed., The University of Akron, 1968.
- HAMILTON DESAUSSURE, *Goodrich Professor of Law in International Transactions* (1970)
B.A., Yale University; LL.B., Harvard University; LL.M., McGill Institute of International Air Law, 1953.
- IRWIN DEUTSCHER, *Professor of Sociology* (1975)
A.B., M.S., M.A., Ph.D., University of Missouri, 1959.
- LILLIAN J. DEYOUNG, *Dean of the College of Nursing and Professor of Nursing* (July 1975)
B.S., M.S., Ph.D., University of Utah, 1975.
- ROBERT L. DIAL, *Associate Professor of English* (1965)
B.S., Central Missouri State College; M.A., Ph.D., University of Missouri, 1963.
- RICHARD M. DIENESCH, *Instructor in Business Management Technology (Wayne General and Technical College)* (1975)
B.B.A., M.B.A., University of Michigan, 1970.
- CONSTANTIN DIMITRIU, *Instructor in Classics* (May 1970)
Baccalaureate, University of Cluj, Romania; M.A., National University of Bucuresti; M.S.L.S., Case Western Reserve University, 1969.
- CECIL L. DOBBINS, *Director of Special Programs* (February 1965)
B.B.A., Cleveland State University, 1952.
- DOROTHY M. DOBRINDT, *Associate Professor of Nursing* (1969)
R.N., St. Elizabeth Hospital School of Nursing; B.S., St. Louis University; M.Ed., Columbia University, 1965.
- SHIRLEY R. DOHERTY, *Assistant Professor of Nursing* (1975)
B.S.N., Syracuse University; M.S.N., Wayne State University, 1968.
- DAVID T. DOLAN, *Assistant Dean of the Community and Technical College and Assistant Professor of Sales and Merchandising* (1965)
B.A., M. Ret. Adv., University of Pittsburgh, 1957; Ph.D., The University of Akron, 1973.
- HELMAR DOLLWET, *Assistant Professor of Biology* (January 1970)
B.S., University of Michigan and Technische Hochschule, Munich; M.S., Ph.D., University of California at Riverside, 1969.
- JOSEPH J. DONATELLI, JR., *Instructor in Modern Languages* (1967)
B.A., M.A., The University of Akron, 1968.
- JAMES E. DOVERSPIKE, *Professor of Education* (1960)
B.S., Indiana State College; M.Ed., Ed.D., Pennsylvania State University, 1961.
- ROBERT L. DOWDY, *Instructor in Physical Education* (August 1974)
B.A., M.S., Indiana University, 1973.
- WILLIAM M. DOYLE, *Director of Staff Personnel* (November 1973)
B.S.B.A., Kent State University, 1949.
- CLARENCE B. DRENNON, *Associate Professor of Civil Engineering* (1975)
B.S., Colorado School of Mines, M.E., Texas A & M, Ph.D., Iowa State University, 1972.

- MILAN F. DUBRAVCIC, *Associate Professor of Chemical Technology* (January 1968)
Ingenieur of Chemistry, University of Zagreb; Ph.D., University of Massachusetts, 1968.
- MARGARET M. DUFALA, *Senior Academic Programmer/Analyst* (January 1975)
B.S., M.S., The University of Akron, 1969.
- R. WAYNE DUFF, *Vice President of Business and Finance* (May 1963)
B.A., Oberlin College; LL.B., Cleveland-Marshall Law School, 1951.
- THEODORE DUKE, *Distinguished Professor of Latin and Greek* (1946)
B.A., The University of Akron; M.A., Case Western Reserve University; Ph.D., Johns Hopkins University, 1946.
- PAUL H. DUNHAM, *Assistant Professor of Industrial Technology* (1972)
B.A., Case Western Reserve University; M.B.A., Kent State University, 1960.
- JAMES F. DUNLAP, *Professor of Theatre Arts* (1955)
B.S.Ed., Wilmington College; M.A., Ph.D., The Ohio State University, 1954.
- JAMES W. DUNLAP, *Dean of the College of Business Administration and Professor of Finance* (1963)
B.B.A., Memphis State University; M.B.A., Ph.D., University of Arkansas, 1963.
- JOSEPH J. DUNN, *Director of Special Events — Athletics* (March 1976)
B.S., Kent State University, 1974.
- KENNETH A. DUNNING, *Associate Professor of Management* (1973)
B.S.E.E., University of North Carolina; M.B.A., Ph.D., University of Pittsburgh, 1972.
- DAVID R. DURST, *Associate Professor of Finance* (1968)
B.S., Kent State University; M.B.A., D.B.A., Georgia State University, 1972.
- ASHOK DUTT, *Professor of Geography and Professor of Urban Studies* (1968)
B.A., M.A., Ph.D., Patna University (India), 1961.
- CHARLES MYRON DYE, *Associate Professor of Education* (1972)
B.Ed., Harris Teachers College; M.Ed., Ph.D., Washington University, 1971.
- DANIEL DENNIS EDGAR, *Adviser of Students* (July 1971)
B.S., M.Ed., Indiana University of Pennsylvania; M.A., The University of Akron, 1969.
- JOSEPH A. EDMINISTER, *Associate Professor of Electrical Engineering and Assistant to the Dean of the College of Engineering* (May 1957)
B.E.E., M.S.E.; J.D., The University of Akron, 1974, P.E., Ohio.
- JAMES J. EGAN, *Associate Professor of English* (1971)
B.A., St. Joseph's College; M.A., Ph.D., University of Notre Dame, 1971.
- JANICE L. ELEY, *Instructor in Food Service Management* (1976)
B.A., Manchester College; M.A., Indiana University, 1974.
- ROBERT K. ELEY, *Assistant Professor of Education* (1975)
B.S.Ed., M.Ed., Ball State University; Ed.D., Indiana University, 1975.
- DANIEL L. ELY, *Assistant Professor of Biology* (1976)
B.A., M.S., Ph.D., University of Southern California, 1971.
- JAMES R. EMORE, *Instructor in Accounting* (1973)
B.A.Ed., M.S.Acct., The University of Akron, 1973.
- ELIZABETH B. ERICKSON, *Assistant Professor of Economics* (1969)
B.S., M.S., University of Western Australia; Ph.D., University of Illinois, 1972.
- EARL L. ERTMAN, *Associate Professor of Art* (1967)
B.S., University of Southern Mississippi; M.A., Case Western Reserve University, 1967.
- BERNARD L. ESPORITE, *Associate Professor of Education* (1970)
B.S.Ed., M.Ed., Ph.D., Miami University, 1971.
- CHARLOTTE ESSNER, *Associate Professor of Speech* (1965)
B.A., Hunter College; M.A., The University of Akron, 1964.
- WALTER LEE EVEGE, JR., *Assistant Director of Admissions* (July 1970)
B.S., Tougaloo College, 1964.
- JUDITH L. EVERETT, *University Artist* (October 1968)
B.F.A., Kent State University, 1968.
- FRED W. FANNING, *Assistant Professor of Education* (1972)
B.S., M.A., Ph.D., The Ohio State University, 1972.
- STEPHEN FARIA, JR., *Instructor in Modern Languages* (1967)
B.A., Harvard University; M.A., Cornell University, 1965.
- MICHAEL F. FARONA, *Professor of Chemistry* (1964)
B.S., Case Western Reserve University; M.S., Ph.D., The Ohio State University, 1964.
- LEONA W. FARRIS, *Director of the Community Involvement Component of Home Economics* (1969)
B.S., The Ohio State University; M.A., Kent State University, 1969.
- ALI M.S. FATEMI, *Professor of Economics* (1965)
B.S., Farleigh Dickinson University; M.A., Ph.D., New School for Social Research (New York), 1967.
- RICHARD M. FAWCETT, *Assistant Professor in the Community and Technical College* (1969)
B.A., M.Ed., Kent State University, 1959.
- JAMES V. FEE, *Professor of Mass Media-Communication* (1967)
B.S.Ed., M.S.Ed., Southern Illinois University; Ph.D., The Ohio State University, 1964.
- ROBERT E. FERGUSON, *Professor of Education* (1965)
B.S.Ed., M.A. Kent State University; Ed.D., Case Western Reserve University, 1965.

- D. G. FERTIS, *Professor of Civil Engineering* (1966)
B.S., B.S.C.E., M.S.C.E., Michigan State University; Ph.D., Eng., National Technical University (Athens, Greece), 1964.
- LEWIS J. FETTERS, *Professor of Chemistry and Professor of Polymer Science* (1967)
B.A., College of Wooster; Ph.D., The University of Akron, 1962.
- RONALD H. FEWKES, *Assistant Professor of Geology* (1977)
B.S., California State College; Ph.D., Washington State University, 1976.
- JOHN P. FINAN, *Professor of Law* (1967)
B.A., Fordham University; J.D., Columbia University, 1961.
- JUDITH L. FITZGERALD, *Instructor in Bibliography and Cataloger in the Library* (July 1969)
B.A., West Virginia Wesleyan University; M.S.L.S., Case Western Reserve University, 1976.
- THOMAS M. FLAHERTY, JR., *Instructor in Physical Education* (February 1974)
B.S.Ed., M.S.Ed., The University of Akron, 1974.
- ALICE M. FLAKSMAN, *Associate Professor of Music* (1965)
B.A., Hunter College; M.A., Columbia University, Teachers College; Ph.D., The University of Akron, 1972.
- EUGENE FLAUMENHAFT, *Associate Professor of Biology* (1963)
B.A., Adelphi College; M.S., Ph.D., University of Chicago, 1958.
- WILLIAM S. FLEMING, *Associate Professor in the Community and Technical College* (1966)
B.S. Rutgers University; M.A., University of Pennsylvania; Ph.D., Kent State University, 1970.
- LAWRENCE G. FOCHT, *Associate Professor of Chemical Engineering* (1968)
B.S. Ch.E. University of Iowa; M.S.Ch.E., Ph.D., Louisiana State University, 1969. P.E., Ohio.
- T. HENRY FORSYTH, *Associate Professor of Chemical Engineering and Research Associate in the Institute of Polymer Science* (1970)
B.S.C.E., University of Kentucky; M.S., Ph.D., Virginia Polytechnic Institute, 1967. P.E., Ohio.
- HAROLD M. FOSTER, *Assistant Professor of Education* (1976)
B.A., Indiana University of Pennsylvania; M.A.T., University of Pittsburgh; Ph.D., University of Michigan, 1976.
- JAMES G. FRANCE, *Professor of Law* (1966)
B.A., Brown University; LL.B., Yale Law School, 1941.
- WILLIAM A. C. FRANCIS, *Assistant Professor of English* (1966)
B.A., M.A., Duquesne University; Ph.D., Case Western Reserve, 1975.
- RICHARD FRANKLIN, *Assistant Professor of Political Science* (1970)
B.A., Bryan College; M.A., Michigan State University; Ph.D., University of Kentucky, 1976.
- EDWARD J. FRANKOVIC, *Administrative Systems and Programming Manager in the Computer Center* (January 1974)
B.A., University of Pittsburgh, 1962.
- PAUL C. FRANKS, *Professor of Geology* (1971)
B.A., Cornell University; M.S., Ph.D., University of Kansas, 1966.
- PAULINE FRANKS, *Associate Professor of Bibliography and Associate University Librarian* (April 1950)
B.S.Ed., Kent State University; B.S.L.S., Case Western Reserve University, 1940.
- J. E. FREDERICK, *Associate Professor of Chemistry, Associate Professor of Polymer Science* (1966)
B.S.Ch., Glenville State College; Ph.D., University of Wisconsin, 1964.
- LAVERNE M. FRIBERG, *Assistant Professor of Geology* (March 1976)
B.S., University of Wisconsin; M.A., Ph.D., Indiana University, 1976.
- JOHN L. FROLA, *Assistant Professor of Biology* (1971)
B.S., Waynesburg College; M.S., Ph.D., West Virginia University, 1970.
- BILL S. FRYE, *Associate Professor of Education* (1971)
B.S., M.S., Indiana State University; Ph.D., The Ohio State University, 1971.
- STEPHEN S. FUGITA, *Assistant Professor of Psychology* (1971)
B.S., The Ohio State University; M.A., Ph.D., University of California at Riverside, 1969.
- BARBARA M. FUSZARD, *Associate Professor of Nursing* (1976)
B.E., Colorado State University; M.A., Ph.D., University of Iowa, 1973.
- ROBERT GAEBEL, *Assistant Professor of Classics* (1970)
B.A., M.A., University of Buffalo; Ph.D., University of Cincinnati, 1968.
- JULIE ANN GAMMON, *Instructor in Bibliography and Cataloger in the Library* (August 1973)
B.A., University of Florida; M.L.S., University of Pittsburgh, 1967.
- ROBERT N. GANDEE, *Assistant Professor of Physical Education* (1973)
B.S., M.S., The University of Akron; Ph.D., Ohio State University, 1972.
- JAMES L. GANO, *Assistant Professor of Military Science* (1976)
A.B., M.A., Eastern Kentucky University; M.S., University of Southern California, 1975. Captain, Military Intelligence.
- REBECCA ANN GANYARD, *Adviser of Students* (August 1971)
B.A., M.S., Indiana University, 1971.
- T. NEAL GARLAND, *Associate Professor of Sociology* (1969)
B.A., M.A., University of North Dakota; Ph.D., Case Western Reserve University, 1971.
- ROBERT M. GARLOW, *Assistant Professor of Aerospace Studies* (August 1974)
B.A., Slippery Rock State College; M.B.A., Southern Illinois University, 1974. Major, USAF.
- PAUL D. GARN, *Professor of Chemistry* (1963)
B.S., M.S., Ph.D., The Ohio State University, 1952.
- JANICE M. GARVER, *Assistant Director of Student Financial Aids* (October 1976)
B.A., Adelphi University, 1976.
- DALE J. GAYDOS, *Assistant in General Studies Speech Program* (January 1976)
B.S., M.S., The University of Akron, 1976.

- ALAN N. GENT, *Professor of Polymer Physics and Assistant Director of the Institute of Polymer Science* (April 1961)
B.S., (General) B.S., (Special Physics), Ph.D., University of London, 1955.
- PHILIP M. GERHART, *Associate Professor of Mechanical Engineering* (1971)
B.S.M.E., Rose Polytechnic Institute; M.S.M.E., Ph.D., University of Illinois, 1971. P.E., Ohio.
- DON R. GERLACH, *Professor of History* (1962)
B.S.Ed., M.A., Ph.D., University of Nebraska, 1961.
- THOMAS E. GETZINGER, *University Auditor and Assistant to the Vice President for Business and Finance* (1969)
B.S.B.A., The University of Akron; M.B.A., Kent State University, 1966; C.P.A.
- C. EDWARD GIBNEY, *Associate Professor of Nursing* (1970)
St. Agnes School of Nursing; B.S., University of Baltimore; M.S., University of Maryland, 1969; R.N.
- RUSSEL N. GIERSCH, *Director of the Physical Plant* (1966)
B.M.E., Cleveland State University, 1954.
- RICHARD J. GIGLIOTTI, *Associate Professor of Sociology* (1972)
B.A., St. John Fisher College; M.A., Ph.D., Michigan State University, 1972.
- KRISTINE GILL, *Instructor in Nursing* (1976)
B.S.N., St. John College, Cleveland, 1970; R.N.
- JAMES R. GILLHAM, *Assistant Professor of Sociology* (1972)
B.A., Kalamazoo College; M.A., Ph.D., University of Illinois, 1972.
- PETER J. GINGO, *Associate Professor of Mathematics* (1969)
B.S., The University of Akron; M.A., Ph.D., University of California at Los Angeles, 1966.
- BERTRAM C. GIRE, *Associate Professor of Law, Law Librarian* (July 1970)
B.S., LL.B., University of Minnesota; M.S.L.S., University of Michigan, 1970.
- ELTON A. GLASER II, *Assistant Professor of English* (1972)
B.A., M.A., Louisiana State University; M.F.A., University of California, 1972.
- WILLIAM M. GLAZIER, *Associate Professor of Surveying and Construction Technology* (1958) (1967)
B.S.C.E., Michigan Technical University; M.S.C.E., University of Michigan, 1956; P.E., Ohio, Michigan and District of Columbia.
- THEODORE L. B. GLOECKLER, *Assistant Professor of Education* (1972)
B.A., Lycoming College; M.A., University of Northern Colorado; Ph.D., University of Michigan, 1973.
- PATRICIA P. GODREY, *Associate Professor of Nursing* (January 1969)
B.S., M.A.Ed., Case Western Reserve University, 1964; R.N.
- PHILLIP W. GOERTZ, *Admissions Counselor, Aerospace Studies* (1974)
B.A., University of the Philippines; M.S., University of Oklahoma, 1965. Major, USAF.
- LATHARDUS GOGGINS, *Assistant Professor of Geography* (1969)
B.A., Central State University; M.A., The Ohio State University; Ph.D., St. John's University, 1973.
- CECIL V. GOLD, *Assistant Professor of Music* (1976)
B.M.E., University of Nebraska. M.M., University of Idaho, 1972.
- LAWRENCE G. GOLDEN, *Assistant Professor of Sales and Merchandising* (1968)
B.S., Case Western Reserve University; M.B.A., Wharton School of Finance and Commerce, 1968.
- MARY T. GOLETZ, *Instructor in Nursing* (1976)
B.S.N., The University of Akron, 1976; R.N.
- TOM A. GOOSBY, *Assistant Director of the Gardner Student Center* (July 1970)
B.A., Baldwin-Wallace College, 1963.
- C. PETER GOPLERUD, *Assistant Professor of Law* (1977)
B.A., J.D., University of Kansas, 1974.
- DENNIS GORDON, *Professor of Accounting* (1946)
A.B., M.B.A., University of Chicago, 1938; C.P.A., Ohio.
- DAVID A. GOSHEN, *Assistant to Dean of General College* (October 1972)
B.A., The University of Akron, 1972.
- H. ROGER GRANT, *Associate Professor of History* (1970)
B.A., Simpson College; M.A., Ph.D., University of Missouri, 1970.
- RICHARD L. GRANT, *Professor of Law* (1967)
B.S., University of Pennsylvania; J.D., Stanford University; LL.M., Georgetown University, 1967.
- HOWARD L. GREENE, *Professor of Chemical Engineering* (1965)
B.Ch.E., M.Ch.E., Ph.D., Cornell University, 1966.
- C. FRANK GRIFFIN, *Professor of Physics* (1967)
B.S., M.S., Texas Technological College; Ph.D., The Ohio State University, 1964.
- CLAIBOURNE E. GRIFFIN, *Dean of The Buchtel College of Arts and Sciences and Professor of Chemistry* (July 1974)
B.A., Princeton University; M.S., Ph.D., University of Virginia, 1955.
- NORMAN M. GRIGGS, JR., *Associate Professor of Education* (1969)
B.A., M.A., DePauw University, Ph.D., The Ohio State University, 1968.
- EDNA P. GRIST, *Associate Professor of Nursing* (January 1968)
B.S.N.Ed., M.S.Ed., The University of Akron, 1967; R.N.
- RICHARD J. GROSS, *Associate Professor of Mechanical Engineering* (1967)
B.S.M.E., University of Pittsburgh; M.S.M.E., Ph.D., Carnegie Institute of Technology, 1967, P.E. Ohio.
- FRANK J. GRUCCIO, JR., *Assistant Professor in the Community and Technical College* (1966)
B.A., M.A., The University of Akron, 1967.

- ROBERT GRUMBACH, *Associate Professor of Electrical Engineering and Assistant to the Director of Cooperative Program in the College of Engineering* (1961)
B.S.E.E., Case Western Reserve University; M.S.E.E., West Virginia University, 1951.
- BARBARA GSELLMAN, *Instructor in the Mechanical Technology* (1967)
B.M.E., The University of Akron, 1950.
- VIRGINIA L. GUNN, *Assistant Professor of Home Economics* (January 1974)
B.S., Kansas State University; M.S., Syracuse University, 1972.
- MARGARET B. GUSS, *Assistant Professor of Bibliography and Research Librarian* (December 1976)
B.A., Oberlin College; M.L.S., University of Oregon, 1969.
- JOHN F. GWINN, *Assistant Professor of Biology* (1970)
B.A., Manchester College; M.S., Purdue University; Ph.D., Kent State University, 1972.
- SCOTT D. HAGEN, *Associate Professor of Biology (Wayne General and Technical College)* (1966)
B.S., Kansas State University; M.S., Kansas State Teachers College, 1964.
- GORDON A. HAGERMAN, *Assistant to the Dean of the Evening College and Summer Sessions* (July 1941)
B.A., The University of Akron, 1941.
- ROBERT D. HAHN, *Director of Student Financial Aids* (July 1969)
B.S., M.Ed., Kent State University, 1969.
- DONALD E. HALL, *Assistant Professor of Speech and Director of the Speech and Hearing Center* (1974)
B.S.Ed., Indiana University of Pennsylvania; M.Ed., Westminster College; Ph.D., Ohio University, 1971.
- DONALD V. HALLOCK, *Professor of Military Science* (August 1975)
B.S., University of Wisconsin; M.Ed., Eastern Michigan University, 1969; Graduate of the U.S. Army Command and General Staff College Lt. Col., Infantry.
- RICHARD L. HANSFORD, *Vice President and Dean of Student Services* (August 1949)
B.A.Ed., M.A.Ed., The University of Akron, 1954.
- CHARLOTTE M. HANTEN, *Assistant Professor of Art* (1969)
B.A., Earlham College; M.Ed., Pennsylvania State University, 1954.
- EDWARD W. HANTEN, *Professor of Geography, Professor of Urban Studies and Director of the Center for Urban Studies* (1963)
B.S., Earlham College; M.A., Ph.D., University of Pittsburgh, 1962.
- PHYLLIS HARDENSTEIN, *Associate Professor of Theatre Arts* (February 1947) (1956)
B.A., The University of Akron; M.A., University of Wisconsin, 1951.
- VERN R. HARNAPP, *Assistant Professor of Geography* (1972)
B.S.Ed., Concordia Teachers College; M.S.Ed., University of Pennsylvania; Ph.D., University of Kansas, 1972.
- JACK D. HARPOOL, *Assistant Professor of Data Processing* (March 1970)
B.S., M.B.A., The University of Akron, 1968.
- ALAN HART, *Associate Professor of Philosophy* (1970)
B.A., M.A., Syracuse University; Ph.D., University of Pennsylvania, 1965.
- DONALD E. HARVEY, *Assistant Professor of Art* (1973)
B.A., Mankato State College; M.F.A. Temple University, 1971.
- H. JAMES HARWOOD, *Professor of Chemistry and Professor of Polymer Science* (October 1959)
B.S., The University of Akron; Ph.D., Yale University, 1956.
- JEAN A. HASPELAGH, *Assistant Professor of Nursing* (1973)
B.S.N., M.S.Ed., The University of Akron, 1974.
- WADE B. HATCH, *Physical Facilities Analyst* (October 1966)
B.S.C.E., University of California at Los Angeles, 1949.
- MARLENE HATHAWAY, *Instructor in English and Assistant to the Dean of the College of Arts and Sciences* (1965)
B.A., Kalamazoo College; M.A., The University of Akron, 1965.
- RICHARD H. HAUDE, *Associate Professor of Psychology* (1967)
B.A., Kenyon College; M.S., Ph.D., University of Pittsburgh, 1964.
- BARBARA J. HAZARD, *Assistant Director of Residence Halls* (1972)
B.A., Ohio Wesleyan University; M.A., Bowling Green University, 1972.
- JOHN G. HEDRICK, *Dean of Wayne General and Technical College* (July 1967)
B.S.Ed., Kent State University; M.A., University of Notre Dame, 1958.
- JACQUELINE HEGBAR, *Instructor in Classics* (1967)
B.A., M.A., The University of Akron, 1967.
- WALTER H. HEINTZ, *Associate Professor of Physics* (1967)
B.S., University of Massachusetts; M.S., Ph.D., The Ohio State University, 1962.
- BARBARA HEINZERLING, *Assistant Professor of Home Economics* (1973)
B.S., M.S., Ohio State University, 1963.
- MARION R. HEISE, *Assistant Professor in the Community and Technical College* (1972)
B.A., M.A., The University of Akron, 1972.
- FAITH HELMICK, *Assistant to Director of Institutional Research and Academic Personnel* (1969)
B.A., Kent State University, 1967.
- WILLIAM S. HENDON, *Professor of Urban Studies and Professor of Economics* (1968)
B.A., M.A., Ph.D., University of Oklahoma, 1964.
- PETER N. HENRIKSEN, II, *Associate Professor of Physics* (1970)
B.S., Berry College; M.A., Ph.D., University of Georgia, 1968.
- RICHARD HENRY, *Associate Professor of Mechanical Technology* (1961)
B.M.E., The Ohio State University; M.S.E., The University of Akron, 1965.

- ALBERTA R. HENSLEY, *Assistant to the Executive Director of University Relations and Development* (January 1974)
B.S.B.A., Indiana Central College, 1969.
- THEODORE T. HERBERT, *Associate Professor of Management* (1973)
B.B.A., M.B.A., D.B.A., Georgia State University, 1971.
- THOMAS P. HERBERT, *Associate Professor of Electronic Technology* (1968)
B.S.E.E., University of Dayton; M.A., Pennsylvania State University, 1968.
- WALTER M. HERIP, *Instructor in Art and Instructor in Commercial Art* (1974)
B.F.A., Cleveland Institute of Art, 1971.
- JAY R. HERSHEY, *Director of Residence Halls* (July 1967)
B.A., Hiram College; M.Ed., University of Illinois, 1965.
- HARRIET K. HERSKOWITZ, *Instructor in Educational Technology and in Home Economics* (1973)
B.S.Ed., Mills College; M.A., University of Connecticut, 1972.
- JAMES R. HEWIT, *Visiting Professor of Mechanical Engineering* (1977)
B.S., University of Edinburgh; M.S., University of Wales; Ph.D., Loughborough University, 1968.
- JACK E. HIBBS, *Assistant Professor of Bibliography and Research Librarian* (October 1974)
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- KATHERINE A. HINCKLEY, *Assistant Professor of Political Science* (1972)
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B.S., Bowling Green State University, 1951.
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M.B., Lawrence Conservatory of Music; S.M.M., S.M.D., School of Sacred Music, Union Theological Seminary, 1951.
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B.S., Ph.D., University of Durham (England), 1959.
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- ALAN F. KRIVIS, *Associate Professor of Chemistry* (1966)
B.A., M.A., Columbia University; M.S.Ch., Ph.D., University of Michigan, 1958.
- LAWRENCE C. KRUEGER, *Associate Director of Residence Halls* (July 1971)
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- ERNEST A. KUEHLS, *Associate Professor of Mathematics* (1965)
B.S.Ed., M.Ed., Miami University; Ph.D., The University of Akron, 1971.
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B.A., Hiram College, 1966.
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B.S., Ph.D., Pennsylvania State University, 1973.
- HENRY A. KUSKA, *Associate Professor of Chemistry* (1965)
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B.A., Kalamazoo College; Ph.D., Northwestern University, 1971.
- MARGHERITA D. LABSON, *Instructor in Nursing* (1976)
B.S.N., Duquesne University, 1975.
- MARCIA T. LADD, *Acting Research Librarian and Instructor in Bibliography* (1977)
B.A., The University of Akron; M.A., Ohio University, 1973.
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B.A., Hiram College; M.A., Ed.D., University of Colorado, 1970.
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B.A., M.A., The University of Akron, 1974.
- LOUIS LANE, *Adjunct Professor of Music*
B.M., University of Texas; M.M., Eastman School of Music, 1947.

- GORDON LARSON, *Associate Professor of Physical Education and Director of Athletics* (February 1961)
B.S.Ed., M.E., Kent State University, 1954.
- RALPH LARSON, *Assistant Director of Purchasing* (July 1960)
B.S.Ed., M.Ed., Kent State University, 1953.
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B.S., State University College at Oneonta; M.S., Indiana University; Ed.S., Indiana University; Ed.D., University of North Dakota, 1971.
- ELAINE Z. LASKY, *Professor of Speech* (1972).
B.S., M.A., Ph.D., Case Western Reserve University, 1971.
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B.S., M.A., Columbia University; Ph.D., Case Western Reserve University, 1972.
- JAMES V. LENA VITT, *Assistant Professor of Art* (1969)
B.F.A., M.F.A., Ohio University, 1969.
- JOHN P. LENCZYK, *Associate Professor of Chemical Engineering*, (1970)
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- ALVIN H. LIEBERMAN, *Assistant Professor of Accounting* (1969)
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- ALLAN J. McINTYRE, *Associate Professor of Modern Languages* (1967) (1969)
B.A., Williams College; M.A., Columbia University; Ph.D., University of Pennsylvania, 1967.
- DONALD McINTYRE, *Professor of Chemistry and Professor of Polymer Science* (1966)
B.A., Lafayette College; Ph.D., Cornell University, 1954.
- REGIS Q. McKNIGHT, *Assistant Professor of Education* (1972)
B.S., M.Ed., Ed.D., Penn State University, 1971.
- MARTIN McKOSKI, *Director of Developmental Programs* (January 1974)
B.A., Saint Joseph's College; M.A., The University of Akron; Ph.D., Florida State University, 1972.
- JAMES McLAIN, *Professor of Economics* (1946)
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- WILLIAM McMAHON, *Associate Professor of Philosophy* (1969)
B.A., University of Notre Dame; M.A., Brown University; Ph.D., University of Notre Dame, 1970.
- ROBERT C. McNEIL, *Assistant Professor of Classics* (1963)
B.A., The University of Akron; Ph.D., University of Pennsylvania, 1970.
- MARION W. McPHERSON, *Associate Professor of Psychology and Associate Director of the Archives of History of American Psychology* (1967)
B.A., M.A., University of Maine; Ph.D., Indiana University, 1949.
- CLAUDE Y. MEADE, *Professor of Modern Languages* (1964)
B.A., M.A., University of Minnesota; Ph.D., University of California, 1957.
- LAVERNE J. MECONI, *Professor of Education* (1967)
B.S., West Chester State College (Pennsylvania); M.A., University of Pennsylvania; Ph.D., The Ohio State University, 1966.
- GARY E. MEEK, *Associate Professor of Management* (1971)
B.S., Cleveland State University; Ph.D., Case Western Reserve University, 1970.
- DAVID T. MEETING, *Instructor in Accounting* (1976)
B.S.B.A., Franklin University; M.B.A., University of Dayton, 1973.
- EBERHARD A. MEINECKE, *Professor of Mechanical Engineering and Professor of Polymer Science* (October 1963)
D. Eng., Braunschweig Institute of Technology (Germany), 1960.
- WARNER D. MENDENHALL, *Associate Professor of Political Science (Wayne General and Technical College)* (1972)
B.S., Davidson College; M.A., Duke University, 1960.
- STANLEY P. MENGEL, *Director, Center for Economic Education; Holder of the Firestone Tire and Rubber Company Chair of Economic Education, and Assistant Professor of Education* (January 1975)
B.A., University of Missouri; M.A., Stanford University, 1965.
- JACK F. MERCER, *Associate Professor in the Community and Technical College* (1965)
B.A., Ohio University; M.A., Case Western Reserve University, 1958.
- R. PAUL MERRIX, *Associate Professor of English* (1966)
B.A., M.A., Butler University; Ph.D., University of Cincinnati, 1966.
- RUTH MESSENGER, *Assistant Professor of English* (1968)
B.A., Wellesley College; M.A., The University of Akron; M.A., Ph.D., Case Western Reserve University, 1976.
- DONALD J. METZGER, *Associate Professor of Sociology* (1968)
B.A., Youngstown University; Ph.D., University of Pennsylvania, 1968.
- CHRISTOPHER P. MEYER, *Assistant Professor of Art* (1972)
B.A., Washington and Lee University; M.F.A., Ohio State University, 1972.
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- DENNIS MEYER, *Assistant Professor of Art* (1969)
B.A., St. Norbert College; M.F.A., Ohio University, 1969.
- FRITZ M. MEYER, *Instructor in Physical Education* (1973)
B.S.Ed., University of Cincinnati; M.A.Ed., Xavier University, 1970.
- JOSEPH MIGDEN, *Assistant Director of Student Financial Aids* (July 1975)
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- ANN LEE MILLER, *Adviser of Students* (April 1971)
B.A., Hanover College; M.A., The University of Akron, 1970.
- JOHN V. MILLER, JR., *Assistant Professor of Bibliography, Director of Archival Services and Associate Curator for the Hower House* (July 1972)
B.A., Franklin and Marshall College; M.A., University of Delaware, 1965.
- RODNEY N. MILLER, *Assistant Professor of Music* (1973)
B.M., Birmingham Southern College; M.M., University of Illinois, 1973.
- TIM W. MILLER, *Assistant Director of Alumni Relations* (1977)
B.A., M.Ed., The University of Akron, 1976.
- WILLIAM I. MILLER, *Assistant Professor of Modern Languages* (1970)
B.A., Wittenberg University; Ph.D., University of Florida, 1970.
- JOYCE E. MIRMAN, *Instructor in Data Processing* (1977)
B.S., The University of Akron, 1976.
- ALOYSIUS E. MISKO, *Professor of Business Management Technology and Director of the Office for Career Planning in the Community and Technical College* (1962)
B.S., Central Michigan University; M.S., Ed.D., University of Michigan, 1962.
- ELIZABETH K. MISKO, *Instructor in Nursing* (1976)
B.S.N.Ed., Catholic University of America; M.S.Ed., The University of Akron, 1974.
- SHIRLEY S. MITCHELL, *Counselor* (1974)
B.S.Ed., M.S.Ed., Youngstown State University; Ph.D., The University of Akron, 1976.
- JOHN B. MONROE, *Associate Professor in the Community and Technical College* (1966)
B.A., College of Wooster; M.A., Rutgers University, 1963.
- BEATRICE MONTGOMERY, *Assistant Professor of Bibliography and Head of Library Cataloging* (December 1972)
B.A., Randolph Macon Woman's College; B.A.L.S., Emory University; M.S.L.S., University of North Carolina, 1957.
- CHARLES K. MOORE, JR., *Associate Professor of Accounting* (January 1973)
A.A., Angelo State University; B.B.A., M.B.A., D.B.A., Texas Technical University, 1973. C.P.A., 1967.
- MARVIN M. MOORE, *Professor of Law* (July 1960)
B.A., Wayne State University; LL.B., LL.M., J.S.D., Duke University, 1968.
- PAMELA J. MOORE, *Instructor in Nursing* (1973)
B.S.N., The University of Akron, 1972.
- MAURICE MORTON, *Regents' Professor of Polymer Chemistry and Director of the Institute of Polymer Science* (October 1948)
B.S., Ph.D., McGill University (Canada), 1945.
- MARJORY M. MORTVEDT, *Associate Professor of Home Economics* (1977)
B.S., M.S., Ph.D., Iowa State University, 1971.
- RICHARD MOSTARDI, *Associate Professor in Biology* (1967)
B.S.Ed., M.Ed., Kent State University; Ph.D., The Ohio State University, 1968.
- JUDITH MOWERY, *Assistant Professor of Bibliography and Research Librarian* (May 1967)
B.A., Ohio University; M.S.L.S., Case Western Reserve University; M.A., The University of Akron, 1972.
- FREDERICK W. MOYER, *Professor of Finance* (March 1970)
B.S., M.A., Ph.D., The Ohio State University, 1949.
- ROBERT J. MRAVETZ, *Associate Professor of Physical Education* (1970)
B.S.Ed., Miami University; M.Ed., Ohio University; Ph.D., The Ohio State University, 1970.
- SAMUEL A. MUELLER, *Associate Professor of Sociology* (1973)
B.A., Valparaiso University; M.A., Roosevelt University; Ph.D., Northwestern University, 1970.
- BEVERLY MUGRAGE, *Assistant Professor of Mathematics (Wayne General and Technical College)* (1972)
B.S., Kent State University; M.S., The University of Akron, 1970.
- JOHN MULHAUSER, *Assistant Professor of Geography* (1966)
B.A., M.A., Kent State University, 1961.
- FRED L. MULLEN, *Associate Professor of Electronic Technology* (1967)
B.S.E.E., Case Western Reserve University; M.S.E., The University of Akron, 1966. P.E., Ohio.
- JOSEPH C. MULLIN, *Assistant Professor of Criminal Justice* (1970)
B.S., Delta State College; M.S.Ed., The University of Akron, 1974.
- MARTIN D. MURPHY, *Assistant Professor of Psychology* (1975)
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- MARGARET A. MURRAY, *Assistant Professor of Military Science* (1975)
B.S., Virginia State University, 1969. Captain, Signal Corps.
- RUTH C. MURRAY, *Rubber Division Literature Chemist* (July 1970)
B.S., Chatham College, 1944.
- JEROME MUSHKAT, *Professor of History* (1962)
B.A., M.A., D.S.S., Syracuse University, 1964.

- ROBERT H. MYERS, *Professor of Education* (1966)
B.S.Ed., M.A., Ph.D., The Ohio State University, 1964.
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B.A., M.A., Ph.D., Kent State University, 1973.
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B.S., The University of Akron, 1961.
- DANIEL NELSON, *Professor of History* (1970)
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- WILLIAM E. NEMEC, *Assistant Professor of Education* (1974)
B.S.S.S., John Carroll University; M.Ed., Ohio University; Ph.D., The Ohio State University, 1974.
- HENRY NETTLING, *Controller* (February 1964)
B.S.B.A., The University of Akron, 1959.
- WILLIAM A. NEUMANN, *Associate Professor of Art* (1970)
B.F.A., Cleveland Institute of Art; M.F.A., Syracuse University, 1970.
- VIRGINIA B. NEWBERN, *Assistant Professor of Nursing* (1976)
B.S.N., Old Dominion University, M.P.H., University of North Carolina, Chapel Hill, 1971.
- DANIEL M. NEWLAND, *Student Development Coordinator* (1971)
B.A., Coe College (Iowa); M.S., Indiana University, 1971.
- ISADORE NEWMAN, *Associate Professor of Education* (1971)
B.A., University of Miami; M.A., New School for Social Research (New York); Ph.D., Southern Illinois University, 1971.
- DAVID L. NICHOLS, *Assistant Professor of Accounting* (1971)
B.B.A., M.B.A., University of Houston, 1957. C.P.A., 1954.
- ALLEN G. NOBLE, *Professor of Geography* (1964)
B.A., Syracuse University; M.A., University of Maryland; Ph.D., University of Illinois, 1957.
- JUDITH A. NOBLE, *Associate Professor of Education* (1970)
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- RICHARD F. NOKES, *Associate Professor of Biology* (January 1962)
B.S., D.V.M., Michigan State University, 1958.
- WALLACE NOLIN, *Professor of Music* (1969)
B.S., Muskingum College; M.M.Ed., Kent State University; Ph.D., The Ohio State University, 1969.
- JAMES W. NOLTE, *Assistant Professor of Business Management Technology* (1972)
B.A., M.A., The University of Akron, 1972.
- JANA K. NONNO, *Academic Programmer/Analyst* (December 1975)
B.S., The University of Akron, 1970.
- CLINTON E. NORTON, *Managing Director of the E. J. Thomas Performing Arts Hall* (July 1973)
B.M., University of Rochester, 1950.
- DOROTHY M. NUNN, *Associate Professor of Biology* (1967)
B.S., Med. Tech., Ph.D., University of Cincinnati, 1962.
- DAVID J. O'BRIEN, *Associate Professor of Sociology* (1972)
B.A., Boston College; M.A., University of Notre Dame; Ph.D., Indiana University, 1972
- OLIVER OCASEK, *Professor of Education* (January 1961)
B.S.Ed., M.A., Kent State University, 1950.
- NORMAN W. ODELL, *Adviser to International Students* (December 1970)
B.A., Western Illinois University; M.A., School for International Training, 1972.
- JOHN H. OLIVE, *Associate Professor of Biology* (1970)
B.S., The Ohio State University; M.A., Ph.D., Kent State University, 1964.
- MARY O'NEIL, *Director of University News Service* (February 1971)
B.A., University of Nebraska, 1942.
- MICHAEL T. ORAVECZ, *Assistant Professor in the Community and Technical College* (1968)
B.A.Ed., M.A.Ed., The University of Akron; Ed.D., Western Michigan University, 1975.
- F. SCOTT ORCUTT, JR., *Assistant Professor of Biology* (1971)
B.S., M.S., Ph.D., Cornell University, 1969.
- SARAH ORLINOFF, *Associate Professor of Education* (1963)
B.A., M.A.Ed., The University of Akron; Ph.D., Case Western Reserve University, 1963.
- JAMES O. OSWALD, *Director of Publications* (October 1971)
B.S.Ed., Central State University; B.A., Cedarville College, 1967.
- DONALD W. OTT, *Assistant Professor of Biology* (1974)
B.S., Southeastern Louisiana University; Ph.D., University of North Carolina, 1973.
- JOHN W. OWEN, *Director of Admissions* (June 1965)
B.A., John Hopkins University; M.A., The University of Akron, 1973.
- MARC C. OZANICH, *Assistant Professor of Dance* (1973)
A.A., Bakersfield College; B.A., University of California at Santa Barbara; M.A., University of California at Santa Barbara, 1968.
- JOSEPH PADOVAN, *Associate Professor of Mechanical Engineering* (1970)
B.S.M.E., M.S.M.E., Ph.D., Polytechnic Institute of Brooklyn, 1969.
- ARTHUR L. PALACAS, *Assistant Professor of English* (1976)
B.A., Harvard University; Ph.D., Indiana University, 1970.

- MARY C. PAOLUCCI, *Coordinator of Developmental Writing Laboratory* (1975)
B.A., The University of Akron, 1964.
- JEFFREY A. PARNES, *Assistant Professor of Law* (1976)
B.A., Colby College; J.D., University of Chicago, 1974.
- D'ORSAY PEARSON, *Associate Professor of English* (1966)
B.A., University of North Carolina; M.A., University of Florida; Ph.D., Kent State University, 1969.
- JON ROBERT PESKE, *Assistant Professor in the Community and Technical College* (1969)
B.A., M.A., The University of Akron, 1969.
- ISOBEL L. PFEIFFER, *Professor of Education* (1966)
B.A., Manchester College (Indiana); M.S., Indiana University; Ph.D., Kent State University, 1966.
- ALICE PHILLIPS, *Coordinator of the Developmental Reading* (July 1975)
B.A., The University of Akron; M.Ed., Kent State University, 1971.
- MARVIN E. PHILLIPS, *Coordinator of Public Services and Director of the Institute for Civic Education* (July 1972)
A.V. Flint Community College; B.A., Albion College; M.A., Michigan State University, 1952.
- JOHN S. PHILLIPSON, *Associate Professor of English* (1961)
B.A., University of Rochester; M.A., Ph.D., University of Wisconsin, 1952.
- FRANK T. PHIPPS, *Professor of English* (1953)
B.A., M.A., Miami University; Ph.D., The Ohio State University, 1953.
- MARIO J. PICCONI, *Associate Professor of Finance* (1975)
B.S., Iona College; M.B.A., University of Chicago; Ph.D., Rutgers University, 1974.
- IRJA PIIRMA, *Associate Professor of Polymer Science* (1963)
Diploma in Chemistry, Technische Hochschule of Darmstadt (Germany); M.S., Ph.D., The University of Akron, 1960.
- ROBIN D. PINKNEY, *Project Leader Administrative Systems and Programming, Computer Center* (August 1974)
B.A., Grove City College; M.B.A., The University of Akron, 1975.
- HARRY T. PINNICK, *Associate Professor of Physics* (1964)
B.A., Southwestern College (Kansas); Ph.D., University of Buffalo, 1955.
- GARY M. PITKIN, *Instructor in Bibliography and Head of Serials* (December 1974)
B.A., M.L.S., University of Wisconsin - Milwaukee, 1971.
- JOHN C. PITTS, *Associate Director, Student Financial Aids* (July 1971)
B.A., The University of Akron, 1968.
- JOHN C. PIZOR, *Assistant Professor in the Community and Technical College* (1966)
B.S., Grove City College; M.Ed., University of Pittsburgh, 1946.
- MRS. ELLEN SUE POLITELLA, *Assistant Professor of History (Wayne General and Technical College)* (1972)
B.A., Kent State University; M.A., Oberlin College 1960.
- ARTHUR R. POLLOCK, JR., *Associate Professor in the Community and Technical College* (1967)
B.S.Ed., Indiana University of Pennsylvania; M.A., Case Western Reserve University, 1968.
- MARGARET POLOMA, *Associate Professor of Sociology* (1970)
B.A., Notre Dame College of Ohio; M.A., Ph.D., Case Western Reserve University, 1970.
- REBECCA K. POOL, *Instructor in Nursing* (October 1975)
B.S.N., The University of Akron, 1973.
- ROBERT F. POPE, JR., *Assistant Professor of English* (1977)
B.A., University of California, Berkley; M.A., California State University, San Diego; M.F.A., University of Iowa, 1976.
- JOHN A. POPPLESTONE, *Professor of Psychology and Director of the Archives of the History of American Psychology* (1961)
B.A., University of Michigan; M.A., Wayne State University; Ph.D., Washington University, 1958.
- CHARLES F. POSTON, *Professor of Finance and Director of Institutional Research and Academic Personnel* (1959)
B.A., Eastern Illinois State College; M.A., University of Illinois; Ph.D., University of North Carolina, 1959.
- EFTHIMIOS POURNARAKIS, *Professor of Economics* (1967)
B.A., Athens Graduate School of Economics and Business Science (Greece); M.A., Ph.D., University of Kansas, 1967.
- THOMAS E. PRICE, *Assistant Professor of Mathematics* (1976)
B.S., M.S., Ph.D., University of Georgia, 1976.
- MINNIE C. PRITCHARD, *Instructor in Surveying and Construction Technology* (1971)
B.S.C.E., The University of Akron, 1955.
- JAMES C. PRODAN, *Assistant Professor of Music* (1975)
M.M., Catholic University of America; B.S., D.M.A., The Ohio State University, 1976.
- GEORGE E. PROUGH, *Instructor in Marketing* (1968)
B.A., The University of Akron; M.A., Michigan State University, 1958.
- GERALD F. PYLE, *Associate Professor of Geography, and Associate Professor of Urban Studies* (1970)
B.A., Kent State University; M.A., Ph.D., University of Chicago, 1970.
- NEAL C. RABER, *Assistant Professor of Mathematics* (1972)
B.S.Ed., Kent State University; M.S., Ph.D., Ohio State University, 1972.
- MALCOM R. RAILEY, *Associate Professor of Electrical Engineering* (1970)
B.S.E.E., M.S.E.E., Ph.D.E.E., University of Texas, 1970. P.E., Texas.
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B.A., University of Michigan; B.S.L., St. Paul's College; J.D., John Marshall Law School, 1960.
- JONATHON S. RAKICH, *Professor of Management* (1972)
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- JOHN H. RAMEY, *Associate Professor of Social Work* (1969)
B.A., M.A.S.A., The Ohio State University, 1950. A.C.S.W., C.S.W., (Illinois).

- D. NICHOLAS RANSON, *Assistant Professor of English* (1973)
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- GEORGE E. RAYMER, *Director of Radio and Television Information* (August 1961)
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B.A., M.A., Kent State University, 1970.
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B.A., Otterbein College; M.Ed., Kent State University; Ed.D., Columbia University Teachers College, 1961.
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B.A., Iona College; Ph.D., New York University, 1961.
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A.B., M.S., University of Illinois; J.D., Tulane University of Louisiana, 1977.
- KATHLEEN A. RICKS, *Instructor in Art* (1976)
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- DAVID C. RIEDE, *Professor of History* (1955)
B.A., M.A., Ph.D., University of Iowa, 1957.
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- RICHARD S. ROBERTS, *Professor of Accounting* (1964)
B.B.A., University of Cincinnati; M.B.A., Ph.D., The Ohio State University, 1966. C.P.A., Ohio.
- ROBERT W. ROBERTS, *Robert Iredell Professor of Chemical Engineering and Research Associate in the Institute of Polymer Science* (1966)
B.S.Ch.E., Washington University; M.S., Ph.D., University of Iowa, 1962.
- RUTH SEMELS ROBERTS, *Associate Professor of Education* (1971)
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- LOUIS D. RODABAUGH, *Associate Professor of Mathematics* (1964)
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- LINDA J. RODDA, *Assistant Professor of Secretarial Science* (1967)
B.S., M.A., The University of Akron, 1969.
- LOUIS E. ROEMER, *Professor of Electrical Engineering* (1968)
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- WILLIAM A. ROGERS, *Executive Dean of Continuing Education and Public Services, Associate Professor of Education and Equal Employment Officer* (1957)
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- PAUL D. ROHRBAUGH, *Associate Professor of Music* (1971)
B.M., Heidelberg College; M.M., New England Conservatory of Music (Boston); D.M.A., University of Michigan, 1971.
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- WILLIAM ROOT, *Professor of Education and Director of Teacher Placement and Student Teaching* (1968)
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- HENRY ROSENQUIST, *Associate Professor of Psychology* (1965)
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B.S.Ed., Shippensburg State College; M.Ed., Ed.D., University of Pennsylvania, 1974.
- MARION ALBERT RUEBEL, *Assistant Dean of the College of Education and Associate Professor of Education* (1970)
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- ROGER N. RYAN, *University Architect* (May 1976)
B.S., University of Cincinnati, 1958.
- RICHARD W. RYMER, *Counselor, Testing and Counseling Bureau* (August 1970)
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B.A., J.D., University of Cincinnati; LL.M., Case Western Reserve University, 1959; LL.M., J.S.D., New York University, 1968.
- RAY H. SANDEFUR, *Dean of the College of Fine and Applied Arts and Professor of Speech* (1950)
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- RAYMOND E. SANDERS, *Assistant Professor of Psychology* (1969)
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- ROBERT G. SCHMIDT, *Associate Professor of Sociology* (1967)
B.A., Illinois College; M.A.T., Harvard University; Ph.D., Washington University, 1955.
- RONALD E. SCHNEIDER, *Associate Professor of Physics* (1962)
B.S., The University of Akron; M.S., Polytechnic Institute; M.S., John Carroll University; Ph.D., Case Western Reserve University, 1964.
- H. PAUL SCHRANK, JR., *Associate Professor of Bibliography, University Librarian and Curator for the Hower House* (January 1965)
B.S., Ohio University; M.S., University of Illinois, 1963.
- FREDERICK M. SCHULTZ, *Associate Professor of Education* (1969)
B.S., M.S., Ph.D., Indiana University, 1969.
- SUSAN SCHUNK, *Instructor in Modern Languages* (1971)
B.S.Ed., Indiana University of Pennsylvania; M.A., Ohio State University, 1968.
- MARGARET E. SEENO, *Assistant Professor of Nursing* (1976)
B.S.N., University of Pittsburgh; M.A., Kent State University; M.S.N., Case Western Reserve University, 1976.
- JOAN G. SEIFERT, *Associate Professor of Education* (1967)
B.S., M.Ed., Ph.D., Kent State University, 1967.
- GARY E. SELLERS, *Assistant Professor of Economics* (1976)
B.A., Shippensburg State College; M.A., Ph.D., University of Cincinnati, 1977.
- MICHAEL D. SERMERSHEIM, *Legal Assistant in the Office of Student Services* (December 1976)
B.A., J.D., The University of Akron, 1973.
- LAWRENCE SEXTON, *Assistant Professor of Theatre Arts* (1969)
B.S., Central Michigan University; M.A., Michigan State University, 1963.
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B.A., The University of Akron, 1968.
- JAMES SHANAHAN, *Assistant Professor of Urban Studies* (1970)
B.B.S., M.A., West Virginia University; Ph.D., Wayne State University, 1972.
- DOUGLAS V. SHAW, *Assistant Professor of Urban Studies* (1972)
B.A., Lebanon Valley College; M.A., Brown University; Ph.D., University of Rochester, 1972.
- ROBERT J. SHEDLARZ, *Assistant Professor of Business Law* (1972)
B.A., New York University; J.D., Notre Dame Law School, 1972.
- WALTER ALVIN SHEPPE, *Associate Professor of Biology* (1968)
B.S., College of William and Mary; M.A., Ph.D., University of British Columbia, 1958.
- KARL A. SHILLIFF, *Professor of Management* (1967)
B.S.Ch.E., Pennsylvania State University; M.B.A., The University of Akron; Ph.D., Pennsylvania State University, 1971.
- RICHARD SHIREY, *Associate Professor of Music* (1967)
B.M., Oberlin College; M.M., University of Illinois, 1965.
- ROBERT J. SEIDERER, *Systems Programmer and Technical Analyst, Computer Center* (February 1973)
B.S.A., The University of Akron, 1972.

- MARTIN H. SIEGEL, *Assistant Professor of Sales and Merchandising* (1972)
B.F.A., M.A., Hunter College, 1965.
- KENNETH T. SILOAC, *Associate Professor of Speech* (1971)
B.S., M.Ed., Ph.D., Wayne State University, 1971.
- ANDREW L. SIMON, *Professor of Civil Engineering and Executive Director of Institute for Technological Assistance* (1965)
C.E. Diploma, Technical University of Budapest; Ph.D., Purdue University, 1962, P.E., Ohio, West Virginia, Indiana.
- FRANK L. SIMONETTI, *Professor of Management* (February 1942)
B.S., The University of Akron; M.B.A., Boston University; D.B.A., Indiana University, 1954.
- PAMELA G. SKORMAN, *Instructor in Nursing* (1976)
B.S.N., Boston University, 1974.
- ROBERT B. SLANEY, *Assistant Professor of Psychology* (1977)
B.A., College of Wooster; M.A., Ph.D., The Ohio State University, 1973.
- RAYMOND SLATTERY, JR., *Manager-Plant Engineering* (February 1968)
B.S., Case Institute of Technology, 1954. P.E., Ohio.
- HOWARD K. SLAUGHTER, *Professor of Theatre Arts* 1967.
B.A., University of California; M.A., University of Hawaii; Ph.D., University of Pittsburgh, 1966.
- SALLY KENNEDY SLOCUM, *Associate Professor of English* (1966)
B.A., Columbia College; M.A., Ph.D., University of Tennessee, 1968.
- DANIEL J. SMITH, *Assistant Professor of Chemistry* (1977)
B.S., Wisconsin State University, Ph.D., University of California-Berkley, 1974.
- FORREST J. SMITH, *Instructor in Biology (Wayne General and Technical College)* (January 1975)
B.A., Hiram College; M.S., Purdue University, 1974.
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B.S., Loyola College; M.A., Ph.D., University of Virginia, 1970.
- HENRY P. SMITH, *Associate Professor of Music* (1947)
B.M., Illinois Wesleyan University; M.A., Carnegie Institute of Technology; Ed.D., Columbia University, Teachers College, 1949.
- HERBERT W. SMITH, JR., *Professor of Modern Languages* (1956)
B.A., Brigham Young University; M.A., Ph.D., University of Wisconsin, 1956.
- GLENN H. SNYDER, *Instructor in the Community and Technical College* (1973)
B.A.Ed., The University of Akron; M.Ed., Kent State University, 1972.
- MARK E. SOPPELAND, *Instructor in Art* (1976)
B.F.A., University of Colorado; M.F.A., Ohio State University, 1976.
- ROBERT SOVCHIK, *Assistant Professor of Education* (1973)
B.S., Kent State University; M.A., Cleveland State University; Ph.D., Kent State University, 1974.
- NORMA L. SPENCER, *Assistant Professor of Education* (1970)
B.S., M.S., The University of Akron, 1970.
- JEANNE A. SPERRY, *Assistant University Artist* (June 1972)
B.S., Kent State University, 1968.
- SAMUEL SPINAK, *Assistant Professor of Music* (1968)
Licentiate, King's College in Sussex (England), 1929; Fellowship, Trinity College in London.
- CONNIE C. STEAR, *Assistant Director of Admissions* (July 1973)
B.A., M.A., The University of Akron, 1976.
- SUSAN J. STEARNS, *Assistant Professor of Nursing* (1974)
B.S.N., Saint John's College; M.S.N., Catholic University of America, 1963.
- RAMON F. STEINEN, *Professor of Education* (1969)
B.A., M.A., Montclair State College; Ph.D., The Ohio State University, 1966.
- JANE M. STEINER, *Associate Professor in the Community and Technical College* (1968)
B.A., The University of Akron; M.A., Western Reserve University, 1945.
- RICHARD J. STEINLE, *Editor, University News Service* (January 1975)
B.A., University of Notre Dame, 1966.
- WILLIAM B. STEIS, *Associate Professor of Mass Media-Communication* (1971)
B.A., University of Notre Dame; M.A., University of Florida; Ph.D., The Ohio State University, 1969.
- HOWARD L. STEPHENS, *Professor of Chemistry, Professor of Polymer Science and Manager of Applied Research and Executive Officer in the Institute of Polymer Science* (1950)
B.S., M.S., Ph.D., The University of Akron, 1960.
- WALLACE STERLING, *Associate Professor of Theatre Arts* (1966)
B.A., M.A., University of Florida; Ph.D., Southern Illinois University, 1966.
- RICHARD STERNE, *Associate Professor of Urban Studies and Associate Professor of Sociology* (1973)
B.A., Swarthmore College; M.A., Duke University; Ph.D., University of Pennsylvania, 1962.
- HARVEY L. STERNS, *Assistant Professor of Psychology* (1971)
B.A., Bard College; M.A., State University of New York at Buffalo; Ph.D., West Virginia University, 1971.
- DONALD P. STORY, *Assistant Professor of Mathematics* (1976)
B.A., Ph.D., University of Florida, 1974.
- WARREN P. STOUTAMIRE, *Associate Professor of Biology* (1966)
B.S., Roanoke College; M.S., University of Oregon; Ph.D., Indiana University, 1954.
- ARCHIE M. STRIMEL, *Instructor in Physical Education* (July 1974)
B.E., M.E., Miami University, 1972.

- MARION STROUD, *Assistant Professor of Education* (1975)
B.S., The University of Akron; M.A., Ph.D., Kent State University, 1976.
- FREDERICK JOHN STURM, *Assistant to the Dean of the Community and Technical College and Instructor in the Community and Technical College* (August 1968)
B.A., M.A., The University of Akron, 1968.
- PHILIP STUYVESANT, *Assistant Professor of Modern Languages* (1966)
B.A., Thiel College; M.A., Ph.D., Western Reserve University; 1970.
- LINDA ELLISON SUGARMAN, *Assistant Professor of Accounting* (1970)
B.B.A., M.S.Ed., Hofstra University, 1968; C.P.A., New York State.
- MICHAEL N. SUGARMAN, *Associate Professor of Education* (1970)
B.S., M.Ed., University of Buffalo; Ed.D., State University of New York at Buffalo, 1966.
- RONALD C. SUICH, *Associate Professor of Mathematics* (1970)
B.B.A., John Carroll University; M.S., Western Reserve University; Ph.D., Case Western Reserve University, 1968.
- ROBERT C. SULLIVAN, *Assistant Director of Placement* (July 1976)
B.S., M.Ed., Kent State University, 1976.
- THOMAS SUMNER, *Dean of the General College and Professor of Chemistry* (1950)
B.S., Ph.D., Yale University, 1951.
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B.A., M.A., The University of Akron, 1976.
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B.S., College of Steubenville, 1970.
- GERARD M. SWEENEY, *Associate Professor of English* (1971)
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- LEONARD SWEET, *Professor of Mathematics* (1959)
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- JOHN D. SZABO, *Assistant Professor of Geology* (1975)
B.S., University of Notre Dame; Ph.D., University of Iowa, 1975.
- GOERGE L. SZOKE, *Assistant Professor of Mathematics* (1963)
B.S.M.E., Polytechnical University of Budapest; M.S.E., The University of Akron, 1963.
- JAMES W. TAGGART, *Associate Professor of Business Management Technology* (1969)
B.S., Youngstown State University; M.B.A., Pennsylvania State University; J.D., The University of Akron, 1974.
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B.S.E.E., M.S.E.E., The University of Akron, 1961.
- CATHRYN TALIAFERRO, *Assistant Professor of English* (October 1961)
B.A., The University of Akron; M.A., Radcliffe College, 1940.
- VIRGINIA J. TAPPENDEN, *Associate Professor of Home Economics* (1969)
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University, 1962.
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B.S.Ed., Miami University; M.B.A., University of Wyoming, 1972. Captain, USAF.
- G. JEAN TAYLOR, *Advisor of Students* (1972)
B.S., Wilberforce University; M.Ed., Kent State University, 1972.
- HOWARD L. TAYLOR, *Professor of Management* (1963)
B.S., The University of Akron; M.S., Ph.D., Iowa State College, 1958.
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B.S.Ed., The University of Akron; M.A., Kent State University, 1972.
- RONALD TAYLOR, *Associate Professor of Art* (1964)
B.F.A., M.A., The Ohio State University, 1963.
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B.A.Ed., M.A.Ed., Ph.D., The University of Akron, 1976.
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B.S., M.S., McMaster University; Ph.D., Rice University, 1966.
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B.A., B.S., M.A., The University of Akron, 1965.
- ROBERT M. TERRY, *Professor of Sociology* (1971)
B.A., M.A., Ph.D., University of Wisconsin, 1965.
- EDWIN THALL, *Assistant Professor of Chemistry (Wayne General and Technical College)* (1974)
B.S., Pratt Institute; M.S., New Mexico Tech; Ph.D., The University of Akron, 1972.
- ANNAMALAI THANIKACHALAM, *Assistant Professor of Electrical Engineering* (1975)
B.S., M.S., University of Madras, India; Ph.D., University of Missouri, 1971.
- FRANCIS B. THOMAS, *Director of Computer Services* (1970)
B.S., University of Cincinnati; M.A., Kent State University, 1966.
- LINDON C. THOMAS, *Associate Professor of Mechanical Engineering* (1967)
B.S.M.E., Tulsa University; Ph.D., Kansas State University, 1968.

- BONNIE J. THOMAS-MOORE, *Assistant Professor of Food Service Management* (1969)
B.A., M.A., Kent State University, 1969.
- JACK E. THOMPSON, *Instructor in Business Management Technology* (January 1974)
B.S.B.A., Kent State University; M.S., The University of Akron, 1975.
- STEPHEN J. THOMPSON, *Assistant Professor of Education* (1973)
B.S., University of Wisconsin; M.A., University of Northern Colorado, Ph.D., Syracuse University, 1973.
- DONALD C. THORN, *Professor of Electrical Engineering* (1967)
B.S.E.E., Texas A & M College; M.S.E.E., Ph.D., University of Texas, 1958. P.E., New Mexico, Ohio.
- DAVID H. TIMMERMAN, *Associate Professor of Civil Engineering* (1962) (1967)
B.S.C.E., M.S., Ohio University; Ph.D., Michigan State University, 1969.
- GENE TISDALE, *Accountant in Controller's Office* (1969)
B.S.B.A., Kent State University, 1953.
- SANDRA K. TOPA, *Coordinator of Developmental English* (May 1975)
B.A., M.A., The University of Akron, 1975.
- ARLENE TOTH, *Instructor in English* (1969)
B.A., M.A., The University of Akron, 1969.
- JAMES P. TRESSEL, *Lecturer in Physical Education* (April 1976)
B.A., Baldwin-Wallace College, 1975.
- BRUCE A. TRIER, JR., *Supervisor Software and Technical Services, Computer Center* (February 1971)
B.S., Kent State University, 1967.
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B.S., M.Ed., Kent State University, 1970.
- ROBERT B. TUFTS, *Associate Registrar* (July 1973)
B.A., Cleveland State University; M.A., Case Western Reserve University, 1972.
- RICHARD J. TUREK, *Assistant Professor of Mathematics* (1972)
B.S., M.A., Ph.D., University of New Mexico, 1972.
- GENEVIEVE H. TURLIK, *Instructor in Secretarial Science* (1971)
B.A., The University of Akron, 1953.
- KAREN B. TURNER, *Instructor in Speech* (April 1971)
B.A., Kent State University; M.S.Ed., The University of Akron, 1974.
- STEPHEN J. TURNER, *Assistant Professor of Management* (1976)
B.S., M.A., University of Maine; Ph.D., University of Massachusetts (1976)
- PAUL UHLINGER, *Professor of Philosophy* (1968)
B.A., Youngstown University; B.D., Oberlin College; Ph.D., Boston University, 1953.
- SHERMAN D. VANDER ARK, *Associate Professor of Music* (1973)
A.B., Calvin College; M.A., Ph.D., Ohio State University, 1970.
- KATHRYN VEGSO, *Assistant to Vice President and Dean of Student Services* (February 1959)
B.S., University of Illinois; M.S.Ed., The University of Akron, 1964.
- WILBUR P. VEITH, *Assistant Professor of Mathematics* (1971)
B.S., Cleveland State University; M.S., Ph.D., The Ohio State University, 1971.
- RANDALL F. VOLPE, *Editor — University News Service* (January 1976)
B.S., Kent State University, 1971.
- ERNST D. VON MEERWALL, *Associate Professor of Physics* (1971)
B.S., M.S., Northern Illinois University; Ph.D., Northwestern University, 1970.
- ANNA M. VOORHEES, *Associate Professor of Bibliography and Assistant Librarian for Technical Services* (1971)
B.S.Ed., B. Mus., The Ohio State University; M.A., Kent State University, 1964.
- DIANE VUKOVICH, *Coordinator of Developmental Mathematics* (1973)
B.S., Youngstown State University; M.Ed., Kent State University; Ph.D., The University of Akron, 1975.
- THOMAS J. VUKOVICH, *Adviser of Students* (July 1972)
B.S., Ohio Northern University; M.Ed., Kent State University, 1971.
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B.S., Appalachian State University; M.Ed., Bowling Green State University, 1965.
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B.S.E.E., Ohio University; M.E., Pennsylvania State University, 1969.
- CHARLES F. WADDELL, *Assistant Professor of Music* (1974)
B.S., Muskingum College; M. M., University of Cincinnati, 1974.
- EDWIN E. WAGNER, *Professor of Psychology* (1959)
B.A., M.A., Ph.D., Temple University, 1959.
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- JOSEPH M. WALTON, *Assistant Dean of Graduate Studies and Associate Professor of Education* (1970)
B.S., University of Cincinnati; M.Ed., Xavier University; Ph.D., The Ohio State University, 1970.
- JOAN E. WARNER, *Assistant Professor of Secretarial Science* (1975)
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B.A.Ed., M.A.Ed., Arizona State University, 1953.

- LLOYD J. WATSON, *Assistant Professor of Biology* (1970)
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- WINIFRED WATSON-FLORENCE, *Instructor in Speech* (1976)
B.A., M.A., Wichita State University, 1972.
- JOHN STEWART WATT, *Assistant Provost and Professor of Education* (1956)
B.A., The University of Akron; M.A., Ph.D., University of Chicago, 1950.
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B.F.A., M.F.A., University of Michigan, 1970.
- WILLIAM V. WEBB, *Assistant Professor in the Community and Technical College* (1968)
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- WYATT M. WEBB, *Assistant Professor of Physical Education* (1967)
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- PAUL A. WEIDNER, *Professor of Political Science* (1960)
B.A., M.A., University of Cincinnati; Ph.D., University of Michigan, 1959.
- RUSSELL WEINGARTNER, *Associate Professor of Modern Languages* (1970)
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- DAVID M. WEIS, *Professor of Education* (1967)
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B.A., M.A., The University of Akron, 1952.
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- KENNETH N. WEXLEY, *Associate Professor of Psychology* (1969)
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B.S. Bus. Ed., Kent State University, 1965.
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B.S., Iowa State University; M.S., The University of Akron, 1972.
- JOHN D. WILLIAMS, *Associate Professor of Finance* (1969)
B.S., Westminster College; M.B.A., D.B.A., Kent State University, 1971.
- MAURICE G. WILLIAMS, *Professor of Education* (1966)
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- RICHARD A. WILLIAMS, *Associate Professor of Electrical Engineering* (1968)
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- PAUL S. WINGARD, *Associate Dean of Buchtel College of Arts and Sciences and Professor of Geology* (February 1966)
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- JAMES L. WITHEROW, *Assistant Professor of Physical Education* (1972)
B.S., M.Ed., Kent State University, 1956.
- MARY O. WITWER, *Assistant Professor of Secretarial Science* (1971) (1972)
B.S., The University of Akron; M.E., Ohio University, 1951.
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- WARREN A. WOLF, *Professor of Art* (1977)
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Chylinski, Jr., Richard M. Fawcett, Frank J. Gruccio, Jr., Marion R. Heise, Timothy C. Jochim, Wendell A. Johnson, Dennis A. Kleidon, Rose A. Kleidon, Kenneth L. McCormick, Joseph C. Mullin, Michael T. Oravec, Jon R. Peske, Charles T. Salem, James D. Switzer, William V. Webb, Edith K. Weinstein; *Instructors:* Richard A. Calkins, Harriet K. Herskowitz, Walter M. Herip, Laura J. Johnson, Glenn H. Snyder, Frederick J. Sturm.

DIVISION OF BUSINESS AND OFFICE TECHNOLOGY

Chairman: Associate Professor George J. Makar; *Professors:* Frank V. Baldo, Aloysius E. Misko; *Associate Professors:* Gerald R. Camp, Robert E. Collins, David T. Dolan, Mary J. Johnston, James W. Taggart, Virginia J. Watkins, Anne H. West; *Assistant Professors:* James D. Bell, Russell K. Davis, Mary K. Dee, Lawrence G. Golden, Jack D. Harpool, Jack D. Huggins, Thora S. Kille, James W. Nolte, John C. Pizor, Linda J. Rodda, Martin H. Siegel, Bonnie J. Thomas-Moore, Joan E. Warner, Mary C. Witwer, Donald A. Zimmerman; *Instructors:* Janice L. Eley, Joyce E. Mirman, Jack E. Thompson, Genevieve H. Turlik, Martha W. Vye.

Buchtel College of Arts and Sciences

BIOLOGY

Head: Professor Dale L. Jackson; *Professors:* Roger F. Keller, Nada Ledinko, Lazarus Macior; *Associate Professors:* Eugene Flaumenhaft, Richard Mostardi, Richard F. Nokes, Dorothy Nunn, John H. Olive, Walter Sheppe, Warren P. Stoutamire; *Assistant Professors:* Helmar H. E. Dollwet, Daniel L. Ely, John L. Frola, John F. Gwinn, F. Scott Orcutt, Jr., Donald W. Ott, Barry L. Richardson, Lloyd J. Watson.

CHEMISTRY

Acting Head: Professor Michael F. Farona; *Professors:* Paul D. Garn, Claibourne E. Griffin, H. James Harwood, Joseph P. Kennedy, William G. Kofron, Ian R. MacGregor, Donald McIntyre, Maurice Morton, Howard L. Stephens, Thomas Summer; *Associate Professors:* Stephen Darling, Lewis Fetters, John E. Frederick, John J. Houser, Gerald F. Koser, Alan F. Kravis, Henry A. Kuska; *Assistant Professors:* William D. Lyon, Daniel J. Smith.

CLASSICS

Head: Distinguished Professor Theodore T. Duke; *Assistant Professors:* Robert E. Gaebel, Robert C. McNeil; *Instructors:* Constantin Dimitriu, Jacqueline Hegbar.

ECONOMICS

Head: Professor Ali Fatemi; *Professors:* William S. Hendon, James McLain, Efthimios Pournarakis; *Associate Professors:* Lascelles F. Anderson, Robert R. Black; *Assistant Professors:* Dennis M. Byren, Elizabeth Erickson, Bruce U. Knight, Lung-Ho Lin, Gary E. Sellers.

ENGLISH

Head: Associate Professor Frederik N. Smith; *Professors:* Gerald H. Levin, Frank T. Phipps; *Associate Professors:* Douglas R. Butturff, Robert L. Dial, James J. Egan, David L. Jones, R. Paul Merrix, D'Orsay W. Pearson, John S. Phillipson, Sally K. Slocum, Gerard M. Sweeney; *Assistant*

Professors: Mary A. DeHaven, William A. Francis, Elton A. Glaser, R. Bruce Holland, Julia A. Hull, Walter D. Lehman, Lawrence T. Martin, Ruth L. Messenger, Arthur L. Palacas, Robert F. Pope, David N. Ranson, Cathryn C. Taliaferro; *Instructors:* Jutta T. Bendremer, Alice MacDonald, Arlene A. Toth.

GEOGRAPHY

Head: Professor Allan G. Noble; *Professors:* Ashok Dutt, Edward W. Hanten; *Associate Professors:* Albert J. Korsok, Laurence J. C. Ma, Thomas L. Nash, Gerald F. Pyle; *Assistant Professors:* Lathardus Goggins, Vern R. Harnapp, John E. Mulhauser.

GEOLOGY

Head: Professor Arthur E. Burford; *Professors:* Robert C. Corbett, Paul C. Franks, James W. Teeter, Paul S. Wingard; *Associate Professor:* Roger Bain; *Assistant Professors:* Ronald H. Fewkes, Laverne M. Friberg, Jim L. Jackson, A. W. Kunze, Surinder K. Sahai, John P. Szabo.

HISTORY

Head: Professor Robert H. Jones; *Professors:* Vincent H. Cassidy, Don R. Gerlach, George W. Knepper, Warren F. Kuehl, Noel L. Leathers, Sheldon B. Liss, Jerome Mushkat, Daniel Nelson, James F. Richardson, David C. Riede; *Associate Professors:* J. Wayne Baker, Boris Blick, H. Roger Grant, William McGucken, Howard S. Reinmuth, Jr., Robert L. Zangrando; *Assistant Professors:* Guy S. Alitto, June Burton, Barbara E. Clements, David E. Kyvig.

MATHEMATICS AND STATISTICS

Head: Professor William H. Beyer; *Professor:* Leonard Sweet; *Associate Professors:* David Buchthal, Douglas E. Cameron, Robert C. Carson, Peter J. Gingo, Ernest A. Kuehls, Louis D. Rodabaugh, Ronald C. Suich; *Assistant Professors:* Joseph C. Hintz, William W. Hokman, Martha Lierhaus, Thomas E. Price, Neal C. Raber, Phillip H. Schmidt, Donald P. Story, George L. Szoke, Richard J. Turek, Wilbur P. Veith.

MODERN LANGUAGES

Head: Professor Isaac Yetiv; *Professors:* Arno K. Lepke, Hugo Lijeron, Theodore Mackiw, Claude Y. Meade, Herbert W. Smith, Jr.; *Associate Professors:* Eugene A. Maio, Allan McIntyre, Russell Weingartner; *Assistant Professors:* Jolita Kavaliunas, William I. Miller, Phillip Stuyvesant, Janet Waisbrot, Hans O. Zbinden; *Instructors:* Joseph J. Donatelli, Stephen A. Faria, Janice Houser, Sys Inman, Kriemhilde Livingston, Helen Ryan, Susan Schunk; *Lecturer:* Faraj Ardan.

CHEMICAL ENGINEERING

Acting Head: Professor Howard L. Greene; *Professors:* Glenn A. Atwood, Coleman J. Major, Robert W. Roberts, Max S. Willis, Jr.; *Associate Professors:* Lawrence G. Focht, T. Henry Forsyth, John P. Lenczyk.

CIVIL ENGINEERING

Head: Professor Andrew L. Simon; *Professors:* D. G. Fertis, Joseph F. Lestingi, Alvin M. Richards, Jr.; *Associate Profes-*

PHILOSOPHY

Head: Professor Paul Uhlinger; *Associate Professors:* Alan Hart, David F. Cox, William McMahon; *Assistant Professor:* James H. Buchanan.

PHYSICS

Head: Professor Charles W. Wilson, III; *Professors:* Alan N. Gent, C. Frank Griffin; *Associate Professors:* Harry T. Chu, Roger B. Creel, Walter H. Heintz, Peter N. Henriksen, II, Harry T. Pinnick, Ronald E. Schneider, Ernest D. von Meerwall.

POLITICAL SCIENCE

Head: Associate Professor Carl Lieberman; *Professors:* Yong H. Cho, Yogendra Malik, Paul A. Weidner; *Associate Professors:* Vernon F. Cook, Frank J. Kendrick, Jesse F. Marquette; *Assistant Professors:* Richard Franklin, Katherine Hinckley, David J. Louscher.

POLYMER SCIENCE

Head: Professor Maurice Morton; *Professors:* Alan N. Gent, H. James Harwood, Joseph P. Kennedy, Donald McIntyre, Eberhard A. Meinecke, Howard L. Stephens, Charles W. Wilson III; *Associate Professors:* Lewis Fetters, John E. Frederick, Irja Piirma.

PSYCHOLOGY

Head: Professor Gerald V. Barrett; *Professors:* Alexis M. Anikeeff, John A. Popplestone, Edwin E. Wagner; *Associate Professors:* Alex Darbes, Richard H. Haude, Marion W. McPherson, Henry Rosenquist, Kenneth N. Wexley; *Assistant Professors:* Ralph Alexander, Faye Dambrot, Robert Deitchman, Stephen S. Fugita, Robert G. Lord, Martin D. Murphy, Raymond Sanders, Robert B. Slaney, Harvey L. Sterns.

SOCIOLOGY

Acting Head: Associate Professor Carl A. Bersani; *Professors:* Charles M. Barresi, Irwin Deutscher, Edwin L. Lively, Lloyd B. Lueptow, Robert M. Terry; *Associate Professors:* T. Neal Garland, Richard J. Gigliotti, John P. Marwitt, McKee J. McClendon, Donald J. Metzger, Samuel A. Mueller, David J. O'Brien, Margaret Poloma, Robert G. Schmidt, Richard Sterne; *Assistant Professors:* Leslie Carr, James R. Gillham, J. Gregory Williams.

URBAN STUDIES

Acting Head: Professor William S. Hendon; *Professors:* Yong H. Cho, Ashok Dutt, Edward W. Hanten; *Associate Professors:* David F. Cox, Frank J. Kendrick, Gerald F. Pyle, Richard S. Sterne; *Assistant Professors:* Frank Costa, James L. Shanahan, Douglas V. Shaw.

College of Engineering

sors: Tse-Yung Chang, Clarence B. Drennon, George P. Manos, Simsek Sarikelle, David H. Timmerman.

ELECTRICAL ENGINEERING

Head: Professor Donald C. Thorn; *Professor:* Louis E. Roemer; *Associate Professors:* Chiou-Shiun Chen, Chu-Fu Chen, Joseph A. Edminister, Robert S. Grumbach, Chaman N. Kashkari, Milton L. Kult, Malcolm R. Railey, John T. Welch, Jr., Richard A. Williams; *Assistant Professors:* Victor

Burke, Annamalai Thanikachalam.

MECHANICAL ENGINEERING

Head: Professor Rudolph Scavuzzo; *Professors:* Michael

Bezbatchenko, Thomas M. Brittain, Eberhard A. Meinecke; *Associate Professors:* Maurice L. Adams, Donald R. Burrowbridge, Mamerto L. Chu, Jr., Benjamin T. F. Chung, Philip M. Gerhart, Richard J. Gross, Azmi Kaya, Joseph Padovan, Lindon C. Thomas.

College of Education

COUNSELING AND SPECIAL EDUCATION

Head: Professor Kenneth C. Hoedt; *Professors:* James E. Doverspike, Robert H. Myers, David M. Weis; *Associate Professors:* William J. Arn, John R. Cochran, Dale Coons, Gary W. Kane, Janko Kovacevich, Sarah Orlinoff, Ruth Roberts, Joseph M. Walton; *Assistant Professors:* Fred W. Fanning, Theodore L. B. Gloeckler, William E. Nemeč, Michael Ross, Marion Stroud; *Instructor:* Elizabeth A. Wright.

Ramon F. Steinen, Maurice G. Williams; *Associate Professors:* Walter E. Arms, David G. Barr, Angela R. Bruno, Hugh G. Christman, Loren L. Hoch, Martha C. Leyden, Judith A. Noble, Joan C. Seifert; *Assistant Professors:* Mary Ellen Atwood, Blanche Clegg, Regis Q. McKnight, Janet R. Reuter, Robert Sovchik, Norma Spencer; *Instructors:* June S. Alleman, Susand McBride, John W. Wilson.

EDUCATIONAL ADMINISTRATION

Acting Head: Professor Dick I. Rich; *Professors:* James C. King, Isobel L. Pfeiffer, William Root; *Associate Professors:* W. Henry Cone, Norman M. Griggs, Jr., William A. Rogers, Charles L. Wood.

PHYSICAL EDUCATION

Head: Associate Professor Andrew W. Maluke; *Associate Professors:* J. Thomas Adolph, Gordon Larson, Robert J. Mravetz; *Assistant Professors:* Thomas A. Campbell, James L. Dennison, Robert N. Gandee, Judith E. Maffett, Patricia J. Taylor, Wyatt M. Webb, James L. Witherow; *Instructors:* Alexander L. Adams, Kenneth G. Cunningham, Robert L. Dowdy, Thomas M. Flaherty, Jr., Mary J. MacCracken, Fritz M. Meyer, Archie M. Strimel, Mary A. Tripodi; *Lecturers:* Dale A. Liston, James P. Tressel.

EDUCATIONAL FOUNDATIONS

Head: Professor Gerald J. Blumenfeld; *Professors:* H. Kenneth Barker, Ralph O. Blackwood, D. J. Guzzetta, John S. Watt; *Associate Professors:* Abdul Amir Al-Rubaiy, Walden B. Crabtree, Ralph Darr, Jr., Charles M. Dye, Thomas H. Maxwell, Isadore Newman, Frederick Schultz; *Assistant Professors:* Edward B. Lasher, William A. Mavrides, Rita S. Saslaw; *Instructor:* C. Robert Blankenship.

SECONDARY EDUCATION

Head: Associate Professor Larry G. Bradley; *Professor:* Oliver Ocasek; *Associate Professors:* Madeline A. Cooke, Bill J. Frye, John J. Hirschbuhl, Joy S. Lindbeck, Marion A. Ruebel, Michael N. Sugarman, Walter H. Yoder; *Assistant Professors:* Robert K. Eley, Harold M. Foster, Lillian M. King, Stanley P. Mengel, Stephen J. Thompson.

ELEMENTARY EDUCATION

Head: Associate Professor Bernard L. Esporite; *Professors:* Caesar A. Carrino, Robert E. Ferguson, LaVerne J. Meconi,

College of Business Administration

ACCOUNTING

Head: Professor Dennis Gordon; *Professors:* Hobart W. Adams, Orville R. Keister, Jr., Richard S. Roberts, Arjan T. Sadhwani; *Associate Professors:* Donald K. Berquist, Arthur D. Karlin, Dennis L. Kimmell, Charles K. Moore, Jr.; *Assistant Professors:* Allen M. Cabral, James L. Cress, Vincent P. Kopy, Alvin H. Lieberman, David L. Nichols, Linda Sugarman; *Instructors:* James R. Emore, David T. Meeting, Michael F. Rolph.

Assistant Professors: Edward L. Baxter, Robert J. Shedlarz.

MANAGEMENT

Head: Professor Frank L. Simonetti; *Professors:* N. F. Davis, Bernard A. Deitzer, Jonathon S. Rakich, Karl A. Shilliff, Howard L. Taylor; *Associate Professors:* Kenneth A. Dunning, Theodore T. Herbert, Keith A. Klafehn, Joseph C. Latona, Richard C. Lutz, Gary E. Meek; *Assistant Professors:* Donald E. Becker, Alan G. Krigline, Stephen J. Turner.

FINANCE

Head: Professor Michael P. Litka; *Professors:* A. Frederic Banda, James W. Dunlap, Frederick W. Moyer, Charles F. Poston; *Associate Professors:* Thomas J. Coyne, David R. Durst, James E. Inman, Mario J. Picconi, John D. Williams;

MARKETING

Head: Professor Stephen S. Castle; *Professor:* Frank V. Baldo; *Associate Professors:* Michael F. d'Amico, Jack R. Dauner, David P. Loyd; *Assistant Professors:* Donald M. Jackson, Kenneth E. Mast; *Instructor:* George E. Prough.

College of Fine and Applied Arts

ART

Head: Professor Warren A. Wolf; *Professor:* Irving A. Achorn; *Associate Professors:* Earl L. Ertman, William A. Neumann, Ronald D. Taylor; *Assistant Professors:* Bruce R. Armstrong,

Charlotte M. Hanten, Donald E. Harvey, Lorena M. Holshoy, Dennis A. Kleidon, James V. Lenavitt, Christopher P. Meyer, Dennis A. Meyer, Thomas D. Webb; *Instructors:* Walter M. Herip, Kathleen A. Ricks, Mark E. Soppeland.

HOME ECONOMICS

Head: Professor Barbara N. Armstrong; *Associate Professors:* Tomasita Chandler, Marjory M. Mortvedt, Virginia Tappenden; *Assistant Professors:* Doris J. Aldrich, Mary Ellen Atwood, Virginia L. Gunn, Barbara Heinzerling, Kathryn E. Koch, Jean R. Williams; *Instructors:* Bonny W. Chirayath, Harriet K. Herskowitz, Judy L. Hodgson, Miriam G. Litt.

MASS MEDIA — COMMUNICATION

Acting Head: Professor Ruth B. Lewis; *Professor:* James V. Fee; *Associate Professors:* John D. Bee, William B. Steis, L. Joel Swabb, Jr.; *Assistant Professors:* David L. Jamison, Thomas T. Miles, Henry J. Ruminski.

MUSIC

Acting Head: Associate Professor Frank V. Bradshaw; *Professor:* Farley K. Hutchins, John A. MacDonald, Wallace Nolin; *Associate Professors:* Alice Flaksman, Richard Jackboice, Marian Lott, Eugene R. Mancini, Paul D. Rohrbaugh, Richard N. Shirey, Henry P. Smith, Sherman D.

Vander Ark; *Assistant Professors:* David S. Bernstein, Paul M. Biss, Cecil V. Gold, Barbara J. Macgregor, Rodney N. Miller, James C. Prodan, Samuel Spinak, Charles F. Waddell.

SPEECH PATHOLOGY AND AUDIOLOGY

Head: Professor George D. Davis; *Professor:* Elaine Z. Lasky; *Associate Professors:* Charlotte L. Essner, John H. Ramey, Kenneth T. Siloac; *Assistant Professors:* Anitra S. Barkley, Patsy B. Blackwell, Mary Capotosto, Bernard J. Clifford, Donald E. Hall, Patricia B. Kricos; *Instructors:* Gloria J. Boggess, Karen B. Turner, Winifred Watson-Florence.

THEATRE ARTS AND DANCE

Head: Professor James F. Dunlap; *Professors:* Elizabeth Hittle, Ray H. Sandefur, Howard K. Slaughter; *Associate Professors:* Paul A. Daum, Phyllis Hardenstein, Wallace S. Sterling; *Assistant Professors:* Marc C. Ozanich, Lawrence R. Sexton; *Instructors:* Jerry J. Burr, Alexander N. Davis.

College of Nursing

Dean: Professor Lillian J. DeYoung; *Professor:* Kathryn M. Homeier; *Associate Professors:* Marian L. Bauer, Perry Jane Bomar, Dorothy M. Dobrindt, Barbara M. Fuszard, C. Edward Gibney, Patricia P. Godfrey, Edna P. Grist, Joanne Marchione; *Assistant Professors:* Barbara S. Anandam, JoAnn Collier, Shirley R. Doherty, Jean A. Haspeslagh,

Marianne L. Lipps, Virginia B. Newbern, Margaret E. Seeno, Susan J. Stearns; *Instructors:* Mary A. Arenella, Cathy Caron, Kristine M. Gill, Mary T. Goletz, Joyce D. Kierst, Mary K. Krater, Margherita D. Labson, Deborah D. Lumley, Elizabeth K. Misko, Pamela J. Moore, Rebecca K. Pool, Pamela G. Skorman, Helen-Agnes Wright.

School of Law

Dean: Professor Stanley A. Samad; *Professors:* Merlin G. Briner, Hamilton DeSaussure, John P. Finan, James G. France, Richard L. Grant, Donald M. Jenkins, Marvin M. Moore, Albert S. Rakas; *Associate Professors:* Ronald E.

Alexander, Hollis Allan, Bertram C. Gire; *Assistant Professors:* C. P. Goplerud, Margery B. Koosed, Albert H. Leyerle, Jeffrey A. Parness, Lawrence P. Wilkins; *Lecturers:* Richard L. Aynes, Dana F. Castle.

Wayne General and Technical College

Dean: John G. Hedrick; *Business Manager:* Martin Kemp; *Associate Professors:* Scott D. Hagen, Warner D. Mendenhall; *Assistant Professors:* R. Diane Arnold, Donald E. Baker, Elmore J. Houston, Armolene J. Maxey, Robert L. McElwee,

Beverly J. Mugrage, Ellen Sue Politella, Janeane A. Reagan, Edwin Thall; *Instructors:* Richard M. Dienesch, Carl L. Huston, Forrest J. Smith, E. Lee Wilson.

University Library

University Librarian: Associate Professor H. P. Schrank, Jr.; *Associate Professors:* Ruth Clinefelter, Pauline Franks, Anna M. Voorhees; *Assistant Professors:* Virginia L. Allanson, Margart B. Guss, Jack E. Hibbs, Jr., Miriam A. Joliat, Nancy A. Knight, Helen Livingston, John V. Miller, Beatrice

Montgomery, Judith K. Mowery; *Instructors:* David R. Brink, Barbara L. Clark, Judith L. Fitzgerald, Julie A. Gammon, Marcia T. Ladd, Gary M. Pitkin, Beverly L. Scherba, Yu-Shiang Yeh.

Reserve Officers' Training Corps

Foster S. Buchtel, *Assistant to the President-Campus*
Civilian Coordinator
May, 1977

ARMY

- DONALD V. HALLOCK, *Professor of Military Science* (August 1975)
B.S., University of Wisconsin; M.Ed., Eastern Michigan University, 1969; Graduate of the U.S. Army Command and General Staff College, Lt. Col, Infantry.
- JAMES L. GANO, *Assistant Professor of Military Science* (1976)
A.B., M.A., Eastern Kentucky University; M.S. University of Southern California, 1975, Captain, Military Intelligence.
- JAMES M. KELLY, *Assistant Professor of Military Science* (1977)
B.A., Cameron University, 1974, Major, Artillery.
- CHARLES L. KOHL, JR., *Assistant Professor of Military Science* (1977)
B.A., Valparaiso University; M.B.A., Adelphi University, 1974, Captain, Transportation.
- MARGARET A. MURRAY, *Assistant Professor of Military Science* (1975)
B.S., Virginia State University, 1969, Captain, Signal Corps.
- PAUL LEWIS, *Chief Enlisted Instructor* (1976)
Sergeant Major.
- AUGUST BROOKS, *Operations NCO* (1977)
Sergeant First Class.
- EDWIN SHUTTE, *Supply Supervisor* (1974)
Staff Sergeant.

AIR FORCE

- EDWARD P. MAZAK, JR., *Professor of Aerospace Studies* (June 1974)
B.S., The University of Akron; M.S.A.E., Air Force Institute of Technology; M.B.A., The George Washington University, 1963. Colonel, USAF.
- CAROL A. CARTER, *Assistant Professor of Aerospace Studies* (September 1976)
B.A., M.A., University of Arkansas; M.A., Troy State University, 1976. Captain USAF.
- ROBERT M. GARLOW, *Assistant Professor of Aerospace Studies* (August 1974)
B.S., Slippery Rock State College; M.S., Southern Illinois University at Edwardsville, 1974. Major, USAF.
- PHILLIP W. GOERTZ, *Admissions Counselor — NE Ohio* (September 1974)
B.A., University of the Philippines; M.S., University of Oklahoma, 1965. Major, USAF.
- JOHN L. TARTAR, *Assistant Professor of Aerospace Studies* (April 1976)
B.S., Miami University; M.B.A., University of Wyoming, 1972. Captain, USAF.
- FRED W. BEER, *NCOIC Cadet Personnel* (September 1975)
Technical Sergeant, USAF.
- DONALD E. HAZLETT, *NCOIC Administration* (September 1975)
Technical Sergeant, USAF.
- THOMAS E. WHITMYER, *Detachment NCOIC* (June 1977)
Staff Sergeant, USAF.

Institute of Polymer Science

May, 1976

- MAURICE MORTON, *Director of the Institute of Polymer Science and Regents Professor of Polymer Chemistry* (October 1948)
B.S., Ph.D., McGill University, 1945.
- ALAN N. GENT, *Assistant Director of the Institute of Polymer Science and Professor of Polymer Physics* (April 1961)
B.S., Ph.D., University of London, 1955.
- LEWIS J. FETTERS, *Associate Professor of Polymer Science and Associate Professor of Chemistry* (1971)
B.A., College of Wooster; Ph.D., The University of Akron, 1962.
- T. HENRY FORSYTH, *Research Associate, Associate Professor Chemical Engineering* (1970)
B.S.C.E., University of Kentucky; M.S., Ph.D., Virginia Polytechnic Institute, 1967, P.E., Ohio.
- JOHN E. FREDERICK, *Associate Professor of Polymer Science and Associate Professor of Chemistry* (1966)
B.S., Glenville State College; Ph.D., University of Wisconsin, 1964.

- H. JAMES HARWOOD, *Professor of Polymer Science and Professor of Chemistry* (October 1959)
B.S., The University of Akron; Ph.D., Yale University, 1956.
- JOSEPH P. KENNEDY, *Professor of Polymer Science and Professor of Chemistry* (1970)
B.Sc., University of Budapest; Ph.D., University of Vienna; M.B.A., General Business, Rutgers University, 1961.
- DONALD MCINTYRE, *Professor of Polymer Science and Professor of Chemistry* (1966)
B.A., Lafayette College; Ph.D., Cornell University, 1954.
- EBERHARD A. MEINECKE, *Professor of Polymer Science and Professor of Mechanical Engineering* (October 1963)
D. Eng., Institute of Technology (Braunschweig, Germany), 1960.
- IRJA PIIRMA, *Associate Professor of Polymer Science* (December 1952)
Diploma in Chemistry, Technische Hochschule of Darmstadt; M.S., Ph.D., The University of Akron, 1960.
- EVERETT SANTEE, JR., *Manager of the NMR Center, Research Associate* (1966)
B.S., West Virginia State College, 1962.
- HOWARD L. STEPHENS, *Executive Officer, and Manager of Applied Research, Institute of Polymer Science, Professor of Polymer Science and Professor of Chemistry* (1950)
B.S., M.S., Ph.D., The University of Akron, 1960.
- CHARLES W. WILSON, III, *Research Associate, Professor of Physics and Professor of Polymer Science* (1965)
B.S.E., M.S., University of Michigan; Ph.D., Washington University, 1952.
- DAVID WINKLER, *Research Associate* (1969)
B.S., Ashland College; M.S., The University of Akron, 1972.

Presidents of Buchtel College

- | | |
|---|-----------|
| *S.H. Colleston, D.D., Litt.D. | 1872-1878 |
| *E. L. Rexford, D.D. | 1878-1880 |
| *Orello Cone, D.D. | 1880-1896 |
| *Charles M. Knight, D.Sc. (ad interim) | 1896-1897 |
| *Ira A. Priest, D.D. | 1897-1901 |
| *A. B. Church, D.D., LL.D. | 1901-1912 |
| *Parke R. Kolbe, Ph.D., LL.D. | 1913-1914 |

Presidents of The University of Akron

- | | |
|--|-----------|
| *Parke R. Kolbe, Ph.D., LL.D. | 1914-1925 |
| *George F. Zook, Ph.D., LL.D. | 1925-1933 |
| *Hezzleton E. Simmons, M.S., D.Sc., LL.D. | 1933-1951 |
| Norman P. Auburn, B.A., D.Sc., Litt.D., L.H.D., LL.D. | 1951-1971 |
| D. J. Guzzetta, Ed.D., LL.D., D.S.Sc., L.H.D. | 1971- |

Deans of the Colleges of The University of Akron

THE BUCHTEL COLLEGE OF ARTS AND SCIENCES

- | | |
|--|-----------|
| *Albert I. Spanton, M.A., Litt.D. | 1913-1938 |
| *Charles Bulger, Ph.D., Litt.D. | 1938-1948 |
| Ernest H. Cherrington, Jr., Ph.D. | 1948-1960 |
| Thomas Sumner, Ph.D. | 1960-1962 |
| George Knepper, Ph.D. | 1962-1967 |
| Don A. Keister, Ph.D. | 1967-1969 |
| John Bachmann, Ph.D. (acting) | 1969-1970 |
| Robert A. Oetjen, Ph.D. | 1970-1977 |
| Claibourne E. Griffin, Ph.D. | 1977- |

THE COLLEGE OF ENGINEERING

- | | |
|--------------------------------------|-----------|
| *Frederic E. Ayer, C.E., D.Eng. | 1914-1946 |
| R. D. Landon, C.E., M.S. | 1946-1963 |
| *W. M. Petry, M.S.M.E. (acting) | 1963-1964 |
| Michael J. Rzasa, Ph.D. | 1964-1970 |
| Coleman J. Major, Ph.D. | 1970- |

THE COLLEGE OF EDUCATION

*W. J. Bankes, M.A.	1921-1931
*Albert I. Spanton, M.A., Litt.D. (acting)	1931-1933
*Howard R. Evans, Ph.D.	1933-1942
Hjalmer W. Distad, Ph.D. (acting)	1942-1944
*Howard R. Evans, Ph.D.	1944-1958
D. J. Guzzetta, Ed.D., LL.D., D.S.Sc., L.H.D. (acting)	1958-1959
Chester T. McNerney, Ph.D., LL.D.	1959-1966
H. Kenneth Barker, Ph.D.	1966-

THE COLLEGE OF BUSINESS ADMINISTRATION

*Warren W. Leigh, Ph.D.	1953-1962
Richard C. Reidenbach, Ph.D.	1962-1967
Arthur K. Brintall, Ph.D. (acting)	1967-1968
**Wilbur Earle Benson, Ph.D.	1968-1970
James W. Dunlap, Ph.D.	1970-

THE SCHOOL OF LAW

Stanley A. Samad, J.S.D.	1959-
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THE GRADUATE SCHOOL

*Charles Bulger, Ph.D., Litt.D. (Dean of Graduate Work)	1933-1951
Ernest H. Cherrington, Jr., Ph.D., (Director of Graduate Studies)	1955-1960
Ernest H. Cherrington, Jr., Ph.D., (Dean of the Division)	1960-1967
Arthur K. Brintall, Ph.D., (Dean of Graduate Studies and Research)	1967-1968
Edwin L. Lively, Ph.D., (Dean of Graduate Studies and Research)	1968-1974
Claibourne E. Griffin, Ph.D. (Dean of Graduate Studies and Research)	1974-1977

THE GENERAL COLLEGE

D. J. Guzzetta, Ed.D., LL.D., D.S.Sc., L.H.D.	1959-1962
Thomas Sumner, Ph.D.	1968-1974

THE EVENING COLLEGE

L. L. Holmes, M.A. (Director)	1932-1934
Leslie P. Hardy, M.S.Ed., L.H.D. (Director)	1934-1953
E. D. Duryea, Ed.D. (Dean)	1953-1956
D. J. Guzzetta, Ed.D., LL.D., D.S.Sc., L.H.D. (Dean)	1956-1959
William A. Rodgers, Ed.D. (Dean)	1959-1967
Charles V. Blair, M.A. (Dean)	1967-1970
John G. Hedrick, M.A. (Dean)	1970-1974
Caesar A. Carrino, Ph.D. (Dean)	1974-

THE COMMUNITY AND TECHNICAL COLLEGE

*W. M. Petry, M.S.M.E.	1964-1974
Robert C. Weyrick, M.S.	1975-

THE COLLEGE OF FINE AND APPLIED ARTS

Ray H. Sandefur, Ph.D.	1967-
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THE COLLEGE OF NURSING

Estelle B. Naes, Ph.D.	1967-1975
Lillian J. DeYoung, Ph.D.	1975-

WAYNE GENERAL AND TECHNICAL COLLEGE

Marvin E. Phillips, M.A. (Acting Director)	1972-1974
John G. Hedrick, M.A. (Director)	1974-1974
John G. Hedrick, M.A. (Dean)	1974-

*Deceased
 **On Record, June 1, 1970

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June, 1976

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GROUPS FOR THE PERFORMING ARTS

Chamber Ballet
Forensic Union
University Marching Band

University Orchestra
University Singers
University Theatre Guild

ATHLETIC CLUBS

Intramurals
Mens
Womens
Karate Club (Tae Kwon Do)

Ski Club
Water Polo Club
Women's Recreation Association
Women's Synchronized Swimming Club

PERSONAL INTEREST

Advertising Club
American Congress on Surveying and Mapping
Arab Students Organization
Associated Student Government
Associated Women Students
The Black Scholar
Black United Students
Campus Girl Scouts
Center for Concern
Cheerleaders
Chess Club
College Republicans
Council for International Relations
and United Nations Affairs

Independent Student Association
International Students Club
Outing Club
Photography Club
Pre-Law Club
Pyramid Zen
Residence Hall Council
Residence Hall Program Board
Senior Class
Students International Meditation
Society
Survival Center
Young Democrats Club

COMMUNICATIONS AND PUBLICATIONS

Akron Law Review
Amateur Radio Club
Arete
Buchtelite
Nite Life

Radio and Television Workshop
Tel-Buch
WAUP-FM
WRHA
YAWP

DEPARTMENTAL ORGANIZATIONS

Accounting Association
Administrative Management Society
(Collegiate Chapter)
American Chemical Society
Chapter of Student Affiliates
American Institute of Chemical Engineers
American Society for Personnel Administration
American Society of Civil Engineers
American Society of Mechanical Engineers
Collegiate Nursing Students
Council for Exceptional Children
Der Deutsche Studentenklub
Economics Association
Finance Club
Geology Club
Institute of Electronic and Electrical Engineers
Instrument Society of America, Student Chapter

Johnson Club
LaComunidad Hispanica
LeCercle Francais Universitaire
"Life" (formerly Biology Club)
Marketing Action Council, Collegiate
Chapter of American Marketing
Association
Mathematics Club
Medical Technology Club
Office Education Association
Philosophy Club
Psychology Club
Slavic Studies Club
Society of American Military Engineers
Society of Physics Students
Sociology Club
Student Art League

PROFESSIONAL FRATERNITIES

Alpha Chi Sigma — Chemistry — Men and
Women
Beta Alpha Psi — Accounting
Delta Sigma Pi — Business Administration
Lambda Alpha Epsilon — Criminal Justice
National Student Speech and Hearing
Association — Speech Pathology and Audiology

Phi Chi Theta — Women
in Business & Economics
Phi Delta Kappa — Education
Pi Lambda Theta — Education

ASSOCIATION OF COLLEGE HONOR SOCIETY MEMBERS

Alpha Kappa Delta — Sociology
Alpha Lambda Delta — Freshman Scholarship
Eta Kappa Nu — Electrical Engineers
Mortar Board — Student Leadership
National Collegiate Players — Dramatics
Omicron Delta Epsilon — Economics
Omicron Delta Kappa — Leadership

Phi Sigma — Biological Sciences
Phi Sigma Tau — Philosophy
Pi Delta Phi — French
Pi Omega Pi — Business Education
Pi Sigma Alpha — Political Science
Psi Chi — Psychology
Sigma Delta Pi — Spanish

Phi Alpha Theta — History
Phi Eta Sigma — Freshman Scholarship

Society of Physics Students — Physics
(Sigma Pi Sigma)

OTHER HONOR SOCIETIES

Alpha Beta Delta — Graduate Students
Alpha Epsilon — Evening Students
Alpha Sigma Lambda — Scholarship and Services
Beta Gamma Sigma — Business Administration
Kappa Delta Pi — Education
Phi Sigma Alpha — Liberal Arts Scholastic

Phi Theta Kappa — Community &
Technical College
Pi Mu Epsilon
Sigma Xi — Scientific Research
Tau Beta Pi — Engineering (formerly
Sigma Tau)
Tau Kappa Phi — Home Economics

RECOGNITION SOCIETIES

Alpha Phi Omega — Men's Service
Delta Phi Alpha — German
Gamma Theta Upsilon — Geography
Kappa Kappa Psi — Men in Band

Pi Kappa Delta — Forensics
Society for Collegiate Journalists
Journalism
Tau Beta Sigma — Women in Band

MILITARY RECOGNITION SOCIETIES

Angel Flight
Arnold Air Society
Association of the United States Army
Beta Corps (formerly Army Sponsors)

Pathfinders
Pershing Rifles
Scabbard and Blade
Valkyrie Drill Team

RELIGIOUS ORGANIZATIONS

Brothers and Sisters in Christ
Christian Science Organization
The Hillel (B'nai B'rith Foundation
Intersarsity Christian Fellowship

Kappa Phi Club
Students for Christ
The Way

EVENING COLLEGE GROUPS

AWARE (Association of Women for Awareness,
Recognition and Enterprise)
Alpha Beta Delta — Graduate Students
Alpha Epsilon — Honor Society
Alpha Sigma Lambda — Scholarship and Service

Beta Gamma Sigma — Business Administration
Chi Sigma Nu — Social Fraternity
Evening Student Council
Gamma Beta — Sorority

GRADUATE STUDENT GROUPS

Graduate Student Council
Psychology Graduate Student Association

SCHOOL OF LAW GROUPS

Arete
Association of Student International
Law Societies
Black American Law Students Association
Bracton's Inn

Delta Theta Phi
National Lawyer's Guild
Phi Alpha Delta
Student Bar Association

THE UNIVERSITY OF AKRON

UNIVERSITY CALENDAR 1977-78

FALL QUARTER 1977 (50 Instructional Days)

September 5, Monday	Labor Day
September 14, Wednesday	Day and Evening Classes Begin
*November 11, Friday	Veterans Day
November 23, Wednesday	Final Instructional Day
*November 24-26, Thursday-Saturday	Thanksgiving Recess
(November 25, Friday)	Columbus Day — in lieu of 2nd Monday in October)
November 28-December 3, Monday-Saturday	Final Examination Period
December 11, Sunday	Commencement
*December 23, Friday	Martin Luther King Day — in lieu of 3rd Monday in January.
December 25, Sunday	Christmas
*December 26, Monday	Christmas Day Observed
*December 30, Friday	President's Day — in lieu of 3rd Monday in February.

WINTER QUARTER 1978 (49 Instructional Days)

January 1, Sunday	New Year's Day
*January 2, Monday	New Year's Day Observed
January 3, Tuesday	Day and Evening Classes Begin
January 12, Thursday	Founders Day Ceremonies
March 11, Saturday	Final Instructional Day
March 13-18, Monday-Saturday	Final Examination Period

SPRING QUARTER 1978 (49 Instructional Days)

March 26, Sunday	Easter
March 27, Monday	Day and Evening Classes Begin
May 19, Friday	May Day
*May 29, Monday	Memorial Day
June 3, Saturday	Final Instructional Day
June 5-10, Monday-Saturday	Final Examination Period
June 11, Sunday	Commencement

SUMMER SESSION I, 1978 (24 Instructional Days)

June 19, Monday	Day and Evening Classes Begin
*July 4, Tuesday	Independence Day
July 21, Friday	End of Summer Session I

SUMMER SESSION II, 1978 (25 Instructional Days)

July 24, Monday	Day and Evening Classes Begin
August 25, Friday	End of Summer Session II

Fall Quarter	— 50 Instructional Days + Examination Week
Winter Quarter	— 49 Instructional Days + Examination Week
Spring Quarter	— 49 Instructional Days + Examination Week

*University Closed



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