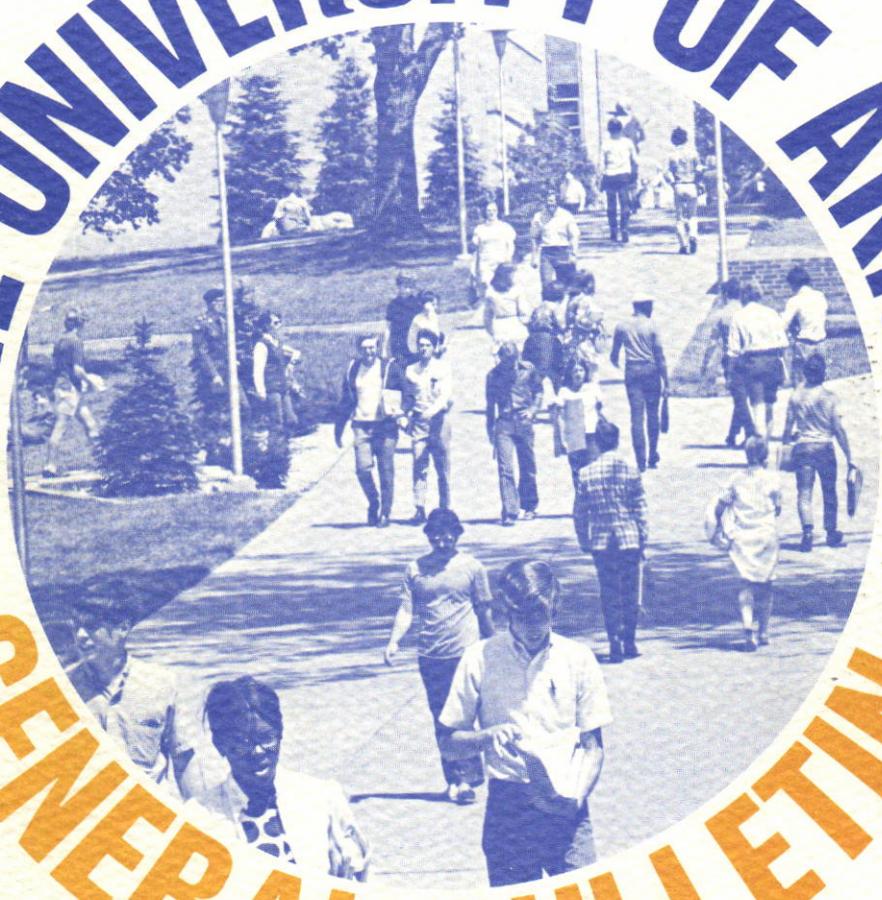


SCHOOL

THE UNIVERSITY OF AKRON GENERAL BULLETIN



APPROVED 26 of - SEP 27 1971
STATE DEPT. OF EDUCATION
STATE APPROVING AGENCY
R. J. Wientjes

1971-72 ISSUE



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

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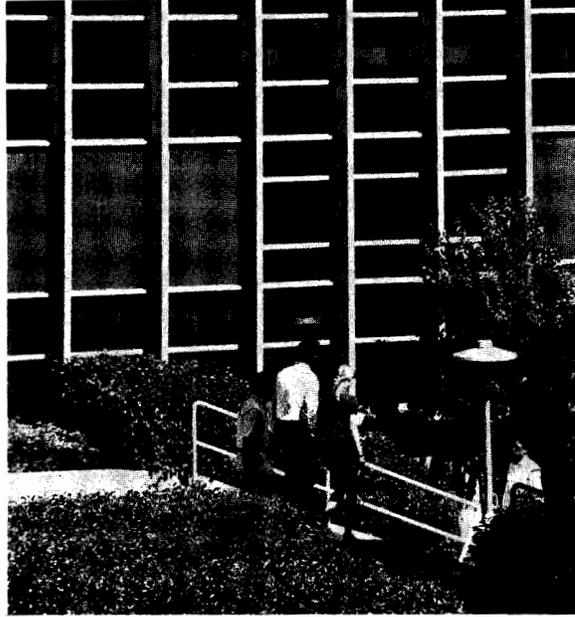
THE UNIVERSITY OF AKRON BULLETIN

Vol. X

Number 1

September, 1971

The University of Akron Bulletin is published seven times a year — twice in September, once in October, November and January, and twice in April — by The University of Akron, 302 E. Buchtel Avenue, Akron, Ohio, 44304. Second Class Postage paid at Akron, Ohio.



I. The University of Akron

A Story of Growth

Buchtel College was established by the Ohio Universalist Convention on May 31, 1870, on a hill overlooking Akron, a thriving industrial city of 10,000 situated at the summit of the Ohio Canal. The College was named in honor of John R. Buchtel, a farm machinery manufacturer, whose money (half a million dollars) and spirit sustained the enterprise. Support also came from local men who pioneered important industries — cereals, clay products, matches, farm machinery, 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 Engineering 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. Its 6,000 students can be found in nearly 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, the doctorate is offered in nine 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 briefly in the 1930s only to disappear with the demise of lighter-than-air craft.

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 more than \$1,600,000, reach into many fields, from barnacles to inner-city problems.

The 105-acre campus with 52 modern buildings is located at the hub of an industrial urban area of 700,000 persons. The University of Akron now enrolls more than 12,000 day and 6,000 evening students in credit courses and an additional 2,000 in "informal" adult education. Its students come from 36 states and 49 foreign countries. The 22,000 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 and its Center for Urban Studies 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.

Objectives

The University of Akron, in fulfilling its role as an institution of higher education, expects students who qualify for admission to achieve the following objectives:

To acquire knowledge of man's social being and history, of his physical and biological nature and environment, of his cultural situation, and of the processes that make for personal and group fulfillment through the development of his personality and character.

To develop and strengthen the ability to use the English language in qualitative and quantitative ways.

To be intellectually curious and eager for scholarly growth.

To think logically and critically and make sound judgments.

To appreciate beauty in all its forms.

To understand people and their differences.

To develop an independent spirit and a personal sense of values with the proper regard for the rights of others and to assume a commitment to a free society and the social and civic responsibility as a participant in the world community.

To maintain physical health and vigor and comprehend the importance of appropriate leisure time activities.

To determine their future occupations and interests.

To prepare for greater social and individual effectiveness in public service, the professions, business and industry, labor, and the fine arts as set forth in the objectives of the various colleges, divisions, and departments of the University.

The University of Akron, in order to provide students the opportunity to achieve these objectives:

Strives to create an appropriate and adequate educational climate by offering courses and curricula in various fields of knowledge.

Utilizes faculty and facilities effectively in instruction.

Conducts research activities directed to the advancement of knowledge.

Provides expert advice and assistance to industrial, civic, and educational agencies.

Offers programs for continuing education and dissemination of knowledge and

culture through various media to the community beyond the University.

The degree programs are established in various fields in the colleges as determined by the adequacy of their resources and facilities to meet the foregoing objectives.

The University recognizes a student's level of accomplishment in these programs by awarding associate, baccalaureate, master's or doctor's degrees.

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, 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 Association of Collegiate Schools of Business and the Electronic Technology and Mechanical Technology Associate degree programs are both 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, 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, and is registered with the State Education Department, The University of the State of New York.

The undergraduate Social Work emphasis program of the Department of Sociology is a fully qualified Constituent Member of the Council on Social Work Education.

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 and second year student may be enrolled in either the General College, obtaining the background in General Studies

required for entering 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 third 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, polymer science, industrial psychology or education.

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, arts, commercial art, surveying and construction technology,



instrumentation technology, data processing, law enforcement 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, as medical assistants, and in office services.

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 administration, 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 96 credits, study in the General College before "graduating" 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 degree in chemical, civil, electrical and mechanical 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 or Bachelor of Arts in Education are offered. In addition, programs leading to the Bachelor of Science in Technical Education are offered.

COLLEGE OF BUSINESS ADMINISTRATION —

offers professional programs in business to prepare 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 —

offers programs leading to the Bachelor of Arts degree with majors in art, home economics, speech and theatre arts, speech pathology and audiology and music, to the Bachelor of Music degree and to the Bachelor of Fine Arts degree in art.

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 a program leading to a Bachelor of Technology degree in electronic and mechanical technology. This program is arranged to provide two years of study following a two-year associate degree program in these fields.

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 leading to the Juris Doctor degree in either day or evening classes. 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, experimental or industrial, education, elementary, secondary, or guidance and counseling, engineering; to the Doctor of Education degree in school administration; and to the master's degree in accounting, biology, 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 teacher, reading specialist, teaching the 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, speech pathology and audiology, statistics, technical education, and urban studies.

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 6,000 of the University's student enrollment attend 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

In July 1968 The University of Akron established off-campus academic programs, offering resident credit centers for third and fourth year baccalaureate courses and academic centers for first and second year courses. Resident credit centers are provided at the Babcock & Wilcox Company's Research Center in Alliance, Canton McKinley High School and Lathrop Elementary School and Canton Aultman Hospital in Canton, and at Massillon City Hospital in Massillon and in the Madison School District in Mansfield, Ohio. Academic centers are in Orville and Alliance and in 1971 the Board of Regents authorized the University to construct and operate a two-year branch campus, known as the Wayne General and Technical College, in Orrville.

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.

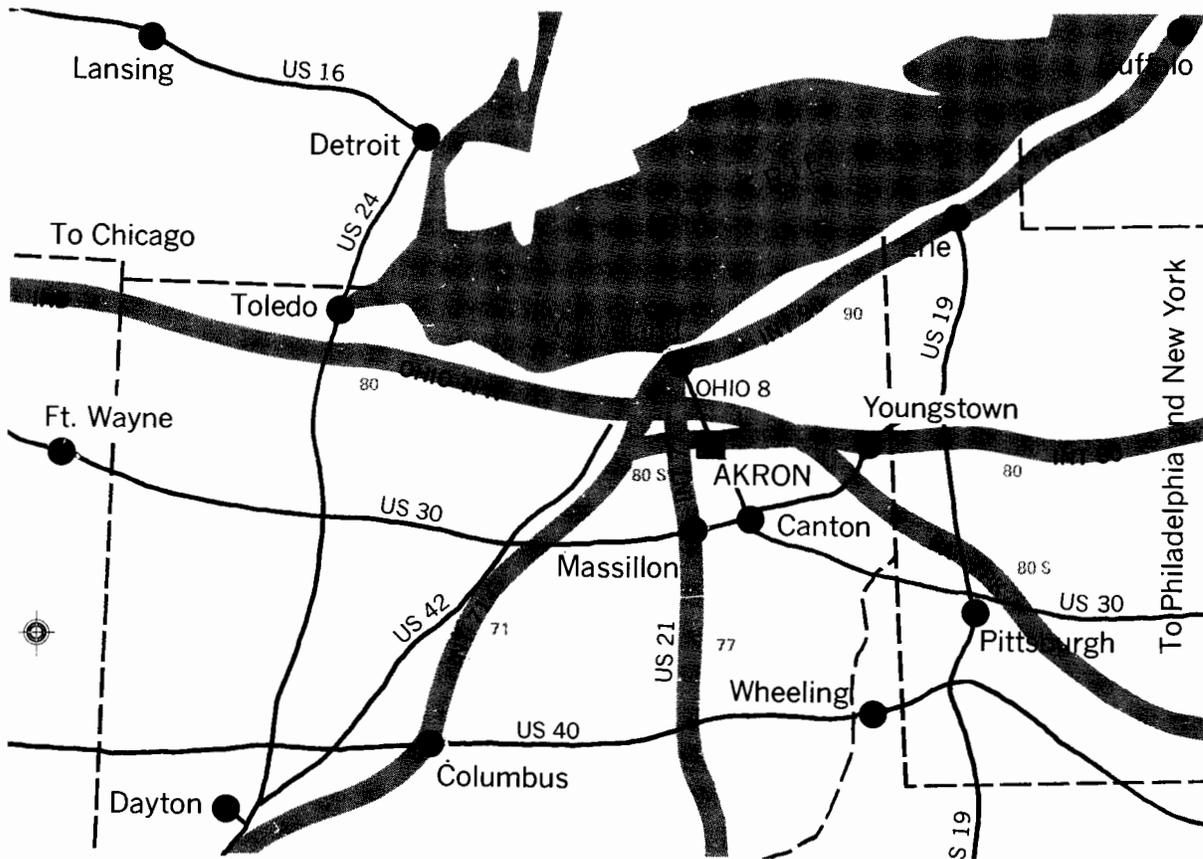
The area surrounding The University of Akron also offers unusual cultural opportunities. Living in an area of the United States called the "culture trail", students have frequent access to plays, lectures and professional performances, either within Akron or in the surrounding area, which includes Warren 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 the new interstate north-south Highway 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

AUBURN SCIENCE AND ENGINEERING CENTER, the home of the four departments of the College of Engineering and the departments of mathematics and biology, the Institute of Polymer Science, also houses the



scientific and engineering holdings of the University's library. The ground floors of the new structure are devoted to vehicular parking for faculty and students.

AYER HALL, on the northwest side of the campus, provides classrooms and office space for the history, physics, political science and sociology departments. It is named for the first Dean of the College of Engineering, Frederick E. Ayer, the developer of The University of Akron cooperative work study plan.

BUCHTEL HALL, in the center of the main campus, has been the Administration center of the University. Destroyed by fire in May, 1971, it is being studied to determine if it can be rebuilt within existing walls to preserve its historic link with the past. It is named for the institution's first benefactor, John R. Buchtel.

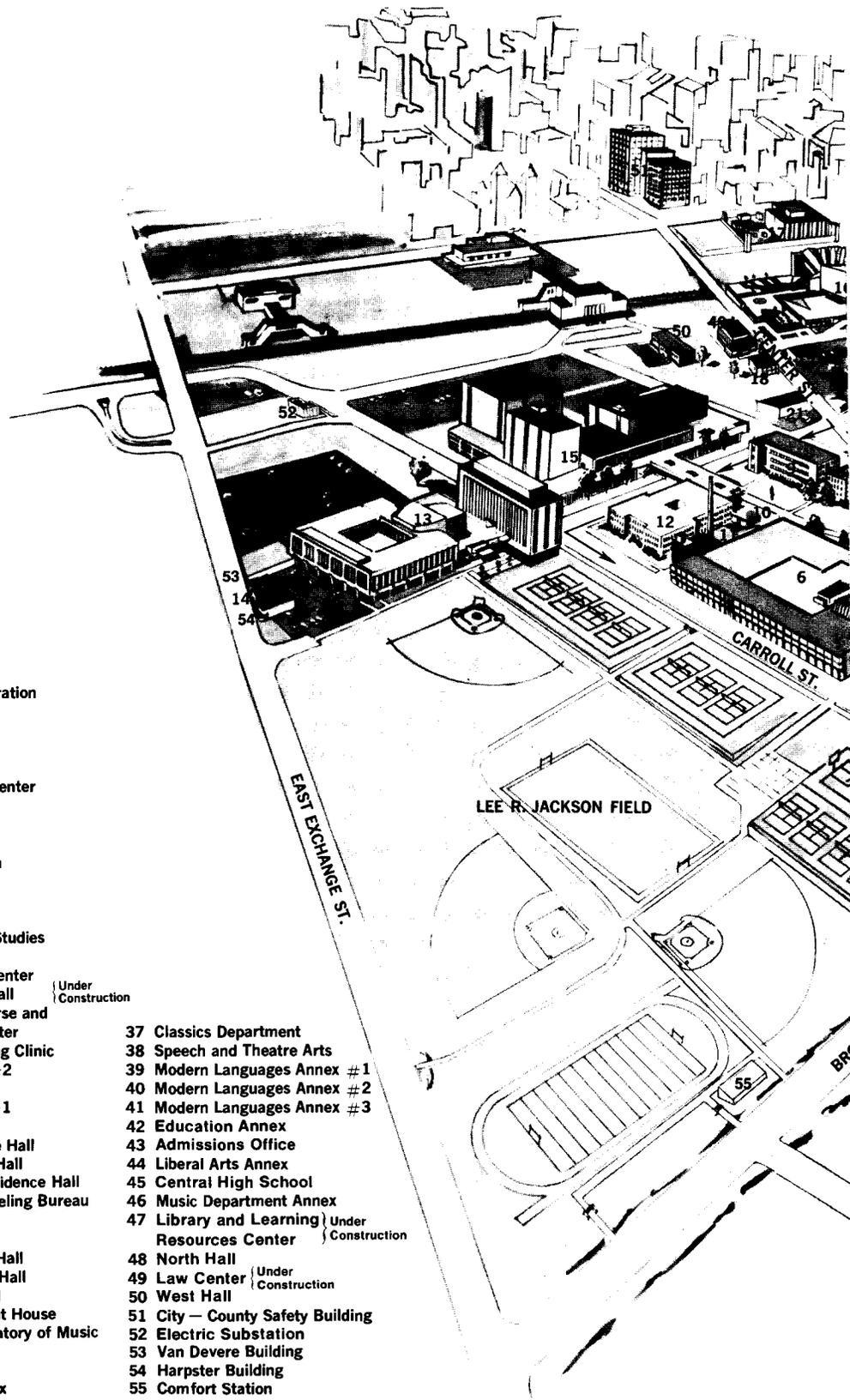
BUSINESS ADMINISTRATION AND LAW BUILDING houses the College of Business Administration and School of Law classrooms and offices plus the John S. Knight Auditorium and C. Blake McDowell Law

Library in addition to lecture, laboratory and seminar rooms, and a practice courtroom. A new three-story building for the School of Law is under construction.

EDUCATION BUILDING, provides a lecture room that seats 260, 19 general classrooms, a handi-crafts room, an auxiliary closed circuit television studio, a complete language laboratory, a teaching demonstration classroom and is headquarters for the Dean of the College of Education.

FIRESTONE CONSERVATORY OF MUSIC, a gift of the Harvey S. Firestone family, includes two buildings located at East Market and Forge Streets. It provides classrooms, practice rooms and office space for the Department of Music and has a large auditorium for student recitals.

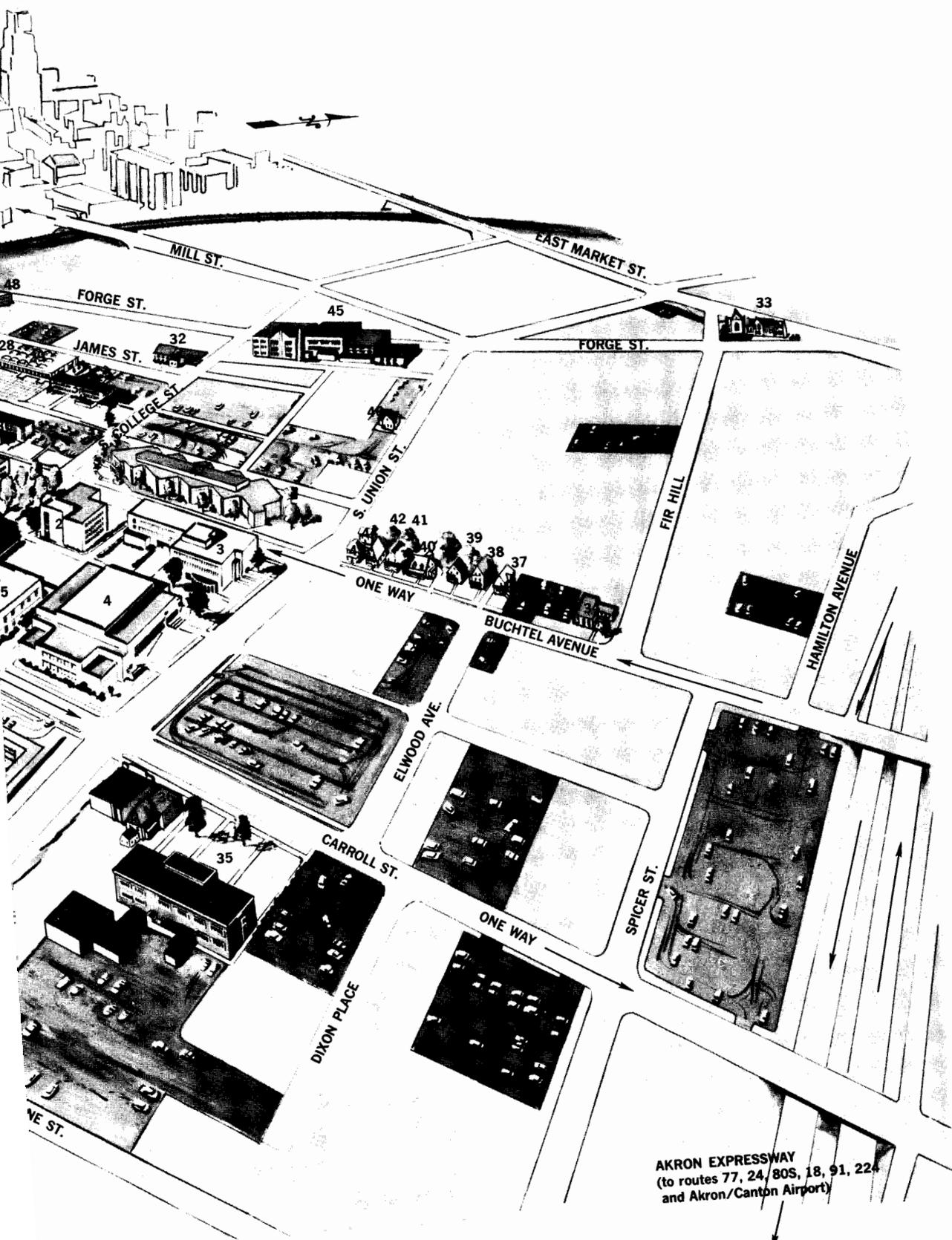
HOME MANAGEMENT HOUSE, located immediately adjacent to the residence halls, provides home economics majors a place to put into practice what they learn in the classroom.



LEGEND

- | | |
|--|---|
| 1 Buchtel Hall | 37 Classics Department |
| 2 Business Administration and Law Building | 38 Speech and Theatre Arts |
| 3 Kolbe Hall | 39 Modern Languages Annex # 1 |
| 4 Memorial Hall | 40 Modern Languages Annex # 2 |
| 5 Library | 41 Modern Languages Annex # 3 |
| 6 Gardner Student Center | 42 Education Annex |
| 7 Education Building | 43 Admissions Office |
| 8 Knight Hall | 44 Liberal Arts Annex |
| 9 Ayer Hall | 45 Central High School |
| 10 Student Mail Room | 46 Music Department Annex |
| 11 Power Plant | 47 Library and Learning Resources Center (Under Construction) |
| 12 Simmons Hall | 48 North Hall |
| 13 Schrank Hall | 49 Law Center (Under Construction) |
| 14 Center for Urban Studies | 50 West Hall |
| 15 Auburn Science and Engineering Center | 51 City - County Safety Building |
| 16 Performing Arts Hall (Under Construction) | 52 Electric Substation |
| 17 University Concourse and Morley Health Center | 53 Van Devere Building |
| 18 Speech and Hearing Clinic | 54 Harpster Building |
| 19 Service Building #2 | 55 Comfort Station |
| 20 Energy Center | |
| 21 Service Building #1 | |
| 22 Ballet Center | |
| 23 Spanton Residence Hall | |
| 24 Bulger Residence Hall | |
| 25 Sisler-McFawn Residence Hall | |
| 26 Testing and Counseling Bureau | |
| 27 Economics | |
| 28 Infirmary | |
| 29 Robertson Dining Hall | |
| 30 Ritchie Residence Hall | |
| 31 Orr Residence Hall | |
| 32 Home Management House | |
| 33 Firestone Conservatory of Music | |
| 34 166 Fir Hill | |
| 35 Spicer Hall | |
| 36 Spicer Hall Annex | |

PLAZA



MILL ST.

EAST MARKET ST.

FORGE ST.

45

33

JAMES ST.

32

FORGE ST.

COLLEGE ST.

S. UNION ST.

FIR HILL

42 41

39

38

37

ONE WAY

BUCHTEL AVENUE

HAMILTON AVENUE

ELWOOD AVE.

CARROLL ST.

35

ONE WAY

SPICER ST.

DIXON PLACE

VE ST.

AKRON EXPRESSWAY
 (to routes 77, 24, 80S, 18, 91, 224
 and Akron/Canton Airport)

KNIGHT HALL provides classrooms, laboratories and office space for the chemistry department. It is named for C. M. Knight, head of the first Science Department and developer of the world's first rubber chemistry course.

PARKE R. KOLBE HALL includes classrooms and offices of the Buchtel College of Arts and Sciences, the University Theatre, WAUP-FM radio station, and instructional television studios, as well as the departments of Geology, Geography and Speech and Theatre Arts. It is named for the first president of the municipal University.

THE UNIVERSITY LIBRARY contains more than 500,000 books, periodicals, microforms, microfilms, computer tapes, government publications, audio and visual tapes and other items.

In the Main Library are the circulating, reference and periodical collections in the social sciences and humanities, microforms and recordings in the social sciences and humanities, and the government documents collection for the social sciences, humanities and science.

Part of the third floor of the Main Library serves as temporary housing for the offices of the President, the Vice Presidents for Planning, Business and Finance, Student Affairs and Academic Affairs, the Treasurer, the Director of University Relations and the Dean of Administration.

The Science-Technology Division of the University Library is in the Auburn Science and Engineering Center. It houses circulating, reference, and periodicals collections for the departments of biology, chemistry, geology, mathematics, physics, polymer science and the colleges of engineering and nursing. A new \$8 million Library and Learning Resources Center is under construction.

MEMORIAL HALL, is the center of men's and women's physical education activities. It contains two large gymnasiums, a swimming pool, classrooms and offices of the Athletic Department faculty. It is dedicated to the memory of Summit County men and women who died in World War II.

SCHRANK HALL is headquarters for the Community and Technical College, the

Graduate School, the offices of the College of Fine and Applied Arts, the ROTC and AFROTC units and the departments of Art, and Home Economics.

SIMMONS HALL contains offices and classrooms of the College of Nursing, the Department of Psychology and the University's Computer Center. It is named for the former University President, Hezzleton E. Simmons.

SPICER HALL is the major student contact building, housing the offices of the Registrar, Student Services, Controller, Cashier, Evening College, Department of Special Programs, Institute for Civic Education, and the Deans of the Summer Sessions and of the General College.

TESTING AND COUNSELING BUILDING Housing the Testing and Counseling Bureau Student Services, this building is located at 221 E. Center Street.

SPEECH AND HEARING CLINIC, located at 162 E. Center Street, houses classrooms, labs and offices of the department of speech pathology and audiology. The first floor houses an outpatient speech and hearing clinic.

WEST HALL, located at the corner of Buchtel Avenue and Grant Street, houses classrooms plus offices for the Department of English.

Residence Halls

The University's Residence Halls complex is located on the North Campus adjacent to the Main Campus and within easy walking distance of downtown Akron. The complex contains four dormitory buildings capable of housing 660 students, Orr, Ritchie, and Sisler-McFawn Halls, housing a total of 341 women and the 10-story Spanton Residence Hall which houses 315 women, and the 16-story Bulger Residence Hall which houses 490 men.

All of the modern buildings are fully air-conditioned and equipped with the finest built-in furniture and conveniences. Each building has its own lounges and recreation areas and all are equipped with laundry facilities and storage rooms.

The Residence Hall complex also contains a coed dining facility, Robertson Hall, used exclusively by dorm students and a 12-bed infirmary which also serves as the University's Health Center.

GARDNER STUDENT CENTER houses bowling alleys, music rooms, TV lounge, student activity offices and work rooms, game and billiard room, book store, Alumni Office, Senior Placement Bureau, and cafeteria and dining facilities.

Pending further construction, several of the University's offices and facilities are housed in temporary structures immediately adjacent to the campus. Temporary faculty offices and the Admissions Office are also located in areas immediately adjacent to the central campus.

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 student body has quadrupled, reaching in the 1970-71 academic year, a record high of more than 18,000. The campus has also grown, covering 105 acres with 52 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 \$12 million auditorium adjacent to downtown Akron to be used for symphonic concerts, opera, drama, ballet and lectures is now under construction. A large, modern Library and Learning Resources Center is being constructed on Buchtel Avenue immediately across from the main campus. A new Law Center is under construction at the corner of Center and Grant Streets and construction has begun on enlargement of the Gardner Student Center.

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 aids makes most learning situations more meaningful and lasting. 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 ultimate creation of The University of Akron's Learning Resource Center. The Office of Instructional Media incorporates the Instructional Television Center and Audio-Visual Services.

THE INSTRUCTIONAL TELEVISION CENTER, which was made operational in 1960, functions as an effective teaching tool through continuous production of daily lectures, originating from the University's instructional television center, and which are transmitted via co-axial cables to campus classrooms. 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.

No courses are presented entirely by television. Each television lecture is presented to a class which meets periodically with its professor "in person."

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 audio-tape and phonograph collection is stored here for use of faculty and students.

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

An audio-visual services annex has been established in Simmons Hall to facilitate service to faculty and students.

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 LANGUAGE LABORATORY and the recording studio, a specialized adjunct, are electronically-equipped rooms in the College of Education Building, with sound booths and a monitor's console.

The Laboratory is expressly for the purpose of familiarizing students with a foreign language through the utilization of actual voices of particular countries recorded on tapes and record transcripts.

Students booths are equipped with ear-phones, microphones with amplifiers, and in some cases, tape recorders. The instructor's console has microphones, eight tape decks, monitoring facilities and a turntable.

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, with its audiology and language laboratories, provides complete hearing and language diagnostic service to both the community and the University. Research and training on the undergraduate and graduate professional levels are assisted by the use of closed-circuit television as well as manual and self-recording audiometers, psycho-acoustic equipment, oscilloscopes and complete selections of taping devices for effective conditioning procedures. A board of medical consultants assists in the aspects of the educational and clinical programs of the Clinic. The faculty and graduate students are affiliated with Akron Children's Hospital.

THE COMPUTER CENTER, a recently-expanded and modernized complex for students and faculty, is located in Simmons Hall.

The Center is equipped with the IBM 370/155 computer and 40 computer systems with magnetic disks, tapes, remote terminals and a wide variety of peripheral equipment.

Faculty research receives considerable computer support. The Center's services include the preparation of financial and academic planning, operating and control reports.

The Center's computers are also used for instruction in a number of computer-related courses leading to a two-year associate degree in data processing. Students also use the computers for homework assignments and special projects in numerous other courses.



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 Student Council, Residence Hall Association, Student Center Program Board, Associated Women Students, Interfraternity Council and Panhellenic Council. A student might contribute through the communications media which include the *Buchtelite* (University newspaper), the *Tel-Buch* (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 systems of our community. The United Fund of Summit County has established an internship for a University student who will coordinate campus programs to meet community needs.

Currently the Extracurricular Activities subcommittee of the Student Affairs Committee, made up of five faculty members, nine students and five 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 submit their constitution and charter to the chairman for the Committee's consideration.

A standard of grades must be maintained before a student can enter some of the more time-demanding extracurricular activities. First quarter students must be carrying at least ten credits, other students must have completed ten credits with an average grade of 2.0 (C).

Each student group has a faculty adviser who is recommended by the student members and appointed by the President of the University.

The identification card (I.D.) is the key to campus participation. Upon presentation of the card a student can be admitted free to most athletic, theater, music, and lecture series events including the Town and Gown Series.

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 100 recitals by individual music students and faculty members are presented each year in the Firestone Conservatory, which includes classrooms, an auditorium and reception areas which are used by hospitality committees in connection with recitals.

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 students and also to non-campus musicians, with payments either on a per-lesson plan or through the conventional quarter arrangement as used for other courses of instruction.

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 their radio or TV sets.

The center of dramatic activities is in the University Theatre. This is located in Kolbe Hall which was built in 1955, honoring the 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 major productions are presented. Open tryouts are held for students in all of the Colleges of the University.

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.

Forensic and debate teams complete intercollegiately.

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.

The newest of the University's performing arts is the Chamber Ballet, a professional training program.

Student Publications

THE BUCHELITE . . . a weekly newspaper with 40-50 issues in each 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 40 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 student creative writing and art work.

Sports Activities

A wide program of sports for both intercollegiate and intramural participants is maintained at the University. Thousands of students can benefit from the intramural programs. Even a late evening volleyball or bowling meet could allow a time slot for students who find challenge in competitive sports.

Competition is keen, especially in the intercollegiate athletic events, but it is stressed that proper focus is to be maintained at all times on principles of basic good health and hygiene; the philosophy is for emphasizing qualities of honor and sportsmanship in all players.

Intercollegiate games, meets and matches are scheduled annually with other colleges for the following athletic teams: football, cross country, basketball, swimming, wrestling, baseball, track, golf and tennis.

Soccer is another intercollegiate sport, and matches are held with other teams in the Ohio Collegiate Soccer Association. Hockey and rugby are new sports which are presently being conducted with other institutions on a club basis.

Intercollegiate competition is planned by the R.O.T.C. staffs for The University of Akron rifle team which is a member of the Lake Erie Conference.

Students desiring information about eligibility to participate should consult the Registrar.

All athletic contests 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.

Memorial Hall, built in 1954, honoring the World War II dead of Summit County, has two spacious gymnasiums and a regulation size (75' x 35') swimming pool for the use of both men and women.

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 11 national sororities for women and 12 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 found the social programs of the Independent Students Association as

their channel for co-ed activities. Their Winter Weekend has become a traditional event on campus.

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 is 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. 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.

Students may come to the Bureau for assistance in identifying aptitudes, interests and personality traits for consideration in the choice of an educational or vocational goal.

Assistance is also offered in dealing with personal or social problems which detract from the student's ability to derive the maximum benefit from his university experience. In addition, the Bureau offers study skills assistance on both individual and group basis.

The Bureau maintains a career library and a study skills laboratory. Students may utilize these facilities in order to improve upon learning skills and study habits.

Counseling services are normally made available through scheduled appointments. However, should a student feel the need to see a counselor immediately a staff member is usually available.

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 representatives 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 or university level is available.

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

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. Disciplinary action may be taken by a Dean if a student neglects to comply with these procedures.

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.

STUDENT HOUSING

Demand for campus housing is on the rise as nonresident students enroll at the University with increasing frequency.

Regulation of student housing centers in the Director of Residence Halls. Its basic rules are as follows:

Unmarried students under 20 years of age are required to live with their parents, legal guardians, relatives with permission of their parents or legal guardians subject to the parietal rules of the University, or in University Residence Halls or other University approved housing.

Unmarried students 20 years of age but not yet 21 years of age, with permission of their parents or legal guardians, may live in housing of their choice subject to the parietal rules of the University.

The University provides five new Residence Halls for non-commuting students, two for men and three for women. Comfortable double room accommodations are thereby provided for 1350 students. Each room has ample space for books and clothing. The furniture and decor are attractive and modern. Sun bathing areas and outdoor recreation areas are provided for all residents. The University swimming pool is open to Residence Hall students.

For the annual rate of \$1140, the student receives living accommodations, bed linen and 20 meals a 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 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 \$25.00. The student insurance provides coverage for such items as hospitalization, surgical benefits, and in-hospital medical benefits.

The Speech and Hearing Clinic provides remedial work in speech, hearing and language for full-time University students without charge. Classes for students who speak English as a second language are also offered. These services are also available to people from the community on a fee basis.

Religious Guidance

Chaplains are available to members of the student body and faculty, offering individual and group guidance services.

A minister of the *Protestant* denomination has been appointed by the Akron Area Council of Churches to serve as a full-time adviser to students. His office is located in the St. James Methodist Church adjacent to the campus at 164 South Union Street.

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

Catholic students have a Newman Center available to them about a block from the main campus, at 143 South Union Street. A priest offers Mass regularly and guidance to students is provided by personnel at the center. The

Newman Center has an assembly room, library, kitchen, and conference rooms where students may study or hold discussion group meetings.

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 include Christian Science, Lutheran Students, Muslim Student Association, Intersity Christian Fellowship, Kappa Phi club, B'nai B'rith and Newman club.



III.

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

Types of Students

A university with an enrollment of 20,000, 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 (Liberal Arts, 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 permission of his Dean but does not receive a grade on his official academic record. Permission to audit a course may be granted if the student has a record of good scholarship or if he has taken and passed the particular course previously or if, in the opinion of his Dean, experience qualifies him to take the course. A student must indicate that he is an auditor at

the time of registration. Auditors are required to do all prescribed course work except the writing of examinations. Audit fees are the same as for credit courses.

TRANSIENT — *From another institution* — One who is regularly enrolled and eligible to continue at another institution, and who has written permission from that institution to enroll at The University of Akron for specified courses. Transient students must present to the Admissions Office, The University of Akron, such written permission prior to registration. 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.

A copy of the record of all work attempted at The University of Akron will be sent to the institution in which the student is regularly enrolled.

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

REQUIRED HIGH SCHOOL COURSES

Prior to admission, applicants who have not previously attended an institution of higher learning must have passed certain preparatory courses on the high school level. These are:

- 4 units of English
- 1 unit of mathematics
- 3 units of social studies
(including American History)
- 1 unit of natural science
- 1 additional unit from any of these

Additional subject requirements for students planning to major in:

SCIENCE, PREMEDICAL OR PREEDENTAL

- 1 1/2 units of high school algebra
- 1 unit of plane geometry

ENGINEERING

- 1 1/2 units of high school algebra
- 1 unit of plane geometry

- 1/2 unit of solid geometry or
- 1/2 unit of trigonometry
- 1 unit of physics or chemistry

MANAGEMENT

- 1 1/2 units of high school algebra

A prospective student who has met the above requirements, 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 reenter the institution from which they desire to transfer. Students who present fewer than 45 quarter credits or their equivalent of accredited transfer work will be required to take either the ACT or the SAT test. If it appears necessary to validate the transfer credits of students with

more than 45 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 44304. FILL IT OUT AND RETURN as soon as possible. If you are applying for admission to the University for the first time, include the nonrefundable 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.

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.

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 45 credits of course work at other institutions you must also submit a copy of your high school transcript and the results of either the ACT or SAT. 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. You should mail this form to the

Admissions Office by September 1.

6. After you have been notified of your acceptance to the University, YOU WILL BE ASKED TO REPORT FOR COUNSELING in the Counseling and Advising Division of the Office of Student Services. At this time, your suitable courses of study will be chosen and you will sign up for these classes. Also, at this time, you will be told the amount of fees you will be expected to pay to the University.

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

TRANSFER FROM NON-BACCALAUREATE PROGRAMS

The records of incoming transfer students from accredited or "Class A" non-baccalaureate programs are evaluated both in terms of the General Studies program and in terms of major requirements. Since these students will, almost without exception, enter the General College, the Dean of the General College consults with the appropriate Upper College Dean or his designated representative, in order to obtain the major program requirements. Permission to substitute courses taken in a non-baccalaureate program for electives or for required courses in the baccalaureate program is decided on an individual basis by the Upper College Dean in consultation with the appropriate department head. These requirements along with the General Studies requirements are transmitted to the student in his letter granting transfer admission.

International Student Program

The University of Akron welcomes qualified students from other lands and seeks to make their educational experience a pleasant and meaningful one. During the 1969-70 academic year, approximately 400 students with citizenship other than the United States attended the University. These students represented 61 countries.

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 June 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 June 1 deadline.

2. Proof of adequate financial support. It is estimated that the international student will need a minimum of \$3,000 per year 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.

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.

HOUSING

The University of Akron maintains no separate housing facilities for international students. The international student may apply for housing in the residence halls and is encouraged to make application early. Most residence hall facilities have been reserved by March for the following academic year. The request for deposit fee can be waived for the international student who is unable to arrange financial exchange before his admission is concluded.

ORIENTATION

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

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 Regional Council for International Education, the Institute for International Education, and The National Association for Foreign Student Affairs.

SPECIAL INTERNATIONAL EDUCATION PROGRAMS

The University of Akron has been headquarters for the Engineering Management of Water Supply Systems program sponsored by the Agency for International Development (AID). It is open to top management and middle management of non-U.S. water supply systems. Applications for this program may be made through AID or directly to The University of Akron.

The University of Akron also participates in the International School at Basel, Switzerland, and Verona, Italy, by sending qualified U.S. students overseas for their junior year of study. This program is administered by the Regional Council for International Education.

In 1971 The University of Akron sent students to Europe as part of its continuing program "Classrooms Around the World." This program is offered for graduate or undergraduate credit. The European trip was the eleventh.

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 the Community and Technical College should make all changes through their advisers in the Counseling and Advising Office, Spicer 201; Evening students in these colleges should contact the Evening College Office, Spicer 118.

WITHDRAWAL

The decision to permit a student to withdraw or not to withdraw from a course is a responsibility of the student's Academic Dean. After the mid-point of a quarter or session, however, the Academic Dean does not take action upon a student's request for withdrawal

until the student (and/or his Dean) has conferred with the instructor concerning the matter, nor until the instructor has had an opportunity to present his recommendations to the Dean charged with the decision. This latter requirement need not be met when the student is requesting *complete* withdrawal from the University because of illness or other personal circumstances beyond his control.

If a student withdraws from a course with the permission of his instructor and Dean, no record of failure appears on his record.

If a student leaves a course without going through the withdrawal procedure or is dropped from any course by his Dean, he is given a failing grade in the course.

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 \$12.00 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 PROPOSAL

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. Undergraduates 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. Except in those courses provided for under Section 3, a student may not retake a course for Credit (CR) after receiving a NC grade. Students may not retake a course for regular credit (i.e., with grade of A-F) after they have received either a CR or NC grade.

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

An undergraduate student who has earned a failing grade may repeat a course once, subject to these conditions:

a. A student who has attempted not more than 60 quarter credits may repeat a course in which he has failed if he enrolls with permission of his Dean or Dean's designate. If he passes the course with a grade of D or better on the second attempt both courses will appear on his academic record but only the second grade earned will count. If he fails the course on the second attempt, both grades of F will count.

b. A student enrolled at the University must repeat a failed course in the next quarter it is offered.

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

c. A student must repeat the exact course which he has failed at The University of Akron and must take this course at The University of Akron.

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 students' 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:

Percentage	Grade	Quality Points Per Credit
93-100 inclusive	A	4
85- 92 inclusive	B	3
77- 84 inclusive	C	2
70- 76 inclusive	D	1
Below 70	F	0
Incomplete*	I	
In Progress***	IP	
Permanent Incomplete**	PI	

*"Incomplete" means that the student has done passing work in the course, but some part, for good reason, has not been completed. An "Incomplete" grade must be reconciled by the end of the immediately succeeding academic term or it automatically converts to an "F" (failing). An instructor may grant an extension of this deadline by notifying the Registrar's Office, prior to the deadline, of his intent. Retroactive extensions may be authorized only by the Dean of the College.

**The student's Dean may for special reasons authorize the change of an Incomplete (I) to a Permanent Incomplete (PI).

***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.

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 75 credits to be eligible to be promoted 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 both as an overall average and for all work taken at The University of Akron.

6. High grades are essential for persons planning 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 also determined by the Dean of the college.

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

*For requirements for promotion to the Buchtel College of Arts and Sciences see Chapter IV.

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 University Registrar by or before the prescribed and appropriate deadline:

a. All baccalaureate and doctoral degree applications are due by or before Friday of the fifth week of the second quarter prior to the quarter in which the Commencement occurs.

b. All Masters and Associate degree applications are due by or before Friday of the fifth week of the quarter immediately preceding the quarter in which the Commencement occurs.

2. Place an order with the University Bookstore for the cap and gown, within dates approved by the University Marshal; and

3. Participate in Commencement exercises. Degree candidates who wish to be graduated "In Absentia" must make written request to the Dean of their college within established dates.

4. Earn a minimum 2.0* quality point ratio, as computed by the University Registrar.

a. For all collegiate work attempted, including work taken at other accredited institutions; and

b. For all work attempted at The University of Akron; and

c. For all work attempted in the major field, including work taken at other accredited institutions; and

d. For all work attempted in the major field at The University of Akron.

5. Meet all degree requirements in his elected major, program, and college, and be approved for graduation by the appropriate college faculty, University Council, and Board of Trustees.

a. Except for doctoral candidates, a student is expected to complete the

requirements for a degree in not more than five calendar years from the date of his enrollment, as defined below. In the event the student fails to complete his degree requirements within five calendar years from the date of his enrollment, the University reserves the right to make changes which alter the number of credits and/or courses required for a degree.

b. The Dean of a College, in consultation with the Department 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 may be reviewed by the Vice President for Academic Affairs on his own motion, or at request of the Dean of the College of the student affected.

6. For the purpose of the following section, "college" means the college or division in which the student is enrolled for a degree; "enrolled" or "enrollment" refers to the date the student registers next following the:

a. date of promotion or transfer to upper college, in the case of students enrolled in the General College or the Community and Technical College;

b. date of his matriculation in the Community and Technical College, the College of Law, or the Graduate Division, or an upper college in the case of post baccalaureate students.

7. Must spend his last year in residence (earning a minimum of 48 credits in the Baccalaureate degree total or 24 credits in the Associate degree total) at The University of Akron unless excused in writing by the Dean of his college.

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

NOTE: A candidate for a second Bachelor's degree must earn a minimum of 48 credits in residence which have not counted toward his first Bachelor's degree.

A candidate for a second Associate degree must earn a minimum of 24 credits in residence which have not counted toward his first Associate degree.

*The College of Education requires a minimum 2.5 quality point ratio in the major field.

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 Relations	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 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
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 Music	193	2.0
	Bachelor of Arts	192	2.0
	Bachelor of Fine Arts	192	2.0
College of Nursing	Bachelor of Science in Nursing	195	2.0
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
	Cytotechnology	96	2.0
	Data Processing	96	2.0
	Educational Technology	96	2.0
	Electronic Technology	102	2.0
	Food Service Management	96	2.0
	Industrial Technology	96	2.0
	Instrumentation Technology	101	2.0
	Law Enforcement Technology	96	2.0
	Mechanical Technology	102	2.0
	Office Services Technology	96	2.0
	Sales and Merchandising	96	2.0
	Secretarial Science	96	2.0
	Surveying and Construction Technology	102	2.0
	Transportation	96-100	2.0
	Bachelor of Technology Degree in:		
	Electronic Technology	202	2.0
	Mechanical Technology	202	2.0

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

CHANGE OF REQUIREMENTS

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

Unless the change in a rule or regulation specifies otherwise, it shall become effective immediately with respect to 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.

Fees and Expenses

(Fees subject to change without notice)

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:

	<i>Commuting Residents of Ohio</i>	<i>Residents of Ohio Living in Dorms</i>	<i>Non-Ohio Residents</i>
Undergraduate fee for regular load	\$525	\$525	\$1,185
General Service Fee	135	135	135
Books (average)	150	150	150
Food and Housing in Residence Halls	—	1,140	1,140
	<u>\$810</u>	<u>\$1,950</u>	<u>\$2,610</u>

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

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

In any question concerning fees, surcharge, or residence, it is the responsibility of the student, 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)

Undergraduate

1-13 credits	\$ 13 per credit
13½-16 credits	175 per quarter
16½ and over credits	\$175 + 13 per credit over 16

Graduate and Professional (Law)

1 or more credits	\$ 22 per credit
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*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.

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

Undergraduate

1-13½ credits	\$ 16 per credit
14-16 credits	220 per quarter
16½ and over credits	16 per credit over 16

Graduate and Professional (Law)

1 or more credits	\$ 6 per credit
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3. GENERAL FEE

Undergraduate

	\$ 4 per credit to a maximum of 45 per quarter (Maximum General Fee for three combined Summer Sessions is \$45.)
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Graduate and Professional (Law)

Full-time (9 or more credits in any quarter)	\$ 15 per quarter
Part-time (8½ or less credits in any quarter)	5 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

Late Registration Fee

Charged to students who have not completed registration and paid fees before close of registration or by final date for payment.	\$ 20
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Music Fees

No fees are charged for enrollment of qualified students in Music Organizations.

Private lessons in Band Instrument, Organ, Piano, Violin and Voice (in addition to normal instructional fees):

Two 1/2 hour lessons per week (Undergraduate)	\$ 50
Two 1/2 hour lessons per week (Graduate)	50

One 1/2 hour lesson per week (Undergraduate)	25
One 1/2 hour lesson per week (Graduate)	25
One 1/2 hour practice per week on pipe organ	-0-

Thesis and Binding Fees

Binding Fee (per volume)	7
Microfilming Fee (for Ph.D. degrees only)	25

Graduation Fees

Each Degree	12
In Absentia, per degree (add'l)	2

Informal Course Fee

Per course unless otherwise noted	20
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6. MISCELLANEOUS FEES

A.C.T	7
Transcripts, each	1
I.D., late or lost	5
Credit by Examination (Undergraduate and Postbaccalaureate), per credit	13
Student Teaching Fee (Course 510:402)	25
Language Tape Rentals (refundable)	10
Locker Fee (\$1.00 refundable) (September - June)	5
Locker Fee, Physical Education (\$1.00 refundable)	2
Towel Rental	5
Change in Course Registration (add/drop)	3
Summer School for Children (per course)	25
Summer School for Gifted Children (per course)	25
Laboratory Breakage Deposit (refundable)	10
"Non Sufficient Funds" or Returned Check Charge	5
Co-op Course Fee	15
Home Management Fee (Course 740:422)	85

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

*Does not include special or miscellaneous fees, i.e.: music, late registration, etc.

ROOM AND BOARD

On the Boarding Plan at the University, young men and women living in the residence halls obtain both board and room for a yearly total of \$1,140. Payment plans can be arranged with the Director of Housing.

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.

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 of \$25.00.

RULES GOVERNING NONRESIDENT SURCHARGE

RESIDENCY REQUIREMENTS

Payment of non-resident tuition is required of any student who does not qualify as a permanent resident of Ohio as defined by one or more of the sections as contained in Division B of the Regulations of the Board of Trustees

Governing Business and Financial Administration for The University of Akron.

For purposes of assessing fees and tuition, the Board defines a "bona fide resident" as a person who resided in the State of Ohio for a minimum of 12 consecutive months immediately preceding the date of enrollment, or who is gainfully employed full-time in the State of Ohio and who has in good faith established a dwelling place or abode in the State of Ohio, with the intent to make the State of Ohio his permanent home for purposes other than attending The University of Akron. A fraternity house, sorority house or University residence hall shall be presumed not to be a permanent home or abode for the purpose of this regulation.

A student who properly qualifies under one of the following rules is a bona fide resident; one who fails to so qualify is a non-resident:

a. The student is under 21 years of age, never married, and one of his natural parents is a bona fide resident.

b. The student is under 21 years of age, never married, and a person other than a natural parent is his guardian, and such guardian is a bona fide resident. Such person may be a grandparent who stands in *loco parentis* to the child after the death of his father and mother, his legal guardian, his adoptive parents, or other person who under the laws of the State of Ohio is a natural guardian. However, if the University finds that the intent of establishing a guardianship is for the primary purpose of achieving bona fide residence status for purpose of attending The University of Akron, such residence status will be denied.

c. The student is under 21 years of age and can establish satisfactory evidence of emancipation and that he is a bona fide resident.

d. The student is 21 years of age or older and is gainfully employed full-time in the State of Ohio while pursuing a part-time program of instruction and there is reason to believe that he did not enter the state for the primary purpose of enrolling at The University of Akron.

e. The student is 21 years of age or older and a bona fide resident. A student who did not qualify as a bona fide resident on his 21st birthday does not change his residence status unless he can qualify under (d) above, or provide other evidence satisfactory to "The Committee on Residence Status."

f. The student, regardless of age, is

married and is a bona fide resident or whose spouse is a bona fide resident.

g. The student, regardless of age, who was married then divorced or separated must have been a bona fide resident in his own right in order to retain the residence status.

h. The student is a teacher taking up residency in the State of Ohio preparatory to teaching in Ohio schools or colleges and who has signed a contract committing him to service in Ohio.

i. The student is a bona fide resident who entered the military service or is a dependent of a bona fide resident who entered the military service and has continuously resided or voted in the State of Ohio or is a dependent of a person in the military assigned to duty in the State of Ohio.

j. The alien student holding an immigrant visa may establish Ohio residency in the same manner as citizens of the United States. An alien student admitted to the United States on a student visa other than an immigrant visa shall be classified as a non-resident student.

The Registrar shall classify a student as a bona fide resident or non-resident student at the time of registration for each quarter or session. A student may appeal to the Committee on Residence Status for a change from a non-resident classification by executing and filing with the Registrar a form entitled "Application for Resident Status."

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 Fee
7. Residence Hall Fees (Note special refund policy)

Amount of Refund:

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 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 \$10

If the student requests in writing official withdrawal from credit courses before the first day of term for which enrolled.

C. In full less \$4

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

D. In part

If the student requests in writing official withdrawal on or after the first day of the term for which he is enrolled the following percentage refunds apply:

	<i>College Credit Courses</i>	<i>Depart- ment of Speical Programs</i>	<i>Summer Sessions</i>
1-7 calendar days	70%	70%	60%
8-14 calendar days	50	25	20
15-21 calendar days	30	0	0
Thereafter	0	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.

E. No refund

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

RESIDENCE HALL REFUNDS

In the event of cancellation of an accepted housing contract (for any reason) \$50.00 will be retained by the University as a forfeiture.

In the event of a cancellation of a housing contract in writing 90 days prior to the start of a quarter, a full refund of monies paid, less \$50.00, will be made.

In the event of cancellation of a housing contract in writing less than 90 days, but prior to the start of a quarter, a full refund of monies paid less \$50.00 will be made if the residence halls housing the same sex as the cancelling student are filled to capacity at the start of a quarter.

In the event of cancellation of a housing contract in writing less than 90 days prior to the start of a quarter and the residence halls housing the same sex as the cancelling student are not filled to capacity, a refund will be made of \$160.00.

In the event of cancellation of a housing

contract in writing after the start of a quarter and the residence halls housing the same sex as the cancelling student are not filled to capacity, a refund will be made of \$2.15 per day for each day remaining in the quarter.

In the event of cancellation of a housing contract in writing after the start of a quarter and a replacement can be found for the cancelling student and the residence halls housing the same sex as the cancelling student are filled to capacity, a refund will be made of \$4.70 per day for each day remaining in the quarter, but in no event will the refund exceed \$300.00.

In the event of cancellation of a housing contract in writing, either before or after the start of a quarter of a board only contract, a refund will be made of \$2.15 per day for each day remaining in the quarter.

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.

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 the Graduate School. 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 as follows:

SCHOLARSHIPS, FELLOWSHIPS AND GRANTS

ACME-ZIP FUND SCHOLARSHIPS

This fund was established from the proceeds of the Acme-Zip Games. Awards are given to outstanding students in the Colleges of Business Administration and Engineering.

AIR FORCE ROTC COLLEGE SCHOLARSHIP PROGRAM

These scholarships, authorized by Public Law through the Vitalization Act of 1964, are designed to offer assistance to outstanding young men who enroll in the four-year 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 \$50.00 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 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.

**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. Hilkert 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 rising 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 engineering 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 FIRE FIGHTERS
ASSOCIATION SCHOLARSHIP**

This scholarship was established by the Akron Fire Fighters Association with equal amounts going to the selected students and the University's general operating expenses. It is awarded to a worthy student in need of financial assistance to meet college costs. Selection is made by the University Scholarship Committee.

**AKRON RUBBER GROUP
SCHOLARSHIPS IN CHEMISTRY**

Awards of \$540 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 funds provided by corporations which hold membership in Akron University Associates. Those which held active membership during 1970 and 1971 are: Akron Brick & Block Company; The Akron, Canton & Youngstown Railroad Company; Akron Coca-Cola Bottling Company; Akron Equipment Company; Akron National Bank & Trust Company; Akron Standard Division of Eagle-Picher Industries, Inc.; The Fred W. Albrecht Grocery Company; Allied Chemical Foundation; The American Bank of Commerce; American Cyanamid Company; Austin Printing Company; Bellows-Valvair, Division of IBEC; The Burger Iron Company; Burt Manufacturing Company; Cabot Corporation; Chrysler Corporation; Columbian Division of Cities Service Company; The Cotter Merchandise Storage Company; Danner Press Corporation and Akron Typesetting Company; The East Ohio Gas Company; Ernst & Ernst; Ethyl Corporation; Fairlawn Supply & Concrete Company; The Firestone Bank; The Firestone Tire & Rubber Company; First National Bank of Akron; Flexi-Grip Division, Eaton,

Yale & Towne, Inc.; Earthmoving Equipment Division, General Motors Corporation; The General Tire & Rubber Company; The B. F. Goodrich Company; The Goodyear Tire & Rubber Company; The Hardware & Supply Company; Harwick Standard Chemical Company; Hiney Printing Company; Knight Foundation, Inc.; Marathon Oil Company; Massey-Ferguson, Inc.; McNeil Corporation; Merrill Lynch, Pierce, Fenner & Smith, Inc.; Minnesota Mining and Manufacturing Company; Mobil Chemical Company; Monsanto Company; John P. Novatny Electric Company; Ohio Edison Company; The M. O'Neil Company; Ohio Match Company; Pepsi-Cola Bottlers of Akron, Inc.; Phillips Petroleum Company; The A. Polsky Company; PPG Industries, Inc.; A. Schulman, Inc.; The Spohn Corporation; Teledyne Monarch Rubber; Union Carbide Corporation; Western Electric Co.; Inc.

**ALLIED CHEMICAL
FOUNDATION GRANT**

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

**AMERICAN CYANAMID
COMPANY GRANT**

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

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 \$50 per month during the period of the scholarship.

**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 honor of David Bruce Auburn, the youngest child of Dr. and Mrs. Norman P. Auburn. The income and/or the principal is to be 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. An amount equal to one half disbursed for scholarship purposes will be set aside for faculty salaries.

**KATHLEEN MONTGOMERY AUBURN
SCHOLARSHIP FOR
GRADUATE STUDY**

Contributions from major women's campus groups,

alumnae, Faculty Women's Club and faculty members make possible this scholarship which will enable women to pursue graduate or professional study. The first award will be made for the 1971-72 academic year.

**KAY AUBURN CHAMBER
BALLET SCHOLARSHIP**

A fund established by The Women's Committee of The University of Akron as a special honor to Mrs. 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.

**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 in the amount of fees for one year 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 fund.

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

An 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.

BUILDERS EXCHANGE
SCHOLARSHIP

A fund established by the Builders Exchange of Akron and Vicinity for the purpose of granting financial assistance to worthy students attending The University of Akron. Preference will be given to students whose families are members of the Exchange, employees of members, contributors to the C.A.P. and/or students whose fathers are members of a building trades union affiliated with the Tri-County Building Trades Council. The University Scholarship Committee selects the recipients. This scholarship applies to the two year Associate degree program, as well as the regular four-year academic program leading to a Bachelor degree in Civil, Electrical or Mechanical Engineering.

CABOT FELLOWSHIP

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

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.

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.

COLUMBIAN CARBON
RESEARCH FELLOWSHIP

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

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 become 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.

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, an award is granted annually to an Art student in the B.F.A. program 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.

**DIVISION OF RUBBER CHEMISTRY
OF THE AMERICAN CHEMICAL
SOCIETY SCHOLARSHIP**

This scholarship was established by the Division of Rubber Chemistry of the American Chemical Society, Inc. for the purpose of encouraging advanced study in the fields of elastomer and polymer chemistry and engineering. It provides for payment of tuition and fees for one school year up to \$1,000. The recipient must be a graduate student in the polymer program at The University of Akron.

**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.

**ENJAY CHEMICAL
COMPANY SCHOLARSHIP**

A fund established by the Esso 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.

**ETHYL CORPORATION
FELLOWSHIP**

This award is provided by the Ethyl Corporation

Research and Development Department in support of a graduate student in polymer science.

**EVANS FOUNDATION
SCHOLARSHIPS**

The Evans Foundation Scholarships in the amount of \$500 a year 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.

**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.

**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.

**GENERAL MOTORS
SCHOLARSHIP**

Supported by the General Motors Corporation, this scholarship 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 DeHaven, 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
PTA SCHOLARSHIPS**

A scholarship in the amount of \$200 annually sponsored by the Glover School Parent-Teacher Association Unit for the purpose of assisting a full-time freshman student at The University of Akron who is a graduate of Glover School in need of financial assistance. Selection will be made by the University Scholarship Committee.

**B. F. GOODRICH
COMPANY GRANT**

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

**THE GOODYEAR TIRE AND RUBBER
COMPANY ACCOUNTING
SCHOLARSHIP**

A scholarship established by The Goodyear Tire and Rubber Company for the purpose of assisting one or two junior or senior students majoring in accounting who are 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 the 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 & 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 & Rubber Company or one of its domestic subsidiaries.

**GOODYEAR TIRE & 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 & RUBBER COMPANY
FUND FOR COUNCIL ON LEGAL
EDUCATION OPPORTUNITY
(CLEO) STUDENTS**

A fund established in 1969 by Goodyear Tire & Rubber Company Fund. The principal and income will be used for living expenses 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.

**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, established 1962-63 by Miss Carlotta C. Greer, Class of 1903.

**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.

**THE HASKINS & SELLS FOUNDATION
AWARD FOR EXCELLENCE
IN ACCOUNTING**

An annual award of \$500 to a senior majoring in accounting. Selection is based on factors which would make for future success in accounting, including a high grade average in all subjects with particular emphasis on English, extracurricular activities, and moral character. Emphasis is given to excellence of scholarship and personal traits rather than to financial need.

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 Ballet. Contributions to the Fund are accepted from interested donors.

**WALTER & 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 in the amount of \$500 to a student 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. & MRS. JOHN S. HEUSS
SCHOLARSHIP**

This fund has been established by Mr. & 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 young man from the Akron area. Selection will be made by the University Scholarship Committee based on financial need and satisfactory academic progress.

**FRED F. AND BESSE WILLETT HOUSEHOLDER
MEMORIAL SCHOLARSHIPS**

A fund established under the will of the late Fred F. Householder, Professor Emeritus of Physics, provides scholarships to students in the Department of Physics.

**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. (1970-71)

**INTERFRATERNITY — PANHELLENIC
COUNCIL SCHOLARSHIPS**

These scholarships are not to exceed \$300 per year and are available to one fraternity man and one sorority woman, funds permitting, who have completed not less than 90 and not more than 144 quarter hours of credit with a minimum accumulative grade point average of 2.5. Recipients must have participated in extracurricular activities at The University of Akron. Funds are provided by the Interfraternity and Panhellenic Councils.

**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 Civic 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 WALTER P. AND FAMA N. KEITH
SCHOLARSHIP**

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 Mr. and Mrs. Walter P. Keith.

**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.

**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. Income will be used to assist worthy students selected by the University Scholarship Committee. Students with an interest in rubber chemistry will be given preference.

THE FRANK J. LAUSCHE
SCHOLARSHIP

The fund serves to assist worthy students in the form of scholarship assistance. Recipients are selected by the University Scholarship Committee.

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.

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

The \$100,000 trust agreement established by Mr. and Mrs. Philip P. Lutz provides 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 will determine the amount of the grants and the 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 will

receive an incentive award in the amount of \$1,000 or in such amount as determined by the Committee.

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 current operating fund.

C. BLAKE McDOWELL SCHOLARSHIPS

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.

MERCATOR CLUBS OF AMERICA
SCHOLARSHIP

The Mercator Club of Akron in cooperation with the Mercator Clubs of America has established scholarships in the amount of \$400 a year to students in their junior or senior years. These scholarships are awarded on the basis of financial need and academic achievement. Applicants are recommended by the University Scholarship Committee with final approval resting with the Mercator Clubs of America Scholarship Committee.

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 and Clean-Way Disposal System in memory of their 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 \$700,000 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 \$300 per year are made to promising students in the field of rubber 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.

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 Larry 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. O'NEIL COMPANY SCHOLARSHIPS

The M. O'Neil Company has established scholarships to be awarded to students from the junior class and/or students from the senior class who are preparing to enter the field of retail business. The scholarships are renewable each semester upon satisfactory performance, scholarship, and the student's continued preparation for a career in retail business. A minimum 2.5 point average for all previous college work is required; also achievement, citizenship, leadership, and promise of success in the business field will be used as a basis for making the awards.

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.

PANHELLENIC COUNCIL SCHOLARSHIP

An award of \$300 a year is made to an outstanding woman student for University fees after completion of at least one quarter of work.

**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.

PETRO-TEX SCHOLARSHIP

The Petro-Tex Chemical Corporation has established a scholarship of \$500 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 Coach 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.

PHI DELTA KAPPA

This fund, established in 1965 by Phi Delta Kappa, Epsilon Tau Chapter, provides scholarship assistance to qualified men pursuing a program in Education on the graduate level.

PHILLIPS PETROLEUM COMPANY RESEARCH FELLOWSHIP

This fellowship 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

Funds established by the PPG Industries Foundation provide three scholarships in the amount of \$700 each to students pursuing an associate degree in data processing or the several curricula of engineering and science technology.

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.

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.

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.

MERLE DAVID RIEDINGER SCHOLARSHIPS

This scholarship in 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.

THE CHARLES AND ADA H. SACKS SCHOLARSHIP

This scholarship fund was 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. 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 was established in memory of Morris Sacks. The income from this fund is to be used annually for scholarships, with matching amounts to be used for current operating expenses. It is to be awarded to a worthy student.

ALEX SCHULMAN SCHOLARSHIPS

The income from the Alex Schulman Endowment Fund is to be 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 the 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 or graduate students of journalism in the Department of English.

**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.

**SIMON PERKINS JR. HIGH SCHOOL
PTA SCHOLARSHIP**

Established by the Simon Perkins Jr. High School Parent-Teacher Association in the amount of \$300 annually to be administered by the University Scholarship Committee with no restrictions except that first preference be granted to Simon Perkins graduates.

**SOUTH AKRON BOARD
OF TRADE SCHOLARSHIPS**

Awards of \$150 per year, payable at \$50 a quarter, in

the freshman year are made to outstanding graduates from Coventry, South, Garfield and St. Mary's High School.

**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.

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.

**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.

**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.

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 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
MEMORIAL FUND SCHOLARSHIPS

A fund established as the result of miscellaneous contributions by individuals and organizations in memory of friends of the University. Recipients are determined by the University Scholarship Committee.

THE UNIVERSITY OF AKRON
PREMEDICAL SCHOLARSHIP

This scholarship, in the amount of \$500 a year, was established by The Sacks Electric Supply Company and is awarded 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 three Akron Schools: East High, North High and South High. A scholarship each year in the amount of \$120 to a graduate of Buchtel High School. The selection of the graduating senior at each school to receive the scholarship is to be made by teachers of juniors and seniors at the respective schools. These scholarships were endowed by a contribution of Dr. and Mrs. George Van Buren in 1970.

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.

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 first or second 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.

WITCO CHEMICAL COMPANY
FELLOWSHIP

The award is provided by the Witco Chemical Company to a graduate student in chemistry. An annual amount of \$2,500 for the student with an equal amount going to the University's current operating fund.

WOMEN'S ART LEAGUE OF
AKRON AWARDS

Awards made to promising women Art students.

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.

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.

ZETA TAU ALPHA
FOUNDATION AWARD

These awards are made available to women students on campuses throughout the country. The majority of these awards are \$200 grants made to undergraduate students. Recipients are recommended by the University Scholarship Committee with final selection resting with the Foundation Scholarship Committee.

HONORS AND PRIZES

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 scholarship.

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 law students 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 *Baldwin's Ohio Civil Practice Manual* is made to the graduating law student 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 department faculty.

BRACON'S INN AWARD

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
LAWBOOK AWARD

An annual award established by Mr. and Mrs. Evan B. Brewster (Margaret Zink, Class of 1925) in the sum of \$130 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.

**BUREAU OF NATIONAL
AFFAIRS INC. AWARD**

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

**PETER C. DANEMAN POLITICAL
SCIENCE HONORS AWARD**

In recognition of the 75th birthday of her father, Mr. Daneman, Dr. Betty Daneman Fox and her husband, Dr. James Fox, established 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 AND ERNST ACCOUNTING
ACHIEVEMENT AWARD**

An annual award of \$250 to the outstanding senior accounting student based upon scholarship and leadership.

**FELLOWS OF THE OHIO STATE BAR
ASSOCIATION FOUNDATION AWARD**

Two annual awards of \$245 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.

DR. FRED S. GRIFFIN AWARD

An award of \$100 established by the Akron Section of the American Society of Mechanical Engineers in honor of 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 law student (or students), who in the judgment of the Dean of the School of Law 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.

INSIDE ADVERTISING WEEK AWARD

This award, consisting of a week's trip to New York City for the purpose of interviewing and observing advertising agencies, is made to the senior student excelling in the field of advertising by the Akron Advertising Club.

**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 LAW WIVES CLUB AWARD

An award of \$50 to a law student displaying scholarship and leadership in student affairs. Selection is at the discretion of the Dean of the School of Law.

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

An annual award of a separately bound volume from *American Jurisprudence* to the highest ranking law student in each of the courses listed: Administrative Law, Agency-Partnerships, Bills and Notes, Civil Procedure, Conflicts, Constitutional Law, Contracts, Corporations, Creditors' Rights, Criminal Law, Damages, Domestic Relations, Estate Planning, Evidence, Future Interests, Insurance, Labor Law, Personal Property, Real Property, Remedies, Torts, Trusts and Wills.

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.

**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 displays 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
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.

**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.

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.

**SIGMA TAU ENGINEERING FRESHMAN
AWARD MEDAL**

The engineering honorary fraternity, Sigma Tau, presents the Award Medal to the sophomore who earned the highest quality point ratio for his freshman year.

**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 EDUCATIONAL OPPORTUNITY
GRANT PROGRAM**

The Higher Education Act of 1965 provides gift assistance to students in the form of Educational Opportunity Grants. Grants to students will be made and will range from \$200 to \$1000 per year. Preference will be given to entering freshmen. They are to be awarded to students who have demonstrated good academic achievement and come from *low-income families* and are to be part of a "package" type of assistance which will also include other scholarships, National Defense Student Loans, and/or wages from the student's employment — the total package designed to meet the educational costs that cannot be met through parental contributions.

THE COLLEGE WORK-STUDY PROGRAM

This program provides on-campus work opportunities at the prevailing campus wage rates to students from low-income families. Up to 15 hours per week is permitted while school is in session and 40 hours weekly during vacation periods. Every attempt will be made to place students in work related to their major field of interest. To be eligible a student must carry at least 12 credits, must be capable of maintaining a minimum of 2.0 or "C" grade average and must meet a financial means test based on family income. Generally speaking, any student who finds he must gain employment to meet educational expenses is eligible.

NATIONAL DEFENSE STUDENT LOAN FUND

The University administers these loans under the following provisions: the student must (a) be in need of the amount of the loan to pursue a course of study; (b) be capable of maintaining good standing in such course; and (c) have been accepted for enrollment as a more-than-half-time student, or if already attending an institution, be in good standing as an undergraduate or graduate student with a more-than-half-time academic load. Repayment begins nine months after a borrower ceases to pursue a full-time course of study at an institution of higher education, and ends 11 years thereafter. Interest rate is 3%. Up to one-half of any loan (plus interest) is canceled for service as a full-time teacher in a non-profit elementary of high school or a college.

NURSING STUDENT LOAN PROGRAM

A loan program with eligibility requirements similar to National Defense Student Loan program except that a student must be enrolled full-time in the course leading specifically to a Bachelor of Science in Nursing. Cancellation of the loan will be made in varying amounts for each full year the borrower is employed full-time as a professional nurse in any public or nonprofit private institution or agency.

NURSING SCHOLARSHIP GRANT PROGRAM

A program which provides grants to students who are enrolled full-time in a Bachelor of Science in Nursing degree program who have exceptional financial need.

OHIO INSTRUCTIONAL GRANT PROGRAM

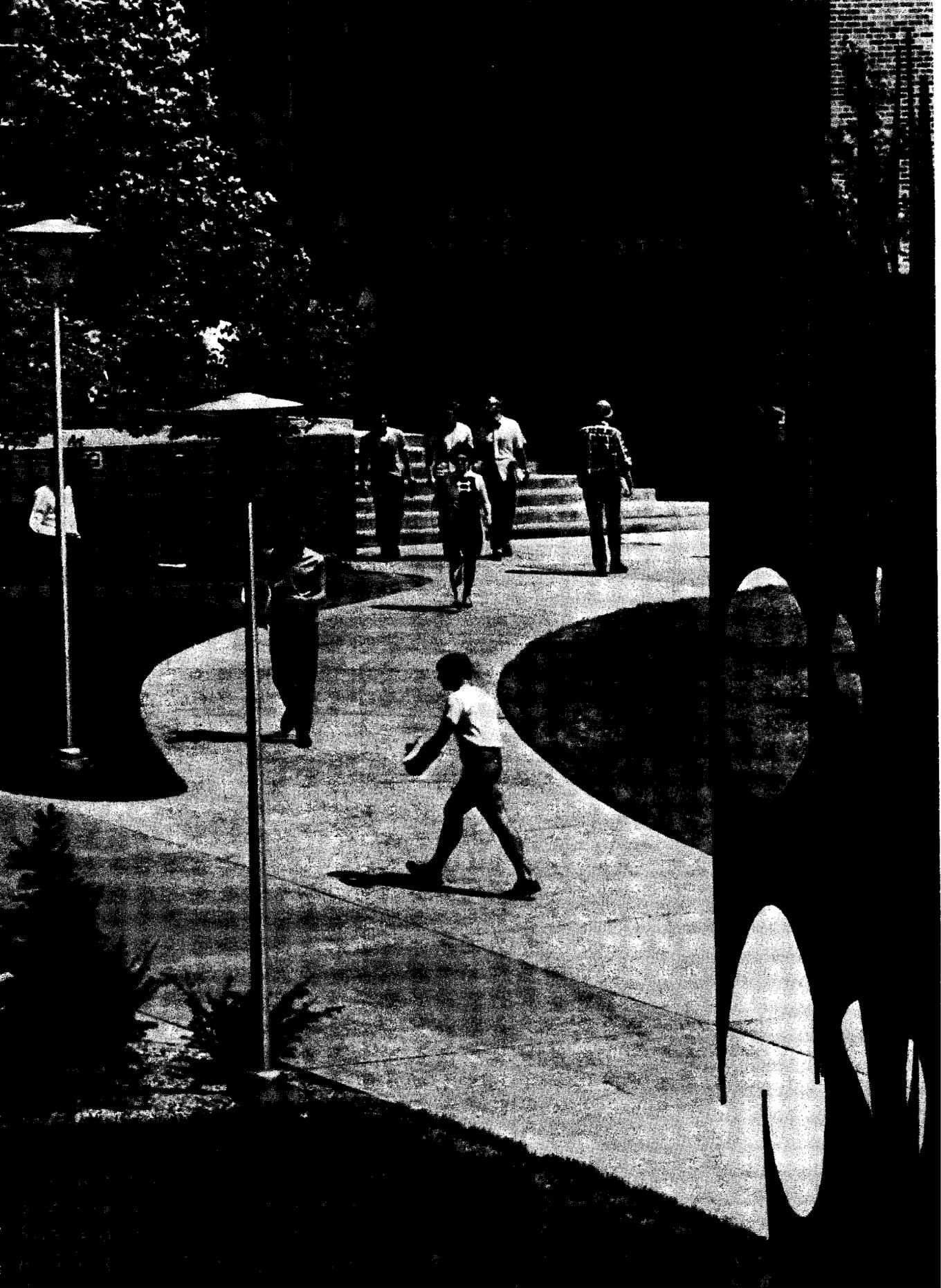
A program which provides grants ranging from \$50 to \$300 to residents of Ohio who are full-time students and who have exceptional financial need.

STUDENT LOAN FUNDS

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
Evening College Loan Fund

Martha Blanche Cook Loan Fund
Harriet Hale Loan Fund
Hermine Z. Hansen Loan Fund
Jessie and William Hyde
Memorial Fund
Indian Trail Chapter of Daughter of
the American Colonist Loan Fund
William A. and Ethel E. Keller
Loan Fund
Lodge No. 547 Independent Order
of Odd Fellows Loan Fund
Lichter Foundation Loan Fund
Litchfield-Thomas Fund
Ellen Nadolski Loan Fund
Stephen Richard Chesrown Loan Fund
Katherine Claypole Loan Fund
Cuyahoga Portage Chapter D.A.R.,
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
Philip H. Schneider
Scholarship Loan Fund
Richard R. Shreve Fund
Albert E. Sidnell Loan Fund
May Steves Memorial Loan Fund
Richard J. Witner Memorial Fund





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 interests 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)	460:320	(Kinematic Analysis of Mechanisms)

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 through the Community 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

William M. Petry, M.S.M.E., *Dean*
Robert C. Weyrick, M.S., *Assistant 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, and Public Service 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.

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

Educational Technology

Law Enforcement Technology

Business and Office Technology Division

Commerce

Data Processing

Food Service Management
Office Services Technology
Sales and Merchandising
Secretarial Science

Technical

Executive

Legal

International

Medical Assistant

Transportation

General

Commercial Aviation

Engineering and Science Technology Division

Chemical Technology

Electronic Technology

Industrial Technology

Instrumentation Technology

Mechanical Technology

Surveying and Construction Technology

Health Technology Division

Nursing (Diploma)

Cytotechnology

BACCALAUREATE PROGRAMS

The Engineering and Science Technology Division also offers a program of study leading to the Bachelor of Technology degree in either Electronic Technology or Mechanical Technology. Requirements for the Bachelor of Technology degree 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. Earn a minimum quality point ratio of 2.0 in all work attempted and all work taken at The University of Akron.
4. Be recommended by the faculty.
5. Spend his last two quarters in residence (earning a minimum of 24 credits) at the University unless excused by the Dean of the College.

6. 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
110:115 Institutions in U.S.	3	110:22- Science Requirement*	3
110:211 Numbers Communication	4	110:108 Effective Speaking	4
Elective	5	Elective	5
	<hr/>		<hr/>
	16		16
<i>Second Quarter</i>		<i>Second Quarter</i>	
110:112 English Composition	4	110:318 Western Cultural Traditions	4
110:116 Institutions in U.S.	3	110:22- Science Requirement*	3
110: Physical Education	1	Electives	9
Electives	8		
	<hr/>		<hr/>
	16		16
<i>Third Quarter</i>		<i>Third Quarter</i>	
110:205 Types of Literature	4	110:319 Western Cultural Traditions	4
110:117 Institutions in U.S.	3	110:22- Science Requirement*	3
110: Physical Education	1	Electives	9
Electives	8		
	<hr/>		<hr/>
	16		16
			<hr/>
			Total Credits 96

*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 in specialized areas of elementary and secondary education, counseling, and Inner City Head Start Programs.

CORE PROGRAM

<i>First Year</i>		<i>Second Year</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>Third Quarter</i>	<i>Credits</i>
202:118 English	4	110:108 Effective Speaking	4
254:150 Beginning Typewriting	4	510:156 Education in American Society	3
375:141 General Psychology	5	110: Physical Education	1
110: Physical Education	1	Electives	8
Elective	2		
	<hr/>		<hr/>
	16		16
<i>Second Quarter</i>		<i>First Quarter</i>	
202:120 English	3	202:240 Human Relations	4
565:157 Human Development & Learning	4	510:410 Audio-Visual Education	3
110:211 Numbers Communication	4	202:247 Survey of Basic Economics	5
Electives	5	Electives	4
	<hr/>		<hr/>
	16		16

<i>Second Quarter</i>	
202:242 American Urban Society	4
555:311 Red Cross First Aid	2
Electives	10
	—
	16
<i>Third Quarter</i>	
585:280 Education Technician	
Field Experience	5
Electives	11
	—
	16
Total Credits: 96	

ELECTIVE PROGRAM

Each student must elect at least fifteen quarter hours from among the following courses. In some of the options certain courses are required and are so marked.

Additional courses to meet the requirement of 96 credits may be chosen from this list 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.

	<i>Credits</i>
202:251 Work Relationships	2
202:253 Intergroup Relations***	2

202:254 The Black American***	2
226:278 Techniques of Community Work***	5
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
386:270 Poverty in the Inner City***	4
520:141 Handicrafts in the Elementary School	3
555:338 Health and Physical Education Activities for Elementary Grades	5
585:100 Introduction to Pupil Personnel Work*	3
585:104 Seminar in Pupil Personnel*	3
585:105 Pupil Personnel Service Roles*	3
585:120 Mechanics of the Language Arts Program**	4
585:201 Information Services in Guidance and Special Education*	3
585:207 Mechanics of Student Appraisal**/*	3
585:260 Special Education Technology*	3
740:265 Child Development	5
740:133 Nutrition Fundamentals	3
740:200 Marriage and Family Relations	2

* Required for Counselor Aide
 ** Required for Elementary Aide
 *** Required for Inner City Head Start Aide

222: LAW ENFORCEMENT TECHNOLOGY

A program to prepare young people seeking a career in law enforcement and to provide additional education to employed law enforcement officers. The curriculum includes the technical functions of law enforcement and courses to develop a better understanding of our rapidly changing society.

<i>First Year</i>	
<i>First Quarter</i>	<i>Credits</i>
202:118 English	4
202:131 Math Analysis I	4
375:141 General Psychology	5
222:100 Introduction to Law Enforcement	3
	—
	16
<i>Second Quarter</i>	
202:240 Human Relations	4
222:102 Criminal Law for Police	3
385:100 Introduction to Sociology	5
202:120 English	3
110: Physical Education	1
	—
	16
<i>Third Quarter</i>	
222:104 Criminal Evidence & Court Procedures	3
284:100 Basic Chemistry	4
110:108 Effective Speaking	4
202:122 Technical Report Writing	3
Elective	3
	—
	17
<i>Summer Quarter</i>	
222:259 Police Internship	6
(for pre-service students only with approval of department)	

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

<i>Second Year</i>	
<i>First Quarter</i>	<i>Credits</i>
222:200 Police Role in Crime and Delinquency	3
222:202 Basic Criminalistics	5
202:242 American Urban Society	4
110: Physical Education	1
Elective	3
	—
	16
<i>Second Quarter</i>	
202:253 Intergroup Relations	2
222:240 Law Enforcement Administration & Supervision	3
222:250 Police Patrol Operations	3
Elective	8
	—
	16
<i>Third Quarter</i>	
222:252 Police Community Relations	3
222:256 Criminal Investigation	3
222:258 Traffic Planning & Operations	3
222:204 Vice and Narcotic Control	3
Elective	3
	—
	15

<i>Recommended Electives:</i>		385:104 Social Problems	4
222:244 Industrial Security	3	242:211 Basic Accounting I	3
202:132 Math Analysis II	4	385:314 Criminology	4
202:247 Survey of Basic Economics	5		
202:254 The Black American	2		
		Total Credits	96

224: COMMERCIAL ART

A program enabling the individual to gain skill as an artist-craftsman for employment in developing visual materials for commerce and industry. Includes courses in drawing, design, photography, and presentation techniques.

<i>First Year</i>		<i>Second Year</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>First Quarter</i>	<i>Credits</i>
110: Physical Education	1	110:211 Numbers Communication	4
202:118 English	4	202:242 American Urban Society	4
252:103 Principles of Advertising	3	224:242 Commercial Art Problems I	3
292:121 Technical Drawing I	3	224:245 Design in Commercial Art	3
710:125 Drawing Design I	5	710:244 Introduction to Photography	2
	<hr/>		<hr/>
	16		16
<i>Second Quarter</i>		<i>Second Quarter</i>	
202:120 English	3	202:247 Survey of Basic Economics	5
224:140 Typography and Lettering	3	224:222 Photography	3
292:122 Technical Drawing II	3	224:243 Commercial Art Problems II	3
710:126 Drawing-Design II	5	224:247 Packaging and Display Design	3
Elective	2	710:230 Life Drawing	3
	<hr/>		<hr/>
	16		17
<i>Third Quarter</i>		<i>Third Quarter</i>	
110:108 Effective Speaking	4	202:240 Human Relations	4
110: Physical Education	1	224:223 Photography	3
224:124 Commercial Art Studio Mechanics	3	224:244 Commercial Art Problems III	3
710:146 Spatial Awareness	2	224:248 Presentation Techniques	3
710:147 Two Dimensional Design	3	Elective	2
Elective	3		
	<hr/>		<hr/>
	16		15
		Total Credits	96

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>Third Quarter</i>	
<i>First Quarter</i>	<i>Credits</i>		
254:119 Business English	3	110:108 Effective Speaking	4
228:135 Food Purchasing	4	242:170 Business Math	3
228:121 Fundamentals of Food Preparation I	3	228:123 Fundamentals of Food Preparation III	3
242:101 Elements of Distribution	4	740:133 Nutrition Fundamentals	3
Elective	2	110: Physical Education	1
	<hr/>	Elective	2
	16		16
<i>Second Quarter</i>		<i>Second Year</i>	
202:240 Human Relations	4	<i>First Quarter</i>	<i>Credits</i>
202:120 English	3	254:293 Business Communications	3
228:122 Fundamentals of Food Preparation II	3	242:211 Basic Accounting I	3
252:103 Principles of Advertising	3	242:102 Personnel Practices	4
110: Physical Education	1	228:236 Menu Planning & Cost Control	4
Elective	2	Elective	3
	<hr/>		<hr/>
	16		17

<i>Second Quarter</i>		<i>Third Quarter</i>	
242:180 Essentials of Law	4	228:238 Food Service Internship II	4
242:212 Basic Accounting II	3	310:177 Introductory Bacteriology	3
228:237 Food Service Internship I	4	228:243 Food Equipment and Plant Operations	3
228:233 Quantity Food Service	5	202:247 Survey of Basic Economics	5
	16		15
		Total Credits	96

242: COMMERCE

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.

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

244: DATA PROCESSING

This program prepares individuals for careers in electronic data process-operating, programming, and systems analysis. The 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>First Quarter</i>	<i>Credits</i>		
242:104 Introduction to Business	4	202:120 English	3
202:131 Mathematical Analysis I	4	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
	16		16

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, as medical assistants, and in office services. An international option provides secretarial training for overseas assignments.

EXECUTIVE SECRETARIAL SCIENCE

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

TECHNICAL SECRETARIAL SCIENCE

<i>First Year</i>				
<i>First Quarter</i>		<i>Credits</i>	254:152 Intermediate Typewriting II	4
254:119 Business English		3	254:173 Shorthand and Transcription	4
254:125 Business Machines		2	254:293 Business Communications	3
254:150 Beginning Typewriting		4		—
254:171 Shorthand Principles I		4		16
242:170 Business Mathematics		3	<i>Second Year</i>	
		—	<i>First Quarter</i>	<i>Credits</i>
		16	242:211 Basic Accounting I	3
<i>Second Quarter</i>			254:274 Advanced Dictation and Transcription I	4
110:111 English Composition		4	254:253 Advanced Typewriting	3
254:121 Office Problems		4	254:291 Data Communications	3
254:151 Intermediate Typewriting I		4	254:241 Records Management	2
254:172 Introduction to Shorthand and Transcription		4	110: Physical Education	1
		—		—
		16		16
<i>Third Quarter</i>			<i>Second Quarter</i>	
110:108 Effective Speaking		4	202:242 American Urban Society	4
110: Physical Education		1	242:212 Basic Accounting II	3
		—	254:275 Advanced Dictation and Transcription II	4
		1	254:257 Secretarial Machines	4

Elective	1	<i>Recommended Electives</i>	
	—	242:101 Elements of Distribution	4
	16	242:111 Public Relations	3
<i>Third Quarter</i>		252:212 Principles of Sales	3
202:122 Technical Report Writing	3	256:110 Transportation Economic Policy I	3
202:240 Human Relations	4	242:243 Survey in Finance	5
202:247 Survey of Basic Economics	5	254:126 Advanced Business Machines	3
254:278 Technical Dictation and Transcription	4	242:104 Introduction to Business	4
	—		
	16		
Total Credits	96		

LEGAL SECRETARIAL PROGRAM

		202:247 Survey of Basic Economics	5
<i>First Year</i>		110: Physical Education	1
<i>First Quarter</i>	<i>Credits</i>		16
254:119 Business English	3		
202:240 Human Relations	4	<i>Second Quarter</i>	
254:150 Beginning Typewriting	4	242:212 Basic Accounting II	3
254:171 Shorthand Principles	4	254:275 Advanced Dictation and Transcription II	4
110: Physical Education	1	Elective	3
	—	254:241 Records Management	2
	16	254:257 Secretarial Machines	4
<i>Second Quarter</i>			16
110:111 English Composition	4	<i>Third Quarter</i>	
254:121 Office Problems	4	242:180 Essentials of Law	4
254:151 Intermediate Typewriting I	4	254:277 Legal Dictation and Transcription	4
254:172 Intermediate Shorthand and Transcription	4	110:108 Effective Speaking	4
	—	202:242 American Urban Society	4
	16		16
<i>Third Quarter</i>		Total Credits	96
254:152 Intermediate Typewriting II	4	<i>Recommended Electives</i>	
254:173 Shorthand and Transcription	4	244:120 Introduction to Information Processing	4
242:170 Business Mathematics	3	242:101 Elements of Distribution	4
254:293 Business Communications	3	242:111 Public Relations	3
254:125 Business Machines	2	252:212 Principles of Sales	3
	—	254:126 Advanced Business Machines	3
	16	254:291 Data Communications	3
<i>Second Year</i>		242:104 Introduction to Business	4
<i>First Quarter</i>	<i>Credits</i>		
242:211 Basic Accounting I	3		
254:253 Advanced Typewriting	3		
254:274 Advanced Dictation and Transcription I	4		

INTERNATIONAL SECRETARIAL SCIENCE

		254:173 Shorthand and Transcription	4
<i>First Year</i>		254:293 Business Communications	3
<i>First Quarter</i>	<i>Credits</i>	Beginning Foreign Language	4
254:119 Business English	3		16
254:150 Beginning Typewriting	4	<i>Second Year</i>	
254:171 Shorthand Principles	4	<i>First Quarter</i>	<i>Credits</i>
Beginning Foreign Language	4	202:242 American Urban Society	4
110: Physical Education	1	254:253 Advanced Typewriting	3
	—	254:274 Advanced Dictation and Transcription I	4
	16	Intermediate Foreign Language	3
<i>Second Quarter</i>		254:241 Records Management	2
110:111 English Composition	4		16
254:151 Intermediate Typewriting I	4	<i>Second Quarter</i>	
254:172 Intermediate Shorthand and Transcription	4	242:170 Business Mathematics	3
Beginning Foreign Language	4	254:275 Advanced Dictation and Transcription II	4
	—	Intermediate Foreign Language	3
	16	254:125 Business Machines	2
<i>Third Quarter</i>			
110: Physical Education	1		
254:152 Intermediate Typewriting II	4		

254:257 Secretarial Machines	4		Total Credits 96
	16		
<i>Third Quarter</i>		<i>Recommended Electives</i>	
254:276 Executive or Legal Dictation or and Transcription	4	244:120 Introduction of Information Processing	4
254:277 Intermediate Foreign Language	3	242:111 Public Relations	3
254:121 Office Problems	4	254:291 Data Communications	3
202:240 Human Relations	4	254:126 Advanced Business Machines	3
Elective	1	242:104 Introduction to Business	4
	16	340:209 Modern Europe 1870-Present	4
		370:220 American Foreign Policy Process and Problems	4

MEDICAL ASSISTANT

		242:180 Essentials of Law	4
<i>First Year</i>	<i>Credits</i>	254:283 Medical Terminology	4
<i>First Quarter</i>		254:253 Advanced Typewriting	3
254:119 Business English	3	Elective	2
254:150 Beginning Typewriting	4		16
284:100 Basic Chemistry	4	<i>Second Quarter</i>	
310:147 Anatomy and Physiology	3	242:212 Basic Accounting II	3
Elective	2	254:181 Office Nursing Techniques I	3
	16	202:240 Human Relations	4
<i>Second Quarter</i>		555:311 Red Cross First Aid	2
202:120 English	3	254:257 Secretarial Machines	4
254:121 Office Problems	4		16
254:151 Intermediate Typewriting I	4	<i>Third Quarter</i>	
310:148 Anatomy and Physiology	3	242:102 Personnel Practices	4
110: Physical Education	1	254:125 Business Machines	2
	15	254:282 Medical Machine Transcription	3
<i>Third Quarter</i>		254:182 Office Nursing Techniques II	3
254:293 Business Communications	3	254:241 Records Management	2
254:152 Intermediate Typewriting II	4	Elective	2
110: Physical Education	1		16
110:108 Effective Speaking	4		
242:170 Business Mathematics	3		
Elective*	2		
	17		Total Credits 96
<i>Second Year</i>			
<i>First Quarter</i>	<i>Credits</i>		
242:211 Basic Accounting I	3		

Electives should be selected from: Psychology, Sociology, Humanities, Art or Home Economics.

* 310:149 Anatomy and Physiology is recommended.

OFFICE SERVICES TECHNOLOGY

		<i>Third Quarter</i>	
<i>First Year</i>	<i>Credits</i>	110:108 Effective Speaking	4
<i>First Quarter</i>		254:125 Business Machines	2
254:119 Business English	3	254:152 Intermediate Typewriting II	4
254:150 Beginning Typewriting	4	254:293 Business Communications	3
202:240 Human Relations	4	110: Physical Education	1
242:104 Introduction to Business	4	Elective	2
	15		16
<i>Second Quarter</i>		<i>Second Year</i>	
242:170 Business Mathematics	3	<i>First Quarter</i>	<i>Credits</i>
202:120 English	3	202:242 American Urban Society	4
254:121 Office Problems	4	242:211 Basic Accounting I	3
254:151 Intermediate Typewriting I	4	242:102 Personnel Practices	4
110: Physical Education	1	254:241 Records Management	2
Elective	2	254:253 Advanced Typewriting	3
	17		16

<i>Second Quarter</i>		242:101 Elements of Distribution <i>OR</i>	4
202:247 Survey of Basic Economics	5	252:212 Principles of Salesmanship	3
254:257 Secretarial Machines	4	Electives	5 or 6
242:180 Essentials of Law	4		
254:126 Advanced Business Machines	3		16
	16		Total Credits 96
<i>Third Quarter</i>		Electives should be selected from: Psychology, Sociology, Humanities, Art or Home Economics.	
254:291 Data Communications	3		
242:121 Administrative Office Supervision	4		

256: TRANSPORTATION
(General)

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.

<i>First Year</i>		<i>Second Year</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>First Quarter</i>	<i>Credits</i>
110: Physical Education	1	202:247 Survey of Basic Economics	5
254:119 Business English	3	256:220 Transportation Terminal Management and Operations	3
202:242 American Urban Society	4	256:225 Interstate Traffic Practices and Procedures I	3
256:110 Transportation Economic Policy I	3	242:104 Introduction to Business Elective	4
256:115 Transportation Commercial Motor Elective	3		2
	17		17
<i>Second Quarter</i>		<i>Second Quarter</i>	
110: Physical Education	1	110:108 Effective Speaking	4
202:120 English	3	254:293 Business Communications	3
202:240 Human Relations	4	256:221 Transportation Traffic Principles	3
256:111 Transportation Economic Policy II	3	256:226 Interstate Traffic Practices and Procedures II	3
256:116 Transportation Commercial Air	3	242:170 Business Mathematics	3
288:141 Safety Procedures	3		16
	17	<i>Third Quarter</i>	
<i>Third Quarter</i>		202:122 Technical Report Writing	3
242:101 Elements of Distribution	4	242:102 Personnel Practices	4
242:180 Essentials of Law	4	242:111 Public Relations	3
256:117 Transportation Commercial Water	3	256:222 Transportation Traffic Practices and Procedures	3
256:118 Transportation Freight Rates and Classification	3	256:227 Interstate Traffic Practices and Procedures III	3
Elective	3		16
	17		Total Credits 100

TRANSPORTATION
(Commercial Aviation Option)

<i>First Year</i>		<i>Second Quarter</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>
256:110 Transportation Economic Policy I	3	256:111 Transportation Economic Policy II	3
242:170 Business Mathematics	3	256:116 Transportation: Commercial Air	3
254:119 Business English	3	242:211 Basic Accounting I	3
254:150 Beginning Typewriting	4	202:120 English	3
110: Physical Education	1	110: Physical Education	1
Elective	3	Elective	3
	17		16

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 Year</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>First Quarter</i>	<i>Credits</i>
202:118 English	4	202:247 Survey of Basic Economics	5
202:131 Math Analysis I	4	292:152 Basic Physics: Electricity and Magnetism	3
284:101 Introductory Chemistry I	4	284:201 Principles of Analysis	4
292:121 Technical Drawing I	3	284:208 Chemical Quality Control	2
110: Physical Education	1	284:210 Scientific Glass Blowing I	1
	—	Elective	2
	16		—
			17
<i>Second Quarter</i>		<i>Second Quarter</i>	
202:132 Math Analysis II	4	202:122 Technical Report Writing	3
292:151 Basic Physics; Mechanics	4	202:234 Math Analysis IV	3
284:102 Introductory Chemistry II	4	284:202 Instrumental Methods I	4
284:121 Organic Principles I	4	284:211 Scientific Glass Blowing II	1
	—	284:270 Polymer Chemistry Methods	4
	16	Elective	2
			—
			17
<i>Third Quarter</i>		<i>Third Quarter</i>	
202:120 English	3	284:203 Instrumental Methods II	4
202:133 Math Analysis III	3	284:255 Literature of Chemistry	1
292:153 Basic Physics; Heat, Sound & Light	3	284:250 Elements of Physical Chemistry	4
284:122 Organic Principles II	4	110:108 Effective Speaking	4
284:204 Chemical Stoichiometry	2	110: Physical Education	1
Elective	2	Elective	2
	—		—
	17		16
			Total Credits 99

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>Second Year</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>First Quarter</i>	<i>Credits</i>
202:131 Math Analysis I	4	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
110: Physical Education	1	110: Physical Education	1
	—		—
	15		17
<i>Second Quarter</i>		<i>Third Quarter</i>	
292:151 Basic Physics; Mechanics	4	202:120 English	3
		286:124 Electronics II	4
		292:153 Basic Physics; Heat, Sound & Light	3

202:133 Math Analysis III	3	<i>Second Quarter</i>	
286:128 Electronic Drafting	2	286:237 Digital Computers	4
Elective	2	286:245 Analog Computers	4
	—	286:249 Industrial Electronics	4
	17	202:122 Technical Report Writing	3
		Elective	3
			—
			18
<i>Second Year</i>			
<i>First Quarter</i>	<i>Credits</i>	<i>Third Quarter</i>	
202:240 Human Relations	4	286:251 Communications Systems	4
286:225 Electronics III	4	202:247 Survey of Basic Economics	5
286:242 Machinery	4	286:250 Electronic Project	2
202:234 Math Analysis IV	3	286:253 Servomechanisms	3
286:255 Shop Practices	1	286:226 Integrated Circuits	2
Elective	1	Elective	2
	—		—
	17		18
			—
			18
			Total Credits 102

288: INDUSTRIAL TECHNOLOGY

This sequence of courses prepares students for entry level positions in the field of industrial supervision. 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 Year</i>	
<i>First Quarter</i>	<i>Credits</i>	<i>First Quarter</i>	<i>Credits</i>
202:118 English	4	242:211 Basic Accounting I	3
202:131 Math Analysis I	4	292:247 Shop Methods and Practices	4
292:121 Technical Drawing I	3	288:231 Factory Planning and Materials Handling	4
242:104 Introduction to Business	4	242:102 Personnel Practices	4
110: Physical Education	1	Elective	2
	—		—
	16		17
<i>Second Quarter</i>		<i>Second Quarter</i>	
202:120 English	3	202:122 Technical Report Writing	3
202:132 Math Analysis II	4	288:232 Labor-Management Relations	4
288:141 Safety Procedures	3	242:212 Basic Accounting II	3
202:247 Survey of Basic Economics	5	Electives	6
110: Physical Education	1		—
	—		16
	16		16
<i>Third Quarter</i>		<i>Third Quarter</i>	
110:108 Effective Speaking	4	202:242 American Urban Society	4
202:240 Human Relations	4	288:242 Production and Quality Control	6
288:120 Work Measurement Procedures	5	288:245 Plants and Equipment Maintenance	3
254:125 Business Machines	2	Elective	3
	—		—
	15		16
			Total Credits 96

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.

298: SURVEYING AND CONSTRUCTION TECHNOLOGY

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.

<i>First Year</i>		<i>Credits</i>		
<i>First Quarter</i>			110: Physical Education	1
202:118 English		4		16
202:131 Math Analysis I		4		
202:240 Human Relations		4	<i>Second Quarter</i>	
292:121 Technical Drawing I		3	202:122 Technical Report Writing	3
110: Physical Education		1	298:245 Cost Analysis & Estimating	3
		16	298:231 Building Construction	4
			298:236 Material Testing Lab II	3
			*Tech. Elective	4
<i>Second Quarter</i>				17
202:120 English		3		
202:132 Math Analysis II		4	<i>* Technical Electives (Second Quarter)</i>	
292:122 Technical Drawing II		3	298:224 Land Surveying	4
292:151 Basic Physics, Mechanics Elective		4	298:234 Element of Structures	4
		3		
		17	<i>Third Quarter</i>	
<i>Third Quarter</i>			202:247 Survey of Basic Economics	5
292:152 Basic Physics, Electricity and Magnetism		3	298:232 Construction	4
202:133 Math Analysis III		3	**Tech. Elective	7
298:125 Statics		5	Elective	2
298:122 Basic Surveying		4		18
Elective		3		
		18	<i>** Technical Electives (Third Quarter)</i>	
			298:233 Construction Administration	4
			298:250 Structural Drafting	3
			or	
<i>Second Year</i>			298:225 Advanced Surveying	4
<i>First Quarter</i>		<i>Credits</i>	335:380 Graphic & Cartographic Representation	3
202:234 Math Analysis IV		3		Total Credits 102
298:241 Strength of Materials		5		
298:235 Material Testing Lab I		3		
298:222 Construction Surveying		4		

Student will choose technical electives in his field of interest.

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>
110:111 English	4
110: Physical Education	1
254:119 Business English	3
310:133 Microbiology	4
310:147, 148, 149 Anatomy and Physiology	3, 3 and 3
315:121, 122, 123 Inorganic Chemistry	3, 3 and 3
315:124 Chemistry	4
375:141 General Psychology	5
375:151 Developmental Psychology	5
385:100 Introduction to Sociology	5
740:133 Nutrition Fundamentals	3



Baccalaureate Degree Programs

Students wishing to earn a baccalaureate degree will find fully accredited courses offered in liberal arts, engineering, education, business, nursing, fine and applied arts, and technology. Except for the latter program students with less than 96 credits seeking the baccalaureate degree are enrolled in the General College where they are given the opportunity to learn to express ideas effectively and to grasp the processes involved in accurate, logical thinking. Successful completion of courses in the General College qualifies students for entrance into one of the Upper Colleges. At this point, students select a specific field of study in one of the colleges of the University and begin course work which directly applies toward that field of study. Students seeking the Bachelor of Technology degrees are enrolled in the Community and Technical College, taking courses leading to the Associate degree in electronic or mechanical technology for the first two years and completing requirements for the baccalaureate degree, including the General Studies, during the third and fourth years.



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 Education through the curriculum of the 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, Physical Education and the Senior Seminar. 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 firmly 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 96 credits (slightly more for Engineering) and achieving a quality point ratio of 2.0 (C) or better, are eligible for promotion 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.

These are the required courses:

	<i>Credits</i>
110:108 Effective Speaking	4
110:111-112 English Composition	8
110:115-116-117 Institutions in the United States	9
110:120-181 Physical Education	minimum 2
110:205 Types of Literature	4
110:211 Numbers Communication*	4

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.

110:330-335 Eastern Civilizations** minimum 6

110:317-318-319 Western Cultural Traditions 12
110:401 Senior Seminar 2

*This requirement may be satisfied by taking 4 credits in the Department of Mathematics.

**Engineering students are only required to take 3 credits; all other students need 6.

MILITARY SCIENCE AND AEROSPACE STUDIES

The University's Reserve Officers' Training Corps is one of the oldest in the country, dating from 1919 when a branch of the Army ROTC was established. In 1946 a unit of the Air Force was formed to give basic and advanced instruction in Aerospace Studies. Both Army and Air Force ROTC offer four and two year programs designed to educate male students in military and aerospace subjects. This education is designed to furnish the United States with Second Lieutenants in the Army and Air Force Reserve who understand the role of the Department of Defense in our society and who have skills to perpetuate the traditions of the citizen soldier.

In the two-year programs successful completion of a summer camp is prerequisite for admission. Other entrance requirements are the same as for the four year program. All Army and Air Force programs are open to full time undergraduate and graduate students.

The Air Force ROTC commissioning programs are open to women students. Entry requirements are similar to the male requirements with the exceptions of qualifying ages of 18-27 and meeting the Air Force commissioning physical requirements for women. Female students in the ROTC program are eligible to apply for Air Force College Scholarships. Regular Army commissions are also offered to students who qualify as Distinguished Military Graduates or who are participants in the Department of Defense Financial Assistance (Scholarship) Program. The Reserve Officers' Training program is elective. Qualifications for enrollment include:

*The usual good character expected of students preparing for any profession requiring dedication.

*United States Citizenship. Alien students who desire to enroll may be accommodated under special circumstances. Age requirements are:

*Minimum - 17 women - 18 for enrollment in the Advanced Course.

*Maximum - under 28 women - 27 at the time of commissioning. For scholarship students, be under 25 on 30 June of the calendar year of commissioning.

*Medical and physical fitness requirements are those normally expected for professions requiring physical activity, stamina, and skill.

*Students participating in ROTC must be enrolled in and attend a full-time regular course of instruction leading to a degree in a recognized academic field.

The main goal of the ROTC program is to provide to the Armed Forces a steady input of Reserve Officers whose civilian education and attitudes can contribute to the development of a military defense structure which reflects as well as defends our Society.

Students enrolled in Reserve Officers' Training Corps can expect to have special opportunities to develop their own self-discipline and sense of responsibility. In addition they may expect to gain a comprehensive understanding of the role of the Department of Defense in the national life. They will also be afforded an unusual opportunity to study and practice management and decision making.

The four year course of instruction is divided into two parts — basic course instruction and advanced course education. The former is conducted during the Freshman and Sophomore years for students completing the basic course. In some instances, by special arrangement with the Professor of Military Science or Professor of Aerospace Studies, basic course equivalent credit may be granted and selected students may participate directly in Advanced Course education.

Credits earned during the basic and advanced courses are applicable toward the total credits required for the baccalaureate degree. Uniforms and textbooks are made available at no cost to the student. Both must be returned at the completion of the school year or withdrawal from the program. Students accepted for enrollment in the advanced ROTC training program, in addition to receiving text materials

and uniforms, also receive a monthly subsistence allowance of \$50.00, not to exceed a total of 20 months and additional pay of \$208.80 per month during the period of Summer Camp. Current legislation is in process to substantially raise both the monthly subsistence allowance and pay for Summer Camp. Attendance at the six week Army ROTC Advanced Summer Camp normally is between the Junior and Senior years and a requirement for both the two-year and four-year programs. Summer Camp for Air Force ROTC cadets in the four-year program is of four weeks duration and cadets may attend between their Sophomore and Senior years. Summer Camp for Air Force ROTC cadets in the two-year program is of six weeks duration and is completed prior to beginning the academic portion of the program.

A student who successfully passes the Advanced ROTC program must also complete requirements for a degree prior to receiving a commission. He also is under obligation to complete the Advanced course in order to qualify for a University degree unless specifically excused by the President of the University. Scholarships, ranging from one to four years, are offered by the Army and from two to four years by the Air Force on a competitive basis to qualified students. These scholarships offer full tuition, fees, and text materials. For full details of these programs see the appropriate Army or Air Force ROTC staff representative.

Active duty military obligations incurred as a result of participation in the ROTC program are as follows:

150: AIR FORCE

Basic Program (Freshman and Sophomore)	None
Advanced Program (Junior and Senior)	4 years
Advanced Program with Flying Training	6 years

160: ARMY

Basic Program (Freshman and Sophomore)	None
Advanced Program (Junior and Senior)	
Non-Scholarship Program	2 years
4 Year Scholarship Program	4 years
3 Year Scholarship Program	4 years
2 Year Scholarship Program	4 years
1 Year Scholarship Program	4 years

Transfer between Army and Air Force ROTC programs can be accomplished on an individual basis after coordination with the appropriate Army and Air Force ROTC staff officer.

FLIGHT TRAINING PROGRAMS

Army ROTC cadets may, during their senior (graduating) year, enroll in the Army Flight Training Program which offers 35 hours of ground instruction and 36 $\frac{1}{2}$ hours of flight instruction at a local FAA approved flying school. The Army pays for all flight instruction, text books, equipment, flight clothing and transportation to and from the flying school. A private pilot's license can be obtained if the student completes FAA requirements.

Air Force ROTC students who have been selected for pilot training enter the Flight Instruction Program (FIP) during their senior year. In addition to ground instruction, they will receive 36 $\frac{1}{2}$ hours of flight instruction from an approved flying school in the local area at no cost to the student. A private pilot's license may be obtained when the student completes the necessary FAA requirements.

Community and Technical College

William M. Petry, M.S.M.E., *Dean*
Robert C. Weyrick, M.S., *Assistant Dean*

BACCALAURATE PROGRAMS BACHELOR OF TECHNOLOGY

The baccalaureate-level program in engineering technology is intended to fill the widening gap in modern industry between the professional engineer and the engineering technician. The graduate of the 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.

The Bachelor of Technology program is designed as a transfer program 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 program is available with options 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 Technology degree in either the Electronic or Mechanical option 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:

ELECTRONIC TECHNOLOGY

<i>Course No.</i>	<i>Course Title</i>	<i>Credits</i>
202:336	Mathematics for Technical Application	4
284:101, 102	Introductory Chemistry I, II	8
286:351	Industrial Electrical Systems	4
286:352	Digital Systems	4
286:353	Instrumentation and Control	4
286:356	Circuit Analysis	3
286:410	Technology Project	1
292:310	Economics of Technology	5
292:401	Inspection Trips	1
375:141	General Psychology	5
375:160	Industrial Psychology	4
440:345	Illumination	3
445:160	Computer Science I	3
650:346	Business Statistics I	3
650:350	Personnel Management	3
650:371	Principles of Management	3

MECHANICAL TECHNOLOGY

<i>Course No.</i>	<i>Course Title</i>	<i>Credits</i>
202:336	Mathematics for Technical Application	4
284:101, 102	Introductory Chemistry I, II	8
286:310	Electromechanical Devices and Circuits	4
286:311	Electronic Devices and Circuits	4
286:353	Instrumentation and Control	4
286:410	Technology Project	1
292:310	Economics of Technology	5
292:346	Mechanical Design III	5
292:347	Production Machinery and Processes	5
292:401	Inspection Trips	1
375:141	General Psychology	5
375:160	Industrial Psychology	4
445:160	Computer Science I	3
650:346	Business Statistics I	3
650:350	Personnel Management	3
650:371	Principles of Management	3

The degree of Bachelor of Technology will be awarded to those students who complete the prescribed work.

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 purpose of the Buchtel College of Arts and Sciences is to further the objectives of The University of Akron by providing a quality program of undergraduate and graduate education in the humanities, natural sciences and social sciences and to pursue the following aims:

Maintain departments of instruction for the preparation of student majors in various academic fields.

Prepare students for useful and rewarding careers in the professions and industry, and for the graduate and professional education necessary for the attainment of professional competence.

Provide appropriate instruction for the General Studies program.

Provide a wide range of elective courses available to students who wish to enrich or diversify their academic programs.

Offer courses designed to meet the curricular needs of the upper colleges.

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 64 credits of work, and have the approval of the Dean of the college.

REQUIREMENTS FOR BACCALAUREATE DEGREES

1. At least 192 credits. Electives included in the 192 credits required for the degree may

consist of any courses offered for credit in the University's degree programs, provided that the prerequisites as set forth in the bulletin are met and further provided that not more than three credits of physical education activities, 12 credits of applied music, six credits of music organizations and nine credits in the Community and Technical College (semi-professional, technical, and vocational credits from other institutions) are included.

2. Completion of requirements in a major field of study (see below), and the recommendation of the head of the department in which the student has majored.

3. All candidates for a degree in the Buchtel College of Arts and Sciences, except those in the labor economics, natural sciences division major and medical technology curricula, must have demonstrated their ability to use two languages.

If the candidate is a native-born speaker of English, this ability will be shown by his completion of a second year of an approved foreign language on the university level.

If the student is not a native-born speaker of English, this ability will be shown by his completion of the General College sequence of English (110:111-112-205).

The general University requirements for a baccalaureate degree are set forth in Chapter 3. Degrees

The following baccalaureate degrees are granted in the divisions:

The Humanities: Bachelor of Arts

The Social Sciences: Bachelor of Arts; Bachelor of Science in Labor Economics.

The Natural Sciences: Bachelor of Arts, Bachelor of Science; Bachelor of Science in Medical Technology.

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 of Student Services.

Ordinarily a student will select a department in which to major. The exact

requirements for each such major will be found on the following pages 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
565:157 Human Development and Learning	4

510:156 Education in American Society	3
530:313 Principles and Practices in Secondary Education	5
510:401 Problems in Education	5
510:402 Student Teaching	12
510:403 Student Teaching Seminar	3
	—
	37

Buchtel College students preparing for high school teaching must signify their intention to the College of Education near the end of the sophomore year.

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 an additional course 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	3
385:427/527 Racial and Cultural Intergroup Relations	4
386:270 Poverty in the Inner City	4
386:276 Introduction to Social Welfare	5
780:461 The Black in American Theatre	3

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.

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

	<i>Credits</i>
370:325 Latin American Politics	3

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 3 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.

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 4

GEOGRAPHY

335:358 USSR. 3

HISTORY

340:458/558 Russia 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 Politics 3

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.

DIVISIONS OF INSTRUCTION

310: BIOLOGY

Both the Bachelor of Science degree and the Bachelor of Arts degree are offered.

Requirements for the B.S. degree with a major in Biology:

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 Biological Chemistry.

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, D. Goldstrohm, L. W. Macior, W. P. Stoutamire.

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, 308, 309 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, S. D. Hagen, J. H. Olive.

MEDICAL TECHNOLOGY

A three year program (144 credits) at The University of Akron. (A foreign language is not required.)

310:191 Introductory Human Physiology; 310:228 Techniques in Biology; 310:307, 308, 309 Microbiology; 310:328 Histology; 310:343 Parasitology; 315:335, 336, 337 Analytical Chemistry for Laboratory Technicians.

The three year University Curriculum is followed by 12 months of Medical Technology instruction in one of the approved schools of Medical Technology in the Akron area: Akron City Hospital, Akron General Hospital, Barberton Citizens Hospital, Children's Hospital, St. Thomas Hospital, or Aultman Hospital in Canton.

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, R. Nokes, D. Nunn.

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 Biochemistry.

Advisers: D. Nunn, E. Flaumenhaft, D. Goldstrohm, N. Ledinko, L. Watson.

PHYSIOLOGY AND PRE-PROFESSIONAL

Including pre-medical, pre-dental, pre-veterinary medical 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, 365:101, 102, 103, Physics.

Advisers: R. F. Keller, R. Nokes, R. Mostardi, J. Gwinn.

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.

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 36 credits in courses approved by the Head of the Department of Biology. At least 26 credits in the humanities or social sciences. The 26 credits must be earned in more than one department. General Studies and foreign language requirements cannot be used to fulfill the 26 credits of humanities and social sciences.

The following courses are suggested as a survey of the major current theories and advances in the biological sciences; 310:121, 122, 123, Principles of Biology; 310:246, General Genetics; 310:271 General Ecology; 310:272 Organic Evolution; 310:301 Cell Biology. In addition one of the introductory courses in chemistry would be helpful in understanding some of the interactions in biological systems. Philosophy of Science 360:464 is also recommended for this degree.

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
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The mathematics requirement is:

Completion of 345:236. Differential Equations I.	4
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The required physics courses are:

365:201-202-203. Elementary Classical Physics.	12
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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 credits in the department including:

320:161,162,163 Comparative Literature	9
320:313,314,315 Classical Archaeology	9

Total 18

Classics Electives 18

Students wishing to be certified for public school teaching of a foreign language must complete 32 credits in a major or 23 credits in a minor. See Teaching Fields section under 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 45 credits in the department including:

	<i>Credits</i>
325:245-246-247 Principles of Economics	9
325:400 Macro-Economics	4
325:410 Micro-Economics	4

3. Mathematics 345:101-102-103 Finite Mathematics I, II, III, 4 credits each quarter.

4. Statistics: one of the following

	<i>Credits</i>
650:346-347 Business Statistics I, II	6
347:251-252 Introduction to Statistics, I, II	6

347:471-472 Applied Statistics I, II	6
—	—
Total 17	
Economic Electives 28	

Requirements for a B.S. degree in Labor Economics:

1. The General Studies.

2. At least 45 credits in the department including:

	<i>Credits</i>
325:245-246-247 Principles of Economics	9
325:330 Labor Problems	4
and two of the following:	
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:

	<i>Credits</i>
650:346-347 Business Statistics I, II	3
347:251-252 Introduction to Statistics I, II	3
347:471-472 Applied Statistics I, II	3

4. At least 12 credits in Upper College Sociology, History, Psychology, Geography or Political Science.

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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
English Electives 27

Of the Journalism courses, only six credits (selected from those below) may be included in the required 48 credits.

	<i>Credits</i>
331:201 News Writing	3
331:203 Radio and Television News Writing	3
331:204 Editing	3
331:206 Feature Writing	3

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	3

335:220 Economic Geography	3
335:230 Rural & Urban Settlement	3
335:240 Maps and Map Reading	3
335:380 Graphic & Cartographic Representation	3
335:481 Introduction to Geographic Research	3
335:484 Field Research Methods	3

—
Total 21

At least one course from the following:

335:350 Anglo-America	3
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 Central and East Asia	3
335:361 South and Southeast Asia	3
335:362 North Africa and Southwest Asia	3
335:363 Africa South of the Sahara	3

Successful completion of one of the following options:

Physical Geography — any three of the following:

335:312 Geographic Aspects of Landforms	3
335:314 Climatology	3
335:415 Geography of Water Resources	3
335:418 Geography of Vegetation and Soils	3

Economic Geography — any three of the following:

335:324 Geography of World Manufacturing	3
335:326 Geography of Mineral and Power Resources	3
335:422 Geographic Aspects of Transportation	3
335:428 Industrial and Commercial Site Selection	3

Urban Geography — any three of the following:

335:336 Urban Land Use Analysis	3
335:433 Geographic Aspects of Planning	3
335:435 Geography of Recreation Resources	3
335:438 Geography of the Metropolitan Area	3

Cartography — any three of the following:

335:346 Geographic Aspects of Air Photo Interpretation	3
335:444 Map Compilation and Reproduction	3
335:447 Remote Sensing of the Environment	3
335:448 Statistical Mapping	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
365:101,102,103 Concepts of Physics I, II, and III or	12
365:201,202,203 Elementary Classical Physics	12

Total 47

Depending upon a student's major field of interest within 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.

340: HISTORY

Requirements for a B.A. degree with a major in history:

The General Studies and the second year of a foreign language (French, German, or Russian suggested). At least 36 credits in the department including:

	<i>Credits</i>
340:201 United States to 1815	4
340:202 United States, 1815-1898	4
340:203 United States, 1898-Present	4
340:207 Modern Europe, 1500-1700	4
340:208 Modern Europe, 1715-1870	4
340:209 Modern Europe, 1870-Present	4
340:499 Historical Methods	3

Total 27

History Electives 9

345: MATHEMATICS

Requirements for a B.S. degree with a major in mathematics:

The General Studies and the second year of a foreign language (French, German, or Russian suggested). 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

345:311-312-313 Introduction to Modern Algebra 3 credits each	9
345:413 Introduction to Topology	3
345:481-482-483 Introduction to Real Analysis 3 credits each	9
A minimum of 15 additional credits of 400-level courses in the department	15

Total 60

The courses 110:211 Numbers Communications, 345:101, 102, 103 Finite Mathematics, 115, 116 Elementary Functions, and 206 Actuarial Mathematics do not meet major requirements.

Requirements for a B.A. degree with a major in mathematics:

The General Studies and the second year of a foreign language (French, German, or Russian suggested). 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
345:311-312-313 Introduction to Modern Algebra 3 credits each	9
345:413 Introduction to Topology	3
345:481-482-483 Introduction to Real Analysis 3 credits each	9
A minimum of 15 additional credits of 400-level courses in the department	15

Total 60

The courses 110:211 Numbers Communications, 345:101, 102, 103 Finite Mathematics, 115, 116 Elementary Functions, and 206 Actuarial Mathematics do not meet major requirements.

26 credits of humanities or social sciences beyond general studies and the second year of a foreign language. The 26 credits are to be from more than one department.

347: STATISTICS

Requirements for a B.S. degree with a major in statistics:

The General Studies and the second year of a foreign language (French, German, or Russian suggested). 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
345:481-482-483 Introduction to Real Analysis 3 credits each	9
347:451-452-453 Theoretical Statistics 3 credits each	9
347:471-472 Applied Statistics 3 credits each	6
347:473 Experimental Design	3

A minimum of 9 additional credits of 400-level courses in the department 9

Total 60

The courses 110:211 Number Communications, 345:101, 102, 103 Finite Mathematics, 115, 116 Elementary Functions, 206 Actuarial Mathematics and 347:200 Statistical Laboratory, 251, 252 Introduction to Statistics I and II do not meet major requirements.

Requirements for a B.A. degree with a major in statistics:
The General Studies and the second year of a foreign language (French, German or Russian suggested). At least 60 credits in the department including:

	<i>Credits</i>
345:231-232-233-234-235 Analytic Geometry-Calculus	20
4 credits each	4
345:236 Differential Equations	3
345:481-482-483 Introduction to Real Analysis	9
3 credits each	3
347:451-452-453 Theoretical Statistics	6
3 credits each	3
347:471-472 Applied Statistics	9
3 credits each	6
347:473 Experimental Design	3
A minimum of 9 additional credits of 400-level courses in the department	9
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Total	60

The courses 110:211 Number Communications, 345:101, 102, 103 Finite Mathematics, 115, 116 Elementary Functions, 206 Actuarial Mathematics and 347:200 Statistical Laboratory, 251, 252 Introduction to Statistics I and II do not meet major requirements.

26 credits of humanities and social sciences above the general studies and the second year of the 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, Russian, or Spanish:

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.

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:

- 360:120 Introduction to Ethics
- 360:170 Introduction to Logic
- 360:211 History of Philosophy I
- 360:212 History of Philosophy II
- 360:213 History of Philosophy III
- 360:480 Seminar
- 360:488 Coordinating Seminar I
- 360:489 Coordinating Seminar II

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.
2. Physics courses: A minimum of 60 credits. Included should be:

	<i>Credits</i>
365:201-202-203 Elementary Classical Physics	12
365:405-406-407 Structure of Matter	9
365:410 Electronic Devices and Circuits	4
365:411-412-413 Intermediate Laboratory	6
365:430 Kinetic Theory and Thermodynamics	4
365:431-432-433 Mechanics	9
365:451-452-453 Advanced Laboratory	6

Total 50
Physics Electives 10

3. Mathematics:

345:231-232-233-234-235 Analytic Geometry-Calculus	20
345:236 Differential Equations I	4

4. Chemistry:

315:126-127-128 General Inorganic Chemistry for Engineers	12
(Alternatively, 315:132-133-134, Principles of Chemistry and Qualitative Analysis, 13 credits total, may be elected).	

5. Computer Science:

445:160 Computer Science I	3
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Requirements for a B.A. degree with a major in Physics:

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

2. Physics courses: A minimum of 36 credits.
Included should be:

	<i>Credits</i>
365:201-202-203 Elementary Classical Physics	12
365:405-406-407 Structure of Matter	9
365:410 Electronic Devices and Circuits	4
365:411-412-413 Intermediate Laboratory	6
Total	31
Physics Electives	5

3. Mathematics courses:

345:231-232-233-234-235 Analytic Geometry-Calculus	20
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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 and Politics	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.

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, or Russian suggested). At least 45 credits in the department including:

	<i>Credits</i>
375:141 General Psychology	5
375:145 Quantitative Methods in Psychology	4
375:147 Introduction to Experimental Psychology	5
Total	14
Psychology Electives	31

The following electives are recommended for majors who intend to enter graduate programs in Psychology:

	<i>Credits</i>
375:315 Social Psychology	4
375:400 Abnormal Psychology	5
375:407 Psychological Tests and Measurements	4
375:412 Psychology of Learning	4

The new requirements for a baccalaureate degree in Psychology may be elected by current majors.

385: SOCIOLOGY

(385: Sociology, 386: Social Work, 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 the Department (Sociology, Social Work, Anthropology) 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, Social Work, or Anthropology
 24 |

Total 45

The credits beyond 21 are to be arranged in consultation with faculty advisor in relation to the selected area of emphasis within the department. These five areas of emphasis are: 1) Academic Sociology, 2) Deviance and Corrections, 3) Urban Environment, 4) Social Work, and 5) Anthropology. The Social Work Emphasis Program is a constituent member of the Council on Social Work Education fully recognized as a baccalaureate professional educational program in the field of social work. All 385 (Sociology), 386 (Social Work), and 387 (Anthropology) courses, except 386:270, are acceptable for any sociology major regardless of area of emphasis.

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 in-

cluding 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 each of two additional disciplines: Biology, Chemistry, Engineering, Geology, Mathematics and/or Statistics, Physics, or Polymer Science.

The courses 110:211 Numbers Communication and 345:101-103 Finite Mathematics cannot count as part of the above 83 credits.

A foreign language is strongly recommended.

AN UPPER COLLEGE:

The College of Engineering

Coleman J. Major, Ph.D., *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 and to pursue the following aims:

To offer sound basic instruction in the engineering disciplines.

To develop in students the ability to apply engineering principles to the economic and technological progress of society.

To promote in students a high sense of ethics and professional responsibility.

To foster in students an appreciation of the need to further the role of the engineering profession in society.

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

For the bachelor's degree the student has the option of taking the five-year cooperative plan or the four-year non-cooperative plan.

The "heart" of the undergraduate program is its five-year cooperative program which was begun in 1914, the same year that the college itself was established. This optional plan of alternating work with study begins in a student's third year when he is formally admitted to the College of Engineering, following his two years of fundamental training in the General College.

A graduate program was established in 1957. The degrees of Doctor of Philosophy in Engineering and Master of Science in Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering and Mechanical Engineering are awarded.

Although the College of Engineering emphasizes specific professional preparation, it nevertheless operates in accordance with the University policy of affording each student a grasp of the broad cultural phases of modern times.

A graduate is expected to apply his technical knowledge with the constant awareness that his goal is to serve humanity. In order that these engineers serve humanity best, the University strives to educate them in the areas of art as well as science.

THE COOPERATIVE PLAN

The cooperative program shall be optional for all engineering students who are presently (April 28, 1971) enrolled as freshmen and to all other engineering students who initially enroll in the University after June 13, 1971.

The optional cooperative plan provides for a coordinated sequence of alternate periods of classroom instruction and industrial employment during the cooperative phase of the five-year course.

The Cooperative plan provides simultaneously for the development of fundamental principles in the classroom and for their application in industrial practice. The Cooperative 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 con-

ditions. 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 sub-professional 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 1½ units
Plane Geometry 1 unit
Solid Geometry or
Trigonometry ½ unit
Chemistry or Physics 1 unit

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

Since the Engineering curricula have been designed to operate on an annual rather than on a quarter basis, beginning students are usually admitted only in September. In special cases, admission may be granted during other months.

All beginning students register in the General College. Those admitted in Engineering will be eligible for promotion to the College of Engineering after satisfactory completion of the sixth quarter Engineering schedule.

DEGREES

The College of Engineering offers curricula on the five year cooperative plan or the four

year non-cooperative plan in Chemical, Civil, Electrical and Mechanical Engineering. The degrees conferred include the Bachelor of Science in Chemical, Civil, Electrical and Mechanical Engineering.

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. All presently enrolled students and transfer students shall complete the number of credits shown below:

<i>Credits applicable for bachelor's degree completed as of 9/26/71</i>	<i>Total completed credits required for bachelor's degree</i>
199 or more	1970-71 Bulletin
At least 162, but less than 199	213
At least 128, but less than 162	209
Less than 128	New Curriculum

3. The recommendation of the student's department head.

Any Junior or Senior Engineering student with a quality point ratio of 2.50 over-all and 2.75 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 environment. Chemical Engineers find satisfying and rewarding careers in all walks of life, but mainly in the chemical process industries. Their involvement generally concerns inorganic and organic chemicals, rubber and plastics,

detergents, petroleum products, metals, pharmaceuticals, dyestuffs and food products.

The Chemical Engineer will usually be concerned with 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 new areas, such as water and air pollution, biological engineering, nuclear science and all aspects of the space science.

CHEMICAL ENGINEERING CURRICULUM

<i>General Studies</i>	<i>Credits</i>		
110:111,112 English Composition	8	420:321 Introduction to Transport Properties	4
110:108 Effective Speaking	4	420:322 Interphase Transport	3
110:205 Types of Literature	4	420:323 Multicomponent Transport	3
110:115,116 Institutions in the U.S.	6	420:325 Chemical Engineering Thermodynamics	3
110:317,318,319 Western Cultural Traditions	12	420:351 Fluid Flow Systems	3
110:3 Eastern Civilizations	3	420:352 Thermal Transfer Processes	3
110:401 Senior Seminar	2	420:353 Mass Transfer Processes	3
110: Physical Education	2	420:426 Phase and Reaction Equilibria	3
325:244 Introduction to Economic Analysis	4	420:430 Reaction Kinetics	4
	—	420:441 Plant Design	3
Total	45	420:442 Plant Design Laboratory	2
		430:301 Engineering Mechanics I	4
		440:331 Circuit Fundamentals	3
		445:160 Computer Science I	3
		460:125 Engineering Graphics I	3
		Total	59
<i>Natural Science Courses</i>		Free Electives including ROTC	17
315:132,133 Principles of Chemistry	8	Plan of Study Electives*	17
315:134 Principles of Chemistry & Quantitative Analysis	5		34
315:263,264,265 Organic Chemistry	9		
315:266 Organic Chemistry Laboratory	2		
315:314,315 Physical Chemistry	6		Total 204
345:231,232,233,234,235 Analytic Geometry & Calculus	20		
345:236 Differential Equations	4		
365:201, 202, 203 Elementary Classical Physics	12		
	—		
Total	66		
<i>Engineering Courses</i>			
410:120 Engineering Design: Chemical Engineering	2		
420:200 Material Balances	3		
420:201 Energy Balances	4		
420:305 Materials Science	3		

*Plan of Study Electives: The student is encouraged to aid in the design of his curriculum. This is accomplished by consultation at the time of promotion to the College of Engineering with his major adviser who helps him define a package of at least 17 course credits which then become a part of his *required* courses. These course credits are called Plan of Study Electives and the program requires the approval of the Department Head. Many plans are possible and students will be encouraged to tailor their educational goals by this means. It should be emphasized that the student may wish to intensify his concentration in a program by judicious choice of the 17 credits of electives, but these need not be determined at the time of promotion to the College of Engineering.

430: CIVIL ENGINEERING

Civil Engineering is a profession responsible for the conception, analysis, design and construction of facilities necessary to maintain our modern way of life.

The civil engineer is responsible for the design, construction, and maintenance of transportation systems (highways, railroad, airports, canals), for much of our public health (water supply, sewage treatment, air and stream pollution), for the structures important to our daily living (buildings, bridges, dams), and for much of our ordered way of life (surveying and mapping, traffic management, community planning), and plays an important role in the exploration of space and the sea (design of launch facilities, space vehicles, deep submergence vehicles).

The civil engineering curriculum at The Univer-

sity of Akron is designed to expose the student in his pre-junior year and first part of his junior year to a well-balanced core of courses in the following areas: (1) structural engineering and engineering mechanics; (2) environmental engineering; (3) water resources engineering; (4) foundation engineering including soil mechanics and engineering geology; and (5) transportation engineering including highway planning and design. In the terminal portion of the junior year and during the senior year, the curriculum is planned for specialization.

Civil Engineering graduates of The University of Akron are employed by many firms and public and private institutions throughout the United States and the rest of the world; many are engaged in private practice.

CIVIL 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: Physical Education	2
110:115,116 Institutions in the U.S.	6
110:117 Institutions in the U.S. OR	3
325:244 Introduction to Economic Analysis	(4)
110:317, 318, 319 Western Cultural Traditions	12
110:3 Eastern Civilizations	3
110:401 Senior Seminar	2
	—
Total 44 or 45	
<i>Natural Science Courses</i>	
365:101, 102, 103 Concepts of Physics	12
315:111, 112 Introduction to Chemistry for Engineers	6
337:101 Physical Geology	5
345:231, 232, 233, 234, 235 Analytic Geometry & Calculus	20
345:236 Differential Equations	4
: Math, Science or Computer Elective	3
Total 50	
<i>Electives</i>	
Free Electives	9
Engineering or Natural Science Electives	12
	—
Total 21	

Engineering Courses

410:130 Engineering Design: Civil Engineering	2
460:125 Engineering Graphics I	3
445:160 Computer Science I	3
460:310 Fluid Mechanics	3
460:322 Dynamics	4
460:305 Thermal Science	3
120:305 Material Science	3
430:201 Statics	4
430:202 Strength of Materials I	3
430:203 Strength of Materials II	3
430:380 Engineering Materials Laboratory	1
430:231, 232 Surveying I and II	6
430:306, 307 Theory of Structures I and II	6
430:401 Steel Design	3
430:403 Reinforced Concrete Design	3
430:321, 322 Environmental Engineering I and II	7
430:311 Soil Mechanics	4
430:312 Foundations	4
430:350 Urban Planning	3
430:351 Transportation Engineering	3
430:352 Highway Design	4
430:341 Water Resources	4
430:342 Hydraulic Engineering	3
430:482 Hydraulics Laboratory	1
430:491 C. E. Systems Design	3
	—
	86
	—
Total 201	

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, telemetry, etc.

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.

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 in Engineering, in Law or Medical School, etc. will find specialized programs of preparation are 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
110:115, 116 Institutions in the U.S.	6
110:317, 318, 319 Western Cultural Traditions	12
110:3 Eastern Civilizations	3
110:401 Senior Seminar	2
110: Physical Education	2
325:244 Introduction to Economic Analysis	4
	—
Total 45	
<i>Natural Science Courses</i>	
315:132, 133 Principles of Chemistry	8
345:231, 232, 234, 235 Analytic Geometry & Calculus	20

345:236 Differential Equations	4
365:201, 202, 203 Elementary Classical Physics	12
365:301 Modern Physics	4
	<hr/>
Total	48

Engineering Core Courses

410:140 Engineering Design: Electrical Engineering	2
420:305 Materials Science	3
430:304, 305 Mechanics	8
445:160 Computer Science I	3
460:125 Graphics I	3
460:305 Thermodynamics	3
	<hr/>
Total	22

Electrical Engineering Courses

440:233, 234, 335, 336 Circuits	13
440:340, 341 Measurements	6
440:351, 352 Fields	5
440:353, 354 Machines	8
440:359 Transmission Lines	4
440:365, 366 Electronics	8
440:371 Controls I	3
	<hr/>
Total	47

Electrical Engineering Electives

Free Electives

27

15

Total 42

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, fluids, energy, and electricity. Among the many subtopics included in these major headings are stress analysis, vibrations, compressible and incompressible fluid flow, 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 Mechanical Engineering 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>
110:111, 112 English Composition	8
110:108 Effective Speaking	4
110:205 Types of Literature	4
110:115, 116 Institutions in the U.S.	6
110:317, 318, 319 Western Cultural Traditions	12
110:3 Eastern Civilizations	3
110:401 Senior Seminar	2
110: Physical Education	2
325:244 Introduction to Economic Analysis	4
	<hr/>
Total	45

Natural Science Courses

315:111, 112 Introductory Chemistry for Engineers	6
345:231, 232, 233, 234, 235 Analytic Geometry & Calculus	20
345:236 Differential Equations	4
345: Mathematics or Statistics	3
365:101, 102, 103 Concepts of Physics	12
	<hr/>
Total	45

Engineering Courses

410:106 Engineering Design: Mechanical Engineering	2
430:201 Statics	4
430:202 Strength of Materials	3
440:331 Circuit Fundamentals	3
440:368 Electronic Fundamentals	3
440:381 Electrical Machinery Fundamentals	3
445:160 Computer Science I	3
460:125, 126 Graphics	5
460:300, 301, 302 Thermodynamics	9
460:310 Fluid Mechanics	3
460:311 Compressible Flow	3
460:315 Heat Transfer	4
460:320 Kinematics of Machinery	4
460:322 Dynamics	4
460:330 Dynamics of Machinery	3
460:336, 337 Analysis of Mechanical Components	6
460:360, 361 Engineering Analysis	6
460:380 Mechanical Properties of Materials	3
460:431 Vibrations	3
460:440, 441 Automatic Controls	6
460:460, 461 Mechanical Design	8
	<hr/>
Total	88

Free Electives

Technical Electives

9

17

26

Total 204

AN UPPER COLLEGE:

The College of Education

H. Kenneth Barker, Ph.D., *Dean*
John S. Watt, Ph. D., *Associate 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 Technical 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 96 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 Associate Dean of the College of Education.

Art	Miss Davis
Business Education	Mrs. King
Elementary	Mr. Arms, Mrs. Atwood, Mrs. Badger, Mr. Barr, Miss Bruno, Mr. Carrino, Mr. Christman, Mr. Esporite, Mrs. Farling, Mr. Ferguson, Mr. Hoch, Miss Leyden, Mr. Meconi, Miss Noble, Mrs. Seifert, Mrs. Spencer, Mr. Steinen, Mrs. Stoodt, Mr. Williams
Secondary	Mr. Biondo Miss Cook, Mr. Hembree, Mr. Hirschbuhl, Mrs. King, Mrs. Lindbeck, Mr. Ocasek, Mrs. Pfeiffer,

Home Economics	Mr. Ruebel, Mr. Wood, Mr. Yoder, Mrs. Sullivan
Music	Mr. MacDonald, Mr. Nolin
Physical Education	Mr. Maluke, Mr. Evans
Special Education	Mr. Arn, Mr. Kovacevich, Mr. Myers
Speech and Theatre Arts	Mr. Dunlap
Speech and Hearing Therapy	Miss Hittle
Technical Education	Mr. Sugarman, Mr. Frye, Mr. Adolph,
Graduate	Mr. Doverspike, Mr. Ferguson, Mr. Hayes, Mr. Rich, Mr. Sugarman, Mr. Wood

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 school 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 another 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 Kindergarten-Primary program is for students preparing to teach in the kindergarten through the third grade. The Elementary program is for those preparing to teach in grades one to eight inclusive.

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.

All students working for a degree in Elementary Education will be required to obtain a minor in a non-professional field chosen from among those fields approved by the Department of Elementary Education and consisting of a minimum of 22 credits of academic work. In addition, students are required to complete a "Field Participation" experience prior to student teaching.

A typical schedule arranged by academic years appears below. Further information may be obtained from the Department of Elementary Education.

KINDERGARTEN-PRIMARY AND ELEMENTARY**

<i>First Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:111 English Composition		4
110:115 Institutions in U.S.		3
110: Physical Education		1
375:141 General Psychology		5
750:201 Fundamentals of Music		3
ROTC		1.5
		16-17.5

<i>Second Quarter</i>		
110:112 English Composition		4
110:116 Institutions in U.S.		3
110: Physical Education		1
565:157 Human Development and Learning/or		4
710:121 Design		3
Elective		3-5
ROTC		1.5
		15-17.5

<i>Third Quarter</i>		
110:117 Institutions in U.S.		3
520:141 Handicrafts		3
520:262 Elementary School Music		
Literature and Appreciation		3
565:157 Human Development and Learning/or		4
Elective		6-8
ROTC		1.5
		15-18.5

<i>Second Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:211 Numbers Communications		3
110:205 Types of Literature/or		
110:108 Effective Speaking		4
110: Natural Science		3
335:100 World Cultural Geography		4

**Changes in Ohio's certification requirements which take effect in January, 1972, will cause certain changes in this program. Consult the Department of Elementary Education for details.

510:156 Education in American Society	3
ROTC	1.5
	16-17.5

Second Quarter

110:205 Types of Literature/or	
110:108 Effective Speaking	4
110: Natural Science	3
340:201 U.S. History/or	4
370:100 Government and Politics in U.S.	5
510:156 Education in American Society/or	3
520:286 Children's Literature	5
ROTC	1.5
	16-19.5

Third Quarter

110: Natural Science	3
335: Elective in Geography	3
340: U.S. History/or	3
370:100 Government and Politics in U.S.	5
510:156 Education in American Society/or	3
520:286 Children's Literature/or	5
Elective	3
ROTC	1.5
	15-17.5

Third Year

<i>First Quarter</i>	<i>Credits</i>
110:317 Western Cultural Traditions	4
335: Geography Elective	3
520:330 *Early Elementary Education	3

<i>Second Quarter</i>	
110:318 Western Cultural Traditions	4
335: Geography Elective	3
520:331 *Early Elementary Education	3

<i>Third Quarter</i>	
110:319 Western Cultural Traditions	4
335: Geography Elective	3
520:332 *Early Elementary Education	3

The following courses should be scheduled for the Junior Year: 520:321, Art for the Grades; 520:333, Science in the Elementary Grades; 520:322, Primary-Elementary Music Education; 555:338, Health and Physical Education Activities; 520:337, Teaching Language Arts; 520:338, Teaching Social Studies; 520:335, Teaching of Reading; 520:336, Arithmetic in Elementary Grades; 510:400, Student Participation. 520:335, Teaching of Reading and 520:336, Arithmetic in Elementary Grades should be scheduled concurrently. Language Arts and Social Studies should also be elected concurrently.

*Elected by those who wish the Kindergarten-Primary Certificate.

Fourth Year

The following courses should be distributed over the three quarters with one quarter left SOLELY FOR STUDENT TEACHING.

	<i>Credits</i>
110: Eastern Civilizations	3
510:350 Tests and Measurements	3
110: Eastern Civilizations	3
510:401 Problems in Education	5
110:401 Senior Seminar	2
510:402 Student Teaching	12
510:403 Student Teaching Seminar	3
	Total 192

Any elementary certificate will be validated for kindergarten teaching provided the applicant submits evidence of completion of nine credits in kindergarten methods and materials. The three courses Early Elementary Education 520:330, 331 and 332 serve this purpose.

By taking the following courses, students in the Kindergarten-Primary program may also receive University recommendations as Director or Teacher in Nursery Schools:

510:402 Student Teaching (In Nursery School) (after 4 credits in Kindergarten-Primary program)	<i>Credits</i>
510:360 Nursery School Laboratory	6
555:311 Red Cross First Aid	2
740:245-246 Basic Nutrition and Foods	2
740:265 Child Development	2

**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.

CERTIFICATION OF NON-PROFESSIONAL DEGREE HOLDERS FOR ELEMENTARY SCHOOL TEACHING IN OHIO

The State Department of Education will, upon the request of the Superintendent in an employing city, county, or exempted village, and the recommendation of the institution in which appropriate bachelor's degree is completed, grant a temporary elementary certificate to the holder of a bachelor's degree on evidence of the completion of the 18 credits listed in the section following.

To qualify for a Provisional Elementary Certificate the holder of a baccalaureate degree should complete a program of courses substantially equivalent to that required for the degree in elementary education. Typically this requires approximately 54 credits of course work.

RETRAINING FROM SECONDARY TO ELEMENTARY CERTIFICATE

The holder of a Provisional, Professional, or Permanent High School or Special Certificate may obtain a certificate valid for elementary teaching upon submitting evidence of the satisfactory completion of the following 18 credits:

	<i>Credits</i>
565:157 Human Development and Learning	4
520:335 Teaching of Reading	5
520:336 Arithmetic in Elementary Grades	5
520:451 Elementary Education	4

Such certification shall be designated as a "Retraining" certificate and may be renewed only by submitting evidence of the completion of 18 credits of additional course work applicable to a degree in elementary education. Then, when qualified, application may be made for the Provisional Elementary Certificate.

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>
751: Music Organization	3
510:402 Student Teaching	3
520:323 Teaching and Supervision of Music in the Primary Grades*	2
520:324 Teaching and Supervision of Music in the Elementary Grades*	2
750:151 Theory I	3
750:152 Theory II	3
750:153 Theory III	3
750:154 Music Literature I	2
750:155 Music Literature II	2
750:156 Music Literature III	2
750:160 Sight Singing	2
750:260-261 Keyboard Harmony	4
752:124 Voice	2
Total	33

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.

Students in this program must meet the requirements for Elementary Education (with minor modifications in the areas of Art and Music Education); must complete the course 530:313, *Principles and Practices in Secondary Education*, taken during the Junior year; 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.

**Beginning January, 1972, 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.

*Since these courses may be substituted for 520:322 Primary-Elementary Music Education (3 credits) in the regular Elementary Program, the net increase in the student's program would be 29 credits. This recommended program has the approval of the music staff.

RECOMMENDED SEQUENCE FOR
SECONDARY EDUCATION

<i>First Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:111 English Composition		4
110:115 Institutions in U.S.		3
110: Physical Education		1
375:141 General Psychology		5
Electives		3
ROTC		1.5
		—
		15-16.5
<i>Second Quarter</i>		
110:112 English Composition		4
110:116 Institutions in U.S.		3
110: Physical Education		1
510:156 Education in American Society/or		3
565:157 Human Development and Learning		4
Electives		3-5
ROTC		1.5
		—
		13-17.5
<i>Third Quarter</i>		
110:117 Institutions in U.S.		3
510:156 Education in American Society/or		3
565:157 Human Development and Learning		4
Electives (Teaching Field)		9
ROTC		1.5
		—
		15-17.5
<i>Second Year</i>		
<i>First Quarter</i>		
110:205 Types of Literature/or		4
110:108 Effective Speaking		4
110: Natural Science		3
Electives (Teaching Field)		4-8
ROTC		1.5
		—
		15-16.5
<i>Second Quarter</i>		
110:205 Types of Literature/or		4
110:108 Effective Speaking		4
110: Natural Science		3
Electives (Teaching Field)		4-8
ROTC		1.5
		—
		15-16.5
<i>Third Quarter</i>		
110:211 Numbers Communications		4
110: Natural Science		3
Electives (Teaching Field)		8-12
ROTC		1.5
		—
		15-16.5

<i>Third Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:317 Western Cultural Traditions		4
Electives (Teaching Field)		8-13
		—
		12-17
<i>Second Quarter</i>		
110:318 Western Cultural Traditions		4
Electives (Teaching Field)		8-13
		—
		12-17
<i>Third Quarter</i>		
110:319 Western Cultural Traditions		4
530:313 Principles and Practices in Secondary Education and 510:350 Tests and Measurements should be scheduled during the Junior Year with 510:350 being scheduled <i>concurrently or after</i> 530:313.		
Electives (Teaching Field)		8-13
		—
		16
<i>Fourth Year</i>		
The following courses should be distributed over the three quarters with one quarter left SOLELY FOR STUDENT TEACHING.		
110: Eastern Civilizations		3
110: Eastern Civilizations		3
110:401 Senior Seminar		2
510:401 Problems in Education		5
510:402 Student Teaching		12
510:403 Student Teaching Seminar		3
		—
		Total 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, a student should consult the Head of the Department of Secondary Education who will appoint an advisor.

STATEMENT OF MINIMUM NUMBER OF HOURS REQUIRED FOR CERTIFICATION IN VARIOUS TEACHING FIELDS† AS SPECIFIED BY THE STATE DEPARTMENT OF EDUCATION IN HIGH SCHOOL AND SPECIAL AREAS

Field	Number of High School Teaching Fields*	Credits Special Teaching Fields**
Art	36 (45)	75
Business		
Bookkeeping	14 —	
Bookkeeping—Basic Business	14 (30)	
Salesmanship—		
Merchandising	23 (30)	
Stenography—Typing	30 (30)	
Typing	8 (8)	
Business Education		
Comprehensive	68 (68)	
English	36 (45)	
English Comprehensive	61 (61)	
Health Education	36 (30)	(45)
Health Education and		
Physical Education	36 (30)	60 (68)
History and Government	41 (45)	
Home Economics	45 (45)	
Latin	23 (30)	
Library Science	24	
Modern Languages	30 (45)	
Mathematics	27 (30)	
Music	36 (45)	75
Science		
Biological Science	23 (30)	
Earth Science	23 (30)	
General Science	32 (30)	
Physical Science	32 (60)	
Science Comprehensive	68 (90)	
Social Studies Comprehensive	68 (90)	
Speech	27	60

SPECIAL FIELDS

Students preparing to teach in the Special Fields of Art, Business Education, Home Economics, Music, Health and Physical Education, and Speech will follow the pattern of courses outlined under RECOMMENDED SEQUENCE FOR SECONDARY EDUCATION in this chapter. Lists of specific course requirements and recommended yearly and quarter patterns will be provided to the student by his advisor.

SPECIAL EDUCATION

COMPREHENSIVE SPECIAL EDUCATION MAJOR

This program provides for an in-depth preparation in the areas of mental retardation and learning disabilities and simultaneously incorporates vital courses from the areas of Secondary Education, Elementary Education, Counselling and Educational Foundations. The program's component parts 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. See Special Education staff members for specific course requirements in all the component parts.

COMBINATION SPECIAL EDUCATION — ELEMENTARY EDUCATION PROGRAM

The addition of the following special education courses to the standard elementary education program in lieu of elective hours, coupled with a student teaching modification, comprise this program of study. Completion of this program leads to a teaching certificate valid for teaching in the regular and special classrooms.

Prerequisite:	Credits
565:157 Human Development and Learning	4
Required:	
561:460 Development Characteristics of Slow-Learning Children	5
561:461 Principles of Teaching Exceptional Children	4
561:462 Methods and Materials for Teaching Slow-Learners	3
561:464 Reading and Language Arts for the Slow Learner	3
561:465 Social Studies for the Slow-Learner	3
561:466 Number Concepts for the Slow-Learner	3
561:468 Occupational Orientation and Job Training for Exceptional Children	3
<i>Student Teaching Modification</i>	

†A major revision in Ohio certification requirements becomes effective January 1, 1972. Figures in parentheses indicate the new requirements which must be met by those seeking certification after that date. In addition, several new fields have been added to those listed. Consult the Head of the Department of Secondary Education for information concerning those changes.

*High School teaching fields entitle the holder of the certificate to teach the subjects in all grades 7-12 in a secondary school and in grades 7 and 8 of an elementary school if the work is departmentalized.

**A special teaching field entitles the holder of the certificate to teach that subject in any grade of the public schools.

**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 first teaching field can be any of the several recognized subject matter areas of preparation.

<i>Prerequisite:</i>	<i>Credits</i>
565:157 Human Development and Learning	4
<i>Required:</i>	
561:460 Development Characteristics of Slow Learning Children	5
561:461 Principles of Teaching Exceptional Children	4
561:462 Methods and Materials for Teaching Slow-Learner	3
520:335 Teaching of Reading	5
561:464 Reading and Language Arts for the Slow-Learner	3
561:465 Social Studies for the Slow-Learner	3
561:466 Number Concepts for the Slow-Learner	3
561:468 Occupational Orientation and Job Training for Exceptional Children <i>Student Teaching Modification</i>	3

SPEECH AND HEARING THERAPY

Recommended program for students interested in certification in Speech and Hearing Therapy may

be obtained from the College of Education or from 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 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.

AN UPPER COLLEGE:

The College of Business Administration

James 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 Association 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

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and the student's indicated area of specialization.

110:108	Effective Speaking	4
375:	Psychology (second course)/or	
385:	Sociology	4
		<hr/>
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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 credit hours to have been completed will vary from student to student, but will normally be from 60 to 80 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 quarter hours
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.**

SCHEDULE OF REQUIRED COURSES

<i>First Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:111	English Composition	4
110:115	Institutions in the U.S.	3
345:101	Finite Math	4
110:	Physical Education	1
	Electives	4
		<hr/>
		16
 <i>Second Quarter</i>		
110:112	English Composition	4
110:116	Institutions in the U.S.	3
345:102	Finite Math	4
375:141	General Psychology/or	
385:100	Introduction to Sociology	5
110:	Physical Education	1
		<hr/>
		17
 <i>Third Quarter</i>		
110:117	Institutions in the U.S.	3
345:103	Finite Math	4

*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.

<i>Second Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:221-224	Natural Science	3
325:245	Principles of Economics	3
620:221	Principles of Accounting	4
110:205	Types of Literature	4
	Electives	2
		<hr/>
		16
 <i>Second Quarter</i>		
325:246	Principles of Economics	3
620:222	Principles of Accounting	4
110:221-224	Natural Science	3
	Electives	6
		<hr/>
		16
 <i>Third Quarter</i>		
110:221-224	Natural Science	3
325:247	Principles of Economics	3
620:270	Managerial Accounting or *	
620:290	Cost Accounting	4
	Electives**	6
		<hr/>
		16

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:

<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	5
650:346-347	Business Statistics I and II	6
650:371	Principles of Management	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	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). 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

*Accounting Majors take Cost Accounting; others take Managerial Accounting.

**Accounting and Marketing Majors may elect 660:300, Marketing Principles (4 credits). Management majors should elect 650:363 Production Management (4 credits), which is a major requirement.

***Accounting Majors also must complete 640:322(4 credits).

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	Commerical 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:

640:314	Credits and Collections	3
640:318	Principles of Insurance	4
640:450	Business and Society and the substitution of	5
640:321-322	Business Law for	9
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>
650:301 Work System Design (Statistics 346 prerequisite)	3
650:303 Motion and Time Study (301 prerequisite)	3
650:350 Personnel Management (two behavioral science courses prerequisite)	3
650:363 Production Management (may be taken after Economics 246, in third quarter of sophomore year.)	4
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).	4

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 & 347 prerequisites); 404, Production Planning and Control, 3 credits (347 prerequisite); & 405, Quality Control, 3 credits, (347 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, (347 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>
20:290	Cost Accounting	4
20:355	Introduction to Electronic Data Processing	5
20:460	Controllership Problems	5
50:301	Work System Design	3
50:303	Motion and Time Study	3
50:350	Personnel Management	3
50:363	Production Management	4
50:405	Quality Control	3

Recommended electives for the student selecting the Industrial Accounting emphasis include:

<i>Number</i>	<i>Course Title</i>	<i>Credits</i>
20:430	Taxation	5
20:440	Auditing	5
20:454	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 660:300 (Marketing Principles), he must complete a minimum of 24 credits in his major, including 660:470 (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>Credits</i>
<i>Number</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 ArtsRay 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 96 credits of work with at

least a 2.0 ratio; have completed the required General Studies courses; have completed the departmental prerequisites 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.

**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, six of music organizations and nine of courses in the Community and Technical College are included (Credit limitations on applied music and music organizations do not apply to the Bachelor of Music degree).

2. The recommendation of the Head of the student's major department.

3. All candidates for a Bachelor of Art degree in the College of Fine and Applied Arts must have demonstrated their ability to use two languages.

If the candidate is a native-born speaker of English, this ability will be shown by his completion of a second year of an approved foreign language on the university level.

If the student is not a native-born speaker of English, this ability will be shown by his completion of the General Studies sequence in English (110:111-112 and 205).

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: Bachelor of Arts Bachelor of Music, and the Bachelor of Fine Arts degree in Art.

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 promotion 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 promoted to the College, the head of his major department becomes his advisor.

PREPARATION FOR HIGH SCHOOL TEACHING

Students interested in a teaching career on the high school level, and those interested in teaching art or music from kindergarten through high school, may qualify for certification by the State Department of Education while enrolled in the College of Fine and Applied Arts. Those wishing to prepare for such a career should register with the Dean of the College of Education at least two years prior to the time he expects to be eligible to teach. Generally the Fine and Applied Arts 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 Fine and Applied Arts degree. Additional elective credits will generally enable the student qualify in a second teaching field, which is required under certain circumstances, without exceeding the 192 credits necessary for graduation from the

College of Fine and Applied Arts. 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.

DEPARTMENTS OF INSTRUCTION

710: ART

Requirements for a Bachelor of Arts degree with a major in Art are:

General Studies and second year of language (French recommended).

Art Courses (Studio Emphasis): 710:125, 126, 146, 147, 180, 181, 182, 230, 240, 242; eight credits in History of Art courses; 15 credits from introductory level courses; and ten credits from advanced level courses, continuing two from the introductory level; 710:440 Studio Problems for 10 credits. Modifications may be made to allow for individual interests subject to approval of the Head of the Department.

Art Courses (History of Art emphasis): 710:125, 126, 146, 147, 180, 181, 230, 240, 244, 320, 403, 414, 415, 416, and 417.

Students interested in earning a major in Drawing and Painting, Sculpture, Printmaking, Communications Graphics, Design (with emphasis on Ceramics, Interior Design or Crafts) should choose their curriculum in consultation with the Head of the Department.

B.F.A. IN ART DEGREE

Requirements for all majors leading to the B.F.A in Art Degree:

The General Studies

Art Courses: 710:125, 126, 146, 147, 180, 181, 182, 210, 230, 240, 242, 244.

Studio electives — five credits.

History of Art — three courses beyond 182.

Major in Painting and Drawing:

710:246, 248, 252 — choice of one (250, 254, 256), 340, 342, 344, 434, 440 (15 credits in major field).

Studio electives — 10 credits.

History of Art — three courses beyond 182.

Major in Sculpture:

710:246, 248, 252, 254, 340, 350 (four out of A, B, C, D, E,), 434, 440 (10 credits in major field).

Studio electives — five credits.

History of Art — three courses beyond 182.

Major in Communications Graphics:

710:246, 250, 252 — choice of one (248, 254, 256), 375, 377, 380, 384, 386, choice of one (340, 342, 344, 434), 406, 407, 408, 413, 430, 440, (10 credits in major field).

Major in Design — Crafts:

710:246, 248, 252, 256, 362, 364, 366, 368, 440 (10 credits in major field).

Studio electives — five credits.

History of Art — three courses beyond 182.

Major in Design — Interior Design:

710:246, 248, 254, 256, 358, 359, 360, 362, 364, 440 (10 credits in major field).

Studio electives — five credits.

History of Art — three courses beyond 182.

Major in Design — Ceramics:

710:246, 248, 252, 254, 335, 350 (C), 354, 440 (10 credits in major field).

Studio electives — 20 credits.

History of Art — three courses beyond 182.

740: HOME ECONOMICS*Requirements for all degrees:*

The General Studies, the second year of a foreign language, Home Economics courses 740:121, 123, 147, 201, 245, 246, 262, 265, 301, 422. Additional course requirements for each major area:

Foods and Nutrition:

Biology 310:191 and 307.

Chemistry 315:121-122-123, and 201- 202-203.

Accounting 620:221 and 222, or 401.

Management 650:350. (The prerequisite is waived).

Home Economics 740:316, 340, 412, 415, 416, 420, 423, 426.

Textiles and Clothing:

Chemistry 315:121-122-123 or 315:129-130-131

Psychology 375:141.

Design 710:121.

Home Economics 740:158, 159, 305, 306, 317, 407, 419 or 439.

General Home Economics:

Design 710:121.

Home Economics 740:158, 159, 305, 316, 340, 415.

Home Economics Education:

Degree requirements for Majors in Home Economics Education leading to a B.S. degree in Home Economics Education (Administered through the College of Education) include the following requirements depending upon certification desired:

45 specified credits in Home Economics for Vocational Provisional Certification.

63 specified credits in Home Economics and related areas for Vocational Certification in Homemaking and Consumer Education.

45 specified credits in Home Economics and related areas for Vocational Certification in one of several job training areas.

Certification requirements are available in the College of Education and in the Department of Home Economics.

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 music 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 Art 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 piano until passage of jury examination in functional piano. (See Keyboard requirements for General Musicianship Examination). 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. Recommended but not required: 360:452 Aesthetics, 360:250 Philosophy of Art. 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:

The General Studies. 48 credits in a primary area of applied music and six credits in electives (secondary area) in applied music (752 courses), 12 credits in music organizations (751 courses), participation for 12 quarters in Student Recital (750:157 and 357), 60 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, passage of the General Musicianship examination, presentation of a senior recital. A junior recital is recommended but not required.

By extending either the B.A or B.M. programs to five years, the student may, with careful planning, take the courses in education, psychology, and music education required 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 organizations (751 courses), participation in Student Recital 157 and 367 for 12 quarters, 63 credits in 750:151, 152, 153, 154, 155, 156, 160, 161, 162, 251, 252, 253, 254, 255, 256, 260, 261, 262, 351, 352, 353, 354, 355, 356, 360, 361, 454, and successful passage of the General Musicianship Examination before assignment to Student Teaching. A half recital is required during the senior year.

GENERAL MUSICIANSHIP EXAMINATION

The General Musicianship Examination will be scheduled at the end of any quarter by request of the student and will require satisfactory performance in the following areas:

1. Prepared performance: each candidate, with the approval but not the instructional aid of a faculty member is required to select and to prepare not more than three weeks prior to the examination compositions for two of the following three performance media: (a) voice (b) keyboard (c) other instrument. (This requirement may be met through the end-of-quarter juries in applied music).

2. Voice

- a. Sight-singing monophonic and polyphonic music with and without words
- b. Singing all intervals within the range of an octave
- c. Singing major and minor, chromatic and whole-tone scales, triads and seventh chords in root positions and in inversions
- d. Singing simple melodies with syllables

3. Keyboard

- a. Sight-reading of easy accompaniments
- b. Harmonization at sight of easy melodies in familiar keys
- c. Playing familiar melodies and accompaniments to school songs by ear
- d. Transpositions of simple songs and accompaniments
- e. Scales, arpeggios, simple chord progressions, and modulations in major and minor keys

4. Conducting

- a. Command of all standard conducting patterns
- b. Understanding of technique used with changing meters
- c. Proper technique for conducting fermatas, attacks, releases, and differing dynamic levels

5. Rhythm

- a. Performing varied rhythms in simple, compound and combined meters
- b. Performing varied rhythms in mixed meters

- 6. Theory, ear-training, and dictation
 - a. Knowledge of all traditional key signatures, major and minor scales, and key relationships
 - b. Understanding of standard musical terms
 - c. Ability to distinguish all intervals within an octave, the four primary triads, and diatonic seventh chords in minor keys, aurally and visually
 - d. Ability to take simple melodic and harmonic dictation in familiar keys.

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.

BACHELOR OF MUSIC
(Performance Major)

Freshman Year

<i>First Quarter</i>	<i>Credits</i>
750:151 *Theory I	3
750:154 *Music Literature I	2
750:160 *Sight Singing I	2
751: *Music Organization	1
752: *Applied Music	+4
750:157 *Student Recital	0
110:111 *English Composition	4
110: *Physical Education	1
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	17

Second Quarter

750:152 *Theory II	3
750:155 *Music Literature II	2
750:161 *Sight Singing II	2
751: *Music Organization	1
752: *Applied Music	+4
750:157 *Student Recital	0
110:112 *English Composition	4
110: *Physical Education	1
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
	17

Third Quarter

750:153 *Theory III	3
750:156 *Music Literature III	2
750:162 *Sight Singing III	2
751: *Music Organization	1
752: *Applied Music	+4
750:157 *Student Recital	0
110:108 *Effective Speaking	4
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
	16

Sophomore Year

<i>First Quarter</i>	<i>Credits</i>
750:251 *Theory IV	3
750:260 *Keyboard Harmony I	2
751: *Music Organization	1
752: *Applied Music	†4
750:157 *Student Recital	0
110:224 *Natural Science — Physics/or	3
110:222 *Natural Science — Chemistry	3
110:115 *Institutions in U.S.	3
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	16

<i>Second Quarter</i>	<i>Credits</i>
750:252 *Theory V	3
750:261 *Keyboard Harmony II	2
751: *Music Organization	1
752: *Applied Music	†4
750:157 *Student Recital	0
110:221 *Natural Science — Biology/or	3
110:223 *Natural Science — Geology	3
110:116 *Institutions in U.S.	3
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	16

<i>Third Quarter</i>	<i>Credits</i>
750:253 *Theory VI	3
750:262 *Keyboard Harmony III	2
751: *Music Organization	1
752: *Applied Music	†4
750:157 *Student Recital	0
110:224 *Natural Science — Physics/or	3
110:222 *Natural Science — Chemistry	3
110:117 *Institutions in U.S.	3
	—
	16

Junior Year

<i>First Quarter</i>	<i>Credits</i>
750:351 *Music History I	3
751: *Music Organization	1
752: *Applied Music	†4
750:357 *Student Recital	0
750:361 *Conducting	3
110:317 *Western Cultural Traditions	4
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	15

<i>Second Quarter</i>	<i>Credits</i>
750:352 *Music History II	3
751: *Music Organization	1
752: *Applied Music	†4
750:357 *Student Recital	0
110:205 *Types of Literature	4
110:318 *Western Cultural Traditions	4
	—
	16

Third Year

750:353 *Music History III	3
751: *Music Organization	1
752: *Applied Music	†4
750:357 *Student Recital	0
110:211 *Numbers Communication	4
110:319 *Western Cultural Traditions	4
	—
	16

Senior Year

<i>First Quarter</i>	<i>Credits</i>
750:451 Introduction to Musicology	3
751: *Music Organization	1
752: *Applied Music	†4
752: *Applied Music (minor)	2
750:357 *Student Recital	0
110: *Eastern Civilizations	3
Elective	3
Senior Recital (any quarter)	0
	—
	16

<i>Second Quarter</i>	<i>Credits</i>
750:454 *Orchestration	3
750:452 Composition	3
751: *Music Organization	1
752: *Applied Music	†4
752: *Applied Music (minor)	2
750:357 *Student Recital	0
110: *Eastern Civilizations	3
Elective	3
Senior Recital (any quarter)	0
	—
	19

<i>Third Quarter</i>	<i>Credits</i>
750:453 Music Bibliography and Research	3
750:455 Advanced Conducting	3
751: *Music Organization	1
752: *Applied Music	†4
752: *Applied Music (Minor)	2
750:357 *Student Recital	0
110:401 *Senior Seminar	2
Elective	3
Senior Recital (any quarter)	0
	—
	18

Total Credits 198

**BACHELOR OF SCIENCE
IN EDUCATION
(Music Education program)**

Freshman Year

<i>First Quarter</i>	<i>Credits</i>
750:151 *Theory I	3
750:154 *Music Literature I	2
750:160 *Sight Singing I	2
751: Music Organization	1

752: *Applied Music	+2
750:157 *Student Recital	0
110:111 *English Composition	4
110: *Physical Education	1
—	15

Second Quarter

750:152 *Theory II	3
750:155 *Music Literature II	2
750:161 *Sight Singing II	2
751: *Music Organization	1
752: *Applied Music	+2
750:157 *Student Recital	0
110:112 *English Composition	4
110: *Physical Education	1
—	15

Third Quarter

750:153 *Theory III	3
750:156 *Music Literature III	2
750:162 *Sight Singing III	2
751: *Music Organization	1
752: *Applied Music	+2
750:157 *Student Recital	0
110:108 *Effective Speaking	4
510:156 Education in American Society	3
—	17

Sophomore Year

First Quarter Credits

750:251 *Theory IV	3
750:260 *Keyboard Harmony I	2
751: *Music Organization	1
752: *Applied Music	+2
750:157 *Student Recital	0
750:254 String Instrument Techniques I	2
110:222 *Natural Science — Chemistry/or	3
110:224 *Natural Science — Physics	3
110:115 *Institutions in U.S.	3
—	16

Second Quarter

750:252 *Theory V	3
750:261 *Keyboard Harmony II	2
751: *Music Organization	1
752: *Applied Music	+2
750:157 *Student Recital	0
750:255 String Instrument Techniques II	2
110:221 *Natural Science — Biology/or	3
110:223 *Natural Science — Geology	3
110:116 *Institutions in U.S.	3
—	16

Third Quarter

750:253 *Theory VI	3
750:262 *Keyboard Harmony III	2
751: *Music Organization	1

752: *Applied Music	+2
750:157 *Student Recital	0
750:256 String Instrument Techniques III	2
110:222 *Natural Science — Chemistry/or	3
110:224 *Natural Science — Physics	3
110:117 *Institutions in U.S.	3
—	16

Junior Year

First Quarter Credits

750:351 *Music History I	3
751: *Music Organization	1
752: *Applied Music	+2
750:357 *Student Recital	0
750:354 Woodwind Instrument Techniques	2
750:361 *Conducting	3
520:323 Teaching and Supervision of Music in Primary Grades	2
375:141 General Psychology	5
—	18

Second Quarter

750:352 *Music History II	3
751: *Music Organization	1
752: *Applied Music	+2
750:357 *Student Recital	0
750:355 Brass Instrument Techniques	2
750:360 Choral Techniques	3
520:324 Teaching and Supervision of Music in Elementary Grades	2
565:157 Human Development	4
—	17

Third Quarter

750:353 *Music History II	3
751: *Music Organization	1
752: *Applied Music	+2
750:357 *Student Recital	0
750:356 Percussion Instrument Techniques	2
530:326 Teaching and Supervision of Music in Senior High	2
530:325 Teaching and Supervision of Music in Junior High	2
110:205 *Types of Literature	4
110:211 *Numbers Communication	4
—	20

Senior Year

First Quarter Credits

751: *Music Organization	1
752: *Applied Music	+2

*Core curriculum for B.Sci.Ed. (Music) and B.M. degrees.

†Applied Music is to be taken on the student's declared major instrument. Applied music requirements differ each quarter by two credits in the major performance area between the B.M. and B.Sci.Ed. (Music) degrees. See Sequence of Courses for B.M. to compare.

750:357 *Student Recital	0
510:350 Tests and Measurements	3
110:317 *Western Cultural Traditions	4
110: *Eastern Civilizations	3
510:401 Problems in Education	5
	<hr/>
	18

Second Quarter

751: *Music Organization	1
752: *Applied Music	†2
750:357 *Student Recital	0
750:454 *Orchestration	3
110:318 *Western Cultural Traditions	4
110: *Eastern Civilizations	3
510:402 Student Teaching	6
	<hr/>
	19

Third Quarter

751: *Music Organization	1
752: *Applied Music	†2
750:357 *Student Recital	0
110:401 *Senior Seminar	2
110:319 *Western Cultural Traditions	4
510:403 Student Teaching Seminar	3
510:402 Student Teaching	6
	<hr/>
	18

Total Credits 205

**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 in a major musical organization on the student's primary instrument.
2. Piano Proficiency (Students for whom piano is the primary performance area will meet requirements under "1" above, and "d" and "e" 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 entrance examination for "Keyboard Harmony" can be passed.

- d. Completion of the courses in "Keyboard Harmony."
- e. Passing the keyboard portion of the General Musicianship Examination.
3. Voice Proficiency (Students for whom voice is the primary performing area will meet requirements under "1" above, and "d" and "e" 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 Voice" as necessary, until entrance examination for "Sight Singing and Ear Training" can be passed.
 - d. Completion of the courses in "Sight Singing and Ear Training."
 - e. Passing the vocal portions of the General Musicianship Examination.

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. Secondary performance area.**
 - a. At least three quarters of private study.
 - b. Completion of the 100 level as determined at jury exams.
3. Piano Proficiency (Students majoring in piano meet requirements under "1" above, and "d" and "e" 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.

**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 then 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. Theatre Arts
3. Communication and Mass Media
4. Rhetoric and Public Address
5. Ballet

CORE PROGRAM

The following "Core" courses are required of all students who will major or minor in Speech and Theatre Arts in the College of Fine and Applied Arts:

	<i>Credits</i>
780:190 Public Speaking/or	3
780:252 Ethical Persuasion	3
780:175 Oral Interpretation I	4
780:261 Introduction to the Theatre	4
780:281 Introduction to Radio/TV	4
780:434 Speech Seminar	4
<hr style="width: 10%; margin-left: auto;"/>	
Total Credits	19

- d. Completion of the courses in "Keyboard Harmony."
- e. Passing the keyboard portion of the General Musicianship Examination.
4. Voice Proficiency (Students majoring in voice meet requirements under "1" above, and "d" and "e" 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 Voice" as necessary, until the entrance examination for "Sight Singing and Ear Training" can be passed.
 - d. Completion of the courses in "Sight Singing and Ear Training."
 - e. Passing the vocal portions of the General Musicianship Examination.

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, 354, 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 advisor 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 advisor about the required courses.

780: DEPARTMENT OF SPEECH AND THEATRE ARTS

Areas of Concentration:

1. General Speech

This program is designed for the student who may teach speech and theatre arts on the secondary level. The student fulfills his credits from a selection of courses spread over the areas listed below. The "General Speech" area is also for the student who wants general speech training without concentrating in a specific area.

1. *General Speech*

In addition to the "Core Program" the student must complete a *minimum* of ten (10) credits from each of the three major areas: Theatre Arts, Rhetoric and Public Address, Communication and Mass Media. The remainder of the General Speech program will be carefully chosen from the remainder of the Speech/Theatre Arts curriculum with the consent of the student's adviser.

2. *Theatre Arts.*

First Year

<i>First Quarter</i>	<i>Credits</i>
110:111 English Composition	4
110:115 Institutions in the U.S.	3
110:108 Effective Speaking	4
375:141 General Psychology/or	5
Foreign Language	4
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	16
	(or) 15

Second Quarter

110:112 English Composition	4
110:116 Institutions in the U.S.	3
780:129 Stage Movement	2
770:135 Introduction to Phonetics	4
Foreign Language	4
<hr style="width: 10%; margin-left: auto;"/>	
	17

Third Quarter

110:205 Types of Literature	4
110:117 Institutions in the U.S.	3
110: *Physical Education	1
770:137 Voice and Articulation	3
Foreign Language	4
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	15

*Suggested courses to choose from: Physical Education: Gymnastics, Folk Dance, Modern Dance, Body Mechanics, or Conditioning.

<i>Second Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:221-224 *Science Requirement		3
780:190 Public Speaking/or		3
780:252 Ethical Persuasion		3
780:175 Oral Interpretation I		4
780:261 Introduction to Theatre Foreign Language		4
		3
		—
		17
<i>Second Quarter</i>		
110:221-224 *Science Requirement		3
110:211 Numbers Communication		4
780:265 Basic Stagecraft		4
780:265 Acting Foreign Language		4
		3
		—
		18
<i>Third Quarter</i>		
110:221-224 *Science Requirement		3
710:121 Design		3
780:281 Introduction to Radio/TV Foreign Language or General Psychology		4
		3 or 5
		—
		13 or 15

Lower College Total: (Max.) 98 credits

*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 of the Natural Science courses. (110:221 — Biology; 110:222 — Chemistry; 110:223 — Geology; 110:224 — Physics) Alternatives which may be considered are the following; 310:147, 148, 149 — Anatomy and Physiology (3 credits each; laboratory).

Third and Fourth Years

1. Theatre Course: 40 credits from the following:

	<i>Credits</i>
780:262 Stage/TV Makeup	3
361 Play Directing	4
362 Advanced Stagecraft	4
364 Introduction to Stage Design	3
367-9 History of Theatre	12
460 Dramatic Criticism	4
461 The Black in American Theatre	3
463 Advanced Acting	4
464 Lighting	3
467 Contemporary Theatre Styles	4
468 Children's Theatre Workshop	4
2. Speech: 8 credits.	
780:275 Oral Interpretation II	4
434 Speech Seminar	4
3. General College: 20 credits.	
110: Eastern Civilizations	6

317-9 Western Cultural Traditions	12
401 Senior Seminar	2
4. Electives: 26 credits from the following:	
330:240 Shakespeare	5
355 Continental Drama	5
363 Pre-Elizabethan Drama	3
364 Jacobean and Caroline Drama	3
365 Restoration and 18th C. Drama	3
442 Modern English and Irish Drama	4
432 Twentieth C. American Drama	4
360:101 Introduction to Philosophy	4
250 Philosophy of Art	4
452 Aesthetics	4
375:403 Personality	3
400 Abnormal Psychology	5
710:180-2 History of Art Survey	9
740:317 Historic Costume	4
750:301 Music Appreciation: Early Baroque (to 1750)	2
302 Music Appreciation: Classical and Romantic (late 18th & 19th C)	2
303 Music Appreciation: Music of our Times (20th C.)	2
780:288 Communication Media: Film	4
Upper College Total: 94	
Four Year Total: 192	

3. *Communication and Mass Media*

First Year

	<i>Credits</i>
<i>First Quarter</i>	
110:111 English Composition	4
110:115 Institutions in the U.S.	3
110:108 Effective Speaking	4
375:141 General Psychology	5
	—
	16

Second Quarter

110:112 English Composition	4
110:116 Institutions in the U.S.	3
110: Physical Education	1
770:135 Introduction to Phonetics	4
780: *Speech Elective	3
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	15

Third Quarter

110:205 Types of Literature	4
110:117 Institutions in the U.S.	3
110: Physical Education	1
780:281 Introduction to Radio/TV	4
780: *Speech Elective	†3
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	15

*Speech Electives for the First Year 780:190 Public Speaking (3) and 780:252 Ethical Persuasion (3).

Second Year

<i>First Quarter</i>	<i>Credits</i>
110:221-224 *Science Requirement	3
780:175 Oral Interpretation I	4
780:261 Introduction to the Theatre	4
780:282-288 **Communication Media	4
Foreign Language	4
	19
<i>Second Quarter</i>	
110:221-224 *Science Requirement	3
110:211 Numbers Communication	4
780:245 Argumentation and Debate	3
780:282-288 **Communication Media	4
Foreign Language	4
	18
<i>Third Quarter</i>	
110:221-224 *Science Requirement	3
780:262 Stage/TV Makeup	3
780:282-288 **Communication Media	4
780:392 Contemporary Speeches	3
Foreign Language	4
	17

*See description, p. 110
 **Take 282 Communication Media: Radio, or 283 Communication: TV before you take 288 Communication Media: Film.

Lower College Total: 100 credits maximum

Third and Fourth Year

Speech Courses: 25 credits from the following:

780:275 Oral Interpretation II	4
381 Broadcasting Media	4
384 Speech-Communication Research I	4
454 Group Processes	3
481 Persuasion and Propaganda and Propaganda Analysis	3
484 Speech-Communication Research II	3
490 Rhetorical Criticism	4
434 Speech Seminar	4

2. The second year of a foreign language should be taken in the third year:

3. Theatre Arts: 8 credits

780:265 Basic Stagecraft	4
467 Contemporary Theatre Styles	4

4. General College: 20 credits.

110: Eastern Civilizations	6
317-9 Western Cultural Traditions	12
401 Senior Seminar	2

5. Electives: 30 credits, from the following:

330:460 Theory of Rhetoric	3
331:203 Radio/TV News Writing	3
360:101 Introduction to Philosophy	4
360:170 Introduction to Logic	4
370:100 Government & Politics in U.S.	5
370:110 Civil Liberties in America	3
370:120 Current Policy Issues	3
370:340 American Political Parties	5
370:440 Public Opinion and Political Behavior	3
375:145 Quantitative Methods in Psychology	4
375:160 Industrial Psychology	4
375:315 Social Psychology	4
385:100 Introduction to Sociology	5
385:336 Social Change	4
385:427 Racial & Cultural Intergrouprelations	4
385:431 Social Interaction	4
650:263 Production Organization	3
650:350 Personnel Management	3
650:352 Management Training and Development	3
770:136 Bases of Speech	4
770:278 Psychology of Speech	4

Upper College Total: 92 credits

Four Year Total: 192 credits

4. Rhetoric and Public Address

First Year

<i>First Quarter</i>	<i>Credits</i>
110:111 English Composition	4
110:115 Institutions in the U.S.	3
110:108 Effective Speaking	1
110: Physical Education	1
Foreign Language (or) Cognate	
Elective	4
	16

Second Quarter

110:112 English Composition	4
110:116 Institutions in the U.S.	3
780:252 Ethical Persuasion	3
780:131 Public Speaking	3
Foreign Language (or) Cognate	
Elective	4
	17

Third Quarter

110:205 Types of Literature	4
110:117 Institutions in the U.S.	3
110: Physical Education	1
780:175 Oral Interpretation I	4
Foreign Language (or) Cognate	
Elective	4
	16

<i>Second Year</i>		<i>Credits</i>
<i>First Quarter</i>		
110:221-224 *Science Requirement		3
780:245 Argumentation and Debate		3
780:261 Introduction to the Theatre		4
Foreign Language (or) Cognate		
Elective		3
780: Speech Elective		3
		<hr/>
		16

<i>Second Quarter</i>		
110:221-224 *Science Requirement		3
110:211 Numbers Communication		4
780:281 Introduction to Radio/TV		4
Foreign Language (or) Cognate		
Elective		3
780: Speech Elective		3
		<hr/>
		17

<i>Third Quarter</i>		
110:221-224 *Science Requirement		3
780:344 Public Discussion and Group Process		3
780:243 Parliamentary Procedure		2
Foreign Language (or) Cognate		
Elective		3
780:392 Contemporary Speeches		3
Cognate Elective		3
		<hr/>
		17

Lower College Total: 99 credits

Third and Fourth Years

1. Speech Courses: 30 credits from the following:

<i>First Quarter</i>	<i>Credits</i>
780:190 or 132 (whichever course not taken in Core)	3
141 Intercollegiate Debate	1
	(repeat to 4)
145 Oral Argument	2
275 Oral Interpretation II	3
384 Speech Communication Research I	3
454 Group Processes & Conference Leadership	3
481 Persuasion & Propaganda Analysis	3
484 Speech Communication Research II	3
490 Rhetorical Criticism	4
434 Speech Seminar (Required in Core)	4

Second Quarter

2. General College: 20 credits.

	<i>Credits</i>
110: Eastern Civilization	6
317-9 Western Cultural Traditions	12
401 Senior Seminar	2
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*See description, p. 110.

3. Speech and Cognate Electives: 43 credits.

a. Speech and Theatre Arts

780:265 Basic Stagecraft	4
282 Communications Media: Radio	4
283 Communications Media: Television	4
288 Communications Media: Film	4
467 Contemporary Theatre Styles	4

b. Cognate Areas:

325:245-7 Principles of Economics	(per qtr.)	3
330 Labor Problems		4
432 The Economics & Practices of Collective Bargaining		4
330:460 Theory of Rhetoric		3
340:203 U.S. History, 1898 — present		4
220 History of the Black People in U.S.		4
334 Social & Cultural History of U.S.		3
426 Civil War		3
360:101 Introduction to Philosophy		4
170 Introduction to Logic		4
211 History of Philosophy		4
222 Social and Political Philosophy		4
370:100 Government & Politics in U.S.		5
110 Civil Liberties in America		3
120 Current Policy Issues		3
440 Public Opinion and Political Behavior		3
375:141 General Psychology		5
145 Quantitative Methods in Psychology		4
160 Industrial Psychology		4
315 Social Psychology		4
385:100 Introduction to Sociology		5
336 Social Change		4
427 Racial & Cultural Intergrouprelations		4
431 Social Interaction		4
387:461 Language and Culture		3
650:263 Production Organization		3
350 Personnel Management		3
352 Management Training & Development		3
371 Principles of Management		3
770:135 Introduction to Phonetics		4
136 Bases of Speech		4
137 Voice and Articulation		3
278 Psychology of Speech		4

Upper College Total 93 credits

Four Year Total 192 credits

5. Ballet at The University of Akron

The College of Fine and Applied Arts, through its Department of Speech and Theatre Arts, offers academic work toward the four year B.A. degree with emphasis on Ballet.

In addition to courses in the major area of Ballet, the student must complete the required curriculum of General Studies courses plus two years of a foreign language required of all University students for graduation.

Admission to The University of Akron Ballet program is by audition only.

Here is a suggested first year schedule of Ballet and General College classes:

Fall Quarter

110:111 English Composition	4
110:115 Institutions in the U.S.	3
555:101 Applied Anatomy	5
750:201 Fundamentals of Music (Ballet)	3
780:122 Ballet Technique	3
	<hr/>
	18

Winter Quarter

110:116 Institutions in the U.S.	3
375:141 General Psychology	5
555:102 Applied Physiology	4
Fundamentals of Music (Ballet)	3
780:122 Ballet Technique	3
	<hr/>
Total 18	7

Spring Quarter

110:112 English Composition	4	Credits
740:133 Nutrition Fundamentals	3	
Fundamentals of Music (Ballet)	3	
780:122 Ballet Technique	3	
Foreign Language	3 or 4	
	<hr/>	
16 or 17		

Certification to Teach Speech and Theatre Arts — Secondary Education.

<i>A. Courses Required of Majors and Minors</i>		<i>Credits</i>
780:190 Public Speaking		3
252 Ethical Persuasion		3
175 Oral Interpretation I		4
770:135 Introduction to Phonetics		4
136 Bases of Speech		4
780:261 Introduction to Theatre		4
245 Argumentation and Debate		3
281 Introduction to Radio & TV		4
780: Electives (to be selected from courses below)		7
		<hr/>
		36

B. Required of Majors

780:434 Speech Seminar	3
468 Children's Theatre Workshop	3
or	
361 Play Directing	4
	<hr/>
	7

C. Recommended for Majors (Elect a minimum of eight credits):

770:137 Voice and Articulation	3
780:145 Oral Argument	3
265 Basic Stagecraft	4
770:270 Introduction to Speech Disorders	4
780:344 Public Discussion	3
	<hr/>
	16

Grand Total 59

Ballet Faculty:

- Mr. Heinz Poll, Director and Choreographer
- Miss Valerie Grieg
- Mrs. Juli Nunlist

Address all inquiries to:

- Dr. James F. Dunlap, Head
- Department of Speech & Theatre Arts
- The University of Akron
- Akron, Ohio 44304

D. Required Education Courses:

510:156 Education in American Society	3	<i>Credits</i>
565:157 Human Development and Learning	4	
530:313 Principles and Practices in Secondary Education	5	
510:401 Problems in Education	5	
510:402 Student Teaching	12	
510:403 Student Teaching Seminar	3	

E. Other Required Courses:

374:141 General Psychology	5
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AN UPPER COLLEGE:

The College of Nursing

Estelle B. Naes, 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 for nursing and to pursue the following aims:

To assist students 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.

To help students acquire a functional knowledge 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.

To prepare students to assume the responsibilities of a nurse practitioner in beginning positions in nursing.

To develop in students a command of an integrated field 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

Applicants are expected to meet the general University admissions requirements.

Transfer students may receive credit for quality work earned in approved colleges. Registered nurses who received their preparation in hospital or associate degree programs may qualify for placement in the nursing concentration by examination in those clinical areas in which they have had theory and practice experience. Examinations may be taken after the completion of the course requirements of the freshman year. Enrollment of transfer students is contingent upon University facilities. The needs of the generic students receive priority.

Prior to enrolling in the clinical nursing courses in the sophomore year, each nursing student must receive approval from the Dean of the College of Nursing. Generally, students with desirable personal qualifications, sound physical and mental health, and a 2.0 quality point ratio or higher will receive approval for entering into the remaining in the nursing major.

All students are required to take a complete physical examination before the fall enrollment in the sophomore year. The physical examination includes prescribed laboratory tests, x-rays and immunization for smallpox, diphtheria, typhoid, tetanus, polio and measles

Annual physical examination is required before the fall enrollment in the junior and senior years.

REQUIREMENTS FOR PROMOTION

Students who complete the courses prescribed by the General College and the College of Nursing and who earned a total of approximately 96 credits with a quality point ratio of 2.0 (C) or above are eligible for promotion to the College of Nursing.

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 heads of the departments concerned.

REQUIREMENTS FOR GRADUATION

1. File an application with the Registrar in the final academic year. (Refer to current *Bulletin* for date).

2. Complete a minimum of 195 credits toward the degree and earn a minimum of 2.0 quality point ratio for all collegiate work attempted, including work taken at accredited institutions other than The University of Akron. For all work attempted in the major field at The University of Akron and in other accredited institutions, a minimum of 2.0 quality point ratio is required.

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
345:101 Finite Mathematics I		4
110:115 Institution in U.S.		3
315:129 General Chemistry		4
110: Physical Education		1
		<hr/> 16
<i>Second Quarter</i>		
110:112 English Composition		4
375:141 General Psychology		5
110:116 Institutions in U.S.		3
315:130 General Chemistry		4
110: Physical Education		1
		<hr/> 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
	<hr/> 16

Total Credits for Freshman Year 49

Sophomore Year

<i>First Quarter</i>		<i>Credits</i>
110:205 Types of Literature		4
310:361 Human Anatomy and Physiology		4
310:307 Microbiology		4
Elective (Social Science)		4
		<hr/> 16

Second Quarter

360:170 Introduction to Logic	4
820:271 General Nursing	8
310:362 Human Anatomy and Physiology	4
	<hr/> 16

Third Quarter

375:151 Developmental Psychology	5
820:272 General Nursing	8
310:448 Human Genetics	3
	<hr/> 16

Total Credits for Sophomore Year 48

Junior Year

<i>First Quarter</i>		<i>Credits</i>
110:317 Western Cultural Traditions		4
820:321 Adult Nursing		7
820:331 Maternal-Child Nursing		7
		<hr/> 18

Second Quarter

110:318 Western Cultural Traditions	4
820:322 Adult Nursing	7
820:332 Maternal-Child Nursing	7
	<hr/> 18

Third Quarter

110:319 Western Cultural Traditions	4
820:323 Adult Nursing	7
820:333 Maternal-Child Nursing	7
	<hr/> 18

Total Credits for Junior Year 54

Senior Year

<i>First Quarter</i>		<i>Credits</i>
110: Eastern Civilizations		3
820:341 Community Nursing (Psychiatric Aspects)		10
Elective		3
		<hr/> 16

Second Quarter

110: Eastern Civilizations	3
820:451 Community Nursing (Health and Welfare Teams)	10
Elective	2
	<hr/>
	15

Third Quarter

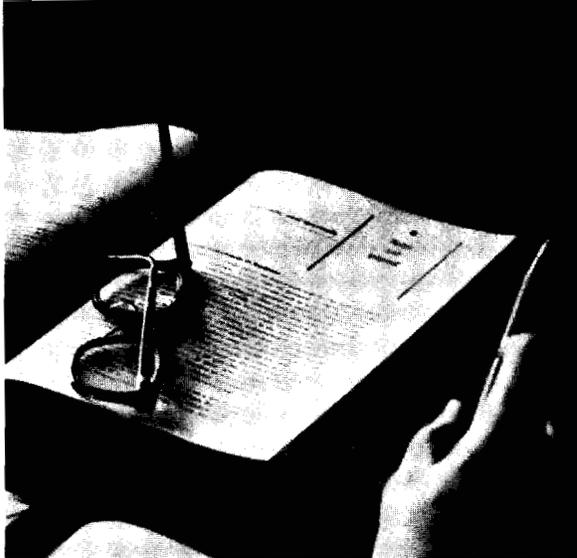
110:401 Senior Seminar	2
820:461 Issues in Nursing	3
820:471 Seminar in Nursing	8
	<hr/>
	13

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 Hospital
- Fallsview Mental Health Center
- The Children's Hospital of Akron
- The City of Akron, Department of Public Health
- Visiting Nurse Service of Summit County
- Barberton Citizens Hospital



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

Edwin L. Lively, Ph.D.,
Dean of Graduate Studies

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.

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), 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 has been approved for planning purposes by the Ohio Board of Regents, and it is expected to admit students in September, 1973. This 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, recommendation of persons for membership in the Graduate Faculty and advising and counseling the Dean in administrative matters.

THE NATURE OF GRADUATE EDUCATION

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 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. Additional information pertaining to his own program can be obtained from the appropriate department head.

ADMISSION

Applications for Admission to the Graduate School must 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 is 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 program 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 2.50 or better, or 2.75 for the last two years (four-point system) 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 the 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. Department Heads should accompany recommendations for this status with a statement as to why they are willing to accept the person into the department on this basis.

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 Student — one who is a regularly enrolled graduate student in good standing at another institution and has written permission from that institution to enroll at The University of Akron for specific courses. A transient student's admission is valid for only one enrollment term, and he is subject to the same rules and requirements as a regularly enrolled student 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 2.5 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 two 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.

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 can not 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 of 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 course 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	22.00
Non-resident student per credit	28.00
(Auditors pay same fees)	
Other Fees	
General Service	
9 or more credits per quarter	15.00
8 1/2 or fewer credits per quarter	5.00
Late Registration Fee	15.00
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
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.)	25.00
Change of Schedule Fee	3.00
Additional Transcripts (one free copy)	1.00
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 Dean of Graduate Studies and Research 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 \$2,400 to \$3,600, 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 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 *five* 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 five-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 the middle of the quarter preceding the one in which he expects to graduate. Advancement to Candidacy forms are available in the Graduate School Office or from the department head. Advancement to Candidacy will not be granted a student 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, 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.

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 at least two quarters before the quarter in which the degree is to be conferred. 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 subject. 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 with

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 Degree 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. Pass proficiency tests required of all entering students.
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). The amount of credit for the dissertation in each academic quarter or term shall be determined by the Head of the Chemistry Department (in agreement with the student's advisory committee).

4. Pass preliminary examinations in analytical, inorganic, and physical chemistry.

5. Pass an oral examination upon completion of the research dissertation.

6. Pass cumulative examinations given monthly during the academic year. The candidate is urged to begin to take these examinations early in his graduate program, and must pass eight of them as a degree requirement.

7. 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.

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. 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 of Polymer Science. Graduates from the three main disciplines (Chemistry, Physics and Engineering) are guided into the appropriate courses of study and research under the supervision of a departmental staff member in their own field. Research facilities of the Institute of Polymer Science are available for thesis research.

In addition to satisfying the general requirements of the graduate School, students working toward the Doctor of Philosophy Degree in Polymer Science must meet the following requirements:

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 hours (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 general Ph.D. degree with specialization in Experimental or Industrial Psychology.

The degree will be awarded to students who, besides fulfilling the general requirements of the Graduate School, have met the following specific requirements:

I. ENTRANCE REQUIREMENTS

1. Completion of M.A. Degree including 45 credits Graduate Courses.

2. Completion of M.A. Core Courses:

	<i>Credits</i>
375:601 Thesis Diss. Seminar	4
*375:602 Advanced Behavioral Statistics I	4
**375:603 Advanced Behavioral Statistics II	4
375:605 Research Methodology	4
375:660 Thesis Research	2-6

*347:671 May be substituted

**347:672 May be substituted

Credits refers to number of quarter credits assigned to various courses.

3. 3.00 GPA Graduate Work.
4. GRE Exam — Aptitude and Advanced Tests.
5. Two letters of recommendation.
6. Successful performance on Psychology Department Qualifying Examinations (See Department Ph.D. Manual)

II. COURSE REQUIREMENTS

1. 135 credit *minimum* total course requirement beyond B.A. including a 45 credit Masters' program). A student may be required to take additional courses.

2. Completion of Ph.D. Core courses (8 courses 28-46 credits out of 135). All required.

	<i>Credits</i>
375:763 Psych. Exp. Design	
or	
347:673 Advanced Behavioral Statistics III	3
375:630 Adv. Gen. Psych.	4
375:640 Experimental Methods and App. I	4
375:710 Theories of Learning	4
375:612 Theories of Personality	4
375:517 History of Psychology	4
375:718 Systems of Psychology	3
375:790 Dissertation Research*	2-20

3. Completion of a major area of study.

The major area course curriculum is planned in conjunction with the student's major advisor and follows suggested Experimental or Industrial Psychology courses specified in department Ph.D. Student manual.

4. Completion of a minor area of study.

The minor area consists of at least 18 credits. See Department Ph.D. Student Manual for specification of minors. A student may petition for variations in minor area.

III. LANGUAGE REQUIREMENT

The language requirements, which must be completed prior to taking the Ph.D. Comprehensive Examinations, may be satisfied under Plan A or B. (See Section on Doctoral Degree Requirements.)

German, French, and Russian are commonly most appropriate. Exceptions may be permitted under Plan A only. Computer Language would be an appropriate substitution under Plan A for the Industrial Ph.D. specialty. Completion of this substitute involves completion of three courses: 445:160 or 445:301, 445:260 and 445:360 with a grade B, no separate examination or independent study with an examination. All substitutions must be approved by the psychology department and must be clearly related to the student's training. No exceptions to

French, German, or Russian will be permitted under Plan B. The student must obtain approval of a language substitution in advance from the faculty of the Psychology Department, and register his desire to be examined by the Language Department. The time and place of the language exams are announced by the Modern Language Department.

IV. RESIDENCE REQUIREMENT

The University specifies at least one year in full time academic residence. Full time residency is defined as completing a full academic load within three quarters (20-24 credits excluding 375:790 Dissertation Research). The Psychology Department may require that this year in full time academic residence be spent at a graduate assistant or fellow.

V. DISSERTATION (Refer to Psychology M.A. & Ph.D. Student Manuals.

VI. OTHER REQUIREMENTS

1. Comprehensive Examination

The comprehensive examination consists of two parts: (1) In the major area an eight hour written examination which may include essay and objective questions, and (2) a two hour oral examination by a committee of five members covering the major areas, as well as additional topics deemed important by the committee. The minor area may be included in this oral.

After a student passes the written examination he and his major advisor agree upon a Committee of five members of the Graduate Faculty. This committee conducts the two-hour oral examination.

A Ph.D. student must take the comprehensive exam within four years of his beginning date as a Ph.D. student. He must have passed the comprehensive exams by the end of his sixth year. Admission to candidacy as well as additional course work is prohibited for students who fail to meet either of the above requirements or twice fail the comprehensive examinations.

2. Advancement to Candidacy — When a Ph.D. student has met the language requirements and passed the comprehensive exam, he should file with the Dean of the Graduate Division an application for Advancement to Candidacy.

The application will bear the approval of the Head of the Psychology Department and will list all requirements that remain to be completed. Prior to advancement to candidacy the performance of every student will be evaluated by the entire staff.

3. Final Oral Examination

For the Ph.D. candidate, the final oral examination by at least five members is conducted by the same procedures as the comprehensive oral examination and must be completed two weeks before the day of Commencement.

The Dean of Graduate Division should be notified of the oral examination two weeks in advance and he will appoint an outside representative to serve with the five-member Dissertation Committee.

This examination is primarily a defense of the dissertation, and an oral examination of the minor area. A majority vote is needed to pass or fail the student. Usually there is no second opportunity to defend the thesis except by petition to the University through the Graduate School.

4. Refer to the Department of Psychology Ph.D. Student manual for other guidelines.

THE MASTER'S DEGREE

Programs of advanced study leading to the Master's degree are offered by the Departments of Biology, Chemistry, Economics, English, Geography, Geology (Earth Science), History, Mathematics, Modern Languages, (French and Spanish), Philosophy, Physics, Political Science, Polymer Science, Psychology, Sociology, Statistics 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 specialty or that he has performed work which the department head approves as equivalent to an undergraduate major.

General requirements for the degree are listed on preceding pages.

Additional requirements in effect in the several departments offering graduate programs follow:

BIOLOGY

Requirements for the Master of Science degree in Biology:

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.

CHEMISTRY

Requirements for the Master of Science degree in Chemistry:

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 in Economics:

1. 45 credits, at least 33 of which (including thesis or its equivalent) must be at the 600 level in Economics. The remaining 12 credits may be 600-level courses taken outside the department or 500-level courses taken in the department. Exceptional departures from this rule with permission of graduate faculty and department head.

2. The following courses are required: 325:602, 611 and either 325:695-696 (thesis) or two additional graduate courses at least one of which must be in the student's major area of concentration. Areas of concentration are:

- a. Economic Theory and Policy.
- b. Quantitative Methods.
- c. International Economics.
- d. Economic Development and Planning.
(Less Developed Countries)
- e. Labor Economics.

3. At least 12 credits for the major concentration and eight credits for the minor concentration are required for all areas except in the case in which the student chooses as major concentration Economic Theory and Policy; in this case a minimum of 16 credits in this area will be required.

4. A comprehensive examination is intended to test the candidate's knowledge in economic theory and in his areas of concentration.

ENGLISH

Requirements for the Master of Arts degree in English:

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 in French:

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 Civilizations, 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.

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.

*Amount of credit allowed for dissertation decided by faculty at time of approval of prospectus.

GEOGRAPHY

Requirements for the Master of Arts degree in Geography:

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: 335:680, 682, 687, and 690, and at least one of the following: 335:610, 620, 630, 640, or 660. 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.

Requirements for the Master of Science degree in Geography:

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: 335:680, 682, and 687, and at least one of the following: 335:610, 620, 630, 640, or 660.

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.

GEOLOGY:

EARTH SCIENCE

Requirements for a Master of Science degree in Earth Science:

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, 337:431/531, 337:465/565, 337:470/570.

b. Earth History — 337:411/511, 337:432/532, 337:460/560, 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 in History:

Completion of 45 credits, including 16 credits in 500 level courses, plus historiography if not part of undergraduate record plus 340:690, 696, a comprehensive examination covering three fields to be determined in conjunction with the departmental adviser. Demonstration, prior to the last quarter of enrollment, of reading proficiency in a foreign language appropriate to the field of study.

MATHEMATICS

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 six credits of the 45 required.

1. Core Requirements

The following courses are required: 345:611-612-

613, 345:621-622-623, 345:698, plus nine graduate credits of additional courses in a single approved area of concentration.

2. Electives

Option II: nine additional credits in 500-level or 600-level Mathematics or Statistics courses.

Option II: 9 additional credits in 500-level or 600-level Mathematics or Statistics courses.

3. Additional Requirements

A comprehensive exam, taking the form suggested by the department, will be required.

PHILOSOPHY

Requirements for the Master of Arts degree in Philosophy:

Complete at least 48 credits in approved courses with a B average and no grade below B.

Complete 360:611, 612, 613, and 614, the sequence in the History of Philosophy, within the 48 credits.

Successfully pass comprehensive examinations in the following areas: Logic and Epistemology and two of: a. Axiology and Ethics, b. Philosophy of Science and Methodology, c. Metaphysics and Ontology, d. Social and Political Philosophy.

Show acquaintance with and competence in some field other than philosophy. (This may be done through undergraduate work, demonstration of active interest, or discussion and planned reading with an adviser.)

Demonstrate mastery of a single language by written translation of either French, German, or Greek.

Complete a thesis under departmental supervision.

PHYSICS

Requirements for the Master of Science degree in Physics:

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 in Political Science:

45 credits, at least 27 of which (including thesis) must be at the 600-level in Political Science. Nine credits for thesis. Each candidate must pass a comprehensive examination covering two fields to be determined in conjunction with his departmental adviser. Thesis topic and completed thesis must be approved by the student's thesis committee. Each student will be required to take at least one course or seminar in each of the four subfields of American Government and Politics, Comparative Politics, International Politics, and Political Theory. In certain cases, at the discretion of the Department Head, candidates for the master's degree may be asked to take undergraduate courses to overcome serious deficiencies.

POLYMER SCIENCE

Requirements for the Master of Science degree in Polymer Science:

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. Demonstration of reading proficiency in a foreign language appropriate to the field of study.

PSYCHOLOGY

Requirements for the Master of Arts degree in Psychology:

I. Entrance Requirement:

1. 45 credits undergraduate psychology including following core courses:

General Psychology	375:141
Quantitative Methods	375:145
Int. to Exper. Psych.	375:147
Social Psychology	375:315
Tests and Measures	375:407
Psychology of Learning	375:412
Abnormal Psychology	375:400

Credits refers to number of quarter credits assigned to various courses.

2. 2.75 overall grade point average; 3.00 GPA in psychology courses.

3. GRE Exam — Aptitude and Advanced Tests.

4. Two letters of recommendation.

II. Course Requirements:

1. Completion of 45 credits graduate psychology courses.

2. Completion of 5 core courses:

375:601 Thesis Diss. Seminar	4
*375:602 Advanced Behavioral Statistics I	4
**375:603 Advanced Behavioral Statistics II	4
375:605 Research Methodology	4
375:660 Thesis Research	2-6
*347:671 May be substituted	
**347:672 May be substituted	

3. Students must average grade B or above in core courses to remain in good academic standing.

4. Core courses must be taken prior to or concurrent with other graduate work except 375:660 — Thesis Research thesis is required.

5. Satisfactory performance on the Department of Psychology qualifying examination (refer to department's M.A. Student Manual).

SOCIOLOGY

Requirements for the Master of Arts degree in Sociology:

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 in Spanish:

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.

I. 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.

STATISTICS

Requirements for the Master of Science degree in Statistics:

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:

The following courses are required: 347:651-652-653, 347:650, 347, 661, 347:662, 347:663, 347:574, 345:610, 345:698.

2. Electives:

Option I: 15 additional credits in 500-level or 600-level Mathematics or Statistics courses.

Option II: 9 additional credits in 500-level or 600-level Mathematics or Statistics courses.

3. Additional Requirements:

A comprehensive exam, taking the form suggested by the department, will be required.

URBAN STUDIES

Requirements for the Master of Arts degree in 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, be applied towards the fulfillment of the Urban Studies core requirement.

2. Statistics: A minimum of 3 credits required from 335:680, 347:671-672, 375:602, 385:600, 398:641 or other approved statistics 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.

— Credits refers to number of quarter credits assigned to various courses.



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.

Additional College requirements may be specified.

THE DOCTOR OF PHILOSOPHY DEGREE

Interdisciplinary programs of advanced study leading to the degree of Doctor of Philosophy in Engineering are offered by the Departments of Chemical, Civil, Electrical, and Mechanical Engineering. In addition to the general requirements of the Graduate School, the candidate must meet the following specific requirements:

1. Satisfactorily complete a course of study prescribed by the student's advisory committee, based on their judgment of his background and a qualifying examination taken by the student.

2. Earn a total of 135 credits of graduate work (90 beyond the M.S. degree). This includes credits for dissertation.

3. Pass a set of preliminary examinations after successful completion of not less than two thirds of the coursework prescribed by the advisory committee.

4. Pass an oral examination in defense of the dissertation.

THE MASTER'S DEGREE

The degrees, Master of Science in Engineering, Master of Science in Chemical Engineering, Master of Science in Civil Engineering, Master of Science in Electrical Engineering, and Master of Science in Mechanical 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

420:604 Transport Phenomena	3
420:615 Reaction Engineering	3

420:620 Classical Thermodynamics	3
Electives*	12
Approved Electives	9
Approved Mathematics	6
	<hr/>
	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>	<i>Credits</i>
Civil Engineering Course work	21
Approved Mathematics or Science	6
Approved, Electives (Thesis Optional)	18
Comprehensive Exam in Lieu of Thesis	0
	<hr/>
	Total 45

<i>Electrical Engineering</i>	
Electrical Engineering Course work	21
Approved Mathematics or Science	9
Approved Electives (Thesis Optional)	15
Comprehensive Exam in Lieu of Thesis	0
	<hr/>
	Total 45

<i>Mechanical Engineering</i>	
Mechanical Engineering Course Work	21
Approved Mathematics	6
Approved Electives (Thesis Optional)	18
Comprehensive Exam in Lieu of Thesis	0
	<hr/>
	Total 45

*Engineering

Engineering Course work	21
Approved Mathematics	6
Approved Electives (Thesis Optional)	18
Comprehensive Exam in Lieu of Thesis	0
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	Total 45

*This program is intended for those students whose interests do not substantially coincide with one of the four Departments. The course selection and the examination are supervised by interdepartmental committees.

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 core program designed to prepare the student generally before he begins to specialize.
3. The completion of preliminary examinations on the core 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.
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.

CORE PROGRAM

The following courses are required of all students in both Ph.D. and Ed.D. Programs:

	<i>Credits</i>
<i>Social Foundations</i>	
510:603 Education and Social Trends	3
510:705 Interdisciplinary Seminar	4
<i>Historical and Philosophical Foundations</i>	
510:700 Philosophies of Education	5
510:701 History of Education in American Society	4
<i>Psychological Foundations</i>	
565:602 Behavioral Bases of Education	4
<i>Research</i>	
590:603 Techniques of Research	5
590:711 Statistics in Education	4
590:899 Research in Education (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 refers to number of quarter credits assigned to various courses.

The general requirements for the Master's degree, listed on preceding pages, must be met. Each department may establish additional requirements relating specifically to that field. In addition, all Master's degree students must complete the courses listed under "CORE COURSES" as well as all requirements in the major field of concentration.

CORE COURSES

	<i>Credits</i>
510:700 Philosophies of Education	5
565:602 Behavioral Bases of Education	4
590:603 Techniques of Research	5
590:899 Research in Education	3-6

In addition to the required courses listed above, the following course lists are published as guides to graduate students selecting work in areas of their interest.

ELEMENTARY EDUCATION

Required:

520:630 Elementary School Curriculum and Instruction	3
520:780 Seminar in Elementary Education	6-12

Electives:

Any combination of courses to meet the minimum of 45 credits which may include up to 18 credits in pertinent electives from 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. Students who look forward to an elementary school principalship will qualify by electing courses in Administration.

SECONDARY EDUCATION

Exception: The course, 590:810, Field Experience (three credits), may be substituted for 590:899, Research in Education (three credits) at the option of the student's advisor.

Required Courses:

	<i>Credits</i>
530:525 Reading Programs in the Secondary School	3
530:780 Seminar: Secondary Education (Subject Area)	3

530:619 Secondary School Curriculum and Instruction	3
530:721 Supervision of Inst. in the Sec. School	3

Choice of one of the following two seminars:

530:780 Seminar: Secondary Education, The Junior High	3
530:780 Seminar: Secondary Education, The Senior High	3

Total Required Courses in Secondary Ed. 15

Required Courses in Subject Field

Graduate Study in Subject Field (Limit of nine credits of 500 Level Courses)	15
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Electives:	3
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Total credits for Master of Arts in Secondary Education Program	50
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This program is intended to prepare the teacher of grades seven through 12 for the following areas: master teacher, department head, supervisor, and resource teacher. 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

Required:

	<i>Credits</i>
520:630 Elementary School Curriculum and Instruction	3
520:631 Elementary School Administration	3
570:601 Principles of Educational Administration	4
570:610 Principles of Educational Supervision	5
At least three (3) additional credits from courses in Administration, Supervision and Curriculum	3

Electives:

Any combination of courses to meet the minimum of 45 credits which may include up to nine credits in pertinent electives from 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 principal or administrator in the elementary schools.

Credits refers to number of quarter credits assigned to various courses.

SECONDARY SCHOOL PRINCIPAL

Required:

	<i>Credits</i>
560:602 Orientation to Guidance Services	3
530:619 Secondary School Curriculum and Instruction	3
530:620 Secondary School Administration	3
570:610 Principles of Educational Supervision	5
570:601 Principles of Educational Administration	4

Suggested Electives:

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: Evaluating the Secondary School	3
530:780 Seminar: Secondary Education: Occupational Education in the Secondary School	3
OR	
570:710 Principles of Curriculum Development	4
OR	
Elective from inside or outside the College of Education	3

Elective courses are planned with the student's adviser. This program is intended for the student who expects to progress as a principle or administrator in the secondary school.

SUPERVISOR

Required:

	<i>Credits</i>
520:630 Elementary School Curriculum and Instruction	3
530:619 Secondary School Curriculum and Instruction	3
570:610 Principles of Educational Supervision	5

Electives:

Any combination of courses to meet the minimum of 45 credits which may include up to nine credits in pertinent electives from course offerings outside the College of Education. Elective courses should be planned with the graduate adviser.

Supervisory certificates are issued for the elementary and the secondary school levels. Details of the requirements may be obtained in consultation with an adviser. The School Superintendent certificate is valid for supervisory duties at either level.

LOCAL SUPERINTENDENT

Required:

	<i>Credits</i>
520:630 Elementary School Curriculum and Instruction	3
530:619 Secondary School Curriculum and Instruction	3
570:601 Principles of Educational Administration	4
570:607 Legal Basis of Education	3
570:608 Principles of School Finance	3
570:610 Principles of Educational Supervision	5

Electives:

Any combination of courses to meet the minimum of 45 credits which may include up to nine credits in pertinent electives from course offerings outside the College of Education. Elective courses should be planned with the graduate adviser.

COUNSELING*

<i>Departmental Core:</i>	<i>Credits</i>
560:617 The Interview	3
561:561 Principles of Teaching Exceptional Children/or	4
561:569 Practices in Educating Children with Learning Disorders	5
561:571 Classroom Behavior Management for Exceptional Children	4
560:625 Seminar in Counseling and Special Education	3
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	14 or 15

Options

(Student chooses one)

Elementary Counseling

560:603 Guidance in the Elementary School	3
560:600 Seminar in Guidance	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	4
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	24

Secondary Counseling

560:602 Orientation to Guidance Services	3
560:600 Seminar in Guidance	3
560:618 Counseling: Theory and Philosophy	3

*Course renumbering effective Winter quarter 1972.

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
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	24

College Adult Counseling

560:601 Student Personnel Services in Higher Education	3
560:600 Seminar in Guidance	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	4
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	24

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

SUMMARY

College of Education Core:	Credits	17
Departmental Core:	14 or 15	
Counseling Core:	24	
Electives:	3	
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Total	58	

SPECIAL EDUCATION

A program of studies for the candidate seeking graduate degree status in Special Education will be selected from the following course listings. The program will be established in conjunction with an adviser and in accordance with individual educational needs and state certification requirements. The areas for concentrated study include preparation for teaching the mentally retarded

child, the learning and/or behavioral disordered child, and in combination with other departments, preparation in supervision and administration of special education.

Credits

<i>Departmental Core</i>	
(Required of all candidates)	
560:617 The Interview	3
561:561 Principles of Teaching Exceptional Children/or	4
561:569 Practics in Educating Children with Learning Disorders	5
561:571 Classroom Behavior Management for Exceptional Children	4
561:625 Seminar in Counseling and Special Education	3
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	14 or 15

SPECIAL EDUCATION*

(20 credits for the following course offerings or related electives in consultation with an adviser)

561:560 Developmental Characteristics of Slow Learning Children	5
561:561 Principles of Teaching Exceptional Children	4
561:562 Methods and Materials for Teaching Slow Learners	3
561:563 Arts and Crafts for the Slow Learner	3
561:564 Reading and Language Arts for the Slow Learner	3
561:565 Social Studies for the Slow Learner	3
561:566 Number Concepts for the Slow Learner	3
561:572 Development Procedures: Trainable Mentally Retarded	5
561:568 Occupational Orientation and Job Training for Exceptional Children	3
561:569 Practices in Educating Children with Learning Disorders	5
561:570 Clinical Teaching Practicum: Children with Learning Problems	5
561:571 Classroom Behavior Management for Exceptional Children	4
561:573 Superior Students — Their Growth Patterns and Education	3
561:600 Seminar in Special Education	3
College of Education Core:	17

Total Credits: 51-52

VISITING TEACHER

The service of the Visiting Teacher includes working with individual children and their families

*Course renumbering effective Winter quarter 1972.

when a child has difficulty such as maladjustment, failure to learn or non-attendance. This service supplements the contribution of the teacher and other personnel and is carried out in cooperation with them. As a liaison service, it helps to integrate school and community services for the benefit of the child.

For those students seeking certification as a Visiting Teacher, the following requirements must be met:

1. Possession of a provisional or higher certificate valid for teaching in Ohio.
2. Evidence of at least one year of teaching experience.
3. The following courses of study:

I. Core Requirements: 14

II. Required Courses in Field:

386:585 Community Organization	4
386:673 Seminar in Social Work Methodology	4
560:602 Orientation to Guidance Services	3
560:619 Techniques of Counseling	3
560:617 The Interview	3
560:623 Evaluation and Diagnosis of Learning Problems	4
570:601 Principles of Educational Administration	4
561:560 Development Characteristics of Slow Learning Children	5
	—
	30

III. Elect one course from the following:

385:504 The Family	4
385:535 Sociology of Urbanization	4
385:523 Juvenile Delinquency	4
510:603 Education and Social Trends	3
570:604 School and Community Relations	3
	4

Total Credits: 48 or 49

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:

Core courses in Master's Program 14-17 credits
Reading Instruction (Schedule minimum of four courses) 17-18 credits

	<i>Credits</i>
580:680 Trends in Reading Instruction	3
580:681 Diagnosis of Reading Problems	5
580:682 Correction of Reading Problems	5
580:683 Clinical Practice in Reading I	4
580:684 Clinical Practice in Reading II	4

Related Professional Education 6-9 credits

With approval of his adviser, each student will schedule a minimum of two courses from the following:

	<i>Credits</i>
520:630 Elementary School Curriculum	3
520:780 Seminar in Elementary Education — Reading	3
570:610 Principles of Education Supervision	5
530:619 Secondary School Curriculum	3
580:692 Advanced Study and Research in Reading Instruction	3
580:693 Supervision and Curriculum Development in Reading Instruction	3

Psychological Foundations 6-12 credits

With the approval of his Adviser, each student will schedule a minimum of two courses from among the following:

	<i>Credits</i>
375:606 Individual Intelligence Testing I	3
375:607 Individual Intelligence Testing II	3
560:602 Orientation to Guidance Services	3
560:623 Evaluation and Diagnosis of Learning Problems	4

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>
580:581 Sociological Foundations of Inner-City School Problems	5
580:582 Characteristics of Inner-City Youth	5
580:686 Seminar: Educating the Disadvantaged	4
530:780 Seminar in Secondary Education: Instruction	3
530:780 Seminar in Secondary Education: Curriculum	3
560:623 Evaluation and Diagnosis of Learning Problems	4
510:690 Internship Teaching and Seminar 691:692 4 credits each quarter	12
590:603 Techniques of Research	5
Electives in Teaching Field in Special Fields in Education	9
Total	48

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>
650:350 Personnel Management	3
325:245, 246, 247 Principles of Economics	9
325:330 Labor Problems	4
375:141 General Psychology	5
375:315 Social Psychology	4
375:160 Industrial Psychology	5
650:371 Principles of Management	3

I. Required Counseling Courses	<i>Credits</i>
560:616 Career Guidance: Theory and Practice	3
560:619 Techniques of Counseling	3
560:617 The Interview	3
560:623 Evaluation and Diagnosis of Learning Problems (Group Testing)	4
560:621 Practicum in Counseling	5
Total	18

II. Elective Program in Management and/or Sociology. In consultation with an academic adviser, the student must select courses from one of these areas and may select courses from both.

<i>Management:</i>	<i>Credits</i>
650:663 Industrial Relations	3
650:668 Administrative Behavior and Methods	3
650:669 Leadership in Organization	3

<i>Sociology:</i>	<i>Credits</i>
385:606 Sociology of Work	3
385:620 Population Theory	4
385:538 Industrial Sociology	4
385:535 Sociology of Urbanization	4

III. Research: Each student will be able to choose one of the three areas in which to complete the research requirement. He must complete all courses listed in whichever area he chooses.

<i>Education:</i>	<i>Credits</i>
590:603 Techniques of Research	5
590:711 Statistics in Education	4
590:899 Research in Education	3

Credits refers to number of quarter credits assigned to various courses.

Management:

650:547 Advanced Statistics	3
650:698 Seminar in Management	3
Prerequisites: 650:663, 650:668, 650:669, 650:547.	

Sociology:

385:600 Sociological Research Methods	4
385:650 Thesis in Sociology	2-8

The master's degree requires a minimum of 45 quarter hours selected in consultation with an academic adviser in the College of Education.

**MASTER OF SCIENCE DEGREE
IN TECHNICAL EDUCATION**

A. Core Courses (14 Credits)

	<i>Credits</i>
510:700 Philosophies of Education	5
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 Industrial Techniques in Technical Education	5
540:530 Course Construction in Technical Education	3

C. Field of Specialization (One option is selected — 13-14 credits)

1. *Teaching Option:* An approved schedule of technical courses selected from the graduate offerings of the College of Engineering, Business Administration, and Fine and Applied Arts and based on the student's academic and professional background.

2. *Guidance Option A* (Must be taken in sequence)

560:619 Techniques of Counseling	3
560:617 The Interview — Approaches, Procedures and Evaluations	3
560:612 Group Counseling	3
560:621 Practicum in Counseling	5

3. *Guidance Option B* (Must be taken in sequence)

560:619 Techniques of Counseling	3
560:623 Evaluation of Diagnosis of Learning Problems	4

4. Curriculum and Supervision Option

570:610 Principles of Educational Supervision	5
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570:710 Principles of Curriculum Development Elective	4 E
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D. Teaching Internship

Students that enter the program without teaching experience are required to take:

510:690 Internship Teaching and Seminar	4
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E. Electives (4-9 credits)

These hours may support the student's field of specialization; add to the student's general education, or professional education courses.

Total Credits 48

Work experience in a technical occupation is also required, the number of years being determined by the student's other qualifications.

**MASTER OF SCIENCE IN TECHNICAL
EDUCATION
VOCATIONAL HOME ECONOMICS OPTION**

	<i>Credits</i>
<i>Core Courses</i> — 14 credits	
510:700 Philosophies of Education	5
565:602 Behavioral Bases of Education	4
590:603 Techniques of Research	5

Professional Technical Education —11 credits

540:510 Postsecondary Technical Education	3
540:521 Instructional Techniques in Technical Education (Home Economics Emphasis)	5
540:530 Course Construction in Technical Education/or	3
540:551 Vocational Home Economics Additional Selections Emphasizing the Adult in Vocational Education	3

Field of Specialization (One Option is Selected) — 13-14 credits.**Family Life (Leads to Specialized Certification)**

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

JOB TRAINING SPECIALIZATION

Child Care and Development

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

Teaching Internship

Students who enter the program without teaching experience are required to 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.

510:690 Internship Teaching and Seminar	4
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Electives — 5-10 credits

These hours may support the student's field of specialization, add to the students' general education, or professional education courses.

Total Credits Required: 48

The Graduate Council approved the curricular modifications at the graduate level and the Vocational Home Economics Option for the Master of Science in Technical Education subject to a review by the Graduate Council in approximately a year.

SIXTH YEAR PROGRAM

In addition to the foregoing Graduate Programs which meet minimum State of Ohio certification requirements in the areas of Administration, Supervision, Guidance and Special Areas, the College of Education offers one year of study beyond the Master's Degree in the areas of School Superintendent, Guidance and School Psychology, respectively.

SCHOOL SUPERINTENDENT

Required:

520:630 Elementary School Curriculum and Instruction	Credits 3
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530:619 Secondary School Curriculum and Instruction	3
570:601 Principles of Educational Administration	4
570:607 Legal Basis of Education	3
570:608 Principles of School Finance	3
570:604 School and Community Relations	3
570:610 Principles of Education Supervision	5
570:701 School Building and Construction	3
570:703 Administration of Staff Personnel	3

Electives:

Any other courses considered necessary or desirable by student, with advice of counselor, which must include credits in pertinent electives in professionally related disciplines such as Sociology, Economics, Public Administration, and Business Administration. The required and elective courses must total 90 credits and must include the Master's Degree.

SCHOOL PSYCHOLOGY*

<i>Prerequisites:</i>	<i>Credits</i>
375:141 General Psychology	5
565:157 Human Development and Learning	4

Departmental Core

561:569 Practices in Educating Children with Learning Disorders/or	5
561:561 Principles of Teaching Exceptional Children	4
560:617 The Interview	3
560:625 Seminar in Counseling and Special Education	3
561:571 Classroom Behavior Management for Exceptional Children	4

Options

PROGRAM I
(Teaching Certificate Required)

565:701 Learning Processes/or	4
375:512 Psychology of Learning/or	4
375:710 Theories of Learning	4
375:503 Personality	4
375:500 Abnormal Psychology/or	5
375:612 Theories of Personality	4
375:608 Experimental Development I	4
560:623 Evaluation and Diagnosis of Learning Problems/or	4
375:507 Psychological Tests and Measurements/or	4
375:706 Advanced Tests and Measurements	4
375:606 Individual Intelligence Testing I: Stanford-Binet	3
375:607 Individual Intelligence Testing II: Wechsler Scales	3
375:619 Survey of Projective Techniques	3

*Course renumbering effective Winter quarter 1972.

562:601 Seminar: Role and Function of the School Psychologist	3
562:760 Internship in School Psychology	3
562:761 Internship in School Psychology	3
562:762 Internship in School Psychology	3

PROGRAM II

(Courses taken in lieu of a teaching certificate — no teaching certificate required)

565:157 Human Development and Learning/or	4
565:602 Behavioral Bases of Education	4
520:630 Elementary School Curriculum and Instruction	3
520:631 Elementary School Administration	3

561:561 Principles of Teaching Exceptional Children	4
580:681 Diagnosis of Reading Problems	5
510:401 Problems in Education/or	5
510:700 Philosophies of Education	5
590:810 Field Experience	3
Plus all courses included in Program I	

College of Education Core: 17

With minor adjustments in course requirements it is possible to obtain a master's degree in School Psychology in the Psychology Department. This program requires the equivalent of two academic years to complete.

The College of Business Administration

pursue a graduate concentration in Accounting but who do not have a baccalaureate degree in Accounting.

Special Admission to graduate status may be granted to applicants who do not possess a 2.50 grade point average for their undergraduate course work or those who have not earned a grade point average of at least 2.75 in all courses in Economics and Business Administration. Special Admission status may be recommended when there is reason to believe that the applicant can successfully complete the graduate program, as evidenced by his recent academic accomplishments. The guidelines outlined below will be used in evaluating students for Special Admission status.

If either of the following conditions exist:

	I	II	III
a. undergraduate grade point average in all courses	2.35-2.49	2.20-2.34	under 2.20
or b. grade point average for all courses in Economics and Business Administration previously taken	2.60-2.74	2.50-2.59	under 2.50

then *all* of the following requirements must be satisfied:

a. minimum acceptable ATGSB score	500	525	550
and b. minimum quarter credits in postbaccalaureate courses at The University of Akron (designated by the Head of the Graduate Business Program)	9 credits	18 credits	27 credits
and c. minimum acceptable grade point average for all postbaccalaureate courses at The University of Akron	3.20	3.35	3.50

Credits

325:243 Survey of Economic Analysis	4
620:401 Accounting Survey	5
640:371 Business Finance	5
650:346 Business Statistics I	3
650:347 Business Statistics II	3
650:371 Principles of Management	3
660:300 Marketing Principles	4

Students taking these courses for postbaccalaureate credit at The University of Akron must maintain a minimum of a 3.00 grade point average for all postbaccalaureate work to be considered eligible for graduate status; exceptions to this rule are not made. Additional prerequisite courses in Accounting will be needed by those students desiring to

Applicants granted Special Admission status will not be considered for Full Admission status until they have completed at least 18 graduate credits with a grade point average of at least 3.00.

A person who has completed a course as an undergraduate or postbaccalaureate student cannot take an equivalent course for graduate credit toward a Master's degree in the College of Business Administration. A maximum of nine graduate credits may be transferred from an accredited college or university to the graduate program in the College of Business Administration.

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 area. Students must have a minimum of 54 graduate credits earned (within a five year period) with at least a 3.00 grade point average to meet the graduation requirements for an MBA degree. The following courses are required of all MBA students, regardless of their area of concentration:

	<i>Credits</i>
3 of 4 Required:	
620:610 Accounting Management and Control	5
640:674 Financial Management and Policy	5
650:663 Industrial Relations	3
660:660 Marketing Management and Policy	4

All Required:

325:601 Macro-Economic Theory	4
640:650 Administering Costs and Prices	5
640:655 Government and Business	5
650:640 Quantitative Methods in Operations Management	4
650:668 Administrative Behavior and Methods	3
650:669 The Leadership Role in Organization	3

In addition to the above requirements for all MBA candidates, specific supplementary requirements for the various concentrations on the MBA program are outlined below.

	<i>Credits</i>
Concentration in Accounting (All Required)	
620:637 Advanced Accounting Theory	5
620:698 Seminar in Accounting	5
Accounting electives	6-8
	—
Total Credits required:	54

Concentration in Finance (All Required):

	<i>Credits</i>
640:698 Seminar in Finance	5
650:670 Organizational Theory and Policy Formulation	3
Finance electives	8-10
	—
Total Credits required:	54

Students concentration in Finance are required to select 640:674 Financial Management and Policy as one of the three courses above.

	<i>Credits</i>
Concentration in International Business (All required):	
660:629 The International Business Enterprise	4
660:689 Seminar in International Business	4
International Business electives	8-10
	—
Total Credits required:	54

Prior to graduation, the student concentrating in International Business must demonstrate a reading and conversational proficiency in one language other than English by one of the following methods:

- a. certification by the Modern Languages Department of The University of Akron.
- b. presentation of earned college credits in such a language, averaging "C" or better, through two academic years (four semesters or six quarters)

Concentration in Management (All Required):

	<i>Credits</i>
650:670 Organizational Theory and Policy Formulation	3
650:698 Seminar in Management	5
Management electives	8-10
	—
Total Credits required:	54

Concentration in Marketing (All Required):

	<i>Credits</i>
660:699 Seminar in Marketing	4
Marketing electives	12-14
	—
Total Credits required:	54

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. Those students desiring to earn the MS in Accounting must have a minimum of 45 graduate credits earned (within a five year period) with at least a 3.00 grade point average. The following courses are required:

	<i>Credits</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
1 of 3 Required:	
325:601 Macro-Economic Theory	4
325:611 Micro-Economic Theory	4
640:650 Administering Costs and Prices	5

All Required:

	<i>Credits</i>
620:637 Advanced Accounting Theory	5
620:698 Seminar in Accounting	5
650:668 Administrative Behavior and Methods	3
650:669 The Leadership Role in Organization	3
Accounting electives	14-16
	—
Total Credits required:	45

**MASTER OF SCIENCE IN
MANAGEMENT**

The Master of Science in Management program is designed to give the student a limited exposure to the functional areas of business and a detailed concentration in Management. Those students desiring to earn the MS in Management must have a minimum of 48 graduate credits earned (within a five year period) with at least a 3.00 grade point average. The following courses are required:

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

Credits

All Required:

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

Total Credits required: 48

The College Of Fine And Applied Arts

THE MASTER'S DEGREE

HOME ECONOMICS

See Vocational Home Economics option under College of Education's graduate programs.

MUSIC

The degree Master of Music is offered by the Department of Music with options for music education and for performance. 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 approved as equivalent to an undergraduate major, and that he has maintained a 2.5 overall grade point average (on a 4.0 system) and a 2.75 average in his major field.

He must be able to demonstrate in an entrance examination satisfactory knowledge gained through undergraduate work in music history, theory, music literature, and basic conducting skills. If he is unable to do so, he must expect to audit the undergraduate courses in these areas until such examinations can be passed. He must demonstrate his performing skills on his major instrument and, depending upon his chosen option, satisfy a jury that he is prepared to undertake satisfactorily the applied music requirement.

He must complete 49 credits as follows: the *core program* will include 750:555, 605, 606, 607, six credits to be chosen from 750:551, 601 604, and 608, six credits of applied music on his major instrument and three quarters of appropriate ensemble participation. The *music education option* includes 375:610, 750:553, 611 (530:611), 612 (530:612), 648 and eight credits of cognate work. The *performance option* includes six additional credits in applied music on the student's major instrument. Repertoire and Pedagogy in the pertinent field, 750:609 and 649 and eight credits of cognate. Cognate for both programs must be approved by the student's faculty advisor.

Following the completion of all course work, the student must pass a comprehensive examination covering the salient materials of his graduate program.

The special project (a recital for those choosing the performance option, a thesis for those in music education) must be approved by the candidate's committee.

SPEECH AND THEATRE ARTS

A program of study leading to the Master of Arts degree, in Speech and Theatre Arts is offered by the Department. Before undertaking such a program, the student must show that he has completed:

1. the general requirements for admission to the Graduate School.
2. 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.
3. in addition to the general requirements for the degree listed in preceding pages, a course of study with a minimum of 45 credits including Thesis.
4. a written Thesis (creative, historical, critical, or experimental) approved by the candidate's committee.

There is no *foreign language* required for the M.A. degree. To fulfill the *residence requirement*, work must be completed with a five-year period from the date of initial course-work. This period must include one full year of residence work (three consecutive quarters). The student, upon completion of his master's thesis, must pass satisfactorily a comprehensive *oral examination* (on course work and thesis) to be administered by his Graduate Committee.

I. Course of Study: *Theatre Arts* Concentration

A. *Required Courses*

780:600 Introduction to Graduate Studies	3
699 Research and Thesis	3-9
(The Graduate Faculty will assign the actual number after the oral examination.)	

B. *Theatre Core*: 36 credits from the following:

780:560 Dramatic Criticism	4
567 Contemporary Theatre Styles	4
641 Problems in Directing	4

642 Problems in Contemporary Acting	4
660 Advanced Technical Theatre	3
662 Seminar in American Musical Theatre	3
663 Seminar in American Theatre	3
664 Seminar in <i>Commedia dell'arte</i>	3
665 Seminar in Theatre Audiences	3
667-8-9 Studies in Dramatic Practice	3 each; 9

C. Electives in Speech and Theatre.
Minimum of nine recommended.

568 Children's Theatre Workshop	4
562 Playwriting	3

D. Electives in Cognate Fields.
No specific number required.

Students may elect related graduate courses in English, psychology, art, music or other theatre courses to complete the required minimum of 54 credits.

E. Thesis Options

1. *Historical.* An examination, in detail, of some particular aspect in theatre history (period, movement, playwright, director, actor, manager, a particular theatre).

2. *Critical.* A detailed critical analysis of a particular playwright, play or combination of plays.

3. *Creative.* The preparation and production of a play, the preparation and presentation of a particular role, the design and execution of costumes or scenery or lighting. In the case of the creative thesis, the student must present the prospectus at *least three quarters prior* to the planned execution of the project.

F. Participation in Productions

It is expected that each graduate student will involve himself in the major productions of University Theatre. Any theatre work undertaken off campus must have the prior approval of the Graduate Faculty in theatre.

II. Course of Study: *Rhetoric and Communication Concentration*

A. Required Courses (780)

600 Introduction to Graduate Studies	3
699 Research and Thesis	3-9

B. Rhetoric and Public Address Core:
18 credits from the following:

780:590 Rhetorical Criticism	4
640 Special Problems — Rhetorical and Public Address	6

690 Rhetorical Theory	3
691 American Public Address I	3
692 American Public Address II	3
693 British Public Address	3
Elective in Speech and Theatre Arts: 12-13 credits recommended.	
554 Group Processes	3
567 Contemporary Theatre Styles	4
665 Seminar in Theatre Audience	3
680 Special Problems — Communication/Mass Media	3
681 Advanced Persuasion and Propaganda Analysis	3
684 Studies in Communication Research	3

C. Communication and Mass Media Core:

780:554 Group Processes	3
680 Special Problems — Communication/Mass Media	6
681 Advanced Persuasion and Propaganda Analysis	3
684 Studies in Communication Research	3
Total	15

Electives in Speech and Theatre:
15 credits recommended.

780:567 Contemporary Theatre Styles	4
590 Rhetorical Criticism	4
640 Special Problems — Rhetoric and Public Address	3
665 Seminar in Theatre Audience	3
690 Rhetorical Theory	3
691 American Public Address I	3
692 American Public Address II	3
693 British Public Address	3

D. Electives in Cognate Fields:

No specific number required.

Students may elect related courses in English, philosophy, political science, psychology, sociology and related Speech Pathology and Audiology courses to complete the required minimum of 52-54 credits.

E. Thesis Options

As there are several options among the types of theses which one can pursue under rhetoric, public address, communication theory and mass media, the type of thesis to be chosen will be at the discretion of the candidate and his thesis adviser, with the final decision rendered by the advisory committee assigned to the candidate.

**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 or language disorders. 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.

3. Complete a course of study with a minimum of 48 credits, including thesis.

4. Prepare a written thesis approved by the candidate's committee.

All graduate students within the department must take 770:625 (One or two quarters) and 620:625 (three quarters) and six credits in audiology for speech pathology majors, and six credits in speech pathology for audiology majors.

The School of Law

Stanley A. Samad, J.S.D., *Dean*
John P. Finan, J.D., *Assistant 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 representation of their individual, corporate, or governmental clients, but who will also serve as architects 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 should 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.

Comments on specific fields of logical background study are as follows:

ACCOUNTING — so that a future lawyer will be able to understand financial terminology.

ECONOMICS — valuable because law protects and regulates economic interests.

HISTORY — important because political, economic and constitutional history are basic to the study of law.

POLITICAL SCIENCE — a logical program for pre-law students because their future profession deals with governmental and political policies.

SOCIOLOGY — valuable because many jurisprudents explain law in sociological terms and advocate a sociological, humanistic approach to the development of law.

PHILOSOPHY — philosophic methods are useful in achieving orderly, critical thinking.

PSYCHOLOGY — essential because law is a means of regulating human behavior and therefore, a lawyer should understand behavioral motivation and response.

LANGUAGES — valuable because much of law practice is apt to have international significance and an awareness of other tongues brings understanding of other people.

For additional information, see the official *Pre-Law Handbook*, 1971-72 edition, published in October 1971 and prepared by the Law School Admission Test Council and the Association of American Law Schools. This book includes material on the law and lawyers, pre-law preparation, applying to law schools, and the study of law, together with individualized information on most American law schools. It may be obtained at college

bookstores or ordered from Educational Testing Service, Princeton, New Jersey 08540.

REQUIREMENTS FOR ADMISSION

An applicant for admission to the School of Law desiring to become a candidate for the Juris Doctor degree must satisfy the following requirements:

1. He must be of good moral character.
2. He shall show evidence that he has received a Bachelor's 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. He must have taken prior to admission the Law School Admission Test and earned a satisfactory score.
4. He must register with the Law School Data Assembly Service (LSDAS).

ADMISSION PROCEDURES

The procedures for securing admission are as follows:

1. Obtain an application form from the School of Law.
 2. Submit to the School of Law, The University of Akron, an application fee of \$20.00 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 analyzes the transcript(s) and Law School Admission Test score, and sends copies to the School of Law.)
5. A personal interview with the Assistant Dean of the School of Law may be required as

condition of admission; otherwise, the personal interview is optional.

6. If accepted for admission by the School of Law, file with the School of Law an official, final copy of the transcript of the record from the institution which awarded the baccalaureate degree, at least one week prior to the official registration period published in the University Calendar.

The School accepts beginning students only in the fall quarter.

All inquiries and correspondence pertaining to admission should be sent to:

Assistant Dean
School of Law
The University of Akron
Akron, Ohio 44304

recording the quality of a student's academic work:

<i>Grade</i>	<i>Quality Points Per Credit</i>
A Excellent	4
B Good	3
C Satisfactory	2
D Poor	1
F Failed	0

<i>Grade</i>	<i>Quality Points Per Credit</i>
I Incomplete	0
IP In Progress	0
PI Permanent Incomplete	0
CR Credit	*
NC No Credit	0

*Not calculated in cumulative average.

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

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:	\$22.00
Fees for nonresidents of Ohio, per credit:	\$28.00

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 \$1140 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 65,000 volumes. University libraries comprising more than 500,000 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, Partnership 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 responsibilities and problems they will face upon admission to the bar, to provide closer integration among the future lawyers and present-day leaders of the legal profession, to promote professional responsibility and to acquaint law students with the opportunities and obligations to improve the administration of justice through the organized bar. In addition, the Student Bar Association provides a form of student government and promotes good fellowship.

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 judgment 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 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 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 woman 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, Sydney 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 has 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

<i>First Quarter</i>	<i>Credits</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>	<i>Credits</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	4

<i>Third Quarter</i>	<i>Credits</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	4

Second and Third Year, Required

<i>First Quarter</i>	<i>Credits</i>
920:628 Legal Profession I	1
920:633 Evidence I	3
920:685 Constitutional Law I	3

<i>Second Quarter</i>	<i>Credits</i>
920:629 Legal Profession II	1
920:634 Evidence II	3
920:686 Constitutional Law II	3

Third Quarter

PART-TIME PROGRAM

(These courses are offered during the evening.)

First Year, Required

<i>First Quarter</i>	<i>Credits</i>
920:603 Legal Process	4
920:605 Contracts I	4
920:623 Legal Research & Advocacy I	1

<i>Second Quarter</i>	<i>Credits</i>
920:606 Contracts II	4
920:617 Torts I	4
920:624 Legal Research & Advocacy II	1

<i>Third Quarter</i>	<i>Credits</i>
920:618 Torts II	4
920:628 Legal Profession I	1
920:638 Criminal Law	4

Second Year, Required

<i>First Quarter</i>	<i>Credits</i>
920:614 Property I	4
920:641 Civil Procedure I	4

<i>Second Quarter</i>	<i>Credits</i>
920:625 Property II	3
920:642 Civil Procedure II	4

<i>Third Quarter</i>	<i>Credits</i>
920:626 Property III	3
920:629 Legal Profession II	1
920:643 Civil Procedure III	4

Third and Fourth Year, Required

<i>First Quarter</i>	<i>Credits</i>
920:633 Evidence I	3
920:685 Constitutional Law I	3

<i>Second Quarter</i>	<i>Credits</i>
920:634 Evidence II	3
920:686 Constitutional Law II	3

Credits refers to number of credits assigned to various courses.

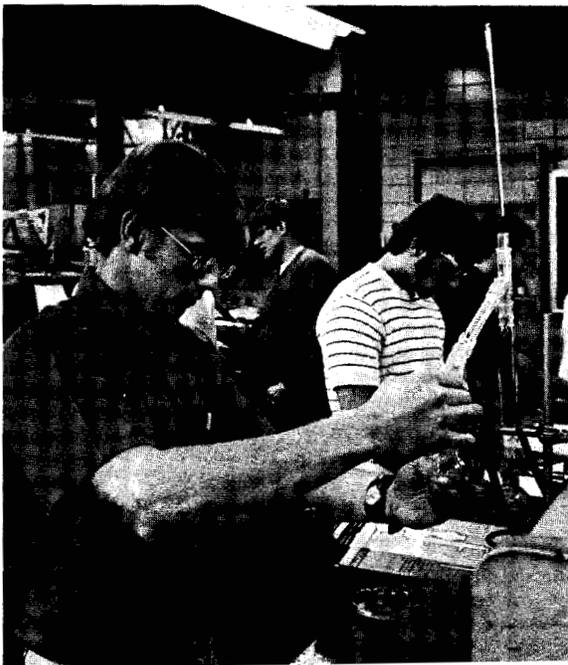
<i>Electives</i>		<i>Electives</i>	
	<i>Credits</i>		<i>Credits</i>
920:602 Development of Law and Legal Institutions	4	920:672 Corporations II	3
920:607 Insurance Law I	2	920:673 Trusts and Estates I	3
920:608 Insurance Law II	2	920:674 Trusts and Estates II	3
920:619 Agency-Partnership I	2	920:675 Trusts and Estates III	2
920:620 Agency-Partnership II	2	920:676 Problems in Labor Law	4
920:622 Administrative Process	4	920:677 Legal Problems in Business Planning	5
920:631 Commercial Transactions I	4	920:678 Seminar in International Transactions and Relations	4
920:632 Commercial Transactions II	3	920:679 Problems in Secured Transactions	3
920:640 Administration of Criminal Justice	3	920:681 Seminar in Judicial Administration	3
920:644 Federal Jurisdiction and Procedure	4	920:682 Accounting For Lawyers	3
920:645 Problems in Trial Advocacy	2	920:683 Conflict of Laws I	3
920:651 Social Legislation	4	920:684 Conflict of Laws II	3
920:652 Creditors' Rights	4	920:687 Federal Income Taxation I	3
920:653 Municipal Corporations	3	920:688 Federal Income Taxation II	3
920:654 Domestic Relations	3	920:689 Federal Estate and Gift Taxation	4
920:655 Individual Studies and Research	1-5	920:690 Antitrust Law	4
920:660 Seminar in Selected Legal Problems	1-4	920:691 Legal Regulation of Competition	4
920:661 Seminar in Political and Civil Rights	3	920:692 Administration of Law Relating to Juveniles	3
920:662 Seminar in Estate Planning	4	920:693 Remedies I	3
920:663 Patent, Trademark and Copyright Law	3	920:694 Remedies II	2
920:665 Seminar in Land Use Planning	3	920:695 Legal Aid	3
920:666 Seminar in Jurisprudence	4	920:696 Law Review	1
920:667 Seminar in Comparative Legal Systems	3	920:697 Legal Control of the Environment	4
920:668 Labor Law	4	920:698 International Law I	3
920:670 Seminar in Legal Problems of the Poor	3	920:699 International Law II	3
920:671 Corporations I	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

Michael P. Rzasa, Ph.D., *Dean*

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 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. During World War II, the research activities were expanded under the impetus of the U.S.

Government Synthetic Rubber Program.

After the war, it soon became apparent that the phenomenal rise of the giant synthetic rubber industry had brought the whole science and technology of rubber into the broader field of *polymer science*, and that 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, comprising about 45,000 square feet of floor space. 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

Lascelles 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 a customized approach to 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

Allen Noble, 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 450 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

concentrations, programs in international business and various opportunities for students and alumni to travel overseas.

Through its Advisory Committee, composed of faculty and students of the various colleges, the Center for International Programs attempts to find ways of committing the University to programs that produce students who will be more knowledgeable about the total world in which we find ourselves. Hopefully, this can be done by increasing the international content of our various courses and finding ways to expose students and faculty to the various cultures of the world.

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., *Acting Director*

The Center for Urban Studies was established in 1965 to analyze and explore the basic problems of the urban structure through a continuing program of urban research. The establishment of the Center represents a recognition by the administration and faculty of the University of the need to gain a more comprehensive understanding of the complex interrelationships which cause expansion decay, wealth and poverty, advantage and exclusion, and a host of other problems and opportunities in the highly urbanized area today.

The Center for Urban Studies represents a commitment on the part of the University to help find solutions to many of the complex problems created by urban growth and development.

The objective of the Center is to provide a

deeper understanding of the urban growth process on both the local and regional levels through a continuing program of basic and applied research. Initially the Center's major emphasis was Akron and its environs, more recently, the Center's horizons have broadened and programs have been undertaken which encompass the whole of Northeast Ohio. However, the findings and applications of the Center's work have a much broader scope and application.

The Center for Urban Studies represents an inter-disciplinary approach to the analysis of the urban region. In its research activities the Center draws upon the skills of the faculty members in the various disciplines represented in the Colleges of Arts and Sciences, Engineering, Education, Business Ad-

ministration, and Fine and Applied Arts. The Center provides facilities through which interested faculty and graduate students can carry out urban research activities.

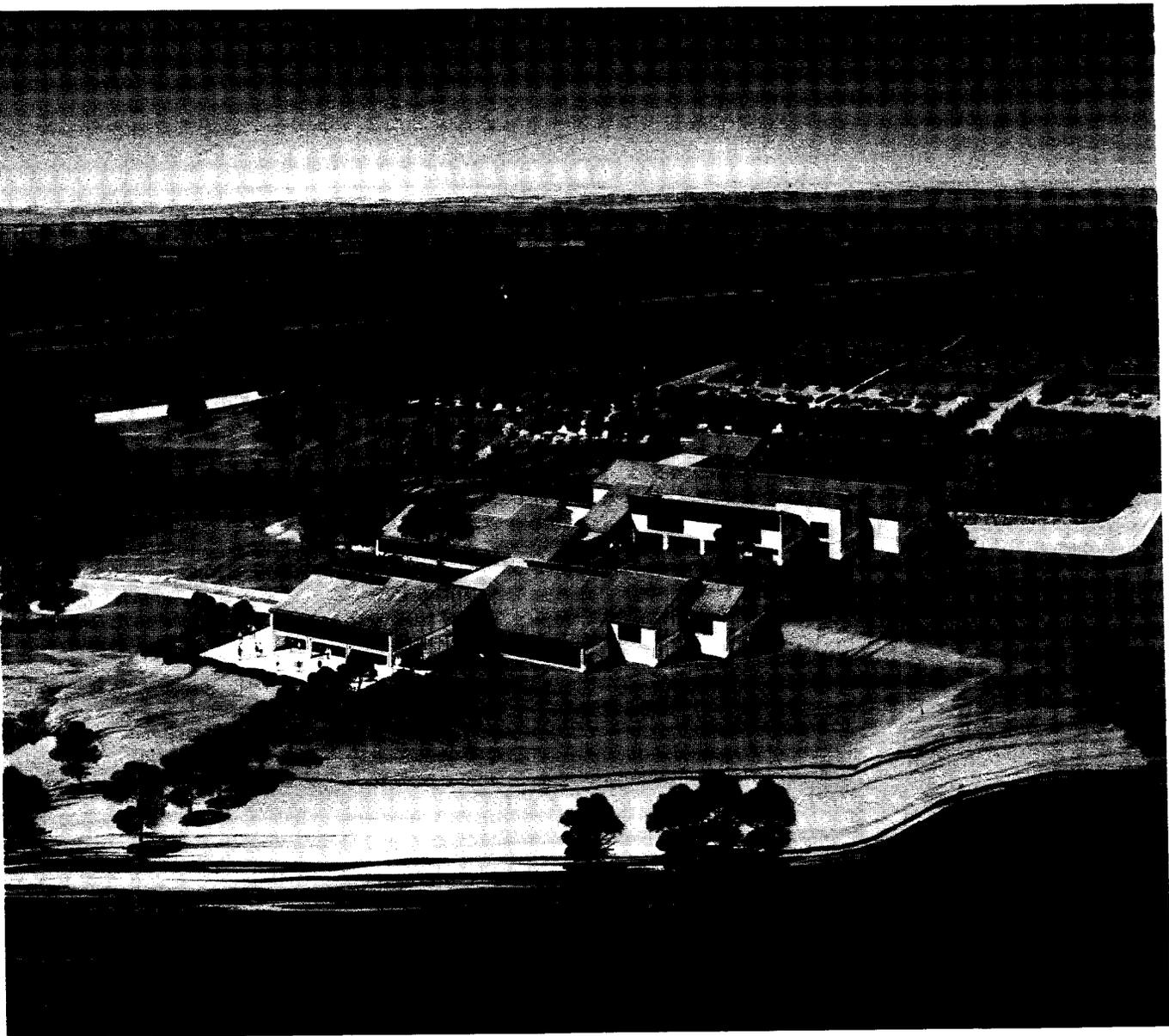
To achieve its objective the Center for Urban Studies initiates and conducts programs in three major areas — Research, Data Accumulation and Extension.

BASIC AND APPLIED RESEARCH is being undertaken in many diverse areas, some of which are: Law Enforcement Planning, Urban Recreation, Community Development, Low Income Housing, Municipal Administrative Organization, and Social Service Planning. Research in these areas will be

useful to local communities, planners, organizations, urban researchers, and the citizenry of urban regions.

ACCUMULATION of data resulting from research conducted by the Center and other agencies will be maintained in the Center's research library for the storage, processing and retrieval operations necessary to continual program of research.

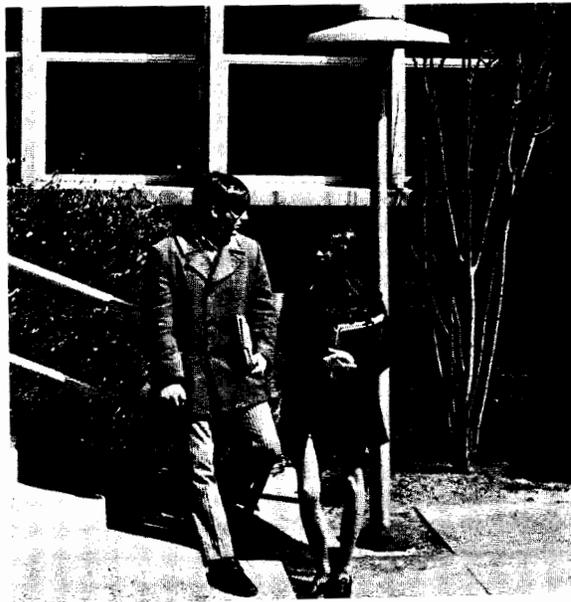
EXTENSION programs including seminars and conference are designed to make the results of the urban research activities directly available to public officials, the business community and residents in the urban region.





Continuing Education

Education at The University of Akron is a year-round, 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 is presently constructing a branch campus at Orrville, Ohio.



The Evening College

John G. Hedrick, M.A., *Dean*
 Frank V. Kelley, M.S.Ed., *Assistant Dean*
 Cecil L. Dobbins, B.B.A., *Assistant Dean*

The University of Akron has a rich, historical tradition to devoting special attention to the development of courses for the education and interest of busy part-time students through evening classes which were first offered in 1909. This form of continuing education for adults has become as significant a pattern for urban universities in America today as was the pattern of agricultural extension in rural America nearly a century ago.

Through evening credit courses, informal special interest courses and programs of education for public responsibility, the Evening College keeps its doors open around-the-clock and around-the-year.

The Evening College at The University of Akron is a continuation of the regular daytime college life on campus. Credit courses have the same academic value whether taken in day or evening. Many of the full-time day faculty members also teach Evening College courses, insuring a high calibre of instruction.

Additional part-time faculty members are engaged to augment the Evening College teaching staff and accommodate large annual enrollments. These part-time instructors are people from the community with a full range of academic and practical experiences in their own and related fields.

The Evening College fulfills its responsibilities for the continuing education of adults by administering the credit courses offerings of the University's several undergraduate and graduate colleges and schools. Informal, special interest courses are arranged by the College's Department of Special Programs.

Students enrolled in the Evening College include, but are not limited to, the following:

1. Persons who desire to accumulate University credits in a formal degree pattern, but who hold full-time jobs during the day. These students may begin, continue, or complete their education with Evening College courses.

2. Some students, in accepting part-time jobs, are requested by their employers to work during some of the daytime hours. They may attend lectures in the morning, work a partial schedule in the late afternoon, and return to the campus for evening lectures. The Evening College's definition of full and part-time job includes the role of the homemaker who often finds this College the major means of achieving her personal educational goal.

3. Many mature people, who are established in their chosen professions, invest some of their night hours in the Evening College to improve themselves academically and professionally. They may be awarded any of the University's degrees after meeting all of the requirements and earning sufficient credit in the Evening College.

Evening College classes begin officially at 4 p.m. Class patterns are generally arranged on a Monday-Wednesday or Tuesday-Thursday cycle. There are also a few Evening classes on Friday evenings.

THE WEEKEND COLLEGE

In the Winter Quarter, 1970, as part of its continuing commitment to expanding opportunities for part-time, college-level education, the Evening College offered an academic innovation — the Weekend College.

The concept is this: some working people (housewives, traveling sales personnel) may be unable to attend day or evening classes during the week. To provide them with their opportunity to pursue a college education, the Evening College is offering classes on Saturday mornings and afternoons. On 10 consecutive Saturdays a student will have the same number of classroom contact hours as his day counterpart who attends three sessions per week, or the evening student who attends two sessions per week for the 10-week quarter.

EVENING COLLEGE ACTIVITIES

An Evening Student Council coordinates the extracurricular student activities of the College, which are similar to those of the day college and, in fact, sometimes are part of the daytime schedule.

Organizations which have been established for Evening College students include Alpha Sigma Lambda, the national scholastic honorary fraternity; Gamma Beta, the Evening College sorority; Chi Sigma Nu, the Evening College fraternity, and Alpha Epsilon, the honorary fraternity.

Bulletins, brochures and flyers with Evening College Department of Special Programs information may be obtained from the Evening College offices, Room 118, Spicer Hall. These offices are opened from 8 a.m. to 9 p.m. Monday through Thursday,

from 8 a.m. to 5 p.m. on Fridays, and 8 a.m. to 1 p.m. on Saturdays during the regular academic year. These publication outline admissions procedures, steps in registering, prerequisites, student course loads, absences, withdrawals, and grades.

A student newsletter, the *Nite-Life*, written and edited by a student staff, keeps Evening College

credit enrollees informed of current happenings on campus.

Enrollment in the Evening College each quarter approximates 6,000 students. This compares to approximately 10,000 students enrolled in the day session. These figures do not include approximately 2,000 students registered in the Department of Special Programs.

The Summer Sessions

William A. Rogers, Ed.D., *Dean*

In 1970 slightly over 12,000 students enrolled in the summer program. Summer study opportunities are designed to satisfy a variety of student educational needs. Some students enroll in the summer session to help accelerate their academic progress. In doing so they will enter the job market earlier. Others who have taken less than a full academic load during the regular quarters enroll to make up course work. Entering fall freshmen begin programs to accelerate or take remedial courses. Elementary and secondary school teachers look to the summer as a period for regeneration of their intellectual energies. Summer is popular as study time because there are other "inherent" differences between the regular academic year and the summer.

Faculty, student, and administration have, on occasion, noted that the summer "feels" different from the regular academic year. Obviously, the change in the weather is an important differential. Equally important is the fact that summer study represents a period when the on-going rhythm of the academic year is broken. The system of 10-week quarters, 50-minute classes, four or five courses three days a week is changed to two courses that meet daily for five days for 80 or 105 minutes each, for five weeks. The rhythm of instruction is changed because the faculty member must recast his material into a new time sequence. Obviously, this change helps the faculty member take a refreshed look at his subject matter.

Students generally tend to increase their outside work commitments in the summer and decrease their academic load, which tends to be the reverse in the academic year.

Add to this the energy and beauty that the summer sun produces, and one can more easily understand why the summer session experience is different and refreshing.

1972 SUMMER CALENDAR

Summer Session I Begins Monday, June 19
Ends Friday, July 21

Summer Session II Begins Monday, July 24
Ends Friday, August 25
Post Session Begins Monday, August 29
Ends Tuesday, September 20

Examples of Three-Week Patterns

Daily	June 19 — July 7
9:00-10:45	Institutions 110:115—3 crs.
7:05- 8:50	Western Cult. 110:317
10:30-11:40	Lecture—0 crs.
11:50-12:50	Discussion—3 crs.
1:00- 2:00	Discussion—3 crs.
	Inorganic Chemistry 315:121
7:45- 8:50	Lecture—3 crs.
9:00-12:00 MWF	Lab—0 crs.
Daily	July 10 — July 28
9:00-10:45	Institutions 110:116—3 crs.
7:05- 8:50	Western Cult. 110:318
10:30-11:40	Lecture—0 crs.
11:50-12:50	Discussion—3 crs.
1:00- 2:00	Discussion—3 crs.
	Inorganic Chemistry 315:122
7:45- 8:50	Lecture—3 crs.
9:00-12:00 MWF	Lab—0 crs.
Daily	August 2 — August 18
9:00-10:45	Institutions 110:117—3 crs.
7:05- 8:50	Western Cult. 110:319
10:30-11:40	Lecture—0 crs.
11:50-12:50	Discussion—3 crs.
1:00- 2:00	Discussion—3 crs.
	Inorganic Chemistry 315:123
7:45- 8:50	Lecture—3 crs.
9:00-12:00 MWF	Lab—0 crs.

THE ENLARGED CAMPUS

Each summer more learning takes place off campus, in fact, in many other parts of the world. The following four workshops were held, i.e., *Classrooms Around the World*, *Performing Arts Tour to Northern Europe*, *Technical and Vocational Education in Northern Europe* and *Beyond the Classroom-To Latin America*. *Geology Field Trip* took 34 students to Wyoming for five weeks of intensified field study. Each year approximately 60 selected student teachers complete their practice teaching in schools located in the five surrounding counties. Other students enrolled in the *Food Technology Program* complete their Food Service Internship Program in restaurants, motels, hotels and other institutions. *Law Enforcement Program* students were enrolled in on-the-job training projects.

Four faculty members from the *Speech Pathology & Audiology* Departments each summer, work with speech majors interested in diagnostic methods. During both of the five week summer sessions students and faculty worked in Children's Hospital and Akron General Hospital helping those with speech and hearing problems.

NEW ACTIVITIES

Educational programs designed for new audiences are programmed. In 1971, for example, the following specialized workshops were offered; For law enforcement personnel, *Community Relations and Middle Management Techniques*; for *Substitute Teachers* a comprehensive two week program concerned with the latest technological concepts of learning; two special workshops were held for those men in the field of school business and maintenance; *Operation and Maintenance Functions In Public Schools* and *Administration of School Business*.

Since junior high school represents a specialized transitional educational period for young people requiring differential treatment a workshop in *Junior High School Education* was organized.

As a response to the importance of the first years of education a workshop *Methods and Materials for Modern Kindergarten* was programmed, to help teachers relate to young people.

Urban junior and senior high schools are beginning to respond to the need for specialized curriculum for all students. The *Institute on Afro-American Studies for Public Schools* emphasized the old traditions, folklore, context of Afro American music, politics, art and the black experiences.

Off-Campus Academic Programs

William A. Rogers, Ed.D., *Dean*

In 1967 the Ohio Board of Regents received requests from the Cities of Wadsworth and Orrville for a branch university facility. The Ohio Board of Regents asked each community to present evidence to support their bid for the branch. Kent State University supported the Wadsworth position and The University of Akron joined the Orrville community in the quest for a branch university. Numerous presentations were made by each community from 1967 through 1970 to the Ohio Board of Regents.

On April 4, 1970 the Ohio Board of Regents held its monthly meeting in Wooster Ohio at the Ohio Agricultural Research & Development Center. The purpose of the meeting was to have each community present its final case to the Board, in the auditorium of the Research Center. Presentations were made followed by the Ohio Board of Regents' visit to each site, in order to make a branch site selection.

At the regular September 21, 1970 meeting of the Ohio Board of Regents in Columbus, it was

agreed that the 155 acre site, one quarter mile north-west of Orrville was superior to the Wadsworth site. In October, the Controlling Board approved \$130,000 to hire an architect and develop detailed drawings for submitting for bids.

Finally in April 1971, The University of Akron was given academic jurisdiction for the Orrville Branch. The 1971 Ohio Master Plan for Higher Education (prepared by the Ohio Board of Regents) designated the Orrville Branch as The Wayne General and Technical College of The University of Akron.

On June 28, 1971, the Controlling Board released funds approved in House Bill 531 (1967) for the construction of The Wayne General and Technical College.

One hundred years ago on July 4, 1871, the ground breaking ceremony for the original Buchtel College building took place on Spicer Hill in Akron.

The ground breaking ceremony for the Wayne General and Technical College took place on July 28,

1971 at the former Blatter 160 acre farm site in Wayne County just northwest of Orrville at County Roads 29, 207 and 47.

The 155 acre site was donated by the citizens of Wayne, Holmes and Medina Counties. During the months of September through March, 1970 a financial campaign aimed at raising \$155,000 to purchase the Blatter Farm site netted \$306,000 from the general citizens of the three counties. The additional \$151,000 will be used to support a scholarship fund for students at the Wayne General and Technical College.

The Ohio Board of Regents in the 1971 Master

Plan for Higher Education in Ohio, defined the role and mission of two year branch universities. Each two year branch shall offer two year programs of study in technical education and general education. Technical education programs will offer the Associate Degree in Applied Science in vocationally oriented fields. The first two years of baccalaureate study (general education) will culminate in the Associate Degree in General Education. Students that receive the Associate Degree in General Education may enroll at any one of the State Universities or private colleges to complete the third and fourth year of baccalaureate study.

Department of Special Programs

Cecil L. Dobbins, B.B.A., *Head of the Department*

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 100 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, final grades are 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 Journalism, 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.

SELF-IMPROVEMENT AND UNDERSTANDING — Beauty Art Course, Creative Thinking, For Women: Plant for the Second Half of Your Life, Introduction to Psychology, Psychology-Improving Your Personality, What Every Woman Should Know About Her Car.

SOCIAL SCIENCE — Cities in Crisis, You and the Law.

SPECIAL COURSES and PROGRAMS

The Department of Special Programs in Addition offers single courses and entire programs, both on and off campus for business, professional and technical societies and non-profit organizations. Such groups include: American Institute of Banking, Charter Life Underwriters, Graduate Realtors' Institute, Radiologic Technology.

The Institute For Civic Education

Charles V. Blair, M.A., *Director*

Mrs. Mary Elizabeth Chesrown, B.A., *Assistant Director*

The Institute for Civic Education, public affairs programming arm of the University represents an idealistic and optimistic concept. Its program assumes that men in a democratic society can and will develop, through patterns of continuing education, a greater sense of public responsibility and will exercise that responsibility to make Reason more effective in our social order.

Universities cannot completely rely on the traditional academic classroom approach to fulfill the requirements of education for public responsibility. A variety of structures and programs have been developed with various names for these tasks. Some are centers for continuing education, others focus on the study of liberal education by adults. At The University of Akron this work is carried out by the Institute for Civic Education, which began as an experimental project in 1956 with financial assistance from the Fund for Adult Education, after being fostered in its earlier years as part of the University's Evening and Adult Education Division.

The Institute serves as a special civic programming center for the University and as such fulfills a managerial and coordinating function for many non-credit, informal programs of continuing education for adults. These programs vary in length, frequency and cost and many are free of any charge. Most of the activities of the Institute are conducted on the University's campus in an informal atmosphere, and most involve one or more faculty members as lecturers or resources persons. Specific offerings and program details are described in separate brochures and announcements which are available to anyone on request from the Institute. In addition, the Institute publishes and circulates a monthly *Civic Educator* of educational events.

Among the continuing educational services provided by the Institute are conference coordination and consultation, cultural and civic field

trips, serving as the foreign visitor center in Akron labor education programs, a twenty-eight week liberal education experience for the over-specialized person in business, guest lectures, study-discussion programs, Thursday Morning Roundtable for those interested in regional planning and development, Town and Gown series of platform lectures by outstanding commentators and authorities on national and international affairs, urban studies programs and 10 annual World At Our Door travel-film lectures.

The Institute also serves as the liaison agency of The University of Akron in administering the Akron-Summit Tutorial Program (A-STP), with its joint sponsor, the Akron Community Service Center and Urban League. A-STP is one of the most successful anti-poverty educational projects in Summit County.

In cooperation with the Akron Area Adult Education Council, which was established in 1952, the Institute produces bi-monthly public Council meetings, weekly Community and National Issues Forums and weekly World Affairs Forums. The Institute serves as headquarters for the Adult Education Council and the Institute's Director is the Council's Executive Secretary.

The University of Akron, through the work of the Institute, is a charter member of the University Council on Education for Public Responsibility. Sister institutional members, all equally dedicated to informal public affairs education, include the University of California, New York University, University of Oklahoma, Pennsylvania State University, Southwestern at Memphis, Syracuse University, and the University of Washington.

The University is also represented, through the Institute, on the Ohio Council on Higher Continuing Education which develops and sponsors cooperative regional and state-wide continuing education programs among the public four and two year institutions in Ohio.

VI.
Courses of
Instruction

DEPARTMENTAL NUMBERING SYSTEM

THE GENERAL COLLEGE (100)

- 110 General Studies
- 150 Air Force ROTC
- 160 Army ROTC

THE COMMUNITY AND TECHNICAL COLLEGE (200)

- 201 Developmental Programs
- 202 Associate Studies
- 220 Educational Technology
- 222 Law Enforcement 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
- 270 Preclinical Nursing
- 275 Cytotechnology
- 284 Chemical Technology
- 286 Electronic Technology
- 288 Industrial Technology
- 290 Instrumentation Technology
- 292 Mechanical Technology
- 298 Surveying and Construction Technology

THE BUCHTEL COLLEGE OF ARTS AND SCIENCES (300)

- 310 Biology
- 315 Chemistry
- 320 Classics
- 321 Greek
- 322 Latin
- 325 Economics
- 330 English
- 331 Journalism
- 335 Geography
- 337 Geology
- 340 History
- 345 Mathematics
- 347 Statistics
- 350 Modern Languages
- 352 French
- 353 German
- 355 Italian
- 357 Russian
- 358 Spanish
- 360 Philosophy
- 365 Physics
- 370 Political Science
- 375 Psychology
- 385 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

THE COLLEGE OF EDUCATION (500)

- 510 General and Foundations
- 520 Elementary
- 530 Secondary
- 540 Technical and Vocational
- 555 Physical Education
- 557 Men's Physical Education
- 559 Women's Physical Education
- 560 Guidance and Counseling
- 565 Educational Psychology
- 570 School Administration
- 580 Special Programs
- 585 Educational Technology
- 590 Research

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 Organizations
- 752 Applied Music
- 770 Speech Pathology and Audiology
- 780 Speech and Theatre Arts

THE COLLEGE OF NURSING (800)

- 820 Nursing

THE SCHOOL OF LAW (900)

- 920 Law

* 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 parentheses (1-3) indicate hours of recitation or lecture and hours of laboratory work. In the example (1-3) there would be one recitation/lecture 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

110: GENERAL STUDIES

110:108. EFFECTIVE SPEAKING

4 credits.

Through this course the student will acquire speaking-listening proficiency; he will develop an awareness of and skill in the accurate use of language and learn to relate fundamentals of effective speaking to certain aspects of reading, writing and listening. The course will place special emphasis on the argumentative and persuasive aspects of speech. At least two-thirds of the course will be devoted to speech performance.

110:111-112. ENGLISH COMPOSITION.

4 credits each.

Must be taken in sequence.

110:205. 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.

110:120-181. 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. 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.

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.

110:211. 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.

110:224 NATURAL SCIENCE — PHYSICS.

3 credits.

An introduction to, and commentary upon, some of the most significant principles, perspectives and developments in contemporary physics. Intended for non-science students.

110:317-318-319. WESTERN CULTURE TRADITIONS.

4 credits each.

Primary objectives of this course are to enable the student to understand human experience 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 experience 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.

110:401. SENIOR SEMINAR.

2 credits.

Prerequisite, Senior standing. An analytical examination of significant, current problems and issues, including their origin and development, and the consideration of possible solutions for them. Each student must satisfactorily complete this course before graduation and should take it in either one of his last three quarters preceding graduation.

U.S. AIR FORCE R.O.T.C.

150: AEROSPACE STUDIES

150:113-114-115. FIRST YEAR AEROSPACE STUDIES (AS 100), General Military Course (GMC).

1½ credits each.

Three 1-hour classes each week consisting of both academic courses and military training. The academic portion, United States Military Forces in the Contemporary World, Vol. I, focuses primarily 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 Corps Training 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 (AS 200), General Military Course (GMC).

1½ credits each.

Three one-hour classes consisting of both academic courses and military training. The academic portion, United States Military Forces in the Contemporary World, Vol. II, is an introduction to defense policy. The course discusses, among

other things, military strategy, foreign policy, economic analysis, and history in order to develop the framework or politico-military environment in which the Armed Forces operate. It affords the student an understanding of the relationship between national power and the military forces. It contributes to the understanding of civic responsibilities in a democratic society. The weekly Corps Training period provides practical leadership experiences in basic military and leader activities.

150:303-304-305. **THIRD YEAR AEROSPACE STUDIES (AS 300)**, Professional Officer Course (POC).

3 credits each.

Prerequisite, 255 and 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 strategy; Air Force concepts, doctrine, and employment; counterinsurgency; astronautics and space operations; and future development of aerospace

power. Within this study, attention is devoted to developing the communicative skills needed by junior officers. Corps Training provides advanced leadership experiences in a practical leadership environment.

150:453-454-455. **FOURTH YEAR AEROSPACE STUDIES (AS 400)**, Professional Officer Course (POC).

3 credits each.

Prerequisite, 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 principles and functions; problem solving; and management tools, practices, and controls. Within this study, attention is devoted to developing the communicative skills needed by junior officers. The final portion of the course is devoted to preparation for active duty. Corps Training consists of advanced leadership experiences in a practical leadership environment.

U. S. ARMY R.O.T.C.

160: MILITARY SCIENCE

160:100-101-102. **FIRST YEAR MILITARY SCIENCE (MS I)**

1½ credits each.

Three one-hour classes each week consisting of both academic courses and leadership development covering the following subjects:

US DEFENSE ESTABLISHMENT: Organization of the Army ROTC; Individual Weapons and Marksmanship; National Security. This is designed to familiarize each student with the U.S. Army through a discussion of the role, history, organization and equipment of the U. S. Army. Included are the nature and causes of war, the principles of war, types of warfare, military history of the American Revolution through the Civil War, the present military situation and the Department of Defense organization. Subject is most beneficial to any student regardless of his future intentions to continue in the Advanced Program as the studies will help him to understand more fully his role as a citizen and the role of national defense in our democratic society.

LEADERSHIP DEVELOPMENT: Significance of military courtesy and discipline; customs and traditions of the service; military as a profession; practical exercises in leadership development. The weekly Leadership Laboratory places the student in a working environment to develop his leadership skills and introduces him to the customs and traditions of the military. It is designed to develop individual character and the attributes essential to a citizen leader.

160:200-201-202. **SECOND YEAR MILITARY SCIENCE (MS II)**

1½ credits each.

Prerequisite, 100-101-102 or equivalent. Three one-hour

classes each week consisting of academic courses and leadership development covering the following subjects:

AMERICAN MILITARY HISTORY: Historical growth and development of the Army in the American social and political context. This course continues the American Military history from the Civil War through the Conflict in Vietnam covering the historical growth and development of the Army and analyzing specific battles and campaigns.

INTRODUCTION TO TACTICS AND OPERATIONS: This part of the course is designed to provide an introduction to tactics and operations. Material consists of mission, organization and composition of basic military teams; principles of offensive and defensive combat stressing firepower, movement and communications; introductions to troop leading procedures; application of basic principles of map and aerial photograph reading and military geography.

LEADERSHIP DEVELOPMENT: During Leadership Laboratory the functions, duties and responsibilities and the development of leadership potential will be stressed through practical application. Also, the ROTC Advanced Course will be discussed.

160:300-301-302. **THIRD YEAR MILITARY SCIENCE (MS III)**

3 credits each.

Prerequisite, 200-201-202 or equivalent. Five one-hour classes each week consisting of academic and leadership development covering the following subjects:

LEADERSHIP: The psychological, physiological and sociological factors which affect human behavior; individual and group solution of leadership problems common to small units.

MILITARY TEACHING PRINCIPLES: Fundamentals of educational psychology applicable to the five stages of instruction; techniques used in planning, presenting, and evaluating instruction.

SMALL UNIT TACTICS AND COMMUNICATIONS:

Analysis of the leader's role in directing and coordinating the efforts of individuals and small units in the execution of offensive and defensive tactical missions, to include communication systems, internal defense/development, and the role of the various branches of the Army.

LEADERSHIP DEVELOPMENT: Applicatory work emphasizing the duties and responsibilities of junior leaders. Discussion of the military environment in garrison and in the field.

160:400-401-402. **FOURTH YEAR MILITARY SCIENCE (MS IV)**

3 credits each.

Prerequisite, 300-301-302. Five one-hour classes each week consisting of academic study and leadership development covering the following subjects:

THEORY AND DYNAMICS OF THE MILITARY TEAM: Study of combat operations and the various military teams; the coordination and planning necessary between the elements of the team.

SEMINAR IN LEADERSHIP AND MANAGEMENT:

Analysis of selected leadership and management problems involved in unit administration, military justice, and the Army Readiness Program; the position of the United States in the contemporary world scene discussed in the light of its impact on leadership and management problems of the military services; obligations and responsibilities of an officer on active duty; chain of command; officer-enlisted relationships.

LEADERSHIP DEVELOPMENT: Application of leadership principles, stressing responsibilities of the leader and affording experience and developing potential through the planning and execution of practical exercises.

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.

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.

202:122. 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.

202:131. MATHEMATICAL ANALYSIS I.

4 credits.

Prerequisite, one unit of algebra, one unit of plane

geometry. The theory of sets, algebraic properties and operations, linear equations in one unknown, functions and graphs, analytical geometry of the straight line, systems of linear equations, exponents and radicals, tables and interpolation, quadratic equations in one unknown.

202:132. MATHEMATICAL ANALYSIS II.

4 credits.

Prerequisite, 131. The right triangle, vectors and analytical trigonometry, logarithms, exponential functions, trigonometric formulas, identities, and equations, oblique triangles, binomial theorem, progressions, equations of quadratic form and non-polynomial equations, and applications of the above.

202:133. MATHEMATICAL ANALYSIS III. *

3 credits.

Prerequisite, 132. The graphs of trigonometric functions, simultaneous quadratic equations, conics, curve sketching, theory of equations, inequalities, graphical methods of calculus, differentiation, integration, and applications.

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.

202:234. MATHEMATICAL ANALYSIS IV.

3 credits.

Prerequisite, 133. The theory of locus, applications of the derivative, definite integral, applications of the definite integral, polar coordinates, functions of several variables, multiple integrals, infinite series, differential equations and applications.

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.

202:336 MATHEMATICS FOR TECHNICAL APPLICATIONS.

4 credits.

Prerequisite, 234. Review and extension of complex numbers. Matrix analysis and determinants. Continuation of differential equations including Laplace Transform methods of solution.

222: LAW ENFORCEMENT TECHNOLOGY

222:100. INTRODUCTION TO LAW ENFORCEMENT.

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.

3 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.

3 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 potential delinquent. The prevention techniques and research projects in the adolescent/police relationship.

222:202. BASIC CRIMINALISTICS.

5 credits.

Prerequisites, 100, 284:100. 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. 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. POLICE PATROL OPERATION.

3 credits.

Prerequisite, 100. The establishment of a rationale for patrol functions based upon a review of historical applications; techniques and methods of police patrol; responsibility for special patrol functions; handling of complaints; mechanics of arrest, search, and seizure, review of problems in personal safety; public relations and crime prevention.

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 disturbances.

222:256. CRIMINAL INVESTIGATION.

3 credits.

Prerequisite, 100. 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. POLICE 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.

222:299. LAW ENFORCEMENT SEMINAR

1-3 credits. (may be repeated for a total of 6 credits.)

Prerequisite, permission. Seminar in selected areas of Law Enforcement such as community relations and police middle management problems and methods.

224: COMMERCIAL ART

224:124. COMMERCIAL ART STUDIO MECHANICS.

3 credits.

Prerequisites, 140, 292:121, 710:125. Craftmanship is stressed in exercises using the specialized tools, materials and techniques of the commercial art studio.

224:140. TYPOGRAPHY AND LETTERING.

3 credits.

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, 710:244. 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. Prerequisites, 124, 292:122, 710:147. Problems in commercial graphic design. Analysis, research, visual ex-

perimentation and finished art. Emphasis on craftmanship and visual problem solving.

224:245. DESIGN IN COMMERCIAL ART.

3 credits.

Prerequisites, 124, 292:122, 710:147. Advanced 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.

Prerequisites, 242, 245. Visual design and development of protective devices for packaging, shipment and display of consumer products.

224:248. PRESENTATION TECHNIQUES.

3 credits.

Prerequisites, 222, 243. Techniques of visual communication and presentation of design concepts. Illustration, charts, models, layout and sketches. Development of personal portfolio.

226: COMMUNITY SERVICES TECHNOLOGY

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, 226:278 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.

228: FOOD SERVICE MANAGEMENT

228:121-122-123. FUNDAMENTALS OF FOOD PREPARATION I, II, III.

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.

228:237-238. FOOD SERVICE INTERNSHIP I AND II.*4 credits each.*

Sequential. Prerequisite 233. A continuation of 233. Food Service experience under commercial operating conditions.

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.

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.*

A study of current personnel practices and principles as applied to offices, stores and industry. This includes basic personnel functions, interviewing, counseling, supervisory training, morale factors and union-management relations.

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.

242:111. PUBLIC RELATIONS.*3 credits.*

A study of the philosophy and functions of management known as Public Relations. This includes newspaper, radio

and television, brochures and other types of organizational publications.

242:121. ADMINISTRATIVE OFFICE SUPERVISION.*4 credits.*

This course is a survey of the background and growth of office operations, procedures, and services. Conceptual ideas for assembling, processing, distributing and retaining information are presented through fundamental principles and successful practices used in getting office work accomplished. Limited case studies emphasize implementing action as well as help in acquiring useful knowledge.

242:170. BUSINESS MATHEMATICS.*3 credits.*

A course designed to develop skill and accuracy in mathematics used in business offices, retailing, and sales. It provides a review of the fundamentals of mathematics as they apply to business, including decimals, fractions, percentages, equations, interest, stocks and bonds, time payment plans, prices and profits, and checking accounts.

242:180. ESSENTIALS OF LAW.*4 credits.*

A brief history of the law, study of contracts, agency, criminal law, sales, bailments, domestic relations, probate law, and courts as they relate to business.

242:211. BASIC ACCOUNTING I.*3 credits.*

This course includes a fundamental study of the principles and procedures of double-entry accounting as applied to the sole proprietorship form of business. This course covers the accounting cycle, special journals, special ledgers, special accounts for a trading concern, and payroll accounting.

242:212. BASIC ACCOUNTING II.*3 credits.*

Prerequisite, 211. This course includes a fundamental study of accounting principles and procedures as applied to partnership and corporate forms of business. Study will also be in the area of internal control, negotiable instruments, asset valuation, departmental accounting, sales and property taxes, and other methods of determining adjustments.

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.

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.*

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/I 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 func-

* Student programming is included

tion, 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 non-commercial 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 SALEMANSHIP.

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.

252:290. 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.

254: SECRETARIAL SCIENCE

254:119. BUSINESS ENGLISH.

3 credits.

Fundamentals of English and its use in the business world.

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.

Techniques of machine and slide rule calculation as applied to business. Basic operations of the key-driven, fully- and semi-automatic, and 10-key calculators are taught.

254:126. ADVANCED BUSINESS MACHINES.

3 credits.

Prerequisites, 125, 153, 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 skillful 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.

For the student who has completed Gregg shorthand theory and needs a review. Theory review and typewriter transcription. Minimum dictation speed, attainment: 70 wpm for five minutes. Credit not allowed for this course and 171.

254:171. SHORTHAND PRINCIPLES.

4 credits.

For the beginning shorthand student. Presentation of the Gregg shorthand theory and brief forms. Minimum reading rate from homework notes at 100 wpm.

254:172. INTERMEDIATE SHORTHAND AND TRANSCRIPTION.

4 credits.

Prerequisite or corequisite, 151. For the students who completed Gregg shorthand theory. Introduction to the new matter dictation and typewritten transcription.

254:173. SHORTHAND AND TRANSCRIPTION.

4 credits.

Prerequisite or corequisite, 152. Emphasis on skill in writing Gregg shorthand and transcribing. A minimum dictation skill of 70 wpm on new material for 5 minutes is required to complete this course.

254:181. OFFICE NURSING TECHNIQUES I.

3 credits.

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.

254:182. OFFICE NURSING TECHNIQUES II.

3 credits.

Prerequisite, 181. This course is devoted to medical and dental office laboratory techniques. These include laboratory orientation to urinalysis, Hematology, Bacteriology, Roentgen Rays, EKG, Basic Metabolism, and nature of dental materials.

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.

254:257. 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.

Vocabulary building; general dictation on letters, articles,

and standard speed material. The minimum speed requirement is 80 wpm on new material for five minutes.

254:275. ADVANCED DICTATION AND TRANSCRIPTION II.

4 credits.

Prerequisite, 274. Dictation of letters articles, and standard speed material. Minimum speed requirement is 90 wpm on new material for five minutes.

254:276. EXECUTIVE DICTATION AND TRANSCRIPTION.

4 credits.

Prerequisite, 275. Dictation on letters, articles, and standard speed material. Minimum speed requirement is 100 wpm on new material for five minutes.

254:277. LEGAL DICTATION AND TRANSCRIPTION.

4 credits.

Prerequisite, 275. A course designed to develop shorthand and transcription skill of legal correspondence, basic pleadings, legal papers, reports, and rules of practice. A minimum dictation skill of 100 wpm on new material for five minutes is required to pass the course.

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.

254:291. 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.

Prerequisite, 202:120. Course designed to develop skill in writing better business letters and reports. Intensive practice in writing adjustments, credit and collection letters, departmental and branch reports, applications and resumes, inquiries and refusals.

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.

284: CHEMICAL TECHNOLOGY**284:100. BASIC CHEMISTRY.**

4 credits.

Elementary treatment of facts and principles of chemistry emphasizing biological application. Elements and compounds important in everyday life, biological processes and medicine. Introduction to laboratory techniques and measurement of chemical and physical quantities. Primarily for Medical Assistant and Law Enforcement students. Laboratory.

284:101. INTRODUCTORY CHEMISTRY I.

4 credits.

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.

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.

284:121-122. ORGANIC PRINCIPLES I AND II.

4 credits each.

Sequential; prerequisite, 101. Nomenclature, classification, preparation, physical and chemical properties of organic compounds. Laboratory.

284:201. PRINCIPLES OF ANALYSIS.

4 credits.

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.

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.

284:204. CHEMICAL STOICHIOMETRY.

2 credits.

Prerequisite, 102 and 202:132. Mass and volume relationships in chemical reactions. Mathematical problems found in chemical industry.

284:208. CHEMICAL QUALITY CONTROL.

2 credits.

Prerequisite, 102 and 202:132. Statistical aspects of quality control in chemical industry, mathematical treatment of variability of data. Probability. Quality control charts.

284:210-211. SCIENTIFIC GLASS BLOWING I AND II.

1 credit each.

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.

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.

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.

Prerequisites, 102, 122 and 202:131. 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.

284:270. POLYMER CHEMISTRY METHODS.

4 credits.

Prerequisite, 122, 204. A survey of polymer structure and properties and basic polymer preparation and testing methods. Commercially important polymers will be used as examples. Laboratory.

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.

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.

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.

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.

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.

Prerequisites, 237, and 245. 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.

Prerequisite, 123. Fundamentals of digital computation, Boolean algebra, switching circuits, computer units, analog-digital conversion.

286:242. MACHINERY.*4 credits.*

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.*

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.*

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.*

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. COMMUNICATIONS SYSTEM.*4 credits.*

Prerequisite, 225. Principles of radio-wave propagation, modulation, and demodulation. Fundamentals, components, and circuits of communications systems.

286:253. SERVOMECHANISMS.*3 credits.*

Prerequisite, 245. Principles of closed loop control systems. Methods of analysis to predict performance. Design of simple servomechanisms.

286:255. SHOP PRACTICES.*1 credit.*

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.

286:310. 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.

286:351. INDUSTRIAL ELECTRICAL SYSTEMS.*4 credits.*

Prerequisite, 242. Characteristics of industrial electrical systems. Generation, transmission, distribution, and use of power in industrial plants. Fault study considerations and practical plant electrical problems.

286:352. DIGITAL SYSTEMS.*4 credits.*

Prerequisite, 226. Design and operation of digital control and measurement systems. Topics include development of input equations, reduction techniques, design considerations of the digital system, and survey of digital systems such as N/C and automatic inspection machines.

286:353. INSTRUMENTATION AND CONTROL.*4 credits.*

Prerequisite, 202:336. Measurement and control of pressure, temperature, flow, and liquid level. Automatic control of industrial processes using closed loop systems.

286:356. CIRCUIT ANALYSIS.*3 credits.*

Prerequisites, 122 and 202:336. Analysis of linear electric circuits in both frequency and time domains. Includes matrix methods of network analysis, Fourier analysis, and introduction to transform methods of analysis.

286:410. TECHNOLOGY PROJECT.*1 credit.*

Prerequisite, Senior standing. An in-depth study of a typical industrial problem using a team approach. Laboratory experimentation, simulation, and analysis will be used in developing a solution. Submission of final report.

288: INDUSTRIAL TECHNOLOGY

288:120. WORK MEASUREMENT PROCEDURES.*5 credits.*

A study of procedures for determining work methods. Develops proficiency in the use of the process chart, the operations chart, motion economy, and time study. Development and application of time standards. The analysis and appraisal of the value of work involving human activity in terms of time.

288:141. SAFETY PROCEDURES.*3 credits.*

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.

288:231. FACTORY PLANNING AND MATERIALS HANDLING.*4 credits.*

In order to have the optimum operating facility we must have the best possible arrangement of the factors of produc

tion: 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.

A study of the historical background of the labor movement. A study of the management viewpoint, the legal frame work within which the modern labor organization operates, and the collective bargaining process and its effect on current labor management relations.

288:242. PRODUCTION AND QUALITY CONTROL PROCEDURES.

6 credits.

Prerequisite, 202:132. A study of planning and control procedures for best productive efforts. Application of statistical methods to formulate control charts used in the control of the manufacturing process for quality manufacturing.

288:245. PLANT AND EQUIPMENT MAINTENANCE.

3 credits.

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.

290: INSTRUMENTATION TECHNOLOGY

290:120. INSTRUMENTATION DRAFTING.

2 credits.

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.

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.

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.

Prerequisites, 230, 232. Analysis and design of feedback control systems by means of frequency response methods.

290:232. COMPUTER PRINCIPLES.

5 credits.

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.

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.

Prerequisite, final quarter or permission. Design, construction and testing by individual student of a specific instrumentation project. Comprehensive use is made of previous courses of study.

292: MECHANICAL TECHNOLOGY

292:121. TECHNICAL DRAWING I.

3 credits.

Lettering and proper use of drawing instruments. Freehand sketching. Geometric drawing. Pictorials. Drawing technique and accuracy emphasized.

292:122. TECHNICAL DRAWING II.

3 credits.

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.

Prerequisite, 122. Study of descriptive geometry with applicable problems. Intersections. Developments. Piping layout. Simplified drawing. A complete working drawing including details, assembly and parts list.

292:151. BASIC PHYSICS: MECHANICS.

4 credits.

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.

Prerequisite, 202:131. 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.

Prerequisite, 202:131. 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.

Prerequisite, 298:125; corequisite, 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 of mechanisms used as examples.

292:244. MECHANICAL DESIGN I.

4 credits.

Prerequisites, 123, 298:242, 241. Design of simple machine elements: springs, shafting, threaded fasteners, columns and combined stress problems.

292:245. MECHANICAL DESIGN II.

5 credits.

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.

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.

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.

Prerequisites, 298:125; corequisite, 202:133. Statics and dynamics of fluids. Viscosity, energy and momentum relationships. Applications to fluid machinery and measurement.

292:310. ECONOMICS OF TECHNOLOGY.

5 credits.

Principles of technology economy including equivalence, alternatives, costs, depreciation, valuation and selected project studies.

292:346. MECHANICAL DESIGN III.

5 credits.

Prerequisites, 245 and 202:336. Design of machine components and subsystems. Vibrations in machines, dynamic forces caused by rotating masses, and lubrication problems in machines. 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.

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, plastic molding, electronic machining and materials handling techniques and equipment. Numerical control of automatic machine tools introduced.

292:401. INSPECTION TRIPS.

1 credit.

Prerequisite, senior standing. Trips through area industrial plants and technical facilities. Written reports.

298: SURVEYING AND CONSTRUCTION TECHNOLOGY

298:122. BASIC SURVEYING.

4 credits.

Corequisite, 202:133. Basic tools and computations for surveying, measurements of distances, elevations, and angles; traverse surveys. Field practice.

298:123. SURVEYING FIELD PRACTICE.

3 credits.

Prerequisite, 122. Practical experience in the use of surveying equipment and methods of surveying. Also provide student with responsibility for making decisions and planning and directing complete projects.

298:125. STATICS.

5 credits.

Prerequisite, 292:151; corequisite, 202:132. Forces, resultants and couples. Equilibrium of force systems: Trusses, frames, friction, first and second moment of area: Shear and bending moment diagrams.

298:222. CONSTRUCTION SURVEYING.

4 credits.

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.

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.

Prerequisite, 122. Introduction to theory of errors, precise leveling, baseline measurements, triangulation, trilateration, and bearings from celestial observations. Field practice.

298:231. BUILDING CONSTRUCTION.

4 credits.

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.

Planning of construction operations. Construction equipment and selection for typical jobs. Emphasis on heavy construction.

298:233. CONSTRUCTION ADMINISTRATION.

4 credits.

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. MATERIAL TESTING LABORATORY I.

3 credits.

Corequisite 241. Types, selection, properties, and specifications of materials used in construction. General features of mechanical testing. Analysis and presentation of data in report form.

298:236. MATERIAL TESTING LABORATORY II.

3 credits.

Corequisite 241. Emphasis placed on soils and bituminous materials. Soil and bituminous identification tests, strength tests and subsurface exploration of soils.

298:241. STRENGTH OF MATERIALS.

5 credits.

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.

Elements of cost in construction, determination of unit costs, analysis of cost records, quantity surveys.

298:250. STRUCTURAL DRAFTING.

3 credits.

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.

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.

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 human body, chiefly gross study of all organ systems, and their functions. 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.

310:182. CONSERVATION OF NATURAL RESOURCES.

*4 credits.**

Principles and practice of conservation of mineral, plant and animal resources.

310:191. INTRODUCTORY HUMAN PHYSIOLOGY.

4 credits.

Physiology of human processes operating in organ systems. Not open to premedical majors. Laboratory.

310:227. TECHNIQUES IN BIOLOGY.

4 credits.

Prerequisite, 123. Paraffin, freezing, and squash techniques for preparing tissues for microscopic examination. Required for all medical technology students.

310:228. TECHNIQUES IN BIOLOGY.

4 credits.

Prerequisite, 123. Instruction in instrumentation used in

biological laboratories. Recommended for all majors in biology 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 or 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.

310:301. CELL BIOLOGY.

4 credits.

Prerequisites, 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; 123. 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.

*Courses so marked involve field trips and the student may be expected to defray minor transportation costs.

110:308. MICROBIOLOGY.

4 credits.

Prerequisite, 307. Organic chemistry recommended. A detailed study of the cultivation and biology of bacteria — their growth, death, metabolism and genetics. Laboratory.

110:309. MICROBIOLOGY.

4 credits.

Prerequisite, 308. Determinative bacteriology. Classification and identification of major groups of bacteria. Laboratory.

110:313. FALL FLORA.

4 credits.*

Prerequisite, 123. Classification and recognition of autumn-flowering plants of the region. Laboratory.

110:314. PLANT TAXONOMY.

3 credits.

Prerequisite, 123. History of plant classification. Current theory and practice of taxonomy. Laboratory.

110:315. SPRING FLORA.

4 credits.

Prerequisite, 123. Classification and recognition of spring-flowering plants of region. Laboratory.

110:328. HISTOLOGY.

4 credits.

Prerequisite, 123. Study of animal tissues. Laboratory.

110:341. INVERTEBRATE ZOOLOGY.

5 credits.*

Prerequisite, 123. Invertebrate groups, their classification, anatomy and life history of representative forms. Laboratory.

110:343. PARASITOLOGY.

4 credits.

Prerequisite, 123. Principles of parasitism; survey of the more important human and veterinary parasitic diseases. Laboratory.

110:344. 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.

110:361-362. HUMAN ANATOMY AND PHYSIOLOGY.

4 credits each.

Prerequisite, 123, College Chemistry. A study of structure and function of the human body. Laboratory.

110:411-412/511-512. 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, club-mosses, horesetails and ferns. Laboratory.

310:419/519. PLANT MORPHOLOGY.

4 credits.

Prerequisite, 123. The structure, reproduction, evolution and economic significance of flowering and non-flowering seed plants. Laboratory.

310:421. ENVIRONMENTAL CONSERVATION.

4 credits.

Prerequisite, 271. The biological, political, and economic basis for managing the earth as a livable environment. The course covers natural resources, pollution, human population problems.

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 methods 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 and 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 properties 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.

310:448/548. HUMAN GENETICS.

3 credits.

Prerequisite, 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.

310:461/561. 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 o laboratory investigations. Open to Seniors.

310:480/580. RADIATION BIOLOGY.

4 credits.

Prerequisite, permission. This presents basic information in the applications of radio-isotopes and high energy source 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.

*Courses so marked involve field trips and the student may be expected to defray minor transportation costs.

GRADUATE COURSES

310:601-602. SEMINAR IN BIOLOGY.

1 credit each.

Discussion of students' research and papers from the current literature in biology.

310:610-611. PLANT DEVELOPMENT.

4 credits each.

Sequential, Prerequisites, 418-419; 315:263-266; 345:101, permission. Embryology and morphogenesis of plants in relation to physical, chemical, genetic and geometric factors. Laboratory.

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.

310:647-648. CYTOLOGY.

3 credits each.

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.

310:657. 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 Home Economics and for laboratory technicians. Fundamental laws and theories of chemistry; the more important elements and their compounds. 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 BIO-CHEMISTRY

3 credits each.

Sequential. Prerequisite, 123. Designed especially for students in Medical Technology and Home Economics. 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.

4 credits.

Prerequisite, 268. Constituents of cells and tissues, their organic and fundamental physical chemical properties. Proteins, enzymes, vitamins, carbohydrates, fats, energy relationships, intermediary metabolism.

315:404/504. BIOCHEMISTRY LABORATORY.

1 credit.

Corequisite, 401/501. A laboratory course to illustrate the principles and descriptive material of biochemistry.

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.

315:421-422/521-522. 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 operations 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.

Corequisites, 315, 318. 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.

315:481-482-483. SENIOR PROBLEMS.

2 credits each.

Prerequisite, permission. An assignment of special problems to the student, designed as an introduction to research problems.

GRADUATE COURSES

315:601-602-603. CHEMISTRY OF POLYMERS.

2 credits each.

Sequential. Prerequisites, 265, 268. Definitions and classification of polymeric substances into fibers, plastics

and rubbers. Sources, structures and properties of naturally occurring polymers. Survey of monomers. Methods of preparation, structure and properties of organic and inorganic polymers. Mechanism of condensation and addition polymerization reactions.

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.

315:615. CHEMICAL INSTRUMENTATION I.

3 credits.

Prerequisites, 425, 428, or permission. Principles and applications of electrical and electronic devices for chemical analysis. Laboratory.

315:616. CHEMICAL INSTRUMENTATION II.

3 credits.

Prerequisite, 615. Principles and applications of various transducers for chemical analysis. Laboratory.

315:617. INSTRUMENTAL METHODS OF ANALYSIS.

3 credits.

Prerequisite, 616. Principles and applications of analytical chemical techniques based on physical measurements. Laboratory.

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.

315:650. PHYSICAL ORGANIC CHEMISTRY I.*3 credits.*

Corequisite, 610. A study of the criteria for mechanisms of organic reactions: linear free energy relationships, acidity functions, isotope effects, etc.

315:651-652-653. QUANTUM CHEMISTRY.*3 credits each.*

Sequential. Prerequisite, 345:236, or permission. Wave mechanics from a postulational 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 inorganic, analytical, physical, and organic chemistry.

315:670. CHEMICAL MICROSCOPY AND MICROCHEMICAL 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. KINETICS OF POLYMERIZATION.*2 credits.*

Prerequisite, 315. Mechanism and kinetics of condensation polymerization, including molecular weight distribution and network formation. Kinetics of addition polymerization and copolymerization, including molecular weight distribution, three-dimensional polymerization and emulsion polymerization.

315:675. CHARACTERIZATION OF MACROMOLECULES.*2 credits.*

Prerequisite, 315. Methods of determination of molecular weights, including osmotic pressure, light scattering, sedimentation and viscosity. Dimensions of macromolecules in solution, and network theory of rubber elasticity.

315:676. MACROMOLECULAR SOLUTIONS.*2 credits.*

Prerequisite, 675 or permission. Theoretical and experimental determination of macromolecular conformation in solution. Thermodynamic properties of polymer liquids and liquid mixtures. Solution properties of polyelectrolytes. Macromolecular association; liquid crystals.

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.

15:688. ADVANCED CHEMICAL THERMODYNAMICS.

3 credits.

Prerequisite, 636. Thermodynamics of solutions, fluctuation theory, generalized thermodynamic potential, irreversible thermodynamics.

15:689. PHYSICAL ORGANIC CHEMISTRY II.

3 credits.

Prerequisite, 650. A study of mechanisms of organic reactions developed from a consideration of the reactive intermediates of organic chemistry: carbonium ions, carbanions, free radicals and carbenes.

15:690. THEORETICAL ORGANIC CHEMISTRY.

3 credits.

Prerequisite, 689. The application of modern quantum chemistry and thermodynamics to problems in organic chemistry.

15:691. ADVANCED INSTRUMENTAL ANALYSIS.

2 credits.

Prerequisite, 617. Modern Instruments.

15:692. ADVANCED INSTRUMENTATION.

3 credits.

Prerequisites, 318, 428. Theory and application of instrumental measurements. Interpretation of data.

15:865. DOCTORAL RESEARCH.

1 to 24 credits each.

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

20:161-162-163. COMPARATIVE LITERATURE.

3 credits each.

Major writers of Greece and Rome; their influence on later European literature. No foreign language necessary. Required of majors.

20:199. CLASSICAL MYTHOLOGY.

4 credits.

Myths, legends and folklore of Greece and Rome; some attention to the history of religion. No foreign language necessary.

20:313-314-315. CLASSICAL ARCHAEOLOGY.

3 credits each.

The ruins and monuments of Greece and Rome; history constructed by examination of the material remains. No foreign language necessary. Required of majors.

20:401-402-403/501-502-503. 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 attention 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.

Some attention to the development of the Romance languages, especially Italian.

322:143-144-145. 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 credits.

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

325:243. SURVEY OF ECONOMIC ANALYSIS.

4 credits. (For M.B.A. Candidates.)

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. For engineering majors. (No credit for persons having completed 245, 246, 247.)

325:244. INTRODUCTION TO ECONOMIC ANALYSIS.

4 credits.

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. For engineering majors. (No credit for persons having completed 245, 246, 247.)

325:245-246-247. PRINCIPLES OF ECONOMICS.

3 credits.

Sequential. Economic activity in modern industrial society, preparation for responsible participation in process of shaping public policy. No credit to students who have received credit in Economics 243.

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, 247. 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.

325:371. DEVELOPMENT OF ECONOMIC INSTITUTIONS.

4 credits.

Prerequisite, 247. 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, 247. Institutions of money, banking, and credit, monetary expansion and contraction, public policies affecting this process, development of our money and banking system.

325:400. MACRO-ECONOMICS.

4 credits.

Prerequisite, 247; recommended 650:346, 347. Changes in the national income, production, employment, price level, long-range economic growth, short-term fluctuations in economic activity.

325:405. PUBLIC FINANCE.

4 credits.

Prerequisite, 247. 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, 247. Advanced analysis of consumer demand, production costs, market structures, determinants of factor income.

325:420/520. MATHEMATICAL ECONOMICS I.

4 credits.

Prerequisites, 247, 345:103. Mathematical treatment of economic statics and comparative statics. Single and multi market equilibrium; comparative statics stability condition. 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.

25:425. QUANTITATIVE ECONOMICS.

4 credits.

Prerequisites, 247, 650:346, 347 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.

25:426/526. ECONOMETRICS I.

4 credits.

Prerequisites, 247, 650:346, 347. 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.

25:431/531. LABOR AND THE GOVERNMENT.

4 credits.

Prerequisites, 247, 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.

25:432/532. THE ECONOMICS AND PRACTICE OF COLLECTIVE BARGAINING.

4 credits.

Prerequisites, 247, 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.

25:450. COMPARATIVE ECONOMIC SYSTEMS.

4 credits.

Prerequisite, 247. 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 in contemporary United States with the state socialism of the Soviet Union.

25:460/560. ECONOMIC DEVELOPMENT AND PLANNING FOR UNDERDEVELOPED COUNTRIES.

4 credits.

Prerequisites, 247 and 650:346, 347. 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.

25:461. PRINCIPLES OF INTERNATIONAL ECONOMICS.

4 credits.

Prerequisite, 247. Theory of international trade and foreign exchange, policies of free and controlled trade, international monetary problems, world economic planning.

25:472/572. 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, 247. 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, 247 or equivalent. This course will stress careful study of the question of economic planning and development at the urban level, in response to the persuasive phenomena of urban ghetto structures.

325:490/590. SEMINAR IN ECONOMICS.

4 credits.

Prerequisite, permission. Opportunity for advanced students to study special fields of Economics.

GRADUATE COURSES

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 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.*

Prerequisites, 650:346, 347. 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.

325:627. ECONOMETRICS.*4 credits.*

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.

325:634. 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.

325:655-656-657. 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.*3 credits each.*

330: ENGLISH**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.

330:265-266-267. 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.

330:321. 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.*

Prerequisite, permission. A study of the representative writings of Black American authors from the eighteenth century to the present.

330:343. ADVANCED EXPOSITORY WRITING.*4 credits.*

Prerequisite, 243 or permission. Writing of a variety of expository papers; study of style through literary criticism and imitation; examination and grading of student themes.

330:350. CREATIVE WRITING.*3 credits.*

Practice in forms of creative writing.

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 JACOBAN 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.

330:401/501. CHAUCER.*5 credits.*

The *Canterbury Tales* and other literary works in Middle English.

330:403/503. MIDDLE ENGLISH LITERATURE.*4 credits.*

Middle English literary 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 *Bēowulf*.

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 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.

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.

30:622. 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.

30:643. 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.

30:647. VICTORIAN POETS.

5 credits.

Major verse of Tennyson, Browning, and Arnold, related poetry and critical studies.

30:659. 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.

30:675. AMERICAN ROMANTIC FICTION.

5 credits.

The meaning of American Romanticism applied to the study of Poe, Hawthorne, and Melville.

30:679. 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: THESIS.

4 credits.

331: JOURNALISM

Courses considered to be part of the English department's program are:

331:201. NEWS WRITING.

3 credits.

Prerequisite, 110:112. Writing of news stories; applying theory through discussions, illustrative material; actual writing for publication.

331:203. RADIO AND TELEVISION NEWS WRITING.

3 credits.

Prerequisite, 110:112. Principles and practice in the preparation of radio and television news. Fundamentals of electronic news writing and news gathering, practice in news delivery techniques and voice control in studio situations.

331:204. EDITING.

3 credits.

Prerequisite, 201. Copyreading, headline writing, proofreading, makeup, type and typography, printing machines and processes, newspaper methods and systems.

331:206. FEATURE WRITING.

3 credits.

Prerequisite, 110:112. Short newspaper and magazine articles; preparation of articles for publication; human interest situations; extensive writing with class discussions.

331:209. PUBLICATIONS PRODUCTION.

3 credits.

Prerequisite, 110:112. Fundamental course for persons engaged in production of publications and those preparing for a scholastic publication supervisory position. Consideration of a variety of processes for reproducing the printed word and related illustrations including photoengraving, lithography, letterpress, rotogravure, mimeographing, and other forms of duplication.

331:335. 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.

335: GEOGRAPHY

335:100. WORLD CULTURAL 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.

3 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 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.

3 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.

3 credits.

Designed to develop competence in map use and evaluation, use and interpretation of globes, cartograms, block diagrams, topographic sheets and thematic maps. Laboratory.

335:312. GEOGRAPHIC ASPECTS OF LANDFORMS.

3 credits.

Distribution patterns of the various types of landforms and their significance for man.

335:314. CLIMATOLOGY.

3 credits.

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.

335:324. GEOGRAPHY OF WORLD MANUFACTURING.

3 credits.

Manufacturing activities as they evolve under different resource and cultural conditions. Particular emphasis on factors which lead to concentration of manufacturing in specific areas and methods used to measure intensity of concentration.

335:326. GEOGRAPHY OF MINERAL AND POWER RESOURCES.

3 credits.

An analysis of the influence of minerals on human activities.

335:336. URBAN LAND USE ANALYSIS.

3 credits.

A study of the internal structure of the city with particular emphasis on the methods of defining and mapping the various parts.

335:346. GEOGRAPHIC ASPECTS OF AIR PHOTO INTERPRETATION.

3 credits.

A study of the basic principles of aerial photography and its utilization. The interpretation of aerial photography and application to map making and geographic research.

335:350. ANGLO-AMERICA.

3 credits.

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.

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.

Regional and topical analysis of geographic relationships in Latin America, south of the equator.

335:356. EUROPE.

3 credits.

Regional and systematic analysis of cultural, economic and physical patterns of the continent, excluding the USSR.

335:358. USSR.

3 credits.

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. CENTRAL AND EAST ASIA.

3 credits.

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.

Analysis of the relationship of cultural and economic patterns to physical environment in the Indian subcontinent and southeast Asia.

335:362. NORTH AFRICA AND SOUTHWEST ASIA.

3 credits.

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.

Topical and regional analysis of the relationship between cultural, economic and physical environment patterns.

335: 380. GRAPHIC AND CARTOGRAPHIC REPRESENTATION.

3 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.

335:415/515. GEOGRAPHY OF WATER RESOURCES.

3 credits.

Discusses the occurrence of water in nature and the influence of water on human activities.

335:418/518. GEOGRAPHY OF VEGETATION AND SOILS.

3 credits.

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.

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.

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.

The role of geographic investigation in city, regional and resource planning.

335:435/535. GEOGRAPHY OF RECREATION RESOURCES.

3 credits.

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.

335:438/538. GEOGRAPHY OF THE METROPOLITAN AREA.

3 credits.

Association of phenomena within the metropolitan area expressed in land use and occupancy features. The changing function of the urban area; relationships between urban centers.

335:444/544. MAP COMPILATION AND REPRODUCTION.

3 credits.

The non-drafting techniques involved in producing modern maps.

335:447/547. REMOTE SENSING OF THE ENVIRONMENT.

3 credits.

The study of advanced methods of aerial "photography" including satellite, radar and infra-red imagery and their applications to geographical research.

335:448/548. STATISTICAL MAPPING.

3 credits.

Problems of cartographic statistical representation. Methods of data manipulation and problems of symbolization are stressed as well as techniques of presentation.

335:481/581. INTRODUCTION TO GEOGRAPHIC RESEARCH.

3 credits.

Prerequisite, 18 credits of geography. Introduction to the techniques and source materials of geographic research. Statistical measurements and library resources will be stressed. Research papers will be required.

335:484/584. FIELD RESEARCH METHODS.

3 credits.

Field work enabling the student to familiarize himself with the proper approach to collecting, organizing and analyzing data while carrying out field research projects.

GRADUATE COURSES

335:610. SEMINAR IN PHYSICAL GEOGRAPHY.

4 credits.

Investigation and analysis of selected topics in physical geography.

335:615. ADVANCED CLIMATOLOGY.

4 credits.

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.

Investigation and analysis of selected topics in economic geography.

335:630. SEMINAR IN URBAN GEOGRAPHY.

4 credits.

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.

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.

Investigation and analysis of selected topics in cultural and political geography.

335:680. QUANTITATIVE GEOGRAPHIC RESEARCH.

4 credits.

Prerequisite, 481. 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.

335:682. SEMINAR IN REGIONAL METHODOLOGY.

4 credits.

A critical study of the methodology applied in the investigation of geographic regions.

335:687. HISTORY OF GEOGRAPHIC THOUGHT.

4 credits.

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. Laboratory.

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.

337:210. 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. Laboratory.

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 or permission. Introduction of the use of geologic field equipment including Brunton compasses, alidades and plane table surveying, and stereoscopes and aerial photography interpretation.

337:323. SEDIMENTATION AND STRATIGRAPHY.*4 credits.*

Prerequisite, 102. An introduction to the factors controlling sedimentation and their relationship to concepts of stratigraphy. Course includes classical examples of recent and ancient case histories of sedimentation and stratigraphy. Laboratory.

337:404/504. ASTROGEOLOGY.*4 credits.*

Prerequisites, 418 or 431/531; 315:134; 365:103; 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.

337:411/511. 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.*

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. OPTICAL MINERALOGY.*4 credits.*

Prerequisite, 216. An introduction to the petrographic microscope and its use in the identification of minerals in thin section. The optical properties of common igneous, metamorphic and sedimentary minerals will be studied in detail. Laboratory.

337:418. PETROGRAPHY.*4 credits.*

Prerequisite, 417 or permission. A basic course in which igneous, sedimentary and metamorphic rocks are described and classified. Laboratory.

337:421. IGNEOUS PETROLOGY.*4 credits.*

Prerequisite, 418. A study of the origin and paragenesis of igneous rocks; the study of selected rock suites. Laboratory.

337:422. METAMORPHIC PETROLOGY.*4 credits.*

Prerequisite, 417 or permission. A microscopic study of igneous, sedimentary and metamorphic rocks. Laboratory.

337:423/523. SEDIMENTARY PETROLOGY.*4 credits.*

Prerequisite, 323, 417 or permission. Detailed hand sample and thin section examination of selected sedimentary suites particularly with respect to mineralogy and texture. Laboratory.

337:431/531. ROCKS AND MINERALS.*5 credits.*

Prerequisites, 101, 102 and permission. The processes which result in the genesis of rocks and minerals is stressed in lecture. The laboratory is devoted to techniques of rock and mineral analysis, for science teachers. Laboratory.

337:432/532. EVOLUTION AND GEOLOGIC TIME.*5 credits.*

Prerequisites, 101 and permission. The development of the geologic time scale, including early and modern techniques of dating. Special emphasis will be given to the impact of evidence for evolution upon the concept of geologic time and the impact of geologic processes and their understanding upon the modern concept of evolution, for science teachers.

337:433/533. GEOMORPHIC PROCESSES AND THEIR INVESTIGATION.*3 credits.*

Prerequisites, 101, 102, 210, 215 or permission. This course will require the use of content from previously outlined courses in the interpretation of the local environment. Attention will also be given to studies of the local area by earlier investigators, for science teachers.

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.

337:460/560. ADVANCED PALEONTOLOGY.*3 credits.*

Prerequisite, 260. A study of the major features of evolution including rates of evolution and extinction using as examples selected fossil groups.

337:463/563. MICROPALAEONTOLOGY.*5 credits.*

Prerequisite, 260 or permission. An introduction to the techniques, systematics and application of micropaleontology. Laboratory.

337:465/565. URBAN GEOLOGY.*4 credits.*

Prerequisites, 101, 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.

337:470/570. 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.

337:482/582. 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.

GRADUATE COURSES**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.

337:690. SEMINAR IN GEOLOGY.*3 credits. (May be repeated for a total of 9 credits.)*

Selected topics or 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 TO 1815.***4 credits.*

From the period of exploration and discovery through the War of 1812.

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.

340:204. THE ANCIENT NEAR EAST.*3 credits.*

Mesopotamia and Egypt; Israel and her neighbors to the time of the Persian Empire.

340:205. GREECE.*3 credits.*

The Minoans and Mycenaeans; Classical Greece to the triumph of Macedon.

340:206. ROME.*3 credits.*

Rome and the Hellenistic East to the end of Classical times.

340:207. Modern Europe, 1500-1715.*4 credits.*

The Renaissance and Reformation, development of the nation states, religious wars, and the Age of Louis XIV.

340:208. MODERN EUROPE, 1715-1870.*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.

340:334. 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.

340:340. PEACE, WAR AND MANKIND.

3 credits.

An historical examination of peace movements, including a study of leaders, groups and ideas for peace.

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.

340:409/509. DIPLOMATIC HISTORY OF THE UNITED STATES, 1776-1871.

3 credits.

Diplomacy of the Revolution, the establishment of basic policies, and the diplomatic problems of wars and expansion.

340:410/510. DIPLOMATIC HISTORY OF THE UNITED STATES, 1871-1920.

3 credits.

Diplomacy of the developing nation, of the Spanish-American War and World War, I, and the peacemaking, 1919-1920.

340:411/511. DIPLOMATIC HISTORY OF THE UNITED STATES, 1920-PRESENT.

3 credits.

The peace structure of the 1920's its collapse in the 1930's, wartime and postwar diplomacy.

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.

340:420/520. 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 to 1863.

340:427/527. 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 led 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, TO 1870.

3 credits.

The emergence of the American City.

340:437/537. HISTORY OF THE AMERICAN CITY, SINCE 1870.

3 credits.

The American city during a half century of rapid urban and industrial growth.

340:440/540. RENAISSANCE.

5 credits.

The Italian Renaissance with emphasis on the economic, social, and cultural trends. The Northern Renaissance.

340:441/541. 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.

340:442/542. 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.

340:445/545. 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.

340:451/551. 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.

- 40:458/558. RUSSIA TO 1725.
3 credits.
From the foundation of Kiev through the reign of Peter the Great.
- 40:459/559. RUSSIA IN THE EIGHTEENTH AND NINETEENTH CENTURIES.
3 credits.
Changes in Russian society and culture, the impact of the West, the end of serfdom, the intelligentsia, the attempts of autocracy to adjust to the industrial age.
- 40:460/560. RUSSIA IN THE TWENTIETH CENTURY.
3 credits.
Russia in World War I, the revolution, and the Soviet period.
- 40:463/563. ENGLAND TO 1530.
3 credits.
Anglo-Saxon and medieval England.
- 40:464/564. ENGLAND, 1530-1750.
3 credits.
Early modern England, an age of transition.
- 40:465/565. ENGLAND, 1750 TO THE PRESENT.
3 credits.
Modern Britain and the Empire-Commonwealth.
- 40:467/567. ENGLAND, 1471-1588.
3 credits.
The transition from medieval to modern times. Emphasis on economic, social, religious and cultural history, especially music and architecture.
- 40:468/568. ENGLAND, 1588-1660.
3 credits.
From the Armada to the Restoration.
- 40:469/569. ENGLAND, 1660-1763.
3 credits.
The Restoration, the Glorious Revolution, and the early Hanoverians.
- 40:477/577. HISTORY OF WESTERN SCIENCE AND TECHNOLOGY TO 1500.
3 credits.
Science and technology in ancient and medieval times, to 1500.
- 40:478/578. HISTORY OF WESTERN SCIENCE AND TECHNOLOGY, 1500-1800.
3 credits.
A study of developments leading to the scientific revolution.
- 40:479/579. HISTORY OF WESTERN SCIENCE AND TECHNOLOGY, 1800-PRESENT.
3 credits.
The specialization and professionalization of Science in the Nineteenth and Twentieth centuries.
- 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.
- 340:490/590. 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. HISTORICAL METHODS.
3 credits.
Practice in historical research, use of research tools, experience in the writing of history.

GRADUATE COURSES

- 340:600. SEMINAR IN LATIN AMERICAN HISTORY.
5 credits.
Prerequisite, any two of 590, 591, 592, 594, 596, or permission. Selected topics in cultural, diplomatic, intellectual and political history.
- 340:611-612-613. INDIVIDUAL READING.
1-3 credits each.
Permission required.

340:619. PROSEMINAR ON GREECE.

4 credits.

Study of historical literature, sources of materials, and major interpretations of Greek history.

340:620-621. SEMINAR ON GREECE.

4 credits each

Prerequisite, 619. This seminar in Greek history will be generally but not necessarily restricted to topics dealing with the archaic and formative periods.

340:622. PROSEMINAR ON ROME.

4 credits.

Study of historical literature, sources of materials, and major interpretations of Roman history.

340:623-624. SEMINAR ON ROME.

4 credits each.

Prerequisite, 622. This seminar in Roman history will be generally but not necessarily restricted to topics dealing with the archaic and formative periods.

340:637. PROSEMINAR IN THE ECONOMIC AND SOCIAL HISTORY OF EUROPE.

4 credits.

Study of historical literature, sources of materials, and major interpretations of the economic and social history of Europe.

340:638-639. SEMINAR IN THE ECONOMIC AND SOCIAL HISTORY OF EUROPE.

4 credits each.

Prerequisite, 637. Selected topics in European economic and social history.

340:642. PROSEMINAR IN EUROPEAN INTELLECTUAL HISTORY.

4 credits.

Study of historical literature, sources of materials, and major interpretations of European Intellectual History.

340:643-644. SEMINAR IN EUROPEAN INTELLECTUAL HISTORY.

4 credits each.

Prerequisite, 642. Selected topics will be investigated in depth.

340:645. PROSEMINAR IN HISTORY OF FRANCE.

4 credits.

Study of historical literature, sources of materials, and major interpretations of French history.

340:646-647. SEMINAR IN THE HISTORY OF FRANCE.

4 credits each.

Selected topics will be investigated in depth, with emphasis upon the French Revolutionary era.

340:651. PROSEMINAR IN ENGLISH HISTORY.

4 credits.

A study of historical literature, sources of materials, and major interpretations of the period.

340:652-653. SEMINAR IN ENGLISH HISTORY.

4 credits each.

Prerequisite, 651. Selected materials in English History will be studied in depth.

340:660. PROSEMINAR IN THE HISTORY OF COLONIAL AND REVOLUTIONARY AMERICA.

4 credits.

Study of historical literature, sources of materials, and major interpretations of the history of seventeenth and eighteenth century America.

340:661-662. SEMINAR IN THE HISTORY OF COLONIAL AND REVOLUTIONARY AMERICA.

4 credits each.

Prerequisite, 660. Selected topics in the development of the British colonies, the Revolutionary movement, the War for Independence, and the early Confederation, and the creation of the new government.

340:663. PROSEMINAR IN EARLY NINETEENTH CENTURY UNITED STATES HISTORY.

4 credits.

Study of historical literature, sources of materials, and major interpretations of Early Nineteenth Century United States history.

340:664-665. SEMINAR IN EARLY NINETEENTH CENTURY UNITED STATES HISTORY.

4 credits each.

Prerequisite, 663. Selected topics on the period including historiography. Special emphasis on Jeffersonian Democracy, reformism, and the coming of the Civil War.

340:669. PROSEMINAR IN AMERICAN HISTORY, 1865-PRESENT.

4 credits.

Study of historical literature, sources of materials and major interpretations of United States history since the Civil War.

340:670-671. SEMINAR IN AMERICAN HISTORY, 1865-PRESENT.

4 credits each.

Prerequisite, 669 or permission. Selected topics on United States history since the Civil War.

340:680. PROSEMINAR IN AMERICAN ECONOMIC HISTORY.

4 credits.

Study of historical literature, sources of materials, and major interpretations of American Economic History.

340:681-682. SEMINAR IN AMERICAN ECONOMIC HISTORY.

4 credits each.

Prerequisite, 680. Selected topics in the development and operation of the American economy.

340:683. PROSEMINAR IN AMERICAN SOCIAL AND INTELLECTUAL HISTORY.*4 credits.*

Study of historical literature, sources of materials, and major interpretations of American Social and Intellectual History.

340:684-685. SEMINAR IN AMERICAN SOCIAL AND INTELLECTUAL HISTORY.*4 credits each.*

Prerequisite, 683. Selected topics will be investigated in depth.

340:688. SEMINAR IN AMERICAN URBAN HISTORY.*4 credits.*

Selected topics for research and writing.

340:689. SEMINAR IN AMERICAN URBAN HISTORY.*4 credits.*

Prerequisite, 436 or 437. Selected topics for research and writing.

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.

340:890. DISSERTATION RESEARCH.*1-18 credits.*

Research of 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.

345:101-102-103. FINITE MATHEMATICS, I, II, III.*4 credits each.*

Sequential; prerequisites, one year of high school algebra. Sets, logic, functions, graphing, linear and quadratic equations, probability, differential and integral calculus of algebraic functions, partial derivatives and multiple integrals, matrices, linear programming, game theory and selected topics.

*These courses are to be offered in alternate years beginning with the 1972-73 academic year.

345:115-116. ELEMENTARY FUNCTIONS I, II.*3 credits each.*

Prerequisites, high school algebra and trigonometry. An introduction 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.

345:204. ASTRONOMY.*3 credits.*

The earth as a body in space, other planets; the moon and other satellites; comets, meteorites; solar systems and its motions; analysis of light; the sun and other stars, star clusters, nebulae, Milky Way, external galaxies; structure of universe.

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.

345:207. EMPIRICAL EQUATIONS AND NOMOGRAPHY.*3 credits.*

Prerequisite, 232. Correlation of data involving two or three variables by empirical methods; nomographic methods for evaluation of empirical formulas.

345:231-232-233-234-235. ANALYTIC GEOMETRY—CALCULUS I, II, III, IV, V.*4 credits each.*

Sequential; prerequisite, 116 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 I.*4 credits.*

Prerequisite, 235. Methods of forming and solving important types of ordinary differential equations; applications of differential equations to science.

345:237. DIFFERENTIAL EQUATIONS II.*4 credits.*

Prerequisite, 236. Methods of forming and solving important types of non-linear differential equations, power series solutions of ordinary differential equations, numerical methods of solving differential equations, boundary-value problems.

345:301. HISTORY OF MATHEMATICS*3 credits.***

Prerequisite, 235 or permission. Origin and development of mathematical ideas and processes.

345:311-312-313. INTRODUCTION TO MODERN ALGEBRA I, II, III.

3 credits each.

Sequential; prerequisite, 233. Introduction to groups, rings, integral domains, axiomatic foundation of the natural numbers, integer number systems, fields, rational numbers, real and complex number systems, vector spaces, matrices and determinants, linear transformations, polynomial algebra.

345:401/501. THEORY OF NUMBERS.

3 credits.

Prerequisite, 235. Development of an integral domain, prime numbers, Euler's algorithm, congruence, Euler's Phi function, quadratic residues, Pell equation, Waring's problem.

345:410/510. MATRICES AND LINEAR ALGEBRA.

3 credits.

Prerequisite, 116, 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.

345:414/514. SELECTED TOPICS IN HIGHER ALGEBRA.

3 credits.

Prerequisite, 235. Theory of equations, Vandermonde's theorem, multinomial theorem, extension of the binomial coefficient, continued fractions, formation of convergents, recurring series, generating functions, infinitesimals, quaternions, hypercomplex numbers.

345:421-422-423/521-522-523. ADVANCED CALCULUS, I, II, III.

3 credits each.*

Sequential; prerequisite, 235. Applied advanced calculus courses to include an introduction to the real number system, sequences and series, limits, continuity, differentiation, partial differentiation, integration, multiple integration, uniform convergence, maxima and minima of several variables, transformations, improper integrals, line and surface integrals, approximate integration, complex variables.

345:425-426/525-526. THEORY OF FUNCTIONS OF A COMPLEX VARIABLE, I, II.

3 credits each.

Sequential; prerequisite, 235. Complex numbers, analytic function theory, elementary functions of a complex variable, mapping and geometry of elementary functions, differentiation, series, integration, residues and poles, analytic continuation, conformal mapping.

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.

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.

345:434/534. VECTOR ANALYSIS.

3 credits.

Prerequisite, 235. Vector algebra with applications to analytic geometry, differential and integral calculus of scalar-vector, vector-scalar, and vector-vector functions, integral theorems, curvilinear coordinates, engineering applications.

345:435/535. TENSOR ANALYSIS.

3 credits*

Prerequisite, 434. n-dimensional spaces, coordinate transformations, contravariant and covariant vectors, contravariant, covariant and mixed tensors; symmetric and skew-symmetric 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.

345:441/541. NON-EUCLIDEAN GEOMETRY.

3 credits.

Prerequisite, 234. A historical development of the modern view in geometry emphasizing postulational systems and the introduction of coordinates in various spaces.

*These courses are to be offered in alternate years beginning with the 1971-72 academic year.

**These courses are to be offered in alternate years beginning with the 1972-73 academic year.

345:442/542. PROJECTIVE GEOMETRY.*3 credits.**

Prerequisite, 313 (or equivalent). 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. INTRODUCTION TO REAL ANALYSIS, I, II, III.*3 credits each.*

Sequential; prerequisite, 235. Real numbers, sequences, cardinal numbers, point set theory, metric spaces, continuity, differentiation, integration, series of numbers, series of functions, power series.

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; prerequisite, 313. Study of abstract mathematical systems, axiomatic set theory, properties of groups and rings, fields, vector spaces, ideals, lattices, and sentential calculus.

345:614-615-616. TOPOLOGY I, II, III.*3 credits each.***

Sequential; prerequisite, 423, or 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, 423 or 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, 423 or 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.

345:642. DIFFERENTIAL GEOMETRY.*3 credits.**

Prerequisite, 423 or 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.*

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.*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.

347:251-252. INTRODUCTION TO STATISTICS I, II.*3 credits each.*

Sequential; prerequisite, 345:101 (or equivalent). An introduction to the fundamental ideas of statistics at a pre-calculus level to include topics from descriptive statistics, probability, discrete distributions, problems of sampling, normal distribution, tests of hypotheses, regression and correlation, analysis of variance, time series and index numbers, nonparametric statistics, estimation.

347:450/550. PROBABILITY.*3 credits.*

Prerequisite, 345:235. An introduction 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, 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.

*These courses are to be offered in alternate years beginning with the 1971-72 academic year.

**These courses are to be offered in alternate years beginning with the 1972-73 academic year.

347:651-652-653. MATHEMATICAL STATISTICS I, II, III.*3 credits each.*

Sequential; prerequisite, 345:423 or 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 to nonparametric statistics.

347:661. REGRESSION AND CORRELATION.*3 credits.*

Prerequisite, 653. 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. 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 operations into machine language. Iterative procedures, recursion formulas.

347:671-672-673. ADVANCED BEHAVIORAL STATISTICS, I, II, III.*3 credits each.*

Sequential; prerequisite, 101 or equivalent. Open only to behavioral science majors. Scientific inference using frequency distributions, tests of significance, point and interval estimation, regression and correlation, analysis of variance and covariance, nonparametric statistics, fundamental principles of designs, randomized blocks, latin squares, factorial designs, individual comparisons, confounding, applications to problems in applied fields.

347:675. FACTOR ANALYSIS.*2 credits.*

Prerequisite, 671 or 375:602 or permission. Theory and techniques in identifying independent variables through the use of factor analysis.

347:676. NONPARAMETRIC STATISTICS-METHODS.*3 credits.*

Prerequisite, 252; 672 or permission. Not open to mathematical statistics majors. Theoretical bases and relationships among various nonparametric techniques compared with parametric ones.

352: FRENCH**352:101-102-103. BEGINNING FRENCH, 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.

352:201-202-203. INTERMEDIATE FRENCH, 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.

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.

352:301-302-303. FRENCH COMPOSITION AND CONVERSATION.*3 credits each.*

Prerequisite, 203 (or equivalent). Advanced composition using French models, special attention to words and idioms, development of oral expression and conversational ability.

352:305-306-307. INTRODUCTION TO FRENCH LITERATURE.*3 credits each.*

Prerequisite, 203 (or equivalent). Introduction to the study of French literature; the fundamentals of *explication de texte*; with reading and class discussion in French of representative works.

352:309-310-311. FRENCH CULTURE AND CIVILIZATION.*3 credits each.*

Prerequisite, 303 or 307 or permission. An audio-visual survey of the French cultural heritage emphasizing color slides and recorded music. Conducted in French.

352:401. FRENCH PHONETICS.*1 credit.*

Prerequisite, 203 (or equivalent). Intensive drill in pronunciation with correction and improvement of student's accent, emphasis on articulation and intonation by use of phonograph records and individual tape recordings made by the student.

352:403-404-405. ADVANCED FRENCH 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.

352:407/507. FRENCH LITERATURE OF THE MIDDLE AGES TO THE 14TH CENTURY.*3 credits.*

Prerequisite, 303 or 307 or permission. Saint's lives, epics, courtly novels, chronicles, Renart sequences, theater. Ruteboeuf. Discussion based on modern French translations.

352:408/508. 14TH AND 15TH CENTURY MEDIEVAL LITERATURE AND THE BEGINNING OF THE RENAISSANCE.*3 credits.*

Prerequisite 303 or 307 or permission. Roman de la rose, Joinville, Froissard, Commines, Charles d'Orléans, François Villon and the *rhétoriqueurs*. Marot and Rabelais. Discussion based on modern French translations.

352:409/509. RENAISSANCE LITERATURE.*3 credits.*

Prerequisite, 303 or 307 or permission. The *Pléiade*, theater, literature of the religious wars, Montaigne.

345:411/511. 17TH CENTURY FRENCH LITERATURE I.*3 credits.*

Prerequisite, 303 or 307 or permission. The literary movements of the classical period and their background.

352:412/512. 17TH CENTURY FRENCH LITERATURE II.*3 credits.*

Prerequisite, 303 or 307 or permission. Theater before Corneille, Corneille, Libertine movement, Pascal, Molière.

352:413/513. 17TH CENTURY FRENCH LITERATURE III.*3 credits.*

Prerequisite, 303 or 307 or permission. La Fontaine, Bossuet, Racine, Boileau, La Rochefoucauld, La Bruyère, Fénelon.

352:415/515. 18TH CENTURY FRENCH LITERATURE I.*3 credits.*

Prerequisite, 303 or 307 or permission. The legacy of Molière and Racine; the beginning of the novel. Régnier, Le Sage, Marivaux, Abbé Prévost. The first assault: Bayle, Fontenelle, Montesquieu.

352:416/516. 18TH CENTURY FRENCH LITERATURE II.*3 credits.*

Prerequisite, 303 or 307 or permission. Buffon, Diderot, and the Encyclopedists, Voltaire, the *salons*.

352:417/517. 18TH CENTURY FRENCH LITERATURE III.*3 credits.*

Prerequisite, 303 or 307 or permission. Rousseau, Beaumarchais, Choderlos de Laclos, literature of the Revolution.

352:419/519. 19TH CENTURY FRENCH NOVEL I.*3 credits.*

Prerequisite, 303 or 307 or permission. Rousseau, Staël,

Chateaubriand, Constant, Senancour, Nodier, Hugo, Musset.

352:420/520. 19TH CENTURY FRENCH NOVEL II.

3 credits.

Prerequisite, 303 or 307 or permission. Balzac, Stendhal, Sand, Mérimée, Hugo.

352:421/521. 19TH CENTURY FRENCH NOVEL III.

3 credits.

Prerequisite, 303 or 307 or permission. Flaubert, Goncourt, Maupassant, Zola, Bourget, Barrès, France.

352:423/523. 19TH CENTURY FRENCH THEATER AND POETRY I.

3 credits.

Prerequisite, 303 or 307 or permission. Romantic theater and poetry: Lamartine, Hugo, Vigny, Musset.

352:424/524. 19TH CENTURY FRENCH THEATER AND POETRY II.

3 credits.

Prerequisite, 303 or 307 or permission. The two Dumas, Scribe, Gautier, Nerval, Leconte de Lisle, Hérédia, Baudelaire.

352:425/525. 19TH CENTURY FRENCH THEATER AND POETRY III.

3 credits.

Prerequisite, 303 or 307 or permission. Verlaine, Rimbaud, Mallarmé, Lautréamont, Laforgue. Naturalistic theater: Becque; Symbolistic theater: Maeterlinck.

352:427/527. 20TH CENTURY FRENCH THEATER AND POETRY I.

3 credits.

Prerequisite, 303 or 307 or permission. Apollinaire, Peguy, Claudel, Valéry, Tarry, Romain, Salacrou.

352:428/528. 20TH CENTURY FRENCH THEATER AND POETRY II.

3 credits.

Prerequisite, 303 or 307 or permission. 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 permission. Saint-John Perse, Michaux, Prévert, Char, Sartre, Camus, Becket and Ionesco.

352:491-492-493. INDIVIDUAL READING IN FRENCH.

1 to 3 credits each.

Prerequisite, permission.

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 FRENCH LINGUISTICS.

3 credits each.

Studies in Romance Linguistics with particular emphasis on linguistic developments and methodology in French; application of essential linguistic principles in learning and teaching French.

352:607-608-609. SELECTED TOPICS IN THE MOVEMENT OF FRENCH IDEAS.

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 in this course.

352:611-612-613. CONTEMPORARY FRENCH CULTURE AS EXPRESSED IN LITERATURE.

3 credits each.

An anthropological approach to culture emphasizing socials and civic institutions, education, value systems, national characteristics, and historical perspectives. A study of major themes and patterns of French culture as they are consciously and unconsciously expressed in nineteenth and twentieth century literature.

352:615-616-617. INDIVIDUAL READING AND RESEARCH SEMINAR.

1-3 credits each.

Special studies and methods of research.

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 graduate students preparing for the graduate reading proficiency examination in German. No previous knowledge of German required.

353:250. MASTERPIECES OF TWENTIETH CENTURY GERMAN LITERATURE IN TRANSLATION.

3 credits.

Readings and discussions 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 discussions of the works of Kleist, Heine, Hebbel, 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.

353:419/519. 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, Kloptock, 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. Hoffmann, 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, Böll, and others.

353:439/539. TWENTIETH CENTURY GERMAN LITERATURE I.

3 credits.

Prerequisite, 303 or 307 or permission. The fading of old traditions and emergence of new values during the first decades of the century. Readings, and discussions 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.

355:301-302-303. 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.

357:301-302-303. 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 conversational 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

8:101-102-103. 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.

8:201-202-203. 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.

8:301-302-303. 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.

8:305-306-307. 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.

8:309. INTRODUCTION TO HISPANIC LINGUISTICS.

5 credits.

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; (c) phonology and grammar; (d) the dialects, or regional varieties, of Spanish; (e) applied linguistics, with special emphasis on the problems likely to be met by prospective teachers of Spanish. Lectures and discussion. This course could be taken by all Spanish majors.

8:401. 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.

8:403-404-405. 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.

358:415-416-417/515-516-517. 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 of 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 discussion of representative Spanish-American Literature from discovery to the present time. Oral and written reports. Conducted in Spanish.

358:427-428-429/527-528-529. 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. 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. SEMINAR IN HISPANIC LINGUISTICS.

5 credits.

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 OR 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.

358:613-614-615. SEMINAR ON 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.

358:651-652-653. 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.

358:690. 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 PHILOSOPHY I.

4 credits.

Prerequisite, one philosophy course or permission of instructor. The history of Western thought, including its scientific, religious, social and political circumstances from Pre-Socratics through Plotinus.

360:212. HISTORY OF PHILOSOPHY II.

4 credits.

Prerequisite, 211 or permission of instructor. A continuation of 211 from St. Augustine through the Renaissance and Reformation.

360:213. HISTORY OF PHILOSOPHY III.

4 credits.

Prerequisite, 212 or permission of instructor. A continuation of 212.

360:214. 19TH CENTURY PHILOSOPHY.

4 credits.

An inquiry into the philosophically significant ideas of Hegel, Marx, Schopenhauer, Mill, Kierkegaard and Nietzsche.

360:216. CLASSICAL AMERICAN PHILOSOPHY.

4 credits.

Prerequisite, one course in philosophy. The movement of ideas in America is examined from Puritanism to Pragmatism, not only as it reflects the stream of Western ideas, but especially as it may be said to contain a particularly American philosophy in development.

360:222. ETHICAL ANALYSIS.

4 credits.

Prerequisite, 120 or two courses in philosophy. The examination and analysis of ethical problems such as the "ought" dichotomy, the relation of language to ethics as well as types of ethical theories.

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.

360:274. FORMAL 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.

360:334. CONTEMPORARY PROBLEMS IN PHILOSOPHY OF RELIGION.

4 credits.

Prerequisite, 232 or permission of instructor. An examination of contemporary religious ideas through acquaintance with the thought of Buber, Tillich, Bonhoeffer, Barth, Bultmann, Altizer, et al.

360:372. INDUCTIVE LOGIC AND SCIENTIFIC METHOD.

4 credits.

Prerequisite, 170 and one other course in philosophy. Problems of inductive inference, probability theory, sampling, verification, hypothetico-deductive method.

360:417. CONTEMPORARY CONTINENTAL PHILOSOPHY.

4 credits.

Prerequisite, 211, 212 and 213, 214, or permission of instructor. Analysis and discussion of the major trends in Continental philosophy; Neo-Kantianism, Existentialism and Phenomenology, Neo-Hegelianism, and Marxist revisionism.

360:418. CONTEMPORARY BRITISH AND AMERICAN PHILOSOPHY.

4 credits.

Prerequisite, 211, 212 and 213, 214, or permission of instructor. An analysis and discussion of the major trends in recent British and American philosophy; pragmatism, logical empiricism, linguistic analysis, logical analysis, and naturalism.

360:452/552. AESTHETICS.

4 credits.

Prerequisite, 250 or permission of instructor. An analysis of the elements of aesthetic experience, aesthetic judgment and the aesthetic object.

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, 372 or 462 or permission of instructor. The nature of explanation, causality, and physical theory.

360:466/566. SEMINAR: SPECIAL PROBLEMS IN PHILOSOPHY OF SCIENCE.

4 credits.

Prerequisite, permission of department member.

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.

360:488-489. COORDINATING SEMINARS I, II.

2 credits each.

Sequential. Individual work course for majors, in which the materials and insights of the area of concentration are combined into a thesis in the light of the general principles of philosophic criticism. Open to philosophy majors by permission of department head.

GRADUATE COURSES

Admission to courses requires permission of departmental advisor.

360:611. ANCIENT PHILOSOPHY.

4 credits.

Beginning with the early cosmologists, this is a study of the origins and development of Western Philosophy, the syntheses of Plato and Aristotle, through Plotinus.

360:612. MEDIEVAL PHILOSOPHY.

4 credits.

Prerequisite, 611. Continuation of 611, from the Patristics through the breakup of Scholasticism.

360:613. RENAISSANCE AND EARLY MODERN PHILOSOPHY.

4 credits.

Prerequisite, 612. Continuation of 612 from Renaissance Humanism and Cosmology to Kant.

360:614. MODERN PHILOSOPHY.

4 credits.

Prerequisite, 613. Continuation of 613, from Kant through Nietzsche.

360:616. EXISTENTIAL PHENOMENOLOGY.

4 credits.

This course presents the classical phenomenological tools: intentionality, eidetic reduction, and noetic-noematic distinctions. The phenomenon of the "lived-world" is explored via the phenomenological method, centering on the experience of freedom, death and anxiety in their ontological significance. Emphasis will be placed upon specific readings in the problem areas derived from the existential and phenomenological literature.

360:617. LOGICAL EMPIRICISM.

4 credits.

An analysis and discussion of the positivistic approach to the problems of truth and confirmation, meaning and verification, and sensation and observation; considerable emphasis upon the "interdisciplinary problems" raised by this approach, such as the problems of law and explanation

in history. Reading covering the works of Ayer, Russell, (the early) Wittgenstein, Carnap, Hempel, Scriven, Dray, Ga dner, et al.

360:618. ANALYTIC PHILOSOPHY.

4 credits.

Discussion of the analytic approach to the problems referring, truth, the relation of language to metaphysical meaning, and the concept of a person; particular emphasis upon determining the motivation, contribution, and value of this approach. Reading covering the works of (the late) Wittgenstein, Moore, Austin, Anscombe, Geach, Kenny, Vesic et al.

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 positivist 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 logical truth and analyticity, induction, special problems concerning the interpretation of the conditional and modal logic. 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.

360:681. SEMINAR.

4 credits.

360:682. SEMINAR.

4 credits.

360:685. SEMINAR: PROBLEMS IN PHENOMENOLOGY.

4 credits.

360:688. SEMINAR: THESIS SUPERVISION I.

2 credits.

360:689. SEMINAR: THESIS SUPERVISION II.

2 credits.

365: PHYSICS

365:101-102-103. CONCEPTS OF PHYSICS I, II AND III.

4 credits each.

Prerequisites, high-school algebra and trigonometry, 345:115-116 as a corequisite. General physics; emphasis such unifying concepts of contemporary physics as conservation laws, symmetry principles and the nature of particle

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.

35:107-108-109. INTRODUCTORY COMPUTATIONS
II, III.

1 credit each.

Prerequisite, 101-102-103. 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.

35:130. 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.

35:201-202-203. ELEMENTARY CLASSICAL PHYSICS
II, AND III.

4 credits each.

Prerequisite, adequate preparation in high-school algebra and trigonometry. 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 non-coherent sources. Vectors and a limited amount of calculus are introduced as needed.

35:211-212-213. PHYSICS COMPUTATIONS I, II, III.

1 credit each.

Prerequisite, 201-202-203. 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.

35:301. ELEMENTARY MODERN PHYSICS.

4 credits.

Prerequisite, 203 or permission of the instructor. Special relativity, introduction to quantum physics, atomic spectra, optics in nuclear and solid state physics.

35:311-312-313. COLLOQUIUM.

1 credit each.

365:331-332-333. ASTROPHYSICS I, II, AND III.

3 credits each.

Prerequisite, 103 or 203. 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, 103 or 203. 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.

3 credits each.

Prerequisite, 203. 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, 203; corequisite, 345:234. Electron tubes, semiconductors, 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, 203 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, 203 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, 203; 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 equations, the special theory of relativity.

365:441-442-443/541-542-543. ELECTRICITY AND MAGNETISM I, II, III.

3 credits each.

Prerequisite, 203; 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, 203 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, 203. 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 203; 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, 203; 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.

GRADUATE COURSES

65:601-602-603. 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.

65:611-612-613. PHYSICAL PROPERTIES OF MATTER
II, III.

3 credits each.

Prerequisite, 203. 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.

65:621-622-623. ATOMIC AND MOLECULAR SPECTRA
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.

65:631-632-633. PHYSICS OF POLYMERS I, II, III.

2 credits each.

Prerequisite, 345:236 or permission of instructor. Study of relations between the physical behavior of elastomers, plastics, and fibers and their molecular constitution.

65:635-636-637. PHYSICS OF POLYMERS
LABORATORY I, II, III.

2 credits each.

Prerequisite, 201, corequisite, 631-632-633. Selected laboratory experiments to illustrate the principles and methods discussed in courses 631-632-633.

65:651-652-653. THEORETICAL CLASSICAL PHYSICS
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, electromagnetic 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-Gordan 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.

365:697. 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.

Cannot be used for credit toward 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.

370:210. STATE AND LOCAL GOVERNMENT AND POLITICS.

5 credits.

Prerequisite, 100. An examination of institutions, processes and intergovernmental relations at the state and local level.

370:220. AMERICAN FOREIGN POLICY: PROCESSES 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.

3 credits.

Prerequisite, 100, or permission. A study of the major thinkers and writers of American political thought.

370:303. DEVELOPMENT OF WESTERN POLITICAL THOUGHT.

5 credits.

Prerequisite, 100 or permission. 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.

Prerequisite, 100 or 200. Relations among nations examined in the political context.

370:312. INTERNATIONAL ORGANIZATION.

3 credits.

Prerequisite, 310 or permission. Description and analysis of the processes and problems of international organization with appropriate references to the United Nations, regional patterns, and alliance systems.

370:320. BRITAIN AND THE COMMONWEALTH.

3 credits.

Prerequisite, 200 or permission. Description and analysis of the government and politics of Great Britain and the leading nations of the Commonwealth.

370:321. WESTERN EUROPEAN POLITICS.

3 credits.

Prerequisite, 200 or permission. 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 POLITICS.

3 credits.

Prerequisite, 200. Theory and practice of government and politics in the Soviet Union, with minor references to the Communist nations of Eastern Europe.

370:323. EAST ASIAN POLITICS.

3 credits.

Prerequisite, 200. Government and Politics in China and

Japan, with minor emphasis on other governments in the East Asian area.

370:324. MIDDLE EASTERN POLITICS.

3 credits.

Prerequisite, 200 or permission. An examination of the government structures and political processes of the nations of the Middle East.

370:325. LATIN AMERICAN POLITICS.

3 credits.

Prerequisite, 200 or permission. An examination of the patterns of government and politics in the Latin American area.

370:326. POLITICS OF DEVELOPING NATIONS.

3 credits.

Prerequisite, 200 or permission. An examination of the governmental structures and political processes of the emerging nations. The political patterns of Southeast Asia and Africa will be emphasized.

370:327. AFRICAN POLITICS.

3 credits.

Prerequisite, 200 or permission. 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.

Prerequisite, 100. 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 LEGISLATIVE PROCESS.

5 credits.

Prerequisite, 100. Examination of the American legislative process on all governmental levels with emphasis on the U.S. Congress. The structure and role of the legislature and of parties and other agencies that affect legislative processes.

370:350. THE AMERICAN PRESIDENCY.

3 credits.

Prerequisite, 100. The Presidency as the focal point of politics, policy, and leadership in the American political system.

370:370. PUBLIC ADMINISTRATION.

4 credits.

Prerequisite, 100. An examination of the implementation of public policy. Administrative organization and principles will be stressed.

370:380. URBAN AND REGIONAL POLITICS.

3 credits.

Prerequisites, 100 or 210. 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.

370:390. INDEPENDENT STUDY.

3-5 credits.

Prerequisite, 15 credits in Political Science and Advisor's permission.

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.

370:410/510. INTERNATIONAL LAW.

3 credits.

Prerequisite, 310 or permission. Established rules, practices and conventions governing the relations of the several nations and their citizens with one another.

370:415/515. COMPARATIVE FOREIGN POLICY.

3 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.

3 credits.

Prerequisite, 200. Comparative studies in depth of various aspects of foreign political systems.

370:440/540. PUBLIC OPINION AND POLITICAL BEHAVIOR.

3 credits.

Prerequisite, 340 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.

3 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.

370:460/560. THE JUDICIAL PROCESS.

3 credits.

Prerequisite, 461. The role of judges and courts in the context of the American political process. Special attention is

given to the Supreme Court, its politics, personalities and procedures, and to the role of the courts in a democratic political system.

370:461/561. THE SUPREME COURT AND CONSTITUTIONAL LAW.

5 credits.

Prerequisite, 100. The development of the U.S. Constitution as reflected chiefly in Supreme Court decisions; judicial review in the democratic political process. Special emphasis on contemporary civil liberty problems.

370:470/570. THE ADMINISTRATIVE PROCESS.

3 credits.

Prerequisite, 370. An intensive analysis of the process and environment of administrative decision-making.

370:480/580. URBAN POLICY PROBLEMS.

3 credits.

Prerequisite, 380. An intensive study of selected problems in urban policy.

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.

370:641. 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 LAW AND THE JUDICIAL PROCESS.

5 credits.

Prerequisite, 9 credits of Political Science, including 460, or permission. Law 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

3-5 credits.

Prerequisite, permission.

370:695. SCOPE AND METHODS IN POLITICAL SCIENCE.

3 credits.

Prerequisite, 9 credits of Political Science, or permission. Nature and scope of research problems in political science.

370:699. THESIS.

3-9 credits each.

375: PSYCHOLOGY

375:141. GENERAL PSYCHOLOGY.

5 credits.

Basic facts and principles in the scientific study of behavior.

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. A study of developmental changes from infancy through senescence and the typical adjustment problems of individuals of different ages in our culture.

375:160. INDUSTRIAL PSYCHOLOGY.

4 credits.

Prerequisite, 141. A survey of the applications of psychology in industry, business and government. Emphasis will be on psychological understanding of men at work and the evaluation of work behaviors.

375:310. EXPERIMENTAL PSYCHOLOGY.

4 credits.

Prerequisites, 141, 145, 147. Scientific methods and tools of modern experimental psychology; studies in sensory processes, attention, perception and learning.

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.

Prerequisites, 141, 145, 147. 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.

375:400/500. 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. PSYCHOPATHOLOGY OF CHILDHOOD.

4 credits.

Prerequisites, 141, 151, 400. Study of the diagnosis and

treatment of deviant children and adolescents.

375:407/507. PSYCHOLOGICAL TESTS AND MEASUREMENTS.

4 credits.

Prerequisites, 141, 145. 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.

375:409/509. INTRODUCTION TO THE CLINICAL METHOD.

4 credits.

Prerequisites, 141, 145, 400, 407. The use of tests, interviews and personal history data in vocational and academic counseling and guidance.

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.

375:417/517. 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.

5 credits.

Prerequisite, 141. Theoretical and social functions of Industrial Psychology.

375:422. INDEPENDENT READING IN PSYCHOLOGY.

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.

375:440-441-442. 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. 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.

GRADUATE COURSES

375:601. THESIS-DISSERTATION SEMINAR.

4 credits.

Prerequisite, permission. Preparation and writing of the thesis and dissertation. Analysis of research designs. Review of profession problems and ethics.

375:602. ADVANCED PSYCHOLOGICAL STATISTICS I.

4 credits.

Prerequisites, 145 or permission. Basic theory of hypothesis testing, chi square, analysis of variance, regression analysis and correlation.

375:603. ADVANCED PSYCHOLOGICAL STATISTICS II.

4 credits.

Prerequisites, 602, 145 or permission. Advanced topics in hypothesis testing and correlational analysis. Survey of selected non-parametric techniques.

375:605. RESEARCH METHODOLOGY.

4 credits.

Prerequisites, 602 and 603. 603 can be taken concurrently. 347:671 and 347:672 can be substituted for 375:602 and 603 respectively. A review of various research techniques reported in the literature. Students will learn how to apply statistics and experimental methodology to solve psychological problems and plan thesis procedures.

375:606. INDIVIDUAL INTELLIGENCE TESTING I: STANFORD-BINET.

3 credits.

Prerequisite, 407 and permission. Lectures and practice in the administration and scoring of the Stanford-Binet.

375:607. INDIVIDUAL INTELLIGENCE TESTING II: WECHSLER SCALES.

3 credits.

Prerequisite, 407 and permission. Lectures and practice in the administration, scoring, and interpretation of the Wechsler Adult Intelligence Scale (WAIS) and the Wechsler Intelligence Scale for Children (WISC).

375:608-609. EXPERIMENTAL DEVELOPMENT I, II.

4 credits each.

Prerequisite, 151. A probing of developmental data by means of intensive study of the literature, field observations and experimentation.

375:610. THE PSYCHOLOGY OF MUSIC.

3 credits.

Prerequisites, undergraduate degree in psychology or music, permission of the instructor. A scientific study of music, its performers, and its listeners. Objective, empirical research in support of theory will be stressed in lectures and readings. The conduct and reporting of an experiment will be required.

375:612. THEORIES OF PERSONALITY.

4 credits.

Prerequisites, 403 and 400. Historical considerations of personality. Psychoanalysis and deviations from it. Contemporary theoretical formulations; personality dynamics, structure and organization.

375:613. THEORIES OF PSYCHOTHERAPY.

4 credits.

Prerequisite, 612 or permission. Contemporary theories of psychotherapy including Freudian, Jungian, Adlerian, Rogerian, and other major systems.

375:614. EXPERIMENTAL PSYCHOPATHOLOGY.

4 credits.

Prerequisites, 400/500 and 612. An approach to the study of abnormal behavior using objective measurements along with a series of pertinent and meaningful behavioral dimensions. Emphasis on experimental studies.

375:615. PHYSIOLOGICAL PSYCHOLOGY I.

3 credits.

A survey of the neuroanatomical and neurophysiological bases of behavior with emphasis on functional analyses of neural mechanisms and behavior.

375:616. PHYSIOLOGICAL PSYCHOLOGY II.

3 credits.

Prerequisite, 615. Detailed treatment of the biochemical and neurophysiological bases of motivated behavior, hormonal and endocrine mechanisms, gene and enzyme systems.

375:618. GRADUATE SEMINAR IN PSYCHOLOGY.

2-4 credits.

Prerequisite, 30 graduate credits of psychology. Special topics in the major areas.

375:619. SURVEY OR PROJECTIVE TECHNIQUES.

3 credits.

Prerequisites, 400, 403, 407, 612 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.

375:620. 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.

375:621. VERBAL LEARNING.

4 credits.

Prerequisite, 412. An over-view of the problems, theories, and experiments in verbal learning research. Lectures and laboratory studies will be featured.

375:622. OPERANT CONDITIONING.*4 credits.*

Prerequisite, 412. A course covering theory and research in operant conditioning. The conduct and reporting of an original experiment may be required.

375:623. CLASSICAL CONDITIONING.*4 credits.*

Prerequisite, 412. A course covering theory and research in classical conditioning. The conduct and reporting of an original experiment may be required.

375:624. COGNITIVE PROCESSES.*4 credits.*

Prerequisite, 412. Theory and research in thinking, language development, and problem solving. An original project and report may be required.

375:625. ADVANCED PROJECTIVE TECHNIQUES.*3 credits.*

Prerequisite, 619, 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.

375:630. ADVANCED GENERAL PSYCHOLOGY.*4 credits.*

Prerequisites, 145, 147. Selective review of contemporary status in various specialty areas in psychology. Emphasis on current problems, new developments, and changing concepts.

375:640. EXPERIMENTAL METHODS AND APPARATUS I.*4 credits.*

Prerequisite, graduate standing. A survey of research techniques and laboratory apparatus, involving review and interpretation of the literature as well as operation of available equipment.

375:641. EXPERIMENTAL METHODS AND APPARATUS II.*4 credits.*

Prerequisite, 640. Design of an original experiment, including selection and operation of appropriate apparatus, collection of data, and report of results to the class. Interpretation of data should emphasize influence of methodology and apparatus.

375:650-651. ENGINEERING PSYCHOLOGY.*4 credits each.*

Prerequisites, 141, 145, 147, and 310. The techniques employed by human factors engineers. Systems analyses, mission profiles, function and task analyses, time-line and line analyses, work layout and related techniques.

375:660. THESIS RESEARCH.*2-6 credits.*

Prerequisite, 601. Research analysis of data and preparation of thesis for the Master's Degree.

375:705. COMPUTER TECHNIQUES IN PSYCHOLOGICAL MEASUREMENT.*3 credits.*

Prerequisites, 602, 347:671, or permission. Information about the computer and its application to research on typical problems in psychology.

375:706. ADVANCED TESTS AND MEASUREMENTS.*4 credits.*

Prerequisite, 407 or permission. Advanced techniques in test construction and analysis.

375:710. THEORIES OF LEARNING.*4 credits.*

Prerequisite, 412. Empirical evaluation of the bases of major theoretical positions. Lectures, readings and experiments.

375:711. ACQUISITION OF SKILL.*4 credits.*

Prerequisite, 412. 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.

375:713. PERCEPTION.*4 credits.*

Prerequisites, 320 and 412 or permission. The neural and physiological correlates of behavior in organisms.

375:714. SENSATION.*4 credits.*

Prerequisite, 147. Structure and function of peripheral receptor mechanisms with attention to the bases of sensation.

375:716. COMPARATIVE PSYCHOLOGY.*4 credits.*

Prerequisite, 615. A comparative study of the behavior of organisms emphasizing an analysis based on phylogenetic position.

375:718. SYSTEMS OF PSYCHOLOGY.*3 credits.*

Prerequisite, 417/517. Overview of the development of the scientific method. Analysis of special problems confronting modern psychology.

375:719. SEMINAR IN THE HISTORY OF PSYCHOLOGY.*3 credits.*

Prerequisite, 417/517. The consideration of special problems in the history of psychology.

375:720. EXPERIMENTAL MOTIVATION.*4 credits.*

Prerequisites, 147, 412 or permission. A broad, experimentally-oriented treatment of motivation emphasizing the evolution and development of current theoretical viewpoints and their empirical bases.

375:721. INDUSTRIAL MOTIVATION.*4 credits.*

Prerequisite, 720. Identification, description, analysis and techniques for implementation of intrinsic and extrinsic incentives during work activity.

375:722. CLINICAL MOTIVATION.*3 credits.*

Prerequisite, 720. Historical and contemporary survey of motivational theory and research findings as applied in the area of clinical psychology.

375:723. EXPERIMENTAL SOCIAL PSYCHOLOGY.*4 credits.*

Prerequisite, 315. An examination of selected theoretical and methodological issues in the study of social perception, group dynamics, inter-group relations and attitude formation and change.

375:730. SEMINAR IN INDUSTRIAL PSYCHOLOGY.*4 credits.*

(May be repeated for a total of 12 credits.)

Prerequisites, permission. Intensive evaluation of selected industrial psychology techniques. Techniques include leadership, morale, merit ratings, job evaluation, interviewing, attitude scaling, advertising, and public relations.

375:733. RESEARCH INDUSTRIAL PSYCHOLOGY.*4 credits.*

(May be repeated for a total of 8 credits.)

Prerequisite, 602, or 347:671, or permission. Performance of research on problems found in business, industry or governmental agencies.

375:736. INDEPENDENT READING AND/OR RESEARCH.*1-4 credits.*

(May be repeated for a total of 12 credits.)

Prerequisite, permission. Individual readings and/or research on a topic selected by a student under the supervision of a member of the faculty with whom specific arrangements have been made. Readings or research should not be directly related to a thesis or dissertation which the student will write for an advanced degree.

375:739. ORGANIZATIONAL PSYCHOLOGY.*4 credits.*

Prerequisite, permission. Organizational Psychology — The study of the relationships between organizational characteristics and human behavior.

375:742. PSYCHOLOGY OF INDUSTRIAL SELECTION.*4 credits.*

Prerequisite, 602 or 347:671 or permission. Evaluation of techniques employed by psychologists for initial job selection and subsequent promotions. Excludes formal testing.

375:745. PERFORMANCE EVALUATION.*4 credits.*

Prerequisite, 602, or 347:671, or permission. 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.

375:751. PSYCHOLOGY OF TRAINING IN INDUSTRY.*4 credits.*

Prerequisite, 412 or permission. The nature of industrial training, needs for training, methods of techniques evaluation of training, training and learning theory.

375:754. FACTOR ANALYSIS.*2 credits.*

Prerequisite, 602, or 347:671, or permission. Theory and techniques in identifying independent variables through the use of factor analysis.

375:757. NON-PARAMETRICS.*3 credits.*

Prerequisite, 145 or permission. Theoretical bases and relationships among various nonparametric techniques compared with parametric ones in Psychology.

375:760. SCALING TECHNIQUES.*2 credits.*

Prerequisite, 602, or 347:671, or permission. Consideration of scales of measurements, use of curve fitting psychophysical methods and psychological scaling methods.

375:763. PSYCHOLOGICAL EXPERIMENTAL DESIGN.*3 credits.*

Prerequisite, 603, or 347:672, or permission. Theory and application of statistical tests of significance to more complex psychological experimental designs than in 603.

375:790. DISSERTATION RESEARCH.*2-20 credits.*

Open to properly qualified students accepted to candidacy for the degree of Doctor of Philosophy in Psychology. 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 system. Required of majors.

385:104. SOCIAL PROBLEMS.*4 credits.*

Prerequisite, 100. 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 or permission. A combination lecture and laboratory course requiring at least five laboratory hour

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.

385:327. 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.

385:336. 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.

385:340. 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.

385:402/502. 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.

385:404/504. THE FAMILY.

4 credits.

Prerequisite, 9 credits of sociology. Analysis of the Family as a social system; historical, comparative, and contemporary sociological approaches examined in relation to family structure and functions.

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 developmental process of varied delinquent role formations. The legal processing of juveniles and the etiologies of forms of delinquency.

385:424/524. 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.

385:425/525. 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.

385:427/527. 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.

385:428. SUBCULTURE PERSONALITY DEVELOPMENT.*4 credits.*

Prerequisite, 100 or permission. Thorough study of the consequences of prejudice, discrimination, poverty and total social milieu on the development of personality among minority group members. Emphasis will range from idiosyncratic factors through total social systems of subcultures such as the ghetto, as they interact with the dominant culture.

385:430/530. SOCIAL STRUCTURES AND PERSONALITY.*4 credits.*

Prerequisite, 100 or permission. Examination of the interrelationships between position in society and personality characteristics. Personality will be treated as both a result and a determinant of social structure and process.

385:431/531. SOCIAL INTERACTION.*4 credits.*

Prerequisite, 100 or 375:141, or permission. An intensive study of advanced theory and research in social-psychology, particularly how social interaction and self-conception affect one another.

385:432/532. THE SOCIOLOGY OF SOCIALIZATION.*4 credits.*

Prerequisites, 100 or 375:141, or permission. Theoretical and empirical analyses of the learning and playing of social roles.

385:433/533. SOCIAL ORGANIZATION.*4 credits.*

Prerequisite, 9 credits of sociology. 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 or Industrial Management. Comparison of formal and informal structures in industrial organizations; analysis of work roles and status systems; communication processes; relation of work plant to community and society.

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.

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.

385:628. 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.*2 credits.*

Description, analysis, and interpretation of political behavior through the application of sociological concepts.

385:631. SEMINAR IN THE SOCIOLOGY OF POLITICAL BEHAVIOR.*2 credits.*

Prerequisite, 630. 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.

4 credits.

Prerequisite, 30 credits of graduate level Sociology courses and/or permission. Significance of some major sociological concepts for theoretical and practical significance of contemporary social issues.

385:650. THESIS.

2-8 credits.

(May be repeated for a total of 8 credits.)

Prerequisite, permission. Supervised thesis writing.

386: SOCIAL WORK

386:270. POVERTY IN THE INNER CITY.

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. This course does not meet requirements for Sociology majors.

386:276. INTRODUCTION TO SOCIAL WELFARE.

5 credits.

Prerequisite, 385:100. 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.

386:373. METHODS AND CONCEPTS OF SOCIAL WORK.

5 credits.

Prerequisite, 276 or permission. Analysis of the methods and concepts utilized in contemporary practice in the various fields of social work.

386:476. FIELD EXPERIENCE IN A SOCIAL AGENCY.

3-12 credits. (3 credits minimum and 12 credits maximum — total in consecutive quarters only.)

Corequisite, 477; 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 477 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.

386:477. FIELD EXPERIENCE SEMINAR.

2 credits.

Corequisite, 476; 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 476. Not open to others.

386:485/585. COMMUNITY ORGANIZATION.

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.

GRADUATE COURSES

386:673. SEMINAR IN SOCIAL WORK METHODOLOGY.

4 credits.

An examination of the concepts and methods utilized in contemporary social work practice.

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 socio-cultural 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.

387:357. MAGIC, MYTH AND RELIGION.*4 credits.*

Prerequisite, 385:100 or 387:150. 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, 385:100 and 387:150. 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.

387:459/559. FACTS AND VALUES IN CULTURE.*4 credits.*

Prerequisites, 385:100 and 387:150. An examination of the independence, ambiguity, and relativity of facts and values from a cultural point of view. Subjective and objective components of the distinction between factual judgments and value judgments. Evaluation of cultural relativism.

387:461/561. LANGUAGE AND CULTURE.*4 credits.*

Prerequisite, 385:100, 387:150 or permission. Language as a subsystem 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, 385:100 and 387:150. 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.

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 syn-

thetic 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.

GRADUATE COURSES**394:604-605. SPECIAL PROJECTS IN POLYMER SCIENCE.***1-5 credits.*

(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.

394:691. 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.

394:701-702-703. POLYMER TECHNOLOGY.

3 credits each.

Prerequisite, permission. A study of the basic principles and methods involved in the technology of polymeric materials, with special emphasis on rubber and plastics, and including the processing, compounding and finishing operations to which these materials are subjected.

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, 3, or 4 credits.

Prerequisites, either 315:314 or 365:301 or 420:305, or permission; prerequisite or co-requisite, 394:708. This laboratory is intended to apply the principles discussed in course 710 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

398:600. 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 or 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.

398:670. 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

410:120. 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.

410:130. 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 Freshmen.

410:140. 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.

410:160. ENGINEERING DESIGN: MECHANICAL ENGINEERING.

2 credits. (2-0)

Introduction of the freshman engineering student to problem-solving techniques in Engineering design. Required of all entering Mechanical Engineering Freshmen.

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.

410:301. 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

420:200. 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 ther-

modynamics as applied to open and closed systems. Thermodynamic concepts, definitions and properties will be discussed.

420:210. CHEMICAL PROCESS INDUSTRIES.

3 credits. (3-0).

Prerequisite, 420:200. A study of the processes used to manufacture basic chemicals. Included are raw materials, processing sequences and economic factors.

420:305. MATERIALS SCIENCE.

3 credits. (3-0).

Prerequisites, 315:112, 315:127 or 315:133, and 345:231. 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, 420:201, 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 THER- MODYNAMICS.

3 credits. (3-0).

Prerequisite, 420:201. 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.

3 credits. (2-1).

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 polymeric 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.

420:415. UNIT OPERATIONS LABORATORY I.

2 credits. (0-2).

Corequisite, 323. Experiments in chemical engineering operations. Emphasis is on collection and analysis of data and report writing.

420:416. UNIT OPERATIONS LABORATORY II.

2 credits. (0-2).

Prerequisite, 323.

420:417. UNIT OPERATIONS LABORATORY III.

2 credits. (0-2).

Prerequisite, 323.

420:426. PHASE AND REACTION EQUILIBRIA.

3 credits. (3-0).

Prerequisite, 420:325. Use of fugacity, activity coefficients, and chemical potential to determine interphase and chemical equilibrium requirements.

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, 420:323. The study of the response of process systems, 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. PLANT DESIGN.

3 credits. (3-0).

Prerequisites, 420:351, 352 and 353. Chemical plant equipment design, plant layout, site selection.

420:442. PLANT DESIGN LABORATORY.

2 credits. (0-2).

Prerequisite, 441. Chemical plant design project.

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.

420:499. 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. (0-2 to 6).

(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 MASS TRANSFER.

3 credits. (3-0).

Prerequisite, 345:236, or permission. Topics in advanced mass transfer operations of chemical engineering such as multicomponent distillation, absorption, extraction, leaching and diffusion.

420:716. ADVANCED REACTION ENGINEERING.

3 credits. (3-0).

Prerequisite, 615. Kinetics of heterogenous systems. Fluidized reactors. Non-ideal mixing 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.

420:897. PRELIMINARY RESEARCH.

1-8 credits.

(May be repeated for a total of 8 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.

420:899. DISSERTATION PREPARATION.

1-5 credits.

(May be repeated for a total of 5 credits.)

Prerequisite, approval of Advisory Committee. Writing of a Ph.D. dissertation by a Ph.D. candidate.

430: CIVIL ENGINEERING

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.

430:202-203. STRENGTH OF MATERIALS I AND II.

3 credits each. (3-0).

Prerequisite, 201. Axial force, shear, bending moment diagrams, axial stress and deformation; stress-strain diagrams; torsion; flexure; compound stresses; principle stresses and strains; failure theories; thin shells of revolution; beam deflections by double integration and moment area; three-moment equation; limit analysis of beams; buckling of columns.

430:231. SURVEYING I.

3 credits. (2-1).

Principles of plane surveying. Use of tape, level and transit.

Computation of areas. Field problems involving measurement of horizontal and vertical distances and angles.

430:232. SURVEYING II.

3 credits. (3-1).

Prerequisite, 231. Precise leveling, triangulation, topographic surveying, astronomic observations pertinent to surveying, horizontal and vertical alignment of transportation routes, earthwork computations.

430:304. MECHANICS I.

4 credits. (4-0).

Prerequisite, 365:201; corequisite, 345:236. Basic concepts of mechanics, elementary vector algebra, concurrent force systems, equilibrium of a particle, kinematics of a particle, kinetics of a particle, products of vectors, nonconcurrent force systems, center of mass, center of gravity and centroid, second moments of masses and areas, equilibrium of rigid bodies, kinematics of rigid bodies, kinetics of rigid bodies. Course and only be taken by students enrolled in Chemical and Electrical Engineering Programs.

430:305. MECHANICS II.

4 credits. (4-0).

Prerequisite, 304. Stress and strain, axial forces, flexure, torsion, statically indeterminate systems, impulse and momentum, work and energy, energy methods for equilibrium. Course can only be taken by students enrolled in Chemical and Electrical Engineering Programs.

430:306. THEORY OF STRUCTURES I.

3 credits. (3-0).

Corequisite, 203. Coplanar equilibrium; stability; determinacy; bridge and roof trusses; approximate analyses of indeterminate frames; influence lines; criteria for moving loads, virtual work methods; theorems of Castigliano; statically indeterminate frames.

430:307. THEORY OF STRUCTURES II.

3 credits. (3-0).

Stiffness properties; slope deflection; moment distribution; influence lines for statically indeterminate structure; temperature and settlement effects; matrix algebra; matrix analysis of beams and frames.

430:311. SOIL MECHANICS.

4 credits. (3-1)

Prerequisites, 203 and 460:310. 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, sheetpiling, cofferdams. Earthworks. Tunneling.

430:321. ENVIRONMENTAL ENGINEERING I.

3 credits. (3-0)

Problems of engineering in public and industrial water supplies. Quality and quantity requirements. Development of surface and ground water supplies to meet the consumptive use of present and future. Treatment methods and techniques for domestic and industrial use. Distribution systems design and analysis by such methods as Hardy Cross. Reservoirs and pumping stations. Principles of water utility management and water works finance.

430:322. ENVIRONMENTAL ENGINEERING II.

4 credits. (3-1)

Prerequisite, 321. Quantity and characteristics of sewage and storm water. Sewer hydraulics. Design of sanitary, storm, and combined sewer systems. Appurtenant structures and fixtures. Loads on buried pipes. Sewage disposal, dilution, and other treatment methods. Primary, secondary, and tertiary treatment. Sludge digestion and disposal. Construction, finance, maintenance, and operation of sewers and treatment facilities. Introduction to Public Health Engineering. Laboratory covers water and sewage quality analysis.

430:341 WATER RESOURCES.

4 credits. (4-0).

Prerequisite, 460:310. Hydrology, flood routing, reservoirs and dams. Navigation, water power, irrigation, flood control and multipurpose water resources systems. Study of economic, legal, ecologic and sociological aspects of water resources projects.

430:342. HYDRAULIC ENGINEERING.

3 credits. (3-0)

Prerequisite, 460:341. Flow in closed conduits and open channels. Analysis of hydraulic structures. Study of hydraulic machinery, wave theories and modeling techniques.

430:350. URBAN PLANNING.

3 credits. (3-0)

History of the development of cities from the earliest civilizations through the industrial revolution of the 19th century. Early attempts to planning. The necessity, organization and legal aspects of planning and zoning. Environmental problems affecting engineers. The search for new solutions.

430:351. TRANSPORTATION ENGINEERING.

3 credits. (3-0)

Prerequisite, 232. Modern techniques of mass transportation. Local and long distance transportation needs. Traffic analysis. Planning of transportation systems. Highways, railroads, airports, heliports, etc. Principles of highway design.

430:352. HIGHWAY DESIGN.

4 credits. (4-0)

Prerequisite, 351. Complete and detailed review of present highway design policies. The design standards and criteria. A step by step review and exercise of the planning process.

Highway materials. Construction methods.

430:380. ENGINEERING MATERIALS LABORATORY.

1 credit. (0-1)

Prerequisite, 203. 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, 307. 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, 307. 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.

430:405-406/505-506. ADVANCED MECHANICS OF MATERIALS I AND II.

3 credits each.

Prerequisite, 307. Torsion analysis, rotating discs, membrane analysis, beams on elastic foundation, bending of plates, energy methods. Stability analysis.

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 III.

4 credits. (4-0)

Prerequisite, 322 and 310:177. 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.

430:425. 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.

430:433/533. PHOTOGRAMMETRY.

3 credits. (2-2)

Prerequisite, 232. Photogrammetry. Fundamental principles involved in surveying by aerial or other photography, including the reduction of photograph to a map. Laboratory exercises in the photographic study of a prepared geometric landscape. Experience with the basic photogrammetric instruments.

430:441. HYDRAULIC STRUCTURES I.

4 credits. (4-0)

Prerequisite, 311. The analysis and design of reservoirs and hydraulic structures such as dams, spillways, gates and outlet works. The use of design procedures and specifications in the design of hydraulic structures. The study of hydraulic machinery used in such structures.

430:443. APPLIED HYDRAULICS.

4 credits. (4-0)

Prerequisite, 460:310. Fundamental principles of flow in pipes and open channels. Discussion of flow control devices and channel transitions. Similitude of model studies, theoretical aspects of hydraulic structures, river engineering, coastal hydraulics, stream channel mechanics.

430:451. STRUCTURAL MECHANICS I.

3 credits. (3-0)

Prerequisite, 307. Deflection Theory; moment distribution; slope deflection method; elastic center and column analogy methods.

430:452. STRUCTURAL MECHANICS II.

3 credits. (3-0)

Prerequisite, 451. A continuation of 430:451 including work and energy methods, influence lines, variable moment of inertia, arch theory, axially loaded members, beams and columns.

430:453/553. COMPUTER METHODS IN STRUCTURAL MECHANICS.

4 credits. (4-0)

Prerequisite, 307. Fundamental concepts of computers; role of computers in structural and solid mechanics; fundamental concepts in structural analysis; introduction to determinants and matrices; solution of linear equations; eigenvalue problems; energy concepts in structures; transformation matrices; flexibility and stiffness methods of 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. HIGHWAY PLANNING I.

4 credits. (4-0)

Prerequisite, 352. Analysis of highway planning programs and including highway needs studies, priority rating systems and programming methods. Discussion of traffic assignment and forecasting techniques as related to highway planning. Discussions will primarily be devoted to rural route problems using case history methods of analysis.

430:464. HIGHWAY PLANNING II.

4 credits. (4-0)

Prerequisite, 463. Continuation of 463 with emphasis on urban locations and planning.

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.

430:482. HYDRAULICS LABORATORY.

1 credit. (0-1)

Prerequisite, 342. Individual assignments of model studies by using wave channel, hydraulic flume, water table equipped 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. A team approach to systematic 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 adviser.

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.

430:608-609. ADVANCED THEORY OF STRUCTURES I AND II.

3 credits each. (3-0)

Prerequisite, 307. Energy methods. Continuous beams and frames of variable moment of inertia. Equivalent systems. Continuous trusses and bents. Arches and rings. Curved members. Flexible members. Special problems. Matrix methods.

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.

Prerequisites, 321 and 322. 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.

430:621-622-623. INDUSTRIAL WASTE TREATMENT I II AND III.

3 credits each.

Prerequisite, permission. Study of the problems arising from industrial water pollution. Methods of treatment of industrial wastes with specific applications to various industries.

430:641. ADVANCED HYDRAULICS.

3 credits. (3-0)

Prerequisite, 643. 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. Open channel flow.

430:642. MULTIPHASE FLOW.

3 credits. (3-0)

Prerequisite, 641. Flow of liquid-gas-solid mixtures in pipes. Design of transport pipelines. Erosion, transport, and sedimentation in open channels. Stratified flow.

430:643. 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.

430:646. THEORY OF WAVES I.

3 credits. (3-0)

Prerequisite, 643. Theory of wave motion. Analysis of periodic and solidarity 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, 307. 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; elasto-plastic deformations; minimum-weight design; grids and arches.

30:653. 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.

30:655. PRESTRESSED CONCRETE.

3 credits. (3-0)

Prerequisite, 404. Prestressing systems and anchorages. Loss of prestress friction. Flexure. Design for flexure. Shear, bond, bearing. Beam deflections. Partial prestress. Structural applications.

30:657-658. 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.

30:661 ADVANCED ENGINEERING MATERIALS I

3 credits.

Prerequisite, 505 or 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.

30:681. SITE PLANNING AND LAND DEVELOPMENT.

3 credits. (3-0)

Prerequisite, permission. A case study of site planning using systems analysis; feasibility for development or redevelopment; the restraints imposed by political, urban and regional relationships.

30:682. URBAN RENEWAL SITE DEVELOPMENT.

3 credits. (3-0)

Prerequisite, permission. The studies required for renewal and shifting land use in terms of feasibility, traffic generation, utilities and public services and the problems of relocation of existing uses by case study.

30:685. 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 in 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.

430:717. 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. POTENTIAL FLOW THEORY.

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. THEORY OF WAVES II

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. Coastal engineering.

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 sheels, 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. Aplication 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.

430:897. PRELIMINARY RESEARCH.

1-8 credits.

(May be repeated for a total of 8 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.

430:899. DISSERTATION PREPARATION.

1-5 credits.

(May be repeated for a total of 5 credits).

440: ELECTRICAL ENGINEERING

440:233. CIRCUITS I.

4 credits. (4-0)

Corequisite, 345:234. 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, 445:160; corequisite, 445:331. 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, 445:160. 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, ohm-meters, galvanometers, balanced and unbalanced Wheatstone bridges.

- 440:341. ELECTRICAL MEASUREMENTS II.
3 credits. (2-1)
Prerequisites, 340 and 445:160. 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, 345:236. Static and dynamic electric and magnetic 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.
2 credits. (2-0)
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, 234. 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, 233 or 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. FEEDBACK 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. FEEDBACK 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.
- 440:381. ELECTRICAL MACHINERY FUNDAMENTALS.
3 credits. (2-1)
Prerequisite, 233 or 331. A course for non-EE majors stressing the practical aspects of AC and DC machinery and associated schematic diagrams.
- 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)
Prerequisites, 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.

440:438/538. 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.

440:443/543. DATA ANALYSIS.

3 credits. (3-0)

Prerequisite, 341. Analysis, interpretation, and smoothing of engineering data through application of statistical methods. Use of probability papers.

440:445. RANDOM SIGNAL ANALYSIS.

3 credits. (3-0)

Prerequisite, senior standing or consent of instructor. Applications 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 or consent of instructor. 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.

440:453/553. 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. Technique of microwave measurements. Microwave systems.

440:459/559. MICROWAVE LABORATORY.

1 credit. (0-1)

Corequisite, 458/558. Laboratory to accompany 458/558.

440:461/561. COMPUTER CIRCUITRY I.

3 credits. (3-0)

Prerequisite, 366. Analysis of computer circuits. Introduction to the use of Boolean Algebra and mapping technique 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, in put-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. FEEDBACK 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.

440:481/581. SYMMETRICAL COMPONENTS II.

3 credits. (3-0)

Prerequisite, 480/580. Simultaneous faults on symmetrical power systems. Positive, negative, and zero sequence impedance calculations of apparatus and lines.

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.

440:486/586. ADVANCED ELECTRICAL MACHINERY.

3 credits. (3-0)

Prerequisite, 484. Advanced topics relative to reactances and transient performance of electrical machinery.

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.

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, 438/538. Use of pole-zero and matrix methods in circuit analysis.

440:631. NETWORK SYNTHESIS I.

3 credits. (3-0)

Prerequisite, 538. Energy relations in passive networks; complex variable theory, realizability and synthesis of driving point impedance and transfer functions.

440:646. CRITICAL ASPECTS OF MEASUREMENTS.

3 credits. (3-0)

Prerequisite, 538 or permission. 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 676 or permission of instructor. 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, mean-squared-error filter, modulation theory and discrete and continuous signals in information theory.

440:648. STATISTICAL COMMUNICATION II.

3 credits. (3-0)

Prerequisite, 647. Continuation of 647.

440:654. ADVANCED ELECTROMAGNETIC FIELDS.

3 credits. (3-0)

Prerequisite, 453/553. Application of Maxwell's equations continued. Propagation equations and antenna analysis.

440:656. ADVANCED ANTENNA THEORY.

3 credits. (3-0)

Prerequisite, 553 or equivalent. 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.

440:674. 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, 604. 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.

440:681. STEADY STATE ANALYSIS OF POWER SYSTEMS.

3 credits. (3-0)

Prerequisite, 481/581. General circuit constants, power circle diagrams, steady state stability, load flow.

440:682. TRANSIENT ANALYSIS OF POWER SYSTEMS.

3 credits. (3-0)

Prerequisite, 481/581. Sudden application of load to machines. Transient and dynamic stability.

440:683. ECONOMIC OPERATION OF POWER SYSTEMS.

3 credits. (3-0)

Prerequisite, BSEE and 455:160 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.

440:692. 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.

440:771. DISCRETE CONTROL SYSTEMS.

3 credits. (3-0)

Prerequisite, 674. 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.

440:772. SYSTEMS ANALYSIS.

3 credits. (3-0)

Prerequisite, 676. Application of operations research methods and optimization approach to engineering problems. Linear and dynamic programming, queuing, and Monte Carlo techniques.

440:776. OPTIMAL CONTROL I.

3 credits. (3-0)

Prerequisite, 674, 675. 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.

1-8 credits.

(May be repeated for a total of 8 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.

440:899. DISSERTATION PREPARATION.

1-5 credits.

(May be repeated for a total of 5 credits.)

Prerequisite, approval of Advisory Committee. Writing of a Ph.D. dissertation by a Ph.D. candidate.

445: COMPUTER SCIENCE**445:160. COMPUTER SCIENCE I.**

3 credits. (3-0)

Prerequisite, 345:231 or 202:336. Introduction to the application and use of stored program digital computers. Intended for students majoring in Engineering or the physical sciences. (No credit for persons having completed 301.)

445:202. COBOL PROGRAMMING.

3 credits. (3-0)

Prerequisites, 110:211 or equivalent. The use of COBOL and other business-oriented computer programming language on digital computers.

445:220. ANALOG COMPUTERS.

3 credits. (2-1)

Prerequisite, 440:233 or 331; corequisite, 345:236. Basic concepts involved in the solution of scientific and engineering problems via the analog computer.

445:260. COMPUTER SCIENCE II.

3 credits. (3-1)

Prerequisite, 160. A continuation of 160 with stress on the use of the computer as a problem-solving tool at the machine language or assembler language level.

445:301. COMPUTER FUNDAMENTALS.

3 credits. (3-0)

Introduction to use of digital computers, designed for students who have not studied calculus. (No credit for persons having completed 445:160.)

445:331. COMPUTER METHODS IN SCIENCE AND ENGINEERING.

3 credits. (3-0)

Prerequisite, 160 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 *Subroutine, Common, and Equivalence* statements, overlay techniques, etc.

445:360. COMPUTER SCIENCE III.

3 credits. (3-1)

Prerequisites, 260 and 345:234. A continuation of 260 with particular emphasis on algorithmic processes, special computer techniques, problem solving, timing, and evaluation. An overview of current applications, research, and development in computer science and related fields.

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, 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, 160 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.

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.

460:300. THERMODYNAMICS I.

3 credits. (3-0)

Introduction of basic concepts of Thermodynamics, the pure substance, the system, and the laws of Thermodynamics.

460:301. THERMODYNAMICS II.

3 credits. (3-0)

Prerequisite, 300. Entropy, inequality of Clausius, the irreversible process, irreversibility, availability, cycle analysis.

460:302. THERMODYNAMICS III.

3 credits. (3-0)

Prerequisite, 301. Maxwell relations, real gases, ideal mixtures, fugacity, chemical reactions, phase and chemical equilibrium, nozzle and blade passage flow.

460:305. THERMAL SCIENCE.

3 credits. (3-0)

Introduction to the first and second laws, perfect gas relationships, properties, introduction to conduction, convection and radiation.

460:310. FLUID MECHANICS.

3 credits. (3-0)

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. Characteristics of turbines, pumps, and fluid couplings.

460:311. COMPRESSIBLE FLUID MECHANICS.

3 credits. (3-0)

Prerequisite, 310. Ideal flow, flow with friction, flow with heat transfer. Shock.

460:315. HEAT TRANSFER.

4 credits. (3-1)

Prerequisite, 310. Fundamentals of heat transfer by conduction, convection, radiation, and combination of these.

460:316. HEAT TRANSFER PROCESSES.

3 credits.

Prerequisite, 315. Fundamentals of heat transfer; a continuation of 315.

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.

460:330. DYNAMICS OF MACHINERY.

3 credits. (2-1)

Prerequisites, 320, 430:302. Dynamic analysis of components and machines — dynamic forces and reactions. Balancing of rotating and reciprocating masses. Analysis and design of gear trains and cams.

460:336-337. ANALYSIS OF MECHANICAL COMPONENTS I AND II.

3 credits each. (3-0)

Prerequisites, 380 and 430:202. Analysis of stress and failure due to static, dynamic, thermal and time dependent loads. Application 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.

460:362. ENGINEERING ANALYSIS III.

3 credits. (3-0)

Prerequisite, 361. The application of numerical and computer techniques to the solution of problems in Mechanical Engineering.

460:380. MECHANICAL PROPERTIES OF MATERIALS

3 credits. (3-0)

Prerequisite, Metallurgical structure of common metallic alloys and the study of their macroscopic mechanical behavior — elasticity, plasticity, fatigue, fracture, creep stress rupture.

460:390. FLUID MECHANICS LABORATORY I.

1 credit. (0-1)

Prerequisite, 310 and permission. Demonstration of flow measuring devices, pump characteristics and measurement of pressure drop in pipes, valves and other piping components.

460:391. FLUID MECHANICS LABORATORY II.

1 credit. (0-1)

Prerequisite, 302, 310 and permission. Demonstration of aerodynamic principles of subsonic and supersonic flow, air compressor performance and tank blowdown.

460:392. AIR CONDITIONING LABORATORY.

1 credit. (0-1)

Prerequisite, 302 and permission. 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, 302 and permission. A study of the application and performance of compression and spark ignition engines.

460:394. HEAT TRANSFER LABORATORY.

1 credit. (0-1)

Prerequisite, 315 and permission. An experimental investigation of certain conduction, convection and radiation heat transfer processes.

460:395. ACOUSTICS LABORATORY.

2 credits. (0-2)

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)

Prerequisites, 362 and permission. Application of analog and digital computers to solution of typical problems in heat transfer, fluid dynamics, machine design, kinematics,

strength of materials, elasticity and vibrations and dynamics.

60:397. CONTROLS AND SYSTEMS LABORATORY.

2 credits. (0-2)

Prerequisites, 440, 441 and permission. Measurement of parameters for first and higher order systems. Experimental study of the effect of controllers on the stability and performance of systems.

60:398. VIBRATIONS AND DYNAMICS LABORATORY.

2 credits. (0-2)

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.

60:410. ENVIRONMENTAL CONTROL.

3 credits. (3-0)

Prerequisites, 320, 315 or permission. Thermodynamics of gas mixtures. Physiological requirements for sustenance and comfort. Control of gas mixtures, heating, cooling, and humidity.

60:415. ENERGY CONVERSION.

3 credits. (3-0)

Prerequisite, 320. Cycle analysis. Modern conversion devices.

60:422/522. EXPERIMENTAL STRESS ANALYSIS I.

3 credits. (3-0)

Prerequisite, 460. Experimental methods of determining stress or strain. Use of brittle lacquer, strain gages, and photoelasticity. Advantages and limitations of each method. May be taken for graduate credit.

60:425/525. ENGINEERING ACOUSTICS.

3 credits.

Prerequisite, 431. Energy of vibration, analysis by Fourier's Theorem, phase and mechanical impedance concepts, wave propagation and reflection, plane waves, spherical waves and radiation impedance.

60:430/530. ENGINEERING DYNAMICS I.

3 credits. (3-0)

Engineering applications of: systems of particles, work, energy, Lagrangian mechanics, rigid body kinetics, the inertia tensor.

60:431/531. VIBRATIONS.

3 credits. (3-0)

Prerequisite, 345:236. Undamped, damped, and forced vibrations for systems having a single degree of freedom.

60:440. 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.

4 credits. (3-1)

The design process. Creativity and inventiveness. The tools of decision making — probability, reliability, optimization.

460:461. MECHANICAL DESIGN II.

4 credits. (3-1)

Prerequisite, 460. Decision-making. The interdisciplinary aspects of design. Case studies and projects.

460:494. MECHANICAL ENGINEERING LAB.

1-10 credits.

(May be repeated for a total of 10 credits.)

Prerequisite, permission of Instructor. 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 maximum of 3 credits.)

Prerequisite, senior standing. Investigation of a project by individual or small student groups. Detailed formal report required.

460:496. SPECIAL TOPICS.

3 credits. (3-0)

Prerequisite, permission. Brief description of current content to be announced in schedule of classes.

GRADUATE COURSES

460:600. GAS DYNAMICS I.

3 credits.

Prerequisites, 310, 302. Fluid flow as affected by thermodynamic considerations. Study of shock and shock areas. Application of dynamic fluid flow.

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. Irreversible processes.

460:610. DYNAMICS OF VISCOUS FLOW I.*3 credits. (3-0)*

Prerequisites, 430:643 or permission. Mathematical derivation and solution of the conservation equations for viscous flow. Fractional analysis of basic equations and boundary conditions to obtain simplified models. Boundary layer analysis. Application to engineering problems by exact and approximate methods. Consideration of laminar and turbulent flows. Temperature dependent properties. Tensor notation.

460:615. CONDUCTIVE HEAT TRANSFER.*3 credits. (3-0)*

Prerequisites, 315, 345:236, (345:432 desirable). Study of the one-, two-, and three-dimensional 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. Dynamic strain measurement and design of transducers using electrical resistance strain gages.

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 those of thermodynamics. Relations between stress and strain and strain rate. Specialized law affecting the stress-strain relationships.

460:623. APPLIED STRESS ANALYSIS I.*3 credits. (3-0)*

Prerequisite, 622. Elastic analysis of stress, stress analysis beyond elastic limit, Non-Linear elastic stress analysis, mathematical techniques applied to stress analysis.

460:625. ANALYSIS OF MECHANICAL COMPONENTS.*3 credits. (3-0)*

Prerequisite, 460. Theories of failure. Determination of

strength-static loading, fatigue, creep, and stress rupture. Determination of stress-torsion, contact stress, and thermoelastic problems.

460:629. NONLINEAR ENGINEERING PROBLEMS I.*3 credits. (3-0)*

Prerequisite, graduate standing. Analytical procedures for non-linear problems in single and multi-degree of freedom parameter systems.

460:630. MECHANICAL VIBRATIONS I.*3 credits. (3-0)*

Prerequisite, 345:236. The study of free vibrations, damped vibrations, transient response, and forced vibrations in linear elastic systems. This course is intended for those graduate students who have done no previous course work in vibrations.

460:633. ENGINEERING DYNAMICS II.*3 credits. (3-0)*

Prerequisite, 530. Engineering applications of: Euler's differential equation, Hamilton's principle, the principle of Minimum potential energy, phase space, and the Hamilton-Jacobi equation.

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, permission of instructor. 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 equation, Laplace transformations complex variables and conformal mapping.

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

andidates for graduate degree. Supervised research in student's major field of training or experience. Credit dependent upon nature and extent of project as determined by 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 permission. Continuation of 600, subsonic, supersonic, transonic and hypersonic flow, hodograph method of characteristics, and oblique method.

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. Continuation of Dynamics of Viscous Flow I. Laminar boundary layer theory, similarity solutions and integral methods. Consideration of high speed flows in continuum and in a rarefied atmosphere.

460:716. CONVECTION HEAT TRANSFER I.

3 credits.

Prerequisites, 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, 610 or permission. Basic topics in convection heat transfer which are not presented in Convection Heat Transfer I are covered. These include natural, convection, boiling and condensation.

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, permission. Stress analysis of systems subjected to dynamic loads, stress analysis of elements subjected to thermal loads. The concept of stress, advanced topics in fatigue, creep, stress relaxation and related effects.

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, and electroelasticity.

460:729. NONLINEAR ENGINEERING PROBLEMS II.

3 credits. (3-0)

Prerequisite, 629. Analytical procedures applicable to continuous nonlinear systems.

460:730. MECHANICAL VIBRATIONS II.

3 credits.

Prerequisite, 630 or equivalent. Laplace transform and Fourier series analysis of linear systems. Analysis of two-degree-of-freedom systems, multimass lumped systems, and distributed mass systems.

460:731. RANDOM VIBRATIONS.

3 credits.

Prerequisite, 630 or equivalent. Stationary random processes 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, 440:604. Mathematical theory of control systems. Existence and uniqueness theorems for control systems. Discussion of recent research such as optimal controls for time delay, distributed parameter, and large-scale systems.

460:742. STABILITY THEORY OF CONTROL SYSTEMS.

3 credits. (3-0)

Prerequisite, 440:605 or permission. Definitions and mathematical concepts of stability. Extensions of Liapunov's direct method. Methods and applications. Stability of time delay systems.

460:760. ENGINEERING ANALYSIS II.

3 credits. (3-0)

Prerequisite, 660 or permission. Continuation of 660. Analysis of engineering problems to include matrices, linear transformations and numerical analysis.

460:763. ADVANCED METHODS IN ENGINEERING ANALYSIS.

3 credits.

Prerequisite, 760 or permission. Applications of numerical methods to complex engineering problems in heat transfer, fluid mechanics, stress analysis and thermodynamics.

460:897. PRELIMINARY RESEARCH.

1-8 credits.

(May be repeated for a total of 8 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.

460:899. DISSERTATION PREPARATION.

1-5 *credits*.

(May be repeated for a total of 5 credits). Prerequisite, approval of Advisory Committee. Writing of : Ph.D. dissertation by a Ph.D. candidate.

The College of Education

510: GENERAL AND FOUNDATION EDUCATION

- 10:156. EDUCATION IN AMERICAN SOCIETY.
3 credits.
Nature and purposes of education in American society including description of its distinctive features and analysis of actors determining its character.
- 10:350. TESTS AND MEASUREMENTS.
3 credits.
Prerequisite, 565:157. Various methods and devices employed in comprehensive and continuous evaluation. Some attention given to treatment and interpretation of scores.
- 10:360. NURSERY SCHOOL LABORATORY.
4 credits. (2-4)
Prerequisite, 740:265. Concentrated study and experience in nursery school programming under direction of supervising teachers.
- 10:400. STUDENT PARTICIPATION.
1 credit.
Systematic observation and participation in the classroom.
- 10:401. PROBLEMS IN EDUCATION.
5 credits.
Prerequisite, Senior status in Education. Involves the 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.
- 10:402. STUDENT TEACHING.
6-9-12 credits.
Prerequisite, 403, prerequisite, 530:313 or equivalent.
Student teaching under supervision of directing teacher and University supervisor.
- 10:403. SEMINAR IN STUDENT TEACHING.
3 credits.
Prerequisite, 402.
- 10:405. INDEPENDENT STUDY.
1-4 credits.
Designed for students who have demonstrated high academic achievement and who wish to do special work in education.
- 10:410. 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.

GRADUATE COURSES

- 510:603. EDUCATION AND SOCIAL TRENDS.
3 credits.
Study of contemporary political, economic and social trends and their effects on educational policies and practices.
- 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.
- 510:690-691-692. INTERNSHIP TEACHING AND SEMINAR.
4 credits each.
Teaching at least 1/2 time under supervision from the University and the school system. Includes a two-hour seminar each week.
- 510:700. PHILOSOPHIES OF EDUCATION.
5 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.
- 510:701. 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, 700 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.
- 510:705. 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.

510:706. 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.

510:709. SEMINAR: HISTORY AND PHILOSOPHY OF HIGHER EDUCATION.

4 credits.

Prerequisite, 700. 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.

510:730. 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.

510:740. THEORIES OF EDUCATIONAL SUPERVISION.

4 credits.

Prerequisite, 570:610; 520:732 or 530:721. Exploration and examination of various theories of supervision; sample methods which implement existing theories.

520: ELEMENTARY EDUCATION

520:141. HANDICRAFTS IN ELEMENTARY SCHOOL.

3 credits.

A broad range of experiences through the manipulation of various craft mediums which will enrich the curriculum of the elementary school.

520:262. ELEMENTARY SCHOOL MUSIC LITERATURE AND APPRECIATION.

3 credits.

Techniques of active, perceptive music listening, and materials and methods for guiding elementary school children, through listening experiences, accomplished by means of the study of musical recordings, motion pictures, live concert attendance and outside listening assignments (non-music majors only.)

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.

520:321. ART FOR THE GRADES.

3 credits.

Prerequisite, 710:121. Art requirements in elementary grades; laboratory work to give teachers a knowledge of materials and mediums and skill in handling them.

520:322. PRIMARY-ELEMENTARY MUSIC EDUCATION.

3 credits.

Prerequisite, 750:201. For non-music majors only. Theory and practice of presenting general music in the grades. Discussion of objectives and methods for grades one through six and a survey of materials in these fields. Required observations of music teaching in the city schools.

520:323. TEACHING AND SUPERVISION OF MUSIC IN THE PRIMARY GRADES.

2 credits.

Prerequisite, 750:253. To prepare vocal and instrumental music teachers for organizing, teaching, and supervising music education in the primary grades (1-3). Observation and participation are required.

520:324. TEACHING AND SUPERVISION OF MUSIC IN THE ELEMENTARY GRADES.

2 credits.

Prerequisite, 323. To prepare vocal and instrumental music teachers for organizing, teaching, and supervising music education in the elementary grades (4-6). Observation and participation are required.

520:330. EARLY ELEMENTARY EDUCATION I.

3 credits.

Prerequisite, 565:157. 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, 565:157. 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.

20:334. TEACHING ART IN THE ELEMENATRY 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, valuation and research, and practical participation (classroom teaching).

20:335. THE TEACHING OF READING.

5 credits.

Prerequisite, 565:157. Reading program for the elementary school, together with modern methods of teaching reading at the various levels.

20:336. ARITHMETIC IN THE ELEMENTARY GRADES.

5 credits.

Prerequisite, 565:157. 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, 565:157. Materials, grade allocations and methods for teaching oral and written expression, reading, spelling and handwriting in elementary grades.

520:338. THE TEACHING OF SOCIAL STUDIES.

3 credits.

Prerequisite, 565:157. Social studies program in the elementary school and the varied means of implementing the program.

520:339. PRINCIPLES OF DIAGNOSTIC TEACHING OF READING.

4 credits.

Nature of reading problems in a classroom setting. Methods and materials employed in a corrective reading program by the classroom teacher.

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.

520:451. 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

520:630. ELEMENTARY SCHOOL CURRICULUM AND INSTRUCTION.

3 credits.

Application of the findings of recent research to curriculum building and procedures in teaching.

520:631. ELEMENTARY SCHOOL ADMINISTRATION.

3 credits.

Prerequisite, 570:601. Problems, procedures and principles of organization, administration and supervision in elementary schools.

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.

520:732. SUPERVISION OF INSTITUTION 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 a particular discipline in elementary education.

530:SECONDARY EDUCATION**530:313. PRINCIPLES AND PRACTICES
IN SECONDARY EDUCATION.***5 credits.*

Prerequisite, 565:157. Four units of study carried on concurrently: (1) basic principles of teaching; (2) a working knowledge of methodology in a specific field; (3) observation and participation; (4) preparation of teaching materials.

530:314. TEACHING OF SPEECH.*3 credits.*

Prerequisite, 12 credits in speech courses. An investigation of educational methods for speech-communication specialists through examination of theories, study of teaching processes and methods and preparation of instructional materials.

**530:315. SEMINAR IN TEACHING MODERN FOREIGN
LANGUAGES.***4 credits.*

Prerequisite, 565:157. An elective course for those students who major in modern foreign languages.

530:316. METHODS IN TEACHING ART.*5 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.

**530:325. TEACHING AND SUPERVISION OF MUSIC IN
THE JUNIOR HIGH SCHOOL.***2 credits.*

Prerequisite, 520:324. To prepare music teachers for organizing, teaching, and supervising music education in junior high school grades (7-9). Special emphasis on the adolescent voice, the changing voice, the general music class, and special interest groups and ensembles. Observation and participation required.

**530:326. TEACHING AND SUPERVISION OF MUSIC IN
THE SENIOR HIGH SCHOOL.***2 credits.*

Prerequisite, 750:253 and 361. To prepare music teachers for organizing, teaching, and supervising music education in the senior high school. Emphasis will be on theory and applied music, especially instrumental organizations.

**530:351. HOME ECONOMICS EDUCATION —
CONSUMER HOMEMAKING.***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.

**530:373. PRINCIPLES OF TYPEWRITING INSTRU-
TION.***2 credits.*

Prerequisite, Typewriting 254:155 and a quality point ratio of 2 in the field. Methods of presentation in typewriting. Demonstrations and observations required. A theory test in the field must be passed before credit will be given for the course.

**530:374. PRINCIPLES OF SHORTHAND INSTRU-
TION.***2 credits.*

Prerequisite, Shorthand 254:173 and a quality point ratio of 2 in the field. Methods of presentation in shorthand and transcription. Demonstrations and observations required. A theory test in the field must be passed before credit will be given for the course.

**530:375. PRINCIPLES OF BOOKKEEPING INSTRU-
TION.***2 credits.*

Prerequisite, Accounting 620:222 and a quality point ratio of 2 in the field. Methods of presentation in bookkeeping, business cycle, practice sets and lesson plans. A theory test in the field must be passed before credit will be given for the course.

**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.

**530:476/576. 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**530:611. 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.

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.

530:619. SECONDARY SCHOOL CURRICULUM AND INSTRUCTION.*3 credits.*

Application of the findings of recent research to curriculum building and procedures in teaching.

530:620. SECONDARY SCHOOL ADMINISTRATION.*3 credits.*

Prerequisite, 570:601. Problems, procedures and principles of organization and administration in secondary schools.

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.

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.

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.

540:410/510. 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 of 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.

540:451/551. 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**540:610. 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.

540:661. 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.

555: PHYSICAL EDUCATION**555:101. APPLIED ANATOMY.***5 credits.*

Study of the human body; origin, insertion, action, innervation and blood supply of the important muscles of the body in relation to Physical Education and health.

555:102. APPLIED PHYSIOLOGY.*4 credits.*

General laws of life; functional activity of tissues, organs, systems; what they can do and how they work in everyday life.

555:170. ORGANIZATION AND ADMINISTRATION OF RECREATION.*3 credits.*

Administration, budgets, management of individual playgrounds, the neighborhood recreation center and community activities.

555:304. THEORY AND PRACTICE OF SWIMMING.*3 credits.*

Analysis of strokes, dives and related skills; methods and practice in teaching of swimming.

555:311. RED CROSS FIRST AID.*2 credits.*

Standard American Red Cross course which gives instruction and practice in the immediate and temporary care of injuries and sudden illness.

555:315. ADAPTIVE PHYSICAL EDUCATION.*3 credits.*

Prerequisite, 101 and 102. Current theories and practices relating to the needs of physically handicapped children; emphasis is given to underlying philosophy, purpose and administration.

555:319. 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.

555:320. CAMPING AND OUTDOOR EDUCATION.*3 credits.*

Camping skills and counseling techniques. Camp administration, school camping and outdoor education.

555:321-322. ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION.*3 credits each.*

Organization and administration of Physical Education programs.

555:325. ORGANIZATION AND ADMINISTRATION OF SCHOOL HEALTH.*4 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.

555:333. METHODS AND MATERIALS IN TEACHING HEALTH EDUCATION.*5 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.

555:334. GAMES AND RHYTHMS FOR ELEMENTARY GRADES.*3 credits.*

One lecture and two laboratory periods each week. Lecture on theories of play, child development and supervisory 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.

555:338. HEALTH AND PHYSICAL EDUCATION ACTIVITIES FOR ELEMENTARY GRADES.*5 credits.*

Two lectures and two laboratory periods each week. Philosophy and objectives of health and Physical Education programs on the elementary level. Practice in teaching games and rhythms of low organization; planning health and Physical Education programs based upon needs, interests and development of elementary children; communicable and non-communicable diseases; methods of organization; study of source materials available.

555:436/536. ADAPTED PHYSICAL EDUCATION TASKS FOR THE LEARNING DISABLED CHILD.*3 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.

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. A critical analysis of existing laboratory testing and a discussion and study of measurement and evaluation in terms of future needs.

555:608. SUPERVISION OF PHYSICAL EDUCATION.*3 credits.*

Principles involved in the supervision of physical education service programs. Procedure and techniques of supervision of service classes at the three levels: elementary, junior high and senior high school.

557: MEN'S PHYSICAL EDUCATION

557:145-146. BASIC COURSE IN PHYSICAL EDUCATION ACTIVITIES.*3 credits each.*

For men majoring in Physical Education. Learning rules and skills in sports, games and activities commonly included in Physical Education programs.

557:193-194. THEORY AND PRACTICE OF PHYSICAL EDUCATION.*3 credits each.*

Prerequisite, 146. To develop personal technique and skill in presenting calisthenics, marching, gymnastic activities and officiating in sports; history; general lesson plans suitable for elementary and secondary school programs. Observation at all school levels.

557:300. THEORY AND TECHNIQUES OF FOOTBALL COACHING.*2 credits.*

Theory, techniques, and practices related to the different systems of coaching football. One hour lecture, two hours laboratory.

557:301. THEORY AND TECHNIQUES OF TRACK COACHING.*2 credits.*

Theory, techniques and practices related to the coaching of track and field. One hour lecture, two hours laboratory.

557:302. THEORY AND TECHNIQUES OF BASKETBALL COACHING.*2 credits.*

Theory, techniques, and practice related to different systems and techniques of coaching basketball. One hour lecture, two hours laboratory.

557:303. THEORY AND TECHNIQUES OF BASEBALL COACHING.*2 credits.*

Theory, techniques, and practice related to the different ways of coaching baseball. One hour lecture, two hours laboratory.

557:307. THEORY AND TECHNIQUES OF SOCCER COACHING.*2 credits.*

Theory, techniques, and practices related to the techniques of soccer coaching. One hour lecture, two hours laboratory.

557:308. THEORY AND TECHNIQUES OF WRESTLING COACHING.*2 credits.*

Coaching philosophy, theory, techniques, and practices related to the coaching of wrestling. One hour lecture, two hours laboratory.

557:313. CARE AND PREVENTION OF ATHLETIC INJURIES.*3 credits.*

Theory and practice in scientific manipulation of the muscles as related to the prevention and treatment of athletic injuries.

559: WOMEN'S PHYSICAL EDUCATION

559:147-148. BASIC COURSE IN PHYSICAL EDUCATION ACTIVITIES.*3 credits each.*

For women majoring in Physical Education. Learning rules and skills in sports, games and activities commonly included in Physical Education programs.

559:195-196. THEORY AND PRACTICE OF TEAM AND INDIVIDUAL SPORTS.*3 credits each.*

Prerequisite, 148. Analysis of skills essential to selected sports, techniques of organizing and teaching classes in these sports, laboratory experience through supervised teaching in service courses, application of current rules in officiating.

559:303. THEORY AND PRACTICE OF PHYSICAL EDUCATION.*3 credits.*

Historical development, methods and practice in the teaching of apparatus, gymnastics, stunts and tumbling. Tests and measurements in Physical Education.

559:308. THEORY AND PRACTICE OF DANCE.

3 credits.

Analysis of the basic dance steps for folk, square and social dance; square dance calling; modern dance technique and improvisations; methods and materials of teaching dance. Supervised teaching in service courses.

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.

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.

560:616. 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 uses 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 individuals 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.

560:701. 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.*

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 experience related to practical problem situations in the public school system.

561: SPECIAL EDUCATION**561:460/560. DEVELOPMENTAL CHARACTERISTICS OF SLOW LEARNING CHILDREN.***5 credits.*

Comparative study of the physical, emotional, intellectual and social development of normal and slow learning children from infancy through adolescence.

561:461/561. PRINCIPLES OF TEACHING EXCEPTIONAL CHILDREN.*4 credits.*

Basic principles underlying the instruction of exceptional children — slow learners, gifted, physically handicapped, etc.

561:462/562. METHODS AND MATERIALS FOR TEACHING SLOW LEARNERS.*3 credits.*

A study of the understandings, techniques, skills and

materials unique in the instruction of the slow learner.

561:463/563. ARTS AND CRAFTS FOR THE SLOW LEARNER.*3 credits.*

Arts and crafts especially suited to the unique characteristics of slow learners.

561:464/564. READING AND LANGUAGE ARTS FOR THE SLOW LEARNER.*3 credits.*

Program and techniques especially suited to slow learners; diagnosing problems and planning remedial and corrective measures.

561:465/565. SOCIAL STUDIES FOR THE SLOW LEARNER.*3 credits.*

A study of the methods and materials designed to meet the unique needs of a varying slow learner school population.

561:466/566. NUMBER CONCEPTS FOR THE SLOW LEARNER.*3 credits.*

A study of the procedures and sequential learnings appropriate for the teaching of number concepts to the slow learning child.

561:468/568. OCCUPATIONAL ORIENTATION AND JOB TRAINING FOR EXCEPTIONAL CHILDREN.*3 credits.*

A study of the developmental understandings related to the post-school adjustment of exceptional youth.

561:469/569. PRACTICES IN EDUCATING CHILDREN WITH LEARNING DISORDERS.*5 credits.*

Prerequisite, 461. A study of the multiple learning characteristics and the special education procedures advocated and practiced with children whose educational disability stems from learning and/or behavioral disorders.

561:470/570. CLINICAL TEACHING PRACTICUM: CHILDREN WITH LEARNING PROBLEMS.*5 credits.*

Prerequisite, permission. A supervised clinical teaching experience with individual 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.

561:471/571. CLASSROOM BEHAVIOR MANAGEMENT FOR EXCEPTIONAL CHILDREN.*4 credits.*

Prerequisite, 461/561 and 565:157. A review of behavioral management principles and the development of application models for exceptional children in the classroom.

**561:472/572. DEVELOPMENT PROCEDURES:
TRAINABLE MENTALLY RETARDED.**

5 credits.

Prerequisite, 565:157. A study of the philosophy, etiology, identification, characteristics, and training provisions for trainable mentally retarded children and adults.

**561:473/573. SUPERIOR STUDENTS — THEIR
GROWTH PATTERNS AND EDUCATION**

3 credits.

Designed to provide students with knowledge of the developmental characteristics of superior students, unique problems they encounter in an educational setting and various dimensions of superiority.

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.

562: SCHOOL PSYCHOLOGY**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.

**562:760-761-762. 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.

565: EDUCATIONAL PSYCHOLOGY**565:157. 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.

GRADUATE COURSES**565:602. 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.

565:701. 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.

565:710. 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.

570: SCHOOL ADMINISTRATION**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.

570:610. 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.

570:701. 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.

570:730. SEMINAR IN SCHOOL ADMINISTRATION.

4 credits.

Prerequisites, 601 and 590:603. 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; theories, 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.

570:750. 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.

570:850-851-852. INTERNSHIP IN EDUCATIONAL ADMINISTRATION.

3 credits.

Work under a practicing administrator involving experience in optimum number of administrative tasks. Includes seminars and written work.

580: SPECIAL EDUCATIONAL PROGRAMS

580:431-434/531-534. WORKSHOP.

3-4 credits each. (Elementary or Secondary School)

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

580:435/535. WORKSHOP IN ECONOMIC EDUCATION.

3-4 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.

3-4 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.

3-4 credits.

Opportunity for individual work under staff guidance or curriculum problems; utilization of community resources; planning of curriculum units.

580:438/538. WORKSHOP ON EXCEPTIONAL CHILDREN.

3-4 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.

3-4 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.

3-4 credits.

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

580:470-479/570-579. EDUCATIONAL INSTITUTES AND FOUNDATION PROGRAMS.

3-4 credits each.

Special courses designed as in-service up-grading programs in various fields, frequently provided with the support of national foundations.

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.

580:481/581. SOCIOLOGICAL FOUNDATIONS OF INNER-CITY SCHOOL PROBLEMS.

5 credits.

The basic characteristics of the inner-city: deterioration, social stratification, value patterns, etc., and their effects on the school and the educational process.

580:482/582. 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

580:680. 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.

580:681. 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.

580:682. 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.

580:683. 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.

580:684. 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.

580:686. 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.

580:692. ADVANCED STUDY AND RESEARCH IN READING INSTRUCTION.

5 credits.

Prerequisites, 520:335 or 530:425; 590:603 and teaching experience. Survey of research, comparison and evaluation of programs, design and development of projects in reading through group and individual study.

580:693. SUPERVISION AND CURRICULUM DEVELOPMENT IN READING INSTRUCTION.

3 credits.

Prerequisites, 530:619 or 520:630, and 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.

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, 100, 104 and 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 TECHNICIAN 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.

590: EDUCATIONAL RESEARCH

GRADUATE COURSES

590:603. TECHNIQUES OF RESEARCH.

5 credits.

Research methods and techniques commonly used in education and psychology; preparation of research reports.

590:711. STATISTICS IN EDUCATION.

4 credits.

Statistical methods and techniques used in the field of measurement and by research workers in education.

590:713. 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.

590:801. 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.

590:810-811-812. FIELD EXPERIENCE.

1-3 credits each.

On the job experience in a public school system working with administrators and/or supervisors.

590:890. RESEARCH PROJECTS IN SPECIAL AREAS.

1-3 credits.

Study, analysis and reporting of an educational problem.

590:899. RESEARCH IN EDUCATION.

3-30 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.

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.

Prerequisites, 222 and 325:246. For non-accounting majors only. 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. 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.

620:420/520. ADVANCED ACCOUNTING.

5 credits.

Prerequisite, 318. Accounting theory and advanced problems in partnerships, insolvency, estate and trusts, accounting and consolidated statements.

620:430-431/530-531. TAXATION.

5 credits each.

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.

620:454/554. 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.

620:460/560. 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.

620:480/580. ACCOUNTING PROBLEMS.

4 credits.

Prerequisite, 318 and permission of instructor. Individual research on an advanced accounting problem in area of student's particular interest.

620:488/588. CPA PROBLEMS — AUDITING.

3 credits.

Prerequisite, permission of instructor.

620:489/589. CPA PROBLEMS — THEORY.

3 credits.

Prerequisites, 430, 440 and approval of instructor. 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

620:610. ACCOUNTING MANAGEMENT AND CONTROL.

5 credits.

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.

620:637. ADVANCED ACCOUNTING THEORY.

5 credits.

This course invites a critical examination of accounting concepts and standards. Current trends are discussed.

620:680. INTERNATIONAL ACCOUNTING.

5 credits.

Prerequisite, 420. International variations in accounting standards and reporting problems; auditing problems in the multinational firm.

620:698. SEMINAR IN ACCOUNTING.

5 credits.

Prerequisite, 27 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 and collection operations, collection aids and problems.

640:318. PRINCIPLES OF INSURANCE.

4 credits.

Underlying principles on which all forms of insurance are based. Beginning with the theory of probabilities, the principles are developed as they apply to the divisions of insurance — life, fire, marine, casualty and security bonds.

640:320. THE LEGAL ENVIRONMENT OF BUSINESS.

5 credits.

Consideration of legal rules, the process of adjudication, and the law making process. Exploration of the fields of substantive law that are of particular concern to the businessman — contracts, secured transactions, commercial paper, sales and business organizations. Examination of the regulation of business by the federal government.

640:321-322. BUSINESS LAW.

321, 5 credits; 322, 4 credits.

Sequential. Designed primarily for the 9 credits of law required for accounting majors. Origin of commercial law, operation and discharge of contracts; law of sales, agency, negotiable instruments; partnerships and corporations; recent court cases integrated with the text material to demonstrate how principles apply to concrete cases.

640:338. FINANCIAL INTERMEDIARIES.

5 credits.

Prerequisite, 371. A study of the major financial institutions in the U.S. economy. The course emphasizes the dynamics of the financial intermediation process and its effect upon the administration of individual financial institutions.

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. Analysis of securities and portfolio management for the individual is stressed.

640:371. BUSINESS FINANCE.

5 credits.

Prerequisites, 620:270, 290, 317 or 401 and 325:247. A survey course on the nature of the corporation from the financial manager's point of view. Topics include the planning and managing of the uses and sources of funds, and theories of optimum asset and financial structure. Financial strategies for growth and mitigating the effects of failure are also considered.

640:386. INTERNATIONAL FINANCE.

5 credits.

Prerequisite, 325:247. Economics and practices of foreign trade with emphasis on world trade from the standpoint of the United States.

640:436. COMMERCIAL BANK MANAGEMENT.

5 credits.

Prerequisite, 371. Surveys work of the more important credit institutions, including commercial banks, finance companies, savings banks and consumer credit and government credit agencies. Role of each type of institution in the economic system. Function of bank reserves; bank portfolio policy; capitalization and earning power; impact of public policy upon organization, structure, and operation of the credit system.

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.

640:450. BUSINESS AND SOCIETY.

5 credits.

Prerequisite, Senior standing. Primarily a conceptual course

which considers the economic and social implications of modern business in society and the norms and values by which their functioning is or might be directed.

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.

GRADUATE COURSES

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.

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.

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.

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.

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, 660:629. Financial policies and practices of companies involved in multinational operations, considers management of working capital and permanent assets, return on investment and capital budgeting for the global firm.

640:698. SEMINAR IN FINANCE.

5 credits.

Prerequisites, 674 and 27 graduate credits in Business. 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.

650:301. WORK SYSTEM DESIGN.

3 credits.

Prerequisites, 363 and 346. A study of the systems concept in the management of activity. The nature of systems, patterns of work performance, criteria for system design, and application to design and control of various types of work systems. Use of simulation techniques.

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.

650:303. MOTION AND TIME STUDY.

3 credits.

Prerequisite, 301. Study of the theory of work measurement and various methods used for the purpose, including work sampling and direct stop-watch time study. Emphasis is placed on evaluation and analysis of collected data.

650:346. BUSINESS STATISTICS I.*3 credits.*

Prerequisite, 345:101 and permission. (The student is urged to complete 345:102 and 103 as well before enrolling in this course.) Nature and uses of statistical data, measures of location and variation, elementary probability, binomial and normal distributions, interval estimation, and hypothesis testing.

650:347. BUSINESS STATISTICS II.*3 credits.*

Prerequisite, 346. Tests of randomness, control chart concepts, linear regression, correlation, index numbers, and time series 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.

650:363. PRODUCTION MANAGEMENT.*4 credits.*

Prerequisite, 325:246. Place of management in business; economics of industrial production; factors of production; and control of the production process.

650:364. BUSINESS OPERATIONAL PLANNING.*3 credits.*

Prerequisites, 301 and 347. 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.

650:371. PRINCIPLES OF MANAGEMENT.*3 credits.*

Prerequisite, two courses in psychology or sociology. This course is a comprehensive introduction to modern management practices which examines conceptually the management process, management functions, and management principles.

650:404. PRODUCTION PLANNING AND CONTROL.*3 credits.*

Prerequisites, 347 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, 347 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, 347. Sampling theory and applications, 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. The student applies modern management principles, practices and theory to an actual problem in industry.

650:469/569. PERSONNEL RELATIONS.*3 credits.*

Prerequisites, 350 and 325:247. 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.

650:473/573. BUSINESS POLICY.*5 credits.*

Prerequisites, 160 credits and permission of department head. The course is designed to enable the student to understand informal organization, the philosophy of modern management; evaluation of objectives of management; policy requirements of business and use of various management tools in operating the business firm.

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**650:640. QUANTITATIVE METHODS IN OPERATIONS MANAGEMENT.***4 credits.*

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.

Prerequisites, 660:629 and permission of instructor. 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.

650:663. INDUSTRIAL RELATIONS.

3 credits.

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 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 quantification 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.

650:668. ADMINISTRATIVE BEHAVIOR AND METHODS.

3 credits.

Prerequisite, 18 graduate level credits. Designed to direct critical thinking toward the internal goal sharing and competitive nature of hierarchal structures. To evaluate the social and behavioral science viewpoints and contributions to organizational activities. The functions of planning, directing, organizing, and control will be studied as variables in the dynamic process and psychology of working

groups. Laboratory assignments.

650:669. THE LEADERSHIP ROLE IN ORGANIZATION.

3 credits.

Prerequisite, 668. 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. 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.

650:698. GRADUATE SEMINAR IN MANAGEMENT.

2-5 credits.

Prerequisite, 30 graduate credits in Business. 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, 325:247 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, 325:246. This course deals with "marketing 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, 650:346. 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.

660:499. 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**660:629. THE INTERNATIONAL BUSINESS ENTERPRISE.***4 credits.*

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, 629 and permission of instructor. 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 or fiscal harmonization in common markets) are selected for independent research and classroom discussion.

660:660. MARKETING MANAGEMENT AND POLICY.*4 credits.*

This basic survey stresses company functions in relation to demand and consumer factors, and the cost and 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.*

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.

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 permission of instructor. 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.

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

710:121. DESIGN.

3 credits.

Basic principles of creative design and color theory. Discussion and studio. No credit toward major or teaching field in art.

710:125. DRAWING — DESIGN.

5 credits.

Freehand drawing experience with an orientation to elements and principles of visual organization. Restricted media.

710:126. DRAWING — DESIGN II.

5 credits.

Prerequisite, 125. Continuation of Drawing — Design I. In-depth exploration of a wide range of techniques and media. Attention to controlled descriptive drawing and space illusion and their aesthetic applications. In addition to the studio work, the student will attend a series of weekly lectures which will provide an orientation to the wide range of career possibilities available in the art field.

710:135. UNDERSTANDING ART.

5 credits.

A foundation for the critical evaluation of the visual arts using the basic principles of design as applied to our environment, past and present. Consideration will be given to the possibilities and limitations of materials and processes in relation to design. No credit toward major or teaching field in art.

710:145. DRAWING.

3 credits.

Fundamentals of graphic expression: perspective, development of form and space in line, value and texture through variety of media and techniques. Studio. No credit toward major or for teaching field.

710:146. SPATIAL AWARENESS.

2 credits.

Prerequisites, 125 and 126. Development of the aesthetic perception of space. Emphasis is on awareness of three dimensional forms and their relationships to each other, to two-dimensional forms, and to environmental space.

710:147. TWO-DIMENSIONAL DESIGN.

3 credits.

Prerequisites, 125 and 126. Lecture and studio experience in two-dimensional design. Experimentation with systems for purposeful organization of visual elements. Study of visual theory including color theory.

710:150-151. DRAWING AND PAINTING.

3 credits each.

Desirable that 145 precede this course. An introduction to painting, understanding and appreciation through ap-

plication of fundamentals of color and composition. First quarter, oil; second quarter, water color. Studio. No credit toward major or for teaching field.

710:180-181-182. SURVEY OF HISTORY OF ART.

3 credits each.

Sequential. Architecture, sculpture, painting and the minor arts from Prehistoric through Contemporary.

710:210. INSTRUMENT DRAWING.

2 credits.

Prerequisite, 146. A studio investigation of the aesthetic principles intrinsic to instrument drawing and their bearing on the visual arts.

710:230. LIFE DRAWING.

3 credits.

Prerequisite, 126. A study of the perceptual and conceptual problems in drawing from the life model. Study of the skeletal, muscular and mechanical nature of the human figure and the application of this knowledge to the resolution of aesthetic problems using the human figure as a motif.

710:240. THREE DIMENSIONAL DESIGN.

5 credits.

Prerequisite, 146. Exposure to problems of three dimensional spatial relationships. Direct application of theories, materials, and mechanical principles to the realm of three dimensions. Stress is on the use of different tools and procedures to realize an aesthetic end.

710:242. INTRODUCTION TO OIL PAINTING.

5 credits.

Prerequisite, 147 and 230. A study of the technical and aesthetic problems involved in oil painting. A painterly orientation toward the plasticity of form as mediated by color.

710:244. INTRODUCTION TO PHOTOGRAPHY.

2 credits.

Prerequisite, 147. A lecture, studio, and laboratory course in which the student studies and experiences fundamental characteristics of photosensitive materials, the chemistry of photography, optical systems and photographic equipment. Photography is studied as an art medium.

710:246. INTRODUCTION TO WATER COLOR.

5 credits.

Prerequisite, 147. 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.

710:248. INTRODUCTION TO SCULPTURE.

5 credits.

Prerequisites, 240 and 230. The basic sculptural processes and the aesthetic relationships to these processes and the

materials to which they may be applied.

710:250. INTRODUCTION TO COMMUNICATIONS GRAPHICS.

5 credits.

Prerequisites, 147 and 210. Studio experience in the use of tools and materials of the commercial graphic artist. Elementary design problems in commercial graphic design.

710:252. INTRODUCTION TO PRINT MAKING.

5 credits.

Prerequisites, 147 and 230. A studio introduction to the basic print-making processes and techniques as well as the concept of the print as a work of art.

710:254. INTRODUCTION TO CERAMICS.

5 credits.

Prerequisite, 240. Consideration of types and preparation of clays, forming and decorative processes, glazes, and glazing and firing. Quality of total design is major emphasis.

710:256. INTRODUCTION TO CRAFTS.

5 credits.

Prerequisite, 240. Concentrated studio experimentation, design, and production through basic craft experiences as exemplified in textile design and printing, jewelry and metalsmithing and enameling.

710:257. DESIGN AND CRAFTS.

3 credits.

Prerequisite, any elective in Art. Not available to Art majors. Extension of design to objects in space; emphasis on the continuous interaction of physical materials, structural processes and significance of the total organization. Studio.

710:259. CERAMICS.

3 credits.

Prerequisite, any elective in Art. Not available to Art majors. Design through the use of forming processes (hand-built and wheel,) decorating, glazing, firing processes. Studio.

710:269. LIFE DRAWING.

3 credits.

Prerequisite, any elective in Art. Not available to Art majors. Structure of the human figure: its anatomy, proportion and articulation as they relate to the visual arts. Studio.

710:306. WEAVING.

3 credits.

Design related to weaving processes, warping and threading of looms, plain and pattern weaving, use of different looms and materials. Studio.

710:320. HISTORY OF PRIMITIVE ART I.

3 credits.

Prerequisite, 182, Junior standing, or permission. A survey of art forms of continental Africa and the South Sea Islands with consideration of their influence on Modern Art.

710:335. CERAMIC BODIES AND GLAZES.

5 credits.

Prerequisite, 254. Calculations, computation and testing of ceramic bodies and glazes — particular attention to colorants.

710:340. ADVANCED LIFE DRAWING.

3 credits.

Prerequisite, 242. 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.

710:342. ADVANCED OIL PAINTING.

5 credits.

Prerequisites, 246 and 252. Additional study in the oil painting medium. An opportunity to explore oil painting techniques and experiment with the aesthetics of color, form, and style.

710:344. ADVANCED PAINTING — NON-OIL MEDIA.

5 credits.

Prerequisites, 246 and 252. An advanced painting course for the exploration of non-oil media. The student may pursue, through experimentation, an advanced study of transparent water color or of opaque non-oil media such as tempera, gouache, casein, polymer acrylics and mixed media.

710:350. ADVANCED SCULPTURE.

5 credits.

Prerequisites, 248 and 254. A continuation of studio work in Sculpture with concentration in one medium as designated. The media corresponding to the letters are: A. Welding, B. Carving, C. Ceramics, D. Direct, E. Casting. Course may be repeated for credit when a different medium is so indicated.

710:352. ADVANCED PRINTMAKING.

5 credits.

Prerequisites, 252 and 340. A continuation of studio work in Printmaking with concentration in one process as designated by the letter as follows: A. Intaglio, B. Relief, C. Lithography, D. Serigraphy. Course may be repeated for credit when a different process is so indicated. (Printmaking major must take all four.)

710:354. ADVANCED DESIGN — CERAMICS.

5 credits.

Prerequisites, 254 and 335 (or concurrent). Personal aesthetic solutions in ceramic medium.

710:358. ADVANCED DESIGN — INTERIOR DESIGN.

5 credits.

Prerequisite, 246. A study of the essentials of shelter as enclosure and space. Developmental studies in full architectural scale. Also a survey of domestic architecture, furniture, and accessories, starting with contemporary and going in reverse chronological order through American.

710:359. ADVANCED DESIGN — INTERIOR DESIGN.

5 credits.

Prerequisite, 358. Study of materials and design

requirements relating to the field of Interior Design. Solving and presenting in various ways Interior Design problems, with main emphasis on domestic. Continuation of the historical aspects from about 1875 back through English, French, and the Spanish Renaissance.

710:360. ADVANCED DESIGN — INTERIOR DESIGN.
5 credits.

Prerequisite, 359. Continuing studio experience in solving Interior Design Problems with emphasis on multi-unit housing, public interiors, etc. Consideration of professional practices and ethics. Historic: The Italian Renaissance back to the earliest evidence of shelter and furnishings.

710:362. ADVANCED DESIGN — WEAVING.
5 credits.

Prerequisites, 256. Creative and experimental approach to hand weaving. Emphasis is upon design qualities, in particular spacing, color, and texture. Warping, threading and manipulation of floor and table looms and a wide range of weaving techniques.

710:364. ADVANCED DESIGN — TEXTILES.
5 credits.

Prerequisites, 256 and 252. Studio exploration of textile design and technical procedures other than weaving. Consideration of the aesthetic, historical and practical aspects of textile design.

710:366. ADVANCED DESIGN — METALSMITHING.
5 credits.

Prerequisite, 248 and 256. Experimentation and production of aesthetic works using semi-precious and precious metals with major considerations of function, size, and form in relationship to material used.

710:368. ADVANCED DESIGN — ENAMELING.
5 credits.

Prerequisites, 256. Studio specialization in enameling design and craftsmanship beyond the introductory phase.

710:375. CREATIVE PHOTOGRAPHY.
3 credits.

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. Students must own or have use of a camera with controllable shutter, lens, diaphragm, and focus.

710:377. APPLIED PHOTOGRAPHICS.
5 credits.

Prerequisites, 252 and 375. Photographic media, controlled light, optical and photographic equipment are manipulated experimentally to produce creative graphic images. These images are studied for possible usage in Advertising, Illustration, Packaging Design, and Display Design.

710:380. LETTER FORM AND TYPOGRAPHY.
5 credits.

Prerequisites, 250. Letter symbols studied in terms of communication and aesthetic awareness. History of letter forms,

hand lettering, alphabet design, contemporary type faces, reproduction processes.

710:382. ADVANCED LETTERING.
3 credits.

Prerequisite, 380. This course is an extension of Letter Form and Typography. Emphasis will be on the development of the student's individual style. It is also a study in depth of historical, mechanical and creative lettering.

710:384. ILLUSTRATION.
5 credits.

Prerequisites, 246, 250 and 252. The application of painting and drawing skills and aesthetic sensitivity to specific commercial and editorial illustration art assignments.

710:386. PACKAGING DESIGN.
5 credits.

Prerequisites, 380 and 377. 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.

710:403-404-405/503-504-505. HISTORY OF ART SEMINAR.

3 credits each.

Prerequisite, permission of head of department. A restricted field of study to be selected.

710:406. ADVERTISING DESIGN.
5 credits.

Prerequisite, 386. Creative development of idea from mental awareness of the problem through idea sketches and ultimately to final visual comprehensive art. Emphasis on variety of assignments.

710:407. ADVERTISING DESIGN.
5 credits.

Prerequisite, 406. Development of understanding of creative visual problem solving, as applied to specific areas of advertising within mechanical limitations of art for reproduction.

710:408. ADVERTISING DESIGN.
5 credits.

Prerequisites, 407 and 430. Studio problems in the development of all phases of an advertising campaign for the promotion of an existing or new product.

710:412/512. HISTORY OF ART IN THE UNITED STATES.

4 credits.

Prerequisite, 182 or permission. Consideration of the development of art in the United States from earliest evidences to approximately World War II.

710:413/513. HISTORY OF CONTEMPORARY ART.
4 credits.

Prerequisite, 182 or permission. A study of the significant developments in art during approximately the past 50 years.

710:414. HISTORY OF MEDIEVAL ART.*5 credits.*

Prerequisite, 182 or permission. A study of the arts of Europe from the fall of Rome to the end of the Fourteenth century including Early Christian and Byzantine.

710:415. HISTORY OF RENAISSANCE ART IN ITALY.*4 credits.*

Prerequisite, 182 or permission. A study of architecture, painting and sculpture of Italy during the Thirteenth through the Sixteenth centuries.

710:416. HISTORY OF RENAISSANCE ART IN NORTHERN EUROPE.*4 credits.*

Prerequisite, 182 or permission. A study of the architecture, painting, sculpture, and graphic arts in the low countries, Germany, and France during the Fifteenth and Sixteenth centuries.

710:417. HISTORY OF ART OF THE 18TH AND 19TH CENTURIES IN EUROPE.*4 credits.*

Prerequisite, 182 or permission. A study and analysis of major European examples of architecture, landscape design, painting, prints, and sculpture from approximately 1750 to the early 1900's.

710:425/525. SPECIAL PROBLEMS IN ART.*3 credits.*

Prerequisite, permission of Head of Department. Problems of an advanced nature in the field of special interest. Studio.

710:426/526. SPECIAL PROBLEMS IN ART.*3 credits.*

Prerequisite, permission of Head of Department. Problems of an advanced nature in the field of special interest. Studio.

710:427/527. SPECIAL PROBLEMS IN ART.*3 credits.*

Prerequisite, permission of Head of Department. Problems of an advanced nature in the field of special interest. Studio.

710:430. DISPLAY DESIGN.*3 credits.*

Prerequisite, 406. The various phases of two and three-dimensional display will be approached aesthetically. Static and moving displays, display lighting, free-standing, supported and collapsible units will be studied.

710:432. TV GRAPHICS.*5 credits.*

Prerequisites, 407 and 430. The emphasis in this course will be upon the total design and its component parts, the still and moving image, both on stage and screen, within the limited time sequence.

710:434. COMPREHENSIVE DRAWING.*5 credits.*

Prerequisite, Senior standing or permission. 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.

710:440. STUDIO PROBLEMS.*2-5 credits.*

Prerequisite, Senior standing or permission. Investigation in depth of aesthetic and technical problems within a student-selected area of specialization. Course may be elected several times with content indicated by letter: A. Printmaking, B. Sculpture, C. Painting-Drawing, D. Design (Emphasis in Interior Design, Crafts, or Ceramics), E. Communication Graphics.

740: HOME ECONOMICS**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.*4 credits. (2-4)*

Fundamental principles of pattern alteration, construction and fitting of garments. Individual preparation of portfolio illustrating various construction techniques.

740:133. NUTRITION FUNDAMENTALS.*3 credits.*

For students in some nursing programs and food service management. No prerequisite; not open to majors or minors in home economics. Basic nutrition principles and their application to self and others with normal needs; comparative nutritive value of various common foods. Planning well balanced diets and use of exchange list.

740:141. FOOD FOR THE FAMILY.*4 credits. (2-4)*

For non-majors. Application of nutrition to meal planning; problems in selecting, budgeting and preparing food; table etiquette, meal service, entertaining.

740:143. FOOD AND NUTRITION.*4 credits. (3-2)*

Designed for some nursing programs. Not open to majors or minors in home economics. Principles of nutrition and food preparation. Selection and care of food; dietary requirements of various age levels, analysis of student's own diet; racial differences in dietary habits; food preparation for invalid, tray service.

40:147. HOME ECONOMICS SURVEY.

2 credits.

Survey of history and development of home economics with emphasis on current opportunities available in the profession.

740:158. HOUSE FURNISHINGS.

3 credits.

Principles which contribute to a 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.

740:201. MODERN FAMILY LIVING.

5 credits.

Study of interaction in various family life cycles with emphasis on changing roles, developmental tasks, family life cycles and socio-economic and cultural influences upon the family.

740:204. SURVEY OF APPLIED HOME ECONOMICS IN THE COMMUNITY.

2 credits.

Directed study and observation of on-going community programs designed to up-grade individuals and parental competencies in relation to problems of child guidance, housing, management, food and nutrition, clothing selection and care and personal development.

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, mother and baby care and care of elderly. Course taught by a registered nurse.

740:245. BASIC NUTRITION AND FOODS.

4 credits. (2-4)

Basic study of food nutrients, their sources and functions; the composition of common foods, their place in the diet.

Principles involved in selection, purchase and preparation of food.

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.

740:262. HOME MANAGEMENT.

3 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.

740:265. CHILD DEVELOPMENT.

5 credits. (4-2)

Physical, social, mental and emotional development of the child from pre-natal through pre-school years.

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.

740:305. TAILORING.

4 credits. (1-6)

Construction of suit, coat or ensemble with lining.

740:306. FLAT PATTERN DESIGN.

4 credits.

Application of principles of design and construction. Adaptation of standard patterns to individual's proportions and flat pattern design. Introduction to dress designing by draping.

740:311. CONTEMPORARY NEEDLE ARTS.

3 credits.

Prerequisite, 123 or permission of instructor. 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.

740:316. NUTRITION IN HEALTH.

3 credits.

Prerequisite, 246. Composition, metabolism and physiological function of foodstuffs; nutritive requirements for individuals in various life cycles and on varied economic planes; results of dietary deficiencies.

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.

740:340. MEAL SERVICE.

3 credits. (2-4)

Prerequisite, 246 or permission. Problems in management of resources in relation to meal preparation and service; table etiquette, appropriate forms of service for various types of meals; experience in organizing and presenting demonstrations.

740:342. COMMUNITY INVOLVEMENT IN HOME ECONOMICS.

2-5 credits.

Prerequisite, 204. Directed study and participation in on-going community programs relating to child guidance, housing, home management, food and nutrition, clothing selection and care and personal development focusing upon individuals who have experienced varying degrees of deprivation.

740:401/501. FAMILY LIFE PATTERNS IN THE CULTURALLY DEPRIVED HOME.

3 credits.

A visually saturated study of family life orientation and life style patterns among the culturally deprived with an emphasis on the impact of socio-economic and psychological deprivation on family members throughout the family life cycles.

740:407. SEMINAR IN TEXTILES AND CLOTHING.

3 credits.

Prerequisite, junior or senior standing. A study of current research trends and developments in the textiles and clothing field with emphasis upon applications in various educational, business and industrial endeavors.

740:412. INSTITUTIONAL MANAGEMENT.

4 credits.

Standard for quality food service; criteria regarding food purchasing; time, cost and labor management; equipment utilization.

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.

Preparation of various food types; care of equipment; layout of different types of food preparation and service centers. Six hours laboratory and conference.

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 as influenced by dress. Concerns of various age levels and various cultural groups regarding dress.

740:420/520. EXPERIMENTAL FOODS.

4 credits. (2-4)

Prerequisite, 246. Techniques and methods in experimental food preparation; group and individual experimentation.

740:421. SPECIAL PROBLEMS IN HOME ECONOMICS.

2-5 credits.

Additional study or apprentice experience in a specialized field of home economics. Open to seniors by permission.

740:422. HOME MANAGEMENT RESIDENCY.

5 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.

740:423/523. ADVANCED NUTRITION.

3 credits.

Prerequisite, 316. Continuing study of nutrition with emphasis on current research methods and findings. Application of nutrition to world food problems. Individual research paper required.

740:426. NUTRITION IN DISEASE.

2 credits.

Prerequisite or corequisite, 316. Applications of principles of normal nutrition to diet in disease; construction of diets for specific disease conditions.

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.

4 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, permission of Instructor. This course is designed to give the student theoretical background and practical experience in the organization and performance of individual and group demonstrations in a variety of media. It is recommended for majors in Home Economics and other students who wish to develop ability and confidence in the coordination of materials, motion and speech in the art of demonstration.

740:458. SEMINAR 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.

40:460/560. ORGANIZATION AND SUPERVISION OF CHILD CARE CENTERS.

3 credits.

Prerequisite, permission of Instructor. Theory and principles for establishing and operating centers for young children.

GRADUATE COURSES

40:601. FAMILY IN TRANSITION.

3 credits.

Prerequisite, 501 or 358:504. Current theories and concepts of family interaction, family breakdown and alternative patterns to family adjustment and organization. Attention given to research and trends in family life and sex education. Implications for teaching.

40:602. FAMILY: ESTABLISHMENT AND ADJUSTMENT.

3 credits.

Prerequisite, 601. 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.

40:603. FAMILY: MIDDLE AND LATER YEARS.

3 credits.

Prerequisite, 602. Study of family patterns and problems during the middle and later years in life with emphasis on psychological and biological changes and economic and social adequacy. Research and trends in gerontology.

40:616. INFANT AND CHILD NUTRITION.

3 credits.

Prerequisites, 265 and 316. Study emphasizes current research trends in physiology of the infant and young child in relation to nutritional requirements and feeding practices.

40:651. 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.

40:660. PROGRAMMING FOR CHILD CARE CENTERS.

3 credits.

Prerequisite, 460. Study of principles and procedures involved in program development for child care centers. Examination of current programs available for children from infancy through age five. Emphasis on critical review of current research and trends.

40:665. 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.

750: MUSIC*

* Five music education courses are offered through the College of Education, numbered 520:322, 323 and 324, 530:325 and 326.

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. BEGINNING 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 III.

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.

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 musical 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 opportunity for experience in public performance before an audience, lecture and discussion of problems in the general area of performance, including ensemble playing and singing, conducting, accompanying, stage deportment, solo performance.

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 re-game 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.

50:306. 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.

50:351-352-353. 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.

50:354. WOODWIND INSTRUMENT TECHNIQUES.

2 credits.

Prerequisite, 153. Playing of woodwind instruments. Basic techniques for clarinet, flute, oboe and bassoon are presented and practiced.

50:355. BRASS INSTRUMENT TECHNIQUES.

2 credits.

Prerequisite, 153. Playing of brass instruments. Basic techniques for trumpet, french horn, trombone, and tuba are presented and practiced.

50:356. PERCUSSION INSTRUMENT TECHNIQUES.

2 credits.

Prerequisite, 153. Playing of percussion instruments. Basic techniques of snare drum, timpani, xylophone, bells, chimes and other percussion instruments are presented and practiced.

50:357. STUDENT RECITAL.

1 hour, 0 credit. (Juniors and Seniors). See 157 for description.

50:360. 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.

750:371. ANALYTICAL TECHNIQUES IN MUSIC.

3 credits.

Prerequisites, 253 and 353. Techniques for analysis of musical scores of all eras, from various standpoints, including harmony, rhythm, melody, texture, medium, sound effect, significance.

750:372. HISTORY AND PEDAGOGY OF THEORY IN MUSIC.

3 credits.

Prerequisites, 253 and 353. A general survey course dealing with the major theoretical concepts, treatises, and personalities relevant to the history of theory and the pedagogical materials, attitudes and techniques currently in vogue in college and university music departments.

750:373. TWENTIETH CENTURY MUSIC: HISTORY AND STYLE.

3 credits.

Prerequisites, 253 and 353. The development and geographical distribution of the major compositional practices from the end of the Romantic Era to the present day.

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, 355 and 356. 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: ORGAN 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.

750:490. 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.

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.

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 problems 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 Monteverdi'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 fields 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.

50:609. 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.

50:611 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.

50:612 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.

50:613. 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.

50:648. 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. Students seeking the B.A. or B.S. degree in Buchtel College may include only six such credits in the minimum 192 credits required for graduation.

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. (2 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 Session 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.

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 University 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*. (2 hours a week)

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 harpsichord.

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 each quarter before a 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.

No credit hour fee is charged for enrollment in applied music. Fees are based on the number of private lessons per week and are listed in the section on "Fees and Expenses." 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. Students seeking the B.A. or B.S. degree in Buchtel College may include only 12 such credits in the minimum 192 credits required for graduation.

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.)

Prerequisites, 750:253 and 353. Private instruction in composition. Primarily offering the students whose concentration is in theory composition.

770: SPEECH PATHOLOGY AND AUDIOLOGY

770:135. INTRODUCTION TO PHONETICS.

4 credits.

Introduction to the use of the International Phonetic Alphabet, in General American speech. The physical, physiological and neurological bases of sound production.

770:136. BASES OF SPEECH.

4 credits.

Prerequisite, 135. Study of the social, linguistic, psychological, genetic and semantic bases of speech.

770:137. VOICE AND ARTICULATION.

3 credits.

Prerequisite, 135. Study of the principles and mechanisms of standard speech and voice.

770:270. INTRODUCTION TO SPEECH DISORDERS.

4 credits.

Basic concepts and principles of speech pathology. Classification and incidents of speech disorders.

770:276. APPLIED PHONETICS.

4 credits.

Training in acoustic phonetic transcription, analysis of dialects, distortions and sound substitutions.

770:278. THE PSYCHOLOGY OF SPEECH.

4 credits.

Prerequisites, 135 and 375:141. The nature, origins and purposes of speech. The basic psychological principles involved in the communicative process and their application to both groups and individuals.

770:321. LANGUAGE DEVELOPMENT PROGRAM: EVALUATION AND HABILITATION.

4 credits.

Prerequisites, 135 and 136. A detailed study of the processes used in evaluating oral language conceptualization and performance. Methods and procedures useful in assisting the language handicapped child.

770:335. LANGUAGE OF SIGNS.

2 credits.

Prerequisite, permission of instructor. Emphasis is on fundamental expressive and receptive skills in manual communication—essential to professional personnel or students whose field of endeavor involves contact with deaf people. Attention is also given to the nature and scope of manual communication as it relates to socio-economic, psychological, educational, communicative and other orientative aspects of deafness.

770:336. LANGUAGE OF SIGNS.

2 credits.

Prerequisite, permission of instructor and 335. Continuation and review of the material covered in 335 on the intermediate level. Development and improvement of conversational sign language and speed in fingerspelling skills. Guests and speakers, including the deaf, will demonstrate application of sign language.

770:337. LANGUAGE OF SIGNS.

2 credits.

Prerequisite, 336 and permission of instructor. Advanced work in proficiency of expressive and receptive skills in manual communication with a broader vocabulary. This course also includes comprehension, higher interpreting skills, and supplementary field experience with the deaf.

770:353. INTRODUCTION TO AUDIOLOGY.

4 credits.

Anatomy, physiology and acoustics of hearing. Survey of the field of audiology. The nature of hearing problems.

770:354. SPEECH READING.

3 credits.

Prerequisite, 353. Theories and practices in teaching lip

reading to adults and children. Classical nature and modifications. Observation and practicum, The University of Akron Speech and Hearing Center.

770:367. HEARING AND DEAFNESS.

4 credits.

Prerequisite, 353. This course will involve the study of hearing as it relates to the adjustment of the deafened individual to life. Emphasis will be placed upon the role of the speech pathologist in counseling the deafened individual as a part of the rehabilitation program.

770:420. PATHOPSYCHOLOGY OF SPEECH AND HEARING MECHANISMS.

4 credits.

Prerequisites, 310:191 and 451. Detailed study of the speech and hearing mechanisms emphasizing their function and neurological control. Theories concerning speech (phonation, velo-pharyngeal closure, language function) and hearing will be paired with the existing neurophysical facts, and with clinical syndromes.

770:457/557. PRINCIPLES OF AUDIOMETRY.

3 credits.

Prerequisite, 353. Hearing tests and hearing instruments. Case finding and referral. Interpretation of hearing test results. Organization of hearing conservation programs. Observation and practicum, The University of Akron Speech and Hearing Center.

770:470/570. SPEECH THERAPY FOR CLASSROOM TEACHERS.

4 credits.

Study of the types and nature of speech and language disorders in the classroom. Interrelationship of the teacher and speech clinician. Available for graduate credit only with approval of program director.

770:471/571. SPEECH PATHOLOGY I.

4 credits.

Prerequisites, 270 and 278. Study of articulation disorders, etiology, evaluation and correction. Observation and practicum, The University of Akron Speech and Hearing Center.

770:472/572. SPEECH PATHOLOGY II.

3 credits.

Prerequisite, 471. Study of the pathology, methods of testing and therapy for stuttering, cleft palate, voice disorders and cerebral palsy. Observation and practicum, The University of Akron Speech and Hearing Center.

770:473/573. SPEECH PATHOLOGY III.

3 credits.

Prerequisite, 472. Study of the pathology, methods of testing and therapy for adult aphasia, and children's organically based language disorders. Observation and practicum, The University of Akron Speech and Hearing Center.

770:474/574. CLINICAL METHODS.

4 credits.

General orientation to clinical methods, practices and

procedures. An overview of therapy aids. Reports on observations made in related community agencies.

770:475/575. CLINICAL PRACTICES.

3 credits.

Prerequisite, 90 credits laboratory experience and permission. Laboratory experience in the University of Akron Speech and Hearing Center. Introduction to interviewing techniques used in a speech and hearing agency.

770:476/576. SPEECH AND LANGUAGE DEVELOPMENT.

4 credits.

Prerequisite, 136 or permission. A study of the development of speech and language in children; theories of speech and language development in the individual.

770:492. 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.

770:495. SEMINAR — COMMUNICATIVE DISORDERS.

3 credits.

Prerequisite, senior standing. This course will provide a means for individualized study and discussion of the various areas within the field; hearing evaluation, speech reading and auditory training, language disabilities, disorders of rhythm, etc.

GRADUATE COURSES

770:620. INTERNSHIP IN SPEECH PATHOLOGY AND/OR AUDIOLOGY.

3-6 credits.

(May be repeated for a total of 9 credits.)

Prerequisite, permission of director of program. Clinical practicum in The University of Akron Speech and Hearing Center and/or selected community centers. 275 clock hours minimum ASHA certification requirements must be fulfilled prior to the completion of the M.A. This course may be used to complete these requirements.

770:623. SPEECH AND HEARING PROGRAMS.

3 credits.

The organization and management of speech and hearing progress in voluntary and official agencies.

770:625. RESEARCH METHODS IN COMMUNICATIVE DISORDERS.

3 credits.

(May be repeated for a total of 9 credits.)

Prerequisite, statistics. Types of research problems and approaches to them in communicative disorders.

770:650. TOPICS IN ADVANCED AUDIOLOGY I.

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.

770:651. TOPICS IN ADVANCED AUDIOLOGY II.
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.

770:652. TOPICS IN ADVANCED AUDIOLOGY III.
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.

770:654. 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.

770:655. INSTRUMENTATION IN AUDIOLOGY.
3 credits.

Prerequisite, 457. Current methodology in auditory research. Emphasis on the type of equipment used in conducting auditory research.

770:656. CLINICAL AUDIOLOGY I.
3 credits.

Prerequisite, 457. Rationale and conduct of clinical programs in audiology. Observation and practicum, The University of Akron Speech and Hearing Center.

770:657. CLINICAL AUDIOLOGY II.
3 credits.

770:658. CLINICAL AUDIOLOGY III.
3 credits.

Current methodology in evaluation of audition of the child and adult. Emphasis on the patterns found in the various types of auditory disorders and auditory rehabilitation.

770:659. SEMINAR IN AUDITORY REHABILITATION.
3 credits.

(May be repeated for a total of 9 credits.)

Prerequisite, 354 or permission. Current methodology in the auditory rehabilitation of the child and adult. Emphasis on the literature and current and potential areas of research.

770:670. 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.

770:671. ADVANCED SPEECH PATHOLOGY I.
3 credits.

(May be repeated once for an additional 3 credits.)

Prerequisite, 474 or permission. Historical background, current theories and research related to the etiology, diagnosis and treatment of selected speech and language disorders.

770:672. ADVANCED SPEECH PATHOLOGY II.
3 credits.

(May be repeated once for an additional 3 credits.)

Prerequisite, 474 or permission. Historical background, current theories and research related to the etiology, diagnosis and treatment of selected speech and language disorders.

770:673. ADVANCED SPEECH PATHOLOGY III.
3 credits.

(May be repeated once for an additional 3 credits.)

Prerequisite, 474 or permission. Historical background, current theories and research related to the etiology, diagnosis and treatment of selected speech and language disorders.

770:674. STUTTERING: THEORIES AND THERAPIES.
3 credits.

(May be repeated once for an additional 3 credits.)

Reading and discussion of selected theories and therapies related to stuttering.

770:675. INSTRUMENTATION IN SPEECH PATHOLOGY.
3 credits.

Prerequisite, permission. Equipment usage in the clinical setting and in field studies.

770:676. COMMUNICATIVE DISORDERS OF CHILDREN.
3 credits.

Prerequisite, 476. Oral and aural language deviations. Their etiologies, pathologies and remediation.

770:677. VOICE PATHOLOGY.
4 credits.

Prerequisite, 473 or permission. Background and current research related to the etiology, diagnosis and therapy for various disorders of voice.

770:678. TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS.
3 credits.

(May be repeated for a total of 9 credits.)

Prerequisite, permission of director of Speech and Hearing program. The study and application of diagnostic procedures related to selected speech and language disorders.

770:694. RESEARCH AND THESIS.
3 credits.

(May be repeated for a total of 9 credits.)

Prerequisite, permission of the Department Head.

780: SPEECH AND THEATRE ARTS**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.*3 credits.*

(May be repeated for a total of 9 credits.)

Prerequisite, permission of instructor. The theory and practice of ballet, stressing fundamentals of vocabulary, structure and placement. Emphasis on individual development of style.

780:123. BALLET LABORATORY.*1 credit.*

(May be repeated for a total of 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.

780:124. 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.

780:125-225-325-425. EXPLORING SOUND FOR CHOREOGRAPHY.*2 credits each.*

(Each course may be repeated for a total of 6 credits.)

Exploration of the relationship of sound to movement in the dance. Designed to develop hearing awareness in dancers, using on-the-spot experiments in creating movement phrases expressive of what is heard, with emphasis on musical structure. Open to ballet majors, only.

780:129. STAGE MOVEMENT.*2 credits.*

A course in effective movement in stage performance.

780:141. 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.

780:145. 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.

780:175. ORAL INTERPRETATION I.*4 credits.*

Oral interpretation from the printed page with special emphasis on factual prose and prose fiction.

780:190. PUBLIC SPEAKING.*3 credits.*

Prerequisite, 110:108. Training in types of public address; performances and individual criticism.

780:222. BALLET TECHNIQUE II.*3 credits.*

(May be repeated for a total of 9 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.

780:226. DANCE COMPOSITION.*2 credits.*

(May be repeated for a total of 6 credits.)

Experiments in improvisation and choreography designed to acquaint students with elements of the art of making dances. Exploration of movement with respect to form, design, dynamics, rhythm, style, motivation, gesture, theme. Open to ballet majors only.

780:243. PARLIAMENTARY PROCEDURE.*2 credits.*

Current practices in parliamentary procedure.

780:245. ARGUMENTATION.*3 credits.*

Theory of argument, analysis of logical processes.

780:251. INTRODUCTION TO 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.

780:252. ETHICAL PERSUASION.*3 credits.*

Moral responsibility of the speaker; motivational forces in persuasive discourse.

780:261. INTRODUCTION TO THEATRE.*4 credits.*

A survey of the arts and crafts of dramatic production, evolution of theatre structures, staging, audiences. Participation in the mounting of University Theatre productions.

780:262. STAGE AND TELEVISION MAKEUP.*3 credits.*

Facial and character analysis; makeup materials; techniques for creating straight and character makeup for both television and the stage.

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.

780:266. ACTING.

4 credits.

The actor's approach to theatre: establishment of character, inner resources, stage practices, external acting techniques.

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.

780:281. INTRODUCTION TO RADIO AND TELEVISION.

4 credits.

Prerequisite, 175. Oral interpretation from the printed page, audience analysis research. Special projects in message design and development.

780:282. COMMUNICATION MEDIA: RADIO.

4 credits.

Prerequisite, 281. A study of the history, nature and function of educational and commercial broadcasting.

780:283. COMMUNICATION MEDIA: TELEVISION.

4 credits.

Prerequisite, 281 or permission of instructor. The function, structure, and influence of television as a communication medium.

780:288. 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.

780:322. BALLET TECHNIQUE III.

3 credits.

(May be repeated for a total of 9 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.

780:344. PUBLIC DISCUSSION AND GROUP PROCEDURES.

3 credits.

Techniques of discussion in terms of skills of the effective discussion leader and participant.

780:354. THEORIES OF APPLIED SEMANTICS.

3 credits.

This course introduces the student to the work of various scholars in attempting to explain and analyze the "meaning of 'meaning'." More specifically, the course focuses on theories of how 'meaning' is conveyed by means of language.

780:360. CREATIVE DRAMATICS.

4 credits.

Prerequisite, 261. Focuses on the child from ages five through eleven. Emphasis is placed on development of the child's imagination and creativity as well as the use of pantomime and improvisation.

780:361. PLAY DIRECTING.

4 credits.

Prerequisite, permission. A practical course in the principles and techniques of bringing a play from page to stage.

780:362. ADVANCED STAGECRAFT.

4 credits.

Prerequisite, permission. Backstage organization and management in terms of production; the 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, 261, 364, 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 presentation.

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.

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.

780:381. BROADCASTING MEDIA.*4 credits.*

Analysis of the technique, performance and message in radio and television production with special emphasis on these media as a means of opinion change.

780:384. SPEECH-COMMUNICATION RESEARCH I.*4 credits.*

The role of mass media as they relate to modern communication theory. Special projects in research.

780:390. INTRODUCTION TO RHETORICAL THEORY.*3 credits.*

Prerequisite, 131 or equivalent. This course lays the foundation for courses requiring students to make rhetorical criticism of oral disclosure. The course considers the *Rhetoric* of Aristotle, the Ciceronian canon and selected contemporary notions of rhetorical theory.

780:392. CONTEMPORARY SPEECHES.*3 credits.*

A survey and critical review of speakers, their speeches, and audience reactions on significant issues since WW II.

780:434. SPEECH SEMINAR.*4 credits.*

An overview of the field of Speech Communication and theatre arts.

780:439. SPEECH AND THEATRE ARTS PRACTICUM.*1-12 credits.*

(May be repeated for a total of 12 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.

780:440/540. 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.

780:445/545. 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. Lectures and discussions center about

specialized topics including: the enthymeme, the meaning identification persuasion sequence, and the Toulmin model.

780:454/554. GROUP PROCESSES AND CONFERENCE LEADERSHIP.*3 credits.*

Group Communication theory and conference leadership as applied to individual projects and seminar reports.

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.

780:461. THE BLACK IN AMERICAN THEATRE.*3 credits.*

An historical and contemporary study of Black playwrights, theatre crafts, actors and producing organization in American Theatre.

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.

780:463. ADVANCED ACTING.*4 credits.*

Prerequisite, 266. Acting styles and techniques for the more demanding serious and comic roles in both contemporary and classic plays.

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.*

A study of theatre for the child audience: play selection, scene design and construction, acting, directing. A full-length play for children, produced by the class, culminates the course.

780:481. 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.

780:484. SPEECH-COMMUNICATION RESEARCH II.

3 credits.

Study of the field of communication as related to ancient rhetorical theory and communication theory.

780:488/588. CINEMATOGRAPHY WORKSHOP.

5 credits.

This course is designed to give filming experience to 12 carefully selected students. The point of emphasis is on communication through film, color and sound. It is not a technical course in camera maintenance.

780:490/590. RHETORICAL CRITICISM.

4 credits.

Study of the goals and philosophy of rhetorical evaluation. Available for graduate credit only with approval of Head of Department.

GRADUATE COURSES

780:600. INTRODUCTION TO GRADUATE STUDIES IN SPEECH AND THEATRE ARTS.

3 credits.

A study of the basic research methods used in Speech and 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 SPEECH AND THEATRE ARTS.

3 credits.

(May be repeated for a total of 6 credits.)

Prerequisite, 600. Performance of research on problems found in speech and theatre arts. Each student designs and conducts an original study concentrating on one of the major tools of research.

780:631. 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. Students will practice skills in speaking situations.

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.

780:640. SPECIAL PROBLEMS IN RHETORIC AND PUBLIC ADDRESS.

3 credits.

(May be repeated for a total of 6 credits.)

Problem analysis, investigation and evaluation of a major interest area in rhetoric and public address.

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.

780:662-663-664-665. THEATRE SEMINARS.

3 credits each.

(Accumulative to 12 credits.)

780:662. Musical Theatre

780:663. American Theatre

780:664. Comedia dell'arte

780:665. Theatre Audiences

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

780:680. 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.

780:681. 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.

780:683. 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.

780:684. STUDIES IN COMMUNICATION RESEARCH.

3 credits.

A study of the dimensions of the field of communication: information analysis, social interaction and semantic analysis.

**780:685. 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.

**780:686-687-688. 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.

**780:690. CRITICAL STUDIES IN RHETORICAL
THEORY.**

3 credits.

Studies in classical and medieval rhetoric.

**780:691-692. CRITICAL STUDIES IN AMERICAN
PUBLIC ADDRESS I, II.**

3 credits each.

Rhetoric criticism of speeches of American orators from the colonial period to the present.

**780:693. CRITICAL STUDIES IN BRITISH PUBLIC
ADDRESS.**

3 credits.

Rhetorical criticism of the speeches of Fox, Pitt, Burke and other British speakers from the early Parliamentary period to the present.

780:699. RESEARCH AND THESIS.

3 credits.

(May be repeated for a total of 9 credits.)

Prerequisite, permission of the department head.

The College of Nursing

820: NURSING

820:271-272. GENERAL NURSING.

8 credits each.

Sequential; prerequisite, by permission; 310:307 and 361. Fundamental concepts are applied to all nursing conditions and situations within the whole health field, local, national and international health problems. A resolution of health problems is based on the understanding of the uniqueness of the human person and his behavior in health and illness. Knowledge and skills needed by nurses in any clinical setting are emphasized; i.e., interviewing, administering treatments, hygiene and comfort measures.

820:321-322-323. ADULT NURSING.

7 credits each.

Prerequisites, 271-272. The purpose of these courses is to increase understanding in the ability to adapt and develop the basic core of nursing. Points of reference are common and special health conditions in adult life and nursing practice in various types of health agencies. Preventive, curative and rehabilitative functions of nursing that focus upon the patient as a human person and a member of a family unit are emphasized.

820:331-332-333. MATERNAL AND CHILD NURSING.

7 credits each.

Prerequisites, 271-272. The basic concepts of nursing and human behavior are applied to the care of mothers and children in the family setting. The courses begin with the adolescent as a potential parent and includes the psychological, anatomical and physiological aspects of child-bearing. It considers the changes in a family beginning with the newborn and continuing through childhood and adolescence. Nursing principles are applied to abnormal conditions and diseases in mothers and children.

820:341. COMMUNITY NURSING (PSYCHIATRIC ASPECTS).

10 credits.

Prerequisites, 321-322-323, 331-332-333. Social and com-

munity 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, 321-322-323, 331-332-333. 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, 321-322-323, 331-332-333, 341 and 451. 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.

The School of Law

920: LAW

920:602. DEVELOPMENT OF LAW AND LEGAL INSTITUTIONS.

4 credits.

An 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.

920:605. 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.

Prerequisite, 606. 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.

920:614. 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. AGENCY-PARTNERSHIP 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. AGENCY-PARTNERSHIP II.

2 credits.

Prerequisite, 619. Continuation of 619.

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.

920:631. COMMERCIAL TRANSACTIONS I.

4 credits.

Prerequisite, 606. Transactions involving chattels and intangibles, and the instruments used in those transactions.

Two and three party arrangements. Warranties. Security. Risk at loss. Negotiability concept. Formal requirements of negotiable instruments. Endorsements. Rights and liabilities of the parties to the instruments. Uniform Commercial Code and prior uniform acts.

920:632. COMMERCIAL TRANSACTIONS II.
3 credits.

Prerequisite, 631. Continuation of 631.

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 relating 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.

920:640. ADMINISTRATION OF CRIMINAL JUSTICE.
3 credits.

Prerequisite, 638. 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.
4 credits.

Prerequisite, 641. Survey of civil procedure in state and federal courts with emphasis on pleadings, demurrers, motions and joinder of parties and causes of action.

920:643. CIVIL PROCEDURE III.
4 credits.

Prerequisite, 642. Survey of trial and appellate practice in state and federal courts. Effect of judgments.

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.

Prerequisite, 643. Assigned problems requiring the application of rules of procedure and professional considerations in typical trial contexts.

920:651. SOCIAL LEGISLATION.
4 credits.

A study of social legislation including social security, workmen's compensation, full and fair employment, and general and special assistance to alleviate poverty and substandard housing.

920:652. CREDITORS' RIGHTS.
4 credits.

Enforcement of judgments. Execution, attachment and garnishment. Creditors' bills. Fraudulent conveyances. General assignments for benefit of creditors. Creditors' agreements. Bankruptcy.

920:653. MUNICIPAL CORPORATIONS.
3 credits.

Nature of municipal corporation. Home rule. Creation. Annexation. Powers. Officers. Zoning Rights of abutters. Contractual and delictual liability. Dissolution.

920:654. DOMESTIC RELATIONS.
3 credits.

To instruct the student in the major areas of family law and to acquaint him with the theories that have influenced its development. Functions performed by various agencies which seek to effect a nonjudicial settlement of domestic problems.

920:655. INDIVIDUAL STUDIES AND RESEARCH.
1-5 credits.

(May be repeated.)

Prerequisite, 624. 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.

920:660. 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 non-legal 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.

Prerequisites, 675 and 689. 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.

320:665. SEMINAR IN LAND USE PLANNING.

3 credits.

Prerequisite, 626. Examination of the assumptions, doctrines, and implications of city planning law, 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.

920:670. 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.

Prerequisite, 606 and 620. 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.

620:673. TRUSTS AND ESTATES I.

3 credits.

This course integrates the material traditionally covered in separate courses on wills, trusts and future interests. Intestacy, will substitutes and life insurance problems. Testamentary and inter vivos transactions applicable to dispositions of both real and personal property.

920:674. TRUSTS AND ESTATES II.

3 credits.

Prerequisite, 673. Continuation of 673.

920:675. TRUSTS AND ESTATES III.

2 credits.

Prerequisite, 674. Continuation of 674.

920:676. PROBLEMS IN LABOR LAW.

4 credits.

Prerequisite, 668. Problems relating to procedures of the National Labor Relations Board, analysis and mechanics of arbitration, individual and the union, and labor relations of public employees.

920:677. LEGAL PROBLEMS IN BUSINESS PLANNING.

5 credits.

Prerequisites, 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 considerations.

920:678. SEMINAR IN INTERNATIONAL TRANSACTIONS AND RELATIONS.

4 credits.

Prerequisite, 699. 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.

3 credits.

No specific prerequisite. 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.

920:681. SEMINAR IN JUDICIAL ADMINISTRATION.

3 credits.

Prerequisite, 642. 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.

3 credits.

Survey of federal income tax law with primary emphasis on individual income.

920:688. FEDERAL INCOME TAXATION II.

3 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.

Principles 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.

920:696. LAW REVIEW.

1 credit.

Prerequisite, acceptance on the Staff of Board of Editors of

the *Akron Law Review*. This course, which may be repeated for credit up to a maximum of six (6) times, entails service on the Staff or Board of Editors of the *Akron Law Review* and the writing of a Student Comment, Student Note, Case Note, or Book Review deemed publishable by the Board of Editors and by one faculty member (selected by the Faculty Advisor of the *Akron Law Review*). Legal research, legal writing, case analysis, and statutory interpretation. 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 I.

3 credits.

Note: This course may be taken independent of 699.

Prerequisite, none. Nature and breadth of international law; its sources and subjects, and its relation to municipal law, to individuals, and to international organizations.

920:699. INTERNATIONAL LAW II.

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 opinion within a limited time frame. Such topical subjects as the legal basis for the use of force in limited armed conflict; the role of the United Nations in peace-keeping operations; and the function of subsidiary and regional organizations within the International Community will be evaluated.

VII. University Directory

Board of Trustees

JULY 1971

- Mr. Robert P. Beasley 2253 Tinkham Road, Akron, Ohio 44313
(Term expires 1973)
- Mr. Ray C. Bliss 2535 Addyston Road, Akron, Ohio 44313
(Term expires 1974)
- Mr. W. Howard Fort 840 Mercer Avenue, Akron, Ohio 44320
(Term expires 1978)
- Mr. Vincent H. Johnson 380 W. Fairlawn Blvd., Akron, Ohio 44313
(Term expires 1979)
- Mr. Joseph M. Leyden 345 Greenwood Avenue, Akron, Ohio 44320
(Term expires 1975)
- Mr. Ben Maidenburg 2046 Wyndham Road, Akron, Ohio 44303
(Term expires 1977)
- Mr. Bernard I. Rosen 277 Hollywood, Akron, Ohio 44313
(Term expires 1980)
- Mr. Harry P. Schrank 120 Twin Oaks Road, Akron, Ohio 44313
(Term expires 1972)
- Mr. E. J. Thomas 812 Mayfair Road, Akron, Ohio 44303
(Term expires 1976)



Administrative Officers and Assistants

GENERAL ADMINISTRATION

D.J. Guzzetta, Ed.D., LL.D., D.S.Sc. *President of the University*
 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*
 Charles V. Blair, M.A. *Dean of Administration*
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 Charles F. Poston, Ph.D. *Director of Institutional Research*
 Carl L. Hall, B.S. *Treasurer*
 Henry Nettling, B.S.B.A. *Controller*
 George W. Ball, B.A. *Director of University Relations*

ACADEMIC ADMINISTRATION

Gordon A. Hagerman, B.A. *Assistant to the Vice President for Academic Affairs*
 Charles V. Blair, M.A. *Dean of Administration*
 Alexander L. Adams, M.S. *Assistant to the Dean of Administration*
 Edwin L. Lively, Ph.D. *Dean of Graduate Studies*
 Bernard J. Mudrock, M.S. *Graduate Records Coordinator*
 Michael J. Rzasa, Ph.D. *Dean of Research*
 Robert A. Oetjen, Ph.D. *Dean of the Buchtel College of Arts and Science*
 Paul S. Wingard, Ph.D. *Associate Dean of the Buchtel College of Arts and Science*
 Coleman J. Major, Ph.D. *Dean of the College of Engineering*
 Donald R. Burrowbridge, M.S. *Director of the Cooperative Program*
 H. Kenneth Barker, Ph.D. *Dean of the College of Education and Dean of International Programs*
 John S. Watt, Ph.D. *Associate Dean of the College of Education*
 C. A. Carrino, Ph.D. *Assistant to the Dean of the College of Education*
 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*
 Estelle B. Naes, Ph.D. *Dean of the College of Nursing*
 Stanley A. Samad, J.S.D. *Dean of the School of Law*
 John P. Finan, J.D. *Assistant Dean of the School of Law*
 Thomas Sumner, Ph.D. *Dean of the General College*
 Timothy J. Enright, B.S.B.A. *Assistant to the Dean of the General College*
 W. M. Petry, M.S.M.E. *Dean of the Community and Technical College*
 Robert C. Weyrick, M.S. *Assistant Dean of the Community and Technical College*
 John G. Hedrick, M.A. *Dean of the Evening College*
 Cecil L. Dobbins, B.B.A. *Assistant Dean of the Evening College and Head of the Department of Special Programs*
 Frank V. Kelley, M.S. *Assistant Dean of the Evening College*
 H. Paul Schrank, Jr., M.S. *University Librarian*
 Pauline Franks, B.S.L.S. *Associate University Librarian*
 Dorothy Hamlen, B.S.L.S. *Director of University Archives, and Rare Books Librarian*
 Charles F. Poston, Ph.D., *Director of Institutional Research*
 Mrs. Grace Hahn, M.S. *Assistant to the Director of Institutional Research*
 Michael J. Pantaleano, M.B.A. *Assistant to the Director of Institutional Research*
 Stuart M. Terrass, M.A. *Assistant to the Director of Institutional Research*

PLANNING ADMINISTRATION

Ian R. MacGregor, Ph.D. *Vice President for Planning*
 Rudolph J. Tichy, B.S. *University Architect*
 Donald L. Bowles, B.S.I.M., B.S.Ed., *Assistant to the Vice President for Planning*
 Wade B. Hatch, B.S.C.E. *Physical Facilities Analyst*
 Phillip E. Bartlett, B.A. *Project Architect*

DEVELOPMENT ADMINISTRATION

Horace D. Harby, B.S. *Assistant to the President for Development*

W. Richard Wright, B.A. *Special Assistant for Development*
 James P. Banks, B.A. *Director of Development*

UNIVERSITY RELATIONS AND ALUMNI RELATIONS

George W. Ball, B.A. *Director of University Relations*
 John M. Denison *Assistant Director of University Relations*
 Mrs. Mary O'Neil, B.A. *Director of University News Service*
 George E. Raymer, M.A.Ed. *Director of Radio and Television Information*
 Robert S. Sartoris, B.S. *Director of University Publications*
 Kenneth E. MacDonald, B.A. *Director of Sports Information*
 Allen M. Boyer, B.A. *Director of Alumni Relations*

FINANCIAL AND BUSINESS ADMINISTRATION

Wayne Duff, LL.B. *Vice President for Business and Finance*
 Joseph E. Lukacik, B.S. *Director of Staff Personnel*
 Russel Giersch, B.M.E. *Director of Physical Plant*
 Clark Biggins, B.S.C. *Director of Purchasing*
 Ralph Larson, M.Ed. *Assistant Director of Purchasing*
 Carl L. Hall, B.S. *Treasurer*
 Henry Nettling, B.S.B.A. *Controller*
 Thomas E. Getzinger, M.B.A. *University Auditor*

STUDENT SERVICES ADMINISTRATION

Richard L. Hansford, M.A.Ed. *Vice President and Dean of Student Services*
 Dudley C. Johnson, Jr., M.S.Ed. *Director of Counseling and Advising*
 Robert D. Hahn, M.S.Ed. *Associate Director of Counseling and Advising*
 Frederick J. Sturm, M.A. *Associate Director of Counseling and Advising*
 Mrs. Kathryn Vegso, M.S.Ed. *Director of Women's Activities and Adviser of Students*
 Sandra Lee Berry, M.A. *Adviser of Students*
 Richard K. Bonnell, B.A. *Adviser of Students*
 Irvin W. Brandel, M.A. *Adviser of Students*
 Ronald P. Brown, M.S.Ed. *Coordinator of Developmental Services and Adviser of Students*
 Herman M. Buerschen, M.A. *Adviser of Students*
 Dan Lee Buie, M.A. *Adviser of Students*
 Richard A. Calkins, B.A. *Foreign Student Adviser*
 Daniel D. Edgar, M.A. *Adviser of Students*
 Rebecca Ann Ganyard, M.A. *Adviser of Students*
 John E. Grimm, M.Ed. *Adviser of Students*
 Steven T. Hurtt, M.A. *Adviser of Students*
 Mrs. Phyllis Y. Jordan, M.Ed. *Adviser of Students*
 Mrs. Susan W. Kinnamon, M.S. *Adviser of Students*
 Daniel M. Newland, M.S. *Adviser of Students*
 Ted A. Mallo, M.S. *Coordinator of Student Conduct Code and Adviser of Students*
 Mrs. Roberta Martin, M.S. *Adviser of Students*
 Mrs. Ann Lee Miller, M.A. *Adviser of Students*
 Norman W. Odell, B.A. *Assistant Adviser to International Students*
 Diane Simonetti, M.A.Ed. *Adviser of Students*
 Robert C. Berry, B.S.B.A. *Director of Placement*
 William C. Lamont, M.S. *Assistant Director of Placement*
 James L. Dague, M.S. *Assistant Director of Placement*
 Thomas O. Brown, Ph.D. *Director of Testing and Counseling Bureau*
 Mrs. Betty E. Coven, M.S. *Counselor, Testing and Counseling Bureau*
 J. Michael Hungerman, M.Ed. *Counselor, Testing and Counseling Bureau*
 Richard Warner Rymer, M.A. *Counselor, Testing and Counseling Bureau*
 Francis J. Werner, M.A. *Counselor, Testing and Counseling Bureau*
 Myra R. Hershey, M.Ed. *Director of Residence Halls*
 Sharon K. Jacobs, M.S. *Associate Director of Residence Halls*
 Lawrence C. Krueger, M.S. *Assistant Director of Residence Halls*

Robert W. Larson, B.S.B.A.	<i>Director of Student Financial A</i>
James Bagnola, B.A.,	<i>Assistant Director of Student Financial A</i>
Donald E. Sabatino, M.A.Ed.	<i>Director of the Gardner Student Cen</i>
Frank J. Cianciola, B.A.	<i>Assistant Director of the Gardner Student Cen</i>
Tom A. Goosby, B.A.	<i>Assistant Director of the Gardner Student Cen</i>
Vincent A. Rich, B.S.	<i>Assistant Director of the Gardner Student Cen</i>
Edward J. Riegler, M.A.	<i>Assistant Director of the Gardner Student Cen</i>
John W. Owen, B.A.	<i>Director of Admissi</i>
Marjorie M. Capotosto, B.S.	<i>Associate Director of Admissi</i>
Walter Lee Evege, Jr., B.S.	<i>Assistant Director of Admissi</i>
James R. Mingle, B.A.	<i>Assistant Director of Admissi</i>
Jeffrey W. Ferguson, B.A.	<i>Assistant Director of Admissi</i>

SPECIAL SERVICES

Howard R. Baldwin, M.Ed.	<i>Regist</i>
R. Thomas Ost, B.A.	<i>Assistant Regist</i>
Jerry L. Rhodeback, B.A.	<i>Assistant Regist</i>
Edward M. Solinski, M.S.	<i>Director of the Computer Cen</i>
William Mavrides, M.A.	<i>Director of Instructional Me</i>
C. Robert Blankenship, M.A.Ed.	<i>Director of Audio-Visual Servi</i>
Robert C. Martin	<i>Supervisor of Instructional Televis</i>
Elmer N. Reighard, Jr., B.A.	<i>Production Manager of Instructional Televis</i>

SPECIAL UNIVERSITY AGENCIES

Maurice Morton, Ph.D.	<i>Director of the Institute of Polymer Scie</i>
Alan N. Gent, Ph.D.	<i>Assistant Director of the Institute of Polymer Scie</i>
Howard Stephens, Ph.D.	<i>Executive Officer in the Institute of Polymer Scie</i>
	<i>Director of the Center for Urban Stua</i>
H. Kenneth Barker, Ph.D.	<i>Dean of the Center for International Progra</i>
Allen G. Noble, Ph.D.	<i>Director of International Stua</i>
Warren F. Kuehl, Ph.D.	<i>Director of the Center for Peace Stua</i>
Lascelles F. Anderson, Ph.D.	<i>Director of Afro-American Stua</i>
John Wesley Wilson, B.S.	<i>Associate Director of Afro-American Stua</i>
Charles V. Blair, M.A.	<i>Director of the Institute for Civic Educat</i>
Mrs. Mary E. Chesrown, B.A.	<i>Assistant Director of the Institute for Civic Educat</i>
Cecil L. Dobbins, B.B.A.	<i>Head of the Department of Special Progra</i>
John A. Popplestone, Ph.D.	<i>Director of the Archives of the History of American Psychol</i>
Marion McPherson, Ph.D.	<i>Associate Director of the Archives of the History</i>
	<i>American Psychol</i>
Peter J. Hampton, Ph.D.	<i>Director of Developmental Progra</i>
Charles V. Blair, M.A.	<i>University Equal Employment Opportunity Offi</i>
Richard Neal, B.S.	<i>Deputy Equal Employment Opportunity Offi</i>
Elizabeth J. Hittle, Ed.D.	<i>Director of the Speech and Hearing Cen</i>

RESEARCH ADMINISTRATION

University Research Council	
Michael J. Rzasa, Ph.D.	<i>Dean of Resear</i>
Edwin L. Lively, Ph.D.	<i>Dean of Graduate Stud</i>
Maurice Morton, Ph.D.	<i>Director of the Institute of Polymer Scie</i>
Coleman J. Major, Ph.D.	<i>Director of Institute of Science and Engineering Resear</i>
H. Kenneth Barker, Ph.D.	<i>Director of Institute of Civic and Educational Resear</i>
James W. Dunlap, Ph.D.	<i>Director of Institute of Business and Economic Resear</i>
Institute of Polymer Science	
Maurice Morton, Ph.D.	<i>Dir</i>
Alan N. Gent, Ph.D.	<i>Assistant Direc</i>
Center for Urban Studies	
Edward W. Hanten, Ph.D.	<i>Acting Direc</i>
Hugh F. Coyle, Jr., M.A.	<i>Acting Associate Direc</i>
Yong H. Cho, Ph.D.	<i>Acting Associate Direc</i>

University Emeritus Faculty

- IRMAN P. AUBURN**, *President Emeritus of the University, Professor Emeritus of Political Science and Consultant* (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.
- UL ACQUARONE**, *Professor Emeritus of Botany and Geology* (1931)
 B.S., Pennsylvania State College; Ph.D., Johns Hopkins University, 1929.
- VID E. ANDERSON**, *Associate Professor Emeritus of Engineering Materials* (1923)
 B.A., Augustana College; M.S., University of Chicago, 1923.
- ENE C. BEAR**, *Professor Emeritus of Home Economics* (1944)
 B.S., Illinois Wesleyan University, M.A., Texas State College for Women, 1937.
- LEN BECKER**, *Associate Professor Emeritus of Primary Education* (1949)
 B.S., M.A., Ed.D., Columbia University Teachers College, 1949.
- ARLES BULGER**, *Dean Emeritus of the Buchtel College of Liberal Arts and Professor Emeritus of Modern Languages* (February 1910)
 Ph.B., Buchtel College; M.A., Ph.D., University of Wisconsin, 1925; Litt.D., The University of Akron, 1953.
- ANA NANCY CABLE**, *Associate Professor Emeritus of Art* (1927)
 B.F., M.Ed., The University of Akron, 1931.
- ALMER W. DISTAD**, *Professor Emeritus of Education* (1934)
 B.S.Ed., M.A., Ph.D., University of Minnesota, 1926.
- WARD M. DOUTT**, *Professor Emeritus of Secretarial Science* (February 1926)
 B.A., The University of Akron; M.A., University of Chicago, 1934.
- ARLES DUFFY**, *Distinguished Professor Emeritus of English* (1944)
 Ph.B., University of Wisconsin; M.A., University of Michigan; Ph.D., Cornell University, 1939.
- DORA FLINT**, *Associate Professor Emeritus of Secretarial Science* (1929)
 B.E., The University of Akron; M.S.Ed., Syracuse University, 1935.
- UGHN W. FLOUTZ**, *Professor Emeritus of Chemistry* (1941)
 B.A., Olivet College; M.A., Ph.D., University of Colorado, 1932.
- ER R. FOUTS**, *Associate Professor Emeritus of Physics* (1926)
 B.A., Wittenberg University; M.A., The Ohio State University, 1925.
- INFRED H. GARDNER**, *Vice President and Dean of Administration Emeritus* (1924)
 B.A., M.A., Princeton University, 1923; L.H.D., The University of Akron, 1963.
- SIAN GRUBER**, *Assistant Professor Emeritus of Business Administration* (1946)
 B.A., University of Minnesota; M.B.A., Northwestern University, 1928.
- AILE GRUNBERG**, *Professor Emeritus of Economics* (1946) (1956)
 A.M., M.A., Ph.D., University of Frankfurt, 1930.
- K. HAMLIN**, *Associate Professor Emeritus of Coordination* (March 1946)
 M.E., The University of Akron, 1928; P.E., Ohio.
- SLIE P. HARDY**, *Financial Vice President Emeritus* (1934)
 B.S.Ed., Kent State University; M.S.Ed., The University of Akron, 1935; L.H.D., The University of Akron.
- ENE HORNING**, *Assistant Professor Emeritus of Biology* (1946)
 St. John's Hospital School of Nursing, R.N., 1928; B.S.N., Western Reserve University, 1934.
- NATO INTERNOSCIA**, *Professor Emeritus of Modern Languages* (1938)
 B.A., Broadview College; M.A., Ph.D., Northwestern University, 1938.
- BERT T. ITTNER**, *Professor Emeritus of Modern Languages* (1950)
 B.A., Ph.D., University of Illinois, 1937.
- FRED H. JOHNSON**, *Associate Professor Emeritus of Education* (1956)
 B.S., College of Wooster; M.S., Ph.D., University of Wisconsin, 1956.
- ON A. KEISTER**, *Distinguished Professor Emeritus of English* (1931)
 B.A., M.A., The University of Akron; Ph.D., Western Reserve University, 1947.
- AVID KING**, *Associate Professor Emeritus of Political Science* (1927)
 B.A., Maryville College; M.A., University of Chicago, 1925.
- D. LANDON**, *Professor Emeritus of Civil Engineering* (February 1946)
 C.E., M.S., University of Cincinnati, 1927; P.E., Ohio.
- ARREN W. LEIGH**, *Dean Emeritus of the College of Business Administration and Professor of Commerce and Business Administration* (1926)
 B.A., University of Utah; M.B.A., Ph.D., Northwestern University, 1936.

- WILL LIPSCOMBE, *Associate Professor Emeritus of Mathematics* (1921)
B.S., Florida State College; M.S., The Ohio State University, 1926.
- MARGARET EVELYN MAUCH, *Professor Emeritus of Mathematics* (1945)
B.S., Huron College; M.S., Ph.D., University of Chicago, 1938.
- STEWART MCKINNON, *Assistant Professor Emeritus of Commerce* (1949)
B.A., M.A., University of Wisconsin, 1941.
- WILLIAM I. PAINTER, *Associate Professor Emeritus of Education* (1945)
B.A., Oakland City College; M.A., Ph.D., Indiana University, 1933.
- GENIE J. PRESTON, *Associate Professor Emeritus of Bibliography* (1939)
B.A., Northwestern University; M.A., University of Illinois, 1936.
- MRS. RUTH PUTMAN, *Assistant Professor Emeritus of English* (1934)
B.A., Howard College; M.A., Western Reserve University, 1938.
- MABEL RIEDINGER, *Distinguished Professor Emeritus of Education* (February 1947)
B.A., Mount Union College; M.A., University of Chicago; Ed.D., Columbia University, Teachers College, 194
L.H.D., Mount Union College, 1955.
- EDGAR C. ROBERTS, *Assistant Professor Emeritus of English* (1926)
B.S.Ed., M.A., The Ohio State University, 1924.
- CLARA G. ROE, *Professor Emeritus of History* (1947)
B.A., University of Michigan; M.A., University of Chicago; Ph.D., University of Michigan, 1943.
- CECIL A. ROGERS, *University Auditor Emeritus* (1932)
B.S.B.A., The University of Akron, 1932.
- CHARLES ROGLER, *Professor Emeritus of Sociology* (1949)
B.A., M.A., University of Michigan; Ph.D., University of Kansas, 1935.
- FREDERICK S. SEFTON, *Professor Emeritus of Physical Education* (1915)
B.S., Colgate University; M.Ed., Harvard University, 1925.
- SAMUEL SELBY, *Distinguished Professor Emeritus of Mathematics* (1927)
B.A., M.A., University of Manitoba (Canada); Ph.D., University of Chicago, 1929.
- ROY V. SHERMAN, *Professor Emeritus of Political Science* (1929)
B.A., M.A., Ph.D., State University of Iowa, 1927.
- MARY VERNON SLUSHER, *Associate Professor Emeritus of Accounting* (1947) (1954)
B.S., M.S., Virginia Polytechnic Institute, 1931; C.P.A. Virginia.
- PAUL C. SMITH, *Associate Professor Emeritus of Electrical Engineering* (1925)
B.S.E.E., Purdue University, 1917; P.E., Ohio.
- ERNEST A. TABLER, *Associate Professor Emeritus of Mathematics* (1935)
B.S., Kent State University; M.A., Western Reserve University, 1933.
- MRS. AUDRA TUCKER, *Associate Professor Emeritus of Secretarial Science* (1926)
B.A., The University of Akron; M.A., New York University, 1936.
- PAUL E. TWINING, *Professor Emeritus of Psychology* (November 1941)
B.S., Ottawa University; M.A., University of Kansas; Ph.D., University of Chicago, 1938.
- CLARENCE R. UPP, *Associate Professor Emeritus of Mechanical Engineering* (1925)
M.E., The Ohio State University, 1910; P.E., Ohio.
- GEORGE STAFFORD WHITBY, *Professor Emeritus of Rubber Chemistry* (1942)
A.R.C.Sc., B.S., University of London; M.S., Ph.D., D.Sc., McGill University, 1939; LL.D., Mount Allison University,
New Brunswick, 1932; D.Sc., The University of Akron, 1958.
- MRS. FLORENCE N. WHITNEY, *Associate Professor Emeritus of English* (1936)
B.A., Dakota Wesleyan University; M.A., Columbia University, 1913.
- EARL R. WILSON, *Associate Professor Emeritus of Mechanical Engineering* (1929)
B.M.E., The Ohio State University, 1916; P.E., Ohio.

NOTE: The dates in parentheses indicate the beginning of service at Buchtel College of The University of Akron; unless otherwise stated, service began in the month of September.

*University Faculty and Administration**

FULL-TIME

- J. GUZZETTA, *President of the University and Professor of Higher Education* (1954) (1971)
 B.A., Ed.M., Ed.D., University of Buffalo 1953; LL.D., The University of Akron, 1968; D.S.Sc, Marian College, 1971.
- IRMAN 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.
- UL ABERCROMBIE, *Assistant Director of Purchasing* (1971)
 B.S., B.S.Ed., M.Ed., Miami University (Ohio), 1960.
- VING ACHORN, *Associate Professor of Art* (1965)
 B.S., M.A., Kent State University, 1956.
- EXANDER L. ADAMS, *Assistant to the Dean of Administration, and Instructor in Physical Education* (1970)
 B.S., M.S., The University of Akron, 1970.
- BART W. ADAMS, *Associate Professor of Accounting* (1969)
 B.S., Kent State University; M.B.A., D.B.A., Indiana University, 1967.
- NNIE G. ADAMS, *Assistant Professor in the Community and Technical College* (1969)
 B.C.E., Cleveland State University; M.S.C.E., Lehigh University, 1963.
- HN THOMAS ADOLPH, *Assistant Professor of Physical Education* (1969)
 B.A., The University of Akron; M.Ed., Ohio University; Ph.D., The Ohio State University, 1969.
- RS. VIRGINIA ALLANSON, *Instructor in Bibliography and Subject Librarian in Science-Technology* (October 1968)
 B.S., Purdue University; M.L.S., Kent State University, 1967.
- NALD ALLCORN, *Assistant Professor of Music* (January, 1971)
 B.M.E., Baldwin-Wallace College, 1955.
- BERT D. AMSPOKER, *Assistant Professor of Management* (1970)
 B.W.E., M.S., The Ohio State University, 1965.
- SCELLES F. ANDERSON, *Assistant 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.
- EXIS M. ANIKEEFF, *Professor of Psychology* (1967)
 A.B., A.M., University of Michigan; Ph.D., Purdue University, 1949.
- HN ARENDT, *Materials Testing Engineer in Civil Engineering and Instructor in the Community and Technical College* (February 1967)
 B.S.M.E., Cleveland State University, 1944.
- ALTER E. ARMS, *Assistant Professor of Education* (1968)
 B.S., Northwest Missouri State College; M.Ed., University of South Dakota; Ed.D., Indiana University, 1968.
- ILLIAM J. ARN, *Associate Professor of Education* (1967)
 B.S., Ohio Northern University; M.S., Bowling Green State University; Ph.D., Kent State University, 1967.
- RS. HELEN MAE ARNETT, *Associate Professor of Bibliography and Education Librarian* (1953)
 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.
- LENN A. ATWOOD, *Associate Professor of Chemical Engineering* (1965)
 B.S.Ch.E., M.S.Ch.E., Iowa State University; Ph.D., University of Washington, 1963.
- RS. MARY ELLEN ATWOOD, *Instructor in Education and in Home Economics, Director of University Nursery School* (1969)
 B.S., Iowa State College; M.S., The University of Akron, 1968.
- HN BACHMANN, *Professor of Chemistry* (February 1961)
 B.Ch.E., Ph.D., University of Minnesota, 1939.
- RS. GERTRUDE BADGER, *Assistant Professor of Education* (1965)
 B.S.Ed., B.A., The Ohio State University; M.Ed., Kent State University, 1960.
- VELYN BAER, *Associate Professor of Speech* (1966)
 B.A., University of Chicago; M.A., The University of Akron, 1948.

*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.

Personnel on record as of July 1, 1971.

- JAMES BAGNOLA, *Assistant Director of Student Financial Aids* (1971)
B.A., The University of Akron, 1971.
- ROGER BAIN, *Assistant Professor of Geology* (1970)
B.S., M.S., University of Wisconsin; Ph.D., Brigham Young University, 1968.
- MRS. VIRGINIA HICKS BAKAY, *Associate Professor of Accounting* (1968)
B.B.A., Memphis State University; M.A., Ph.D., University of Alabama, 1969. C.P.A., Tennessee.
- J. WAYNE BAKER, *Assistant Professor of History* (1968)
B.A., Western Baptist Bible College; B.D., Talbot Theological Seminary; B.A., Pepperdine College; M.A., Ph. University of Iowa, 1970.
- FRANK V. BALDO, *Associate Professor of Marketing* (1969)
B.B.A., Fenn College; M.B.A., Western Reserve University; Ph.D., Pennsylvania State University, 1969
- HOWARD R. BALDWIN, *Registrar* (July 1967)
B.P.S.M., Mount Union College; M.Ed., Kent State University, 1958.
- GEORGE W. BALL, *Director of University Relations* (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, *Director of Development* (July 1966)
B.S., Ohio Univeristy, 1950.
- H. KENNETH BARKER, *Dean of the College of Education, Dean of International Programs and Professor Education* (1966)
B.A., M.A., University of Louisville; Ph.D., University of Michigan, 1959.
- MRS. ANITRA BARKELY, *Instructor in Speech* (March 1969)
B.A., M.A., The University of Akron, 1969.
- MRS. ANNA P. BARNUM, *Instructor in the Community and Technical College* (1970)
B.A., Middlebury College; M.A., University of Vermont, 1969.
- DAVID G. BARR, *Assistant Professor of Education* (1967)
B.S., M.A., Kent State University, 1966.
- CHARLES M. BARRESI, *Associate Professor of Sociology* (1966)
B.A., M.A., Ph.D., State University of New York at Buffalo, 1965.
- PHILLIP E. BARTLETT, *Project Architect* (1971)
B.A., Kent State University, 1963.
- ROBERT M. BARTLETT, *Adjunct Professor of Anatomy* (January 1971)
- DAVID T. BASSO, *Senior Programmer/Analyst* (1968)
B.B.A., University of Notre Dame, 1966.
- MRS. MARIAN E. BAUER, *Assistant Professor of Nursing* (1969)
B.A., Maryville College; M.N., Western Reserve University, 1941. R.N.
- DONALD E. BECKER, *Assistant Professor of Management* (1959)
B.A., M.A., Oberlin College, 1948.
- CLARE BEDILLION, *Assistant Professor in the Community and Technical College* (1968)
B.A., Woman's College of Georgia; M.A., New York University; 1944.
- JOHN D. BEE, *Assistant Professor of Speech* (1969)
B.A., Ohio University; M.A., University of Wisconsin, 1967.
- WILLIAM H. BEISEL, JR., *Professor of Education and Director of Student Teaching* (1960)
B.S., West Chester State Teachers College; M.Ed., Ed.D., Pennsylvania State University, 1960.
- WILLIAM BELDING, *Editor, University News Service* (1969)
B.S., University of Oregon, 1959.
- JAMES D. BELL, *Instructor in the Community and Technical College* (1970)
B.S., M.Ed., Kent State University, 1970.
- MRS. JUTTA T. BENDREMER, *Instructor in English* (1967)
B.A., Hunter College; M.A., Brooklyn College, 1951.
- EUGENE MOSS BENEDICT, *Instructor 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.
- PAUL BENNINGFIELD, *Assistant Professor of Music* (1969)
B.M., Texas Technological University; M.M., University of Illinois, 1967.
- DONALD K. BERQUIST, *Assistant Professor of Accounting* (1968)
B.S.B.A., Youngstown University; M.Acc. The Ohio State University, 1964; C.P.A., Ohio.
- ROBERT C. BERRY, *Director of Placement*, (August 1946)
B.S.B.A., The University of Akron, 1942.
- SANDRA LEE BERRY, *Adviser of Students* (1971)
B.A., M.A., Michigan State University, 1971.

- RL A. BERSANI, *Associate Professor of Sociology* (1965)
B.A., Eastern Michigan University; M.A., University of Michigan; Ph.D., Iowa State University, 1965.
- WILLIAM H. BEYER, *Professor of Mathematics* (1961)
B.S., The University of Akron; M.S., Ph.D., Virginia Polytechnic Institute, 1961.
- CHARLES BEZBATCHENKO, *Professor of Mechanical Engineering* (June 1949)
B.M.E., The University of Akron; M.S., Case Institute of Technology, 1954; P.E., Ohio.
- MARK E. BIGGINS, *Director of Purchasing* (April 1967)
B.S.C., Ohio University, 1957.
- JOHN J. BIONDO, *Assistant Professor of Education* (1968)
B.A., M.A., M.A.Ed., The University of Akron, 1957.
- WILLIAM F. BLACK, *Assistant Professor of Education* (1970)
B.S., Slippery Rock State Teacher's College; M.A., Duquesne University; Ph.D., University of Pittsburgh, 1970.
- ROBERT R. BLACK, *Associate Professor of Economics* (1958)
B.A., Carleton College; M.B.A., University of Chicago; Ph.D., University of California at Berkeley, 1963.
- ALPH O. BLACKWOOD, *Associate Professor of Education* (1967)
B.A., Muskingum College; M.A., Ph.D., The Ohio State University, 1962.
- CHARLES V. BLAIR, *Dean of Administration, Director of the Institute for Civic Education, Assistant Professor in the Community and Technical College and Equal Employment Opportunity Officer* (April 1959)
B.A., M.A., The University of Akron, 1963.
- 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.
- FRANK BLICK, *Associate Professor of History* (1964)
B.A., Brooklyn College; M.A., Ph.D., University of Wisconsin, 1958.
- FRANK J. BLUMENFELD, *Associate Professor of Education* (1970)
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- CHARLES K. BONNELL, *Adviser of Students* (1969)
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B.S.I.M., B.S.Ed., The University of Akron, 1959.
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B.A., The University of Akron, 1942.
- ARTHUR E. BOYLE, *Research Assistant in the Center for Urban Studies* (1970)
B.A., M.A., College of St. Francis; M.A., The University of Akron, 1970.
- FRANK G. BRADLEY, *Assistant Professor of Education* (1969)
B.A., Muskingum College; M.A., West Virginia University; Ph.D., Ohio University, 1969.
- FRANK BRADSHAW, *Assistant Professor of Music* (1968)
B.A., M.A., Bob Jones University, 1950.
- FRANK W. BRANDEL, *Adviser of Students* (1969)
B.S., Bowling Green State University; M.A., Michigan State University, 1968.
- FRANK BRDAR, *Assistant Professor in the Community and Technical College* (1967)
B.S., M.A., Western Reserve University, 1954.
- FRANK G. BRINER, *Associate Professor of Law* (1970)
B.S.B.A., University of Wichita; J.D., The University of Akron, 1966.
- THOMAS M. BRITTAIN, *Associate Professor of Mechanical Engineering* (February 1965)
B.M.E., The University of Akron; M.S., Ph.D., University of Illinois, 1966.
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B.S.N., M.S.N., University of Washington (Seattle), 1953; R.N.
- FRANK CLIFFORD BROWN, *Assistant Professor of English* (1971)
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B.S.C.E., Citadel University; M.S.C.E., University of Texas, 1966.
- RONALD P. BROWN, *Advisor of Students and Coordinator for Developmental Services* (January 1969)
B.S.Ed., M.S.Ed., The University of Akron, 1969.
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B.S., M.Ed., Mississippi State University; Ph.D., Kent State University, 1968.
- FRANK D. BROWNSTEIN, *Assistant Professor of Social Welfare* (1966)
B.S.Ed., Temple University; M.S.W., University of Pennsylvania School of Social Work, 1958.
- ANGELA ROSE BRUNO, *Assistant Professor of Education* (1969)
B.S., Seton Hill College; M.Ed., Indiana University of Pennsylvania; Ed.D., Pennsylvania State University, 1969.
- FRANK R. BRUNS, *Instructor 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.
- DAVID BUCHTHAL, *Assistant Professor of Mathematics* (1971)
B.S., Loyola University; M.S., Ph.D., Purdue University, 1971.
- HERMAN M. BUERSCHEN, *Adviser of Students* (1971)
B.A., M.A., University of Dayton, 1968.
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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.
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B.S., University of Wisconsin; M.S., Virginia Polytechnic Institute, 1965.
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B.A., M.A., Stetson University, 1967.
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B.A.Ed., The University of Akron, 1965.
- LARRY D. CALHOUN, *Associate Professor of Art* (1970)
B.A., Iowa Wesleyan College; M.A., University of Iowa, 1961.
- RICHARD A. CALKINS, *Instructor in the Community and Technical College and Foreign Student Adviser* (196
B.A., Westminster College (Pa.) 1961.
- DOUGLAS E. CAMERON, *Assistant Professor of Mathematics* (1969)
B.A., Miami University; M.S., The University of Akron; Ph.D., Virginia Polytechnic Institute, 1970.
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- T. ALLEN CAMPBELL, *Instructor in Physical Education* (August 1968)
B.S., M.S., The University of Akron, 1968.
- MARJORIE M. CAPOTOSTO, *Associate Director of Admissions* (1968)
B.S., The University of Akron, 1965.
- MARY CAPOTOSTO, *Instructor in Speech* (1968)
B.A., The University of Akron; M.A., DePaul University, 1967.
- NATHAN F. CARDARELLI, *Associate Professor in the Community and Technical College* (1968)
B.S., B.A., M.S., M.A., The University of Akron, 1961.
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B.A., M.A., Ph.D., University of North Carolina, 1957.
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B.A., M.A., The University of Akron, 1970.
- TOMASITA M. CHANDLER, *Assistant Professor of Home Economics* (1971)
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- GYAN CHANDRA, *Assistant Professor of Accounting* (1971)
B.Com., M.Com., Agra (India); M.S., University of Minnesota; Ph.D., The Ohio State University, 1971
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B.S.C.E., National Taiwan University; M.S., Ph.D., University of California at Berkley, 1966.
- CHIOU-SHIUN CHEN, *Associate Professor of Electrical Engineering* (1968)
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B.S., M.S., Ph.D., Virginia Polytechnic Institute, 1966.
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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, *Instructor in the Community and Technical College* (1970)
B.A., Cleveland State University; M.A., University of Pittsburgh, 1970.
- FRANK J. CIANCIOLO, *Assistant Director of the Gardner Student Center* (July 1968)
B.A., The University of Akron, 1968.
- MRS. BARBARA CLARK, *Senior Cataloger in the Library* (1961)
B.A., The University of Akron, 1950.
- FRANCES A. CLARK, *Assistant Professor of Accounting* (1946)
B.S., The University of Akron; M.Ed., University of Pittsburgh, 1946.
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B.A., University of Richmond; M.A., Ph.D., Duke University, 1971.
- BERNARD J. CLIFFORD, *Assistant Professor of Sociology* (1969)
B.A., Western Reserve University; M.S.S.W., University of Wisconsin, 1952.
- MRS. RUTH CLINEFELTER, *Assistant Professor of Bibliography and Social Science Librarian* (June 1952)
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B.S., M.A., Ph.D., The Ohio State University, 1968.
- KENNETH COCHRANE, *Professor of Physical Education* (1948)
B.E., The University of Akron; M.Ed., University of Pittsburgh, 1941.
- JOHN W. COE, *Assistant Professor of Music* (1970)
B.M., Ithaca College; M.M., Manhattan School of Music; D.Mus., Indiana University, 1971.
- GEORGE S. COHEN, *Associate Professor of Electrical Engineering* (1969)
B.E.E., University of Dayton; M.S.E., Ph.D., University of Michigan, 1962.
- JAMES R. COLLINS, *Instructor in Sociology* (1968)
B.A., M.A., Kent State University, 1965.
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B.A., Glenville State Teachers College (W. Va.); M.A., West Virginia University, 1952.
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B.S.M.E., University of Oklahoma; M.S.M.E., Ph.D., M.E., University of Wisconsin, 1963.
- VERNON COOK, *Assistant Professor of Political Science* (1965)
B.A., The Ohio State University, 1951.
- MADELINE A. COOKE, *Assistant Professor of Education* (1969)
B.S., The Ohio State University; M.A., Mexico City College; Ph.D., The Ohio State University, 1969.
- ROBERT G. CORBETT, *Associate Professor of Geology* (1969)
B.S., M.S., Ph.D., University of Michigan, 1964.
- GERALD CORSARO, *Professor of Chemistry* (1948)
B.S., Fenn College; M.S., Ph.D., Western Reserve University, 1944.
- MRS. BETTY COVEN, *Counselor, Testing and Counseling Bureau* (1969)
B.A., Sir George Williams University (Canada); M.S., University of Arizona, 1968.
- MRS. JULIA C. COWAN, *Instructor in the Community and Technical College and in Education* (1969)
B.S., M.S., University of Maine, 1968.
- DAVID F. COX, *Associate Professor of Urban Studies and of Philosophy* (1970)
B.A., Morningside College; S.T.B., Ph.D., Boston University, 1953.
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B.S., Swarthmore College; M.A., The University of Akron, 1970.
- THOMAS J. COYNE, *Associate Professor of Finance* (1969)
B.B.A., Marshall University; M.B.A., Kent State University; Ph.D., Case Western Reserve University, 1967.
- WALDEN BLAIN CRABTREE, *Assistant Professor of Education* (1968)
B.A., St. Meinrad College (Indiana); M.S.Ed., Ph.D., Indiana University, 1968.

- WILLIAM S. CRAMER, *Documents Librarian and Instructor in Bibliography* (1966)
B.A., The Ohio State University; M.S., Case Western Reserve University, 1971.
- ROGER B. CREEL, *Assistant Professor of Physics* (1970)
B.A., Kalamazoo College; Ph.D., Iowa State University, 1969.
- LARRY A. CRUM, *Assistant Professor of Electrical Engineering* (1971)
B.E.E., The Ohio State University; Ph.D., Marquette University, 1971.
- GERALD L. CULTON, *Assistant Professor of Speech* (1969)
B.A., University of Omaha; M.A., Kansas State University; Ph.D., University of Denver, 1968.
- EARL M. CURRY, JR., *Associate Professor of Law* (1970)
B.S., J.D., West Virginia University; M.B.A., University of Pittsburgh; LL.M., New York University, 1968.
- MRS. FRANCES B. CURTIS, *Assistant Professor of Nursing* (1970)
B.S., University of Cincinnati; M.A., University of Chicago, 1950.
- JAMES L. DAGUE, *Assistant Director of Placement* (1971)
B.S., Ashland College; M.S.Ed., The University of Akron, 1968.
- MRS. FAYE DAMBROT, *Instructor in Psychology* (1967)
B.S., Carnegie Institute of Technology; M.A., The University of Akron, 1966.
- ALEX DARBES, *Associate Professor of Psychology* (1968)
B.A., Ph.D., 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., *Assistant Professor of Education* (1968)
B.S., Southeast Missouri College; M.A., Washington University; Ph.D., Southern Illinois University, 1967.
- PAUL A. DAUM, *Assistant Professor of Speech* (1965)
B.F.A., Wesleyan College; M.A., The University of Akron, 1964.
- JACK R. DAUNER, *Associate Professor of Marketing* (1971)
B.S., University of Iowa; M.S., Ph.D., St. Louis University, 1970.
- DONALD M. DAVIS, *Assistant Professor in the Community and Technical College* (1966)
B.S.B.A., University of Dayton; M.S., University of North Carolina, 1951.
- EMILY DAVIS, *Professor of Art* (1945)
B.A., The Ohio State University; M.A., Columbia University, Teachers College; Ph.D., The Ohio State University, 1936.
- N. F. DAVIS, *Professor of Management* (1970)
B.S., Lincoln University; M.B.A., Washington University; Ph.D., Indiana University, 1960.
- ROBERT J. DAVIS, *Software/Hardware Coordinator, Computer Center* (1971)
B.S., The University of Akron, 1969.
- MARY H. K. DEE, *Instructor in the Community and Technical College* (1970)
B.S., University of the East (Manila); M.A., Central Missouri State College, 1969.
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B.A., University of Wisconsin; M.A., The University of Akron, 1963.
- 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.
- JOHN M. DENISON, *Assistant Director of University Relations* (February 1946)
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- JAMES L. DENNISON, *Assistant Professor of Physical Education* (1965)
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- HAMILTON DESAUSSURE, *Associate Professor of Law* (1970)
B.A., Yale University; LL.B., Harvard University; LL.M., McGill Institute of International Air Law, 1953.
- PETER DESY, *Instructor in English* (1966)
B.A., M.A., University of Detroit, 1959.
- ROBERT L. DIAL, *Associate Professor of English* (1965)
B.S., Central Missouri State College; M.A., Ph.D., University of Kansas City, 1963.
- CONSTANTIN DIMITRIU, *Head of Searching and Instructor in Bibliography* (1970)
Baccalaureate, University of Cluj, Romania; M.A., National University of Bucharest, M.S.L.S., Case Western Reserve University, 1969.
- KAREN B. DIXON, *Instructor/Coordinator of Services for the Deaf* (April 1971)
B.S., Kent State University, 1970.
- CECIL L. DOBBINS, *Assistant Dean of the Evening College* (February 1965)
B.B.A., Fenn College, 1952.
- DOROTHY M. DOBRINDT, *Assistant Professor of Nursing* (1969)
R.N., St. Elizabeth Hospital School of Nursing; B.S., St. Louis University; M.Ed., Columbia University, 1965.

- DALE DOEPKE, *Associate Professor of English* (1965)
B.S.Ed., Central Missouri State College; M.A., Ph.D., Washington University, 1963.
- DAVID T. DOLAN, *Assistant Professor in the Community and Technical College* (1965)
B.A., M. Ret. Adv., University of Pittsburgh, 1957.
- EELMAR DOLLWET, *Assistant Professor of Biology* (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.
- AMES E. DOVERSPIKE, *Professor of Education* (1960)
B.S., Indiana State College; M.Ed., Ed.D., Pennsylvania State University, 1961.
- JANEVIEVE DREWS, *Senior University Physician* (1966)
B.S., The St. Mary College; M.A., Colorado College; M.D., University of Colorado School of Medicine, 1961.
- ROBERT G. DUBENSKY, *Associate Professor of Mechanical Engineering* (February 1968)
B.M.E., Cleveland State University; M.S.M.E., University of Kansas; Ph.D., University of Iowa. P.E., Ohio.
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B.A., Oberlin College; LL.B., Cleveland-Marshall Law School, 1951.
- MRS. GRETCHEN H. DUFFIELD, *Instructor in Sociology* (1971)
B.A., The University of Akron, 1969.
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- AMES F. DUNLAP, *Professor of Speech* (1955)
B.S.Ed., Wilmington College; M.A., Ph.D., The Ohio State University, 1954.
- AMES 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.
- DAVID R. DURST, *Assistant Professor of Finance* (1968)
B.S., Kent State University; M.B.A., Georgia State University, 1966.
- ASHOK DUTT, *Associate Professor of Geography and Associate Professor of Urban Studies* (1968)
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- DANIEL DENNIS EDGAR, *Adviser of Students* (July 1971)
B.S., M.Ed., Indiana University of Pennsylvania; M.A., The University of Akron, 1969.
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B.E.E., M.S.E., The University of Akron, 1960. P.E., Ohio.
- HAROLD L. EDWARDS, *Assistant Professor in the Community and Technical College* (1965)
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B.A., Kings College (Pa.); J.D., The University of Akron, 1968.
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B.S.Ed., M.Ed., Ph.D., Miami University, 1971.
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B.A., Hunter College; M.A., The University of Akron, 1964.
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B.A., Brown University; LL.B., Yale Law School, 1941.
- WILLIAM A. C. FRANCIS, *Instructor in English* (1966)
B.A., M.A., Duquesne University, 1964.
- NEIL P. FRANKENHAUSER, *Assistant Professor of Art* (1970)
B.F.A., Bowling Green State University; M.A., M.F.A., University of Iowa, 1965.
- RICHARD FRANKLIN, *Instructor in Political Science* (1970)
B.A., Bryan College; M.A., Michigan State University, 1960.
- PAUL C. FRANKS, *Associate Professor of Geology* (1971)
B.A., Cornell University; M.S., Ph.D., University of Kansas, 1966.
- PAULINE FRANKS, *Assistant Professor of Bibliography and Associate University Librarian* (1950)
B.S.Ed., Kent State University; B.S.L.S., Western Reserve University, 1940.
- KENNETH C. FRAUNDORF, *Assistant Professor of Economics* (1971)
B.A., University of Oregon; M.A., Cornell University, 1969.
- MRS. ANNE E. FREDERICK, *Instructor in Modern Languages* (1968)
B.A., The University of Akron; M.A., Middlebury College, 1968.
- J. E. FREDERICK, *Assistant Professor of Chemistry, Assistant Professor of Polymer Science and Research Associate in the Institute of Polymer Science* (1966)
B.S.Ch., Glenville State College; Ph.D., University of Wisconsin, 1964.

- VINCENT FRITTELLI, *Assistant Professor of Music* (1969)
Julliard School of Music; Brussels Royal Conservatory; Curtis Institute of Music.
- JOHN L. FROLA, *Assistant Professor of Biology* (1971)
B.S., Waynesburg College; M.S., Ph.D., West Virginia University, 1970.
- WILL S. FRYE, *Assistant 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.
- ROBERT GAEBEL, *Assistant Professor of Classics* (1970)
B.A., M.A., University of Buffalo; Ph.D., University of Cincinnati, 1968.
- REBECCA ANN GANYARD, *Adviser of Students* (1971)
B.A., M.S., Indiana University, 1971.
- NEAL GARLAND, *Assistant Professor of Sociology* (1969)
B.A., M.A., University of North Dakota; Ph.D., Case Western Reserve University, 1971.
- PAUL D. GARN, *Professor of Chemistry* (1963)
B.S., M.S., Ph.D., The Ohio State University, 1952.
- 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, *Assistant Professor of Mechanical Engineering* (1971)
B.S.M.E., Rose Polytechnic Institute; M.S.M.E., University of Illinois, 1969.
- JOHN R. GERLACH, *Associate Professor of History* (1962)
B.S.Ed., M.A., Ph.D., University of Nebraska, 1961.
- THOMAS E. GETZINGER, *University Auditor* (1969)
B.S.B.A., The University of Akron; M.B.A., Kent State University, 1966; C.P.A.
- EDWARD GIBNEY, *Assistant 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.
- ERNEST D. GIGLIO, *Associate Professor of Political Science* (August 1970)
B.A., Queens College; M.A., State University of New York at Albany; Ph.D., Syracuse University, 1964.
- 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, *Assistant Professor of Law, Assistant Law Librarian Acquisitions and Reference* (July 1970)
B.S., LL.B., University of Minnesota; M.S.L.S., University of Michigan, 1970.
- WILLIAM M. GLAZIER, *Assistant Professor in the Community and Technical College* (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.
- MRS. PATRICIA PUTNAM GODFREY, *Assistant Professor of Nursing* (January 1969)
B.S.N., M.A.Ed., Western Reserve University, 1964. R.N.
- LATHARDUS GOGGINS, *Assistant Professor of Geography* (1969)
B.A., Central State University; M.A., The Ohio State University, 1955.
- LAWRENCE G. GOLDEN, *Assistant Professor in the Community and Technical College* (1968)
B.S., Case Institute of Technology; M.B.A., Wharton School of Finance and Commerce, 1968.
- DONALD GOLDSTROHM, *Assistant Professor of Biology* (1967)
B.S., Waynesburg College; M.S., Ph.D., West Virginia University, 1966.
- DOM A. GOOSBY, *Assistant Director of the Gardner Student Center* (July 1970)
B.A., Baldwin-Wallace College, 1963.
- DENNIS GORDON, *Professor of Accounting* (1946)
B.A., M.B.A., University of Chicago, 1938; C.P.A., Ohio.
- H. ROGER GRANT, *Assistant Professor of History* (1970)
B.A., Simpson College; M.A., Ph.D., University of Missouri, 1970.
- RICHARD L. GRANT, *Associate Professor of Law* (1967)
B.S., University of Pennsylvania; LL.B., Stanford University; LL.M., Georgetown University, 1967.
- PAUL E. GREEN, *Visiting Instructor in Education* (1971)
B.S., Malone College; M.S., The University of Akron, 1968.
- HOWARD L. GREENE, *Associate Professor of Chemical Engineering* (1965)
B.Ch.E., M.Ch.E., Ph.D., Cornell University, 1966.
- VALERIE GRIEG, *Instructor in Ballet* (1970)
Victorian Ballet Guild (Australia); Cecchetti Society (London); Borovansky Ballet Academy; Royal Ballet School in London; Egorova Preobrajenska (Paris); Julliard School of Music.

†Leave of Absence, 1971-72.

- C. FRANK GRIFFIN, *Associate Professor of Physics* (1967)
B.S., M.S., Texas Technological College; Ph.D., The Ohio State University, 1964.
- NORMAN M. GRIGGS, JR., *Assistant Professor of Education* (1969)
B.A., M.A., DePauw University; Ph.D., The Ohio State University, 1968.
- JOHN E. GRIMM, *Adviser of Students* (July 1967)
B.S.Ed., M.Ed., Ohio University, 1966.
- 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.
- FRANK J. GRUCCIO, JR., *Instructor in the Community and Technical College* (1966)
B.A., M.A., The University of Akron, 1967.
- ROBERT GRUMBACH, *Associate Professor of Electrical Engineering* (1961)
B.S.E.E., Case Institute of Technology; M.S.E.E., West Virginia University, 1951.
- MRS. BARBARA GSELLMAN, *Lecturer in the Community and Technical College* (1967)
B.S.M.E., The University of Akron, 1950.
- JOHN F. GUZZETTA, *Assistant Professor of Education* (1970)
B.S., State University College at Fredonia; M.S., State University College at Cortland, 1963.
- JOHN F. GWINN, *Instructor in Biology* (1970)
B.A., Manchester College; M.S., Purdue University, 1967.
- MRS. RUTH T. HADDOCK, *Instructor in Mathematics* (1968)
B.C.E., M.A., University of Louisville, 1967.
- SCOTT D. HAGEN, *Assistant Professor of Biology* (1966)
B.S., Kansas State University; M.S., Kansas State Teachers College, 1964.
- GORDON A. HAGERMAN, *Assistant to the Vice President for Academic Affairs* (July 1941)
B.A., The University of Akron, 1941.
- MRS. GRACE M. HAHN, *Assistant to the Director of Institutional Research* (August 1970)
B.S., M.A., The University of Akron, 1970.
- ROBERT D. HAHN, *Associate Director, Counseling and Advising Division* (1969)
B.S., M.Ed., Kent State University, 1969.
- CARL L. HALL, *Treasurer* (1959) (March 1965)
B.S., The Ohio State University, 1950.
- DOROTHY HAMLIN, *Professor of Bibliography, Director of University Archives and Rare Books Librarian*
(February 1937)
B.A., The University of Akron; B.S.L.S., Western Reserve University, 1942.
- LOUIS F. HAMPEL, *Associate Professor of Finance* (1933) (1968)
B.S., The University of Akron; M.B.A., Northwestern University, 1931.
- PETER J. HAMPTON, *Associate Professor of Psychology and Director of Developmental Programs in the Community and Technical College* (August 1954)
B.A., M.A., University of Manitoba (Canada); Ph.D., Western Reserve University, 1950.
- RICHARD L. HANSFORD, *Vice President and Dean of Student Services* (August 1949)
B.A.Ed., M.A.Ed., The University of Akron, 1954.
- MRS. 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 Acting Director of the Center for Urban Studies* (1963)
B.A., Earlham College; M.A., Ph.D., University of Pittsburgh, 1962.
- HORACE D. HARBY, *Assistant to the President for Development* (May 1966)
B.S., Clemson University, 1936.
- MRS. PHYLLIS HARDENSTEIN, *Associate Professor of Speech* (February 1947) (1956)
B.A., The University of Akron; M.A., University of Wisconsin, 1951.
- JACK D. HARPOOL, *Instructor in the Community and Technical College* (1970)
B.S., M.B.A., The University of Akron, 1968.
- MARY GRACE HARRINGTON, *Assistant Professor of Bibliography and Business Administration Librarian*
(November 1960)
B.A., The University of Akron; B.A.L.S., University of Michigan, 1939.
- ALAN HART, *Associate Professor of Philosophy* (1970)
B.A., M.A., Syracuse University; Ph.D., University of Pennsylvania, 1965.
- H. JAMES HARWOOD, *Professor of Chemistry, Professor of Polymer Science, and Research Associate in the Institute of Polymer Science* (October 1959)
B.S., The University of Akron; Ph.D., Yale University, 1956.

- VADE B. HATCH, *Physical Facilities Analyst* (October 1966)
B.S.C.E., University of California at Los Angeles, 1949.
- MRS. MARLENE HATHAWAY, *Instructor in English* (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.
- AUL C. HAYES, *Professor of Education* (1967)
B.S.Ed., Wilmington College; M.A., Miami University; Ph.D., University of Ottawa (Canada), 1963.
- MRS. CAROL HEALER, *Instructor in Home Economics* (1968)
B.S., Framington State College (Massachusetts); M.S.Ed., The Ohio State University, 1968.
- JOHN G. HEDRICK, *Dean of the Evening College* (July 1967)
B.S.Ed., Kent State University; M.A., University of Notre Dame, 1958.
- MRS. 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.
- MRS. FAITH HELMICK, *Programmer/Analyst Project Leader* (1971)
B.A., Kent State University, 1967.
- CECIL W. HEMBREE, *Assistant Professor of Education* (1970)
B.S., M.S., Indiana University, 1964.
- 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, *Assistant Professor of Physics* (1970)
B.S., Berry College; M.A., Ph.D., University of Georgia, 1968.
- RICHARD HENRY, *Assistant Professor in the Community and Technical College* (1961)
B.M.E., The Ohio State University; M.S.E., The University of Akron, 1965.
- THOMAS P. HERBERT, *Assistant Professor in the Community and Technical College* (1968)
B.S.E.E., University of Dayton; M.A., Pennsylvania State University, 1968.
- LAY R. HERSHEY, *Director of Residence Halls* (1967)
B.A., Hiram College; M.Ed., University of Illinois, 1965.
- JOHN J. HIRSCHBUHL, *Assistant Professor of Education* (1971)
B.S., M.S., Temple University, 1966.
- ELIZABETH J. HITTLE, *Professor of Speech and Director of the Speech and Hearing Center* (1950)
B.S.Ed., The University of Akron; M.A., Kent State University; Ed.D., Western Reserve University, 1963.
- LOREN HOCH, *Assistant Professor of Education* (1969)
B.S., Indiana Central College; M.A., Ball State University; Ed.D., Indiana University, 1968.
- KENNETH C. HOEDT, *Professor of Education and Coordinator of Educational Research and Services* (1962)
B.S., State University of New York, (Buffalo); M.S., Ph.D., University of Wisconsin, 1960.
- WILLIAM W. HOKMAN, *Assistant Professor of Mathematics* (1967)
B.S.Ed., M.A., M.S., West Virginia University, 1958.
- R. BRUCE HOLLAND, *Instructor in English* (1967)
B.A., University of Rochester; M.A., University of Michigan, 1963.
- LORENA HOLSHOY, *Assistant Professor of Art* (1969)
B.F.A., M.A., The Ohio State University, 1965.
- KATHRYN HOMEIER, *Associate Professor of Nursing* (February 1967)
B.S.N.E., Saint Louis University; M.S.Ed., The University of Akron, 1963. R.N.
- EUGENE M. HOOD, *Instructor in Philosophy* (1968)
B.A., M.A., The University of Akron, 1968.
- MARTHA HOSFELT, *Instructor in English* (1961)
B.A., The University of Akron, 1959.
- RICHARD B. HOSKIN, *Assistant Professor in the Community and Technical College* (1967)
B.A., Hiram College; M.E., Kent State University, 1955.
- MRS. JANICE MEIKLE HOUSER, *Instructor in Modern Languages* (1965)
B.A., Butler University; M.A., Indiana University, 1964.
- JOHN J. HOUSER, *Assistant Professor of Chemistry* (1965)
B.S., Villanova University; Ph.D., Pennsylvania State University, 1964.
- LOWELL HOYT, *Assistant Professor in the Community and Technical College* (1967)
B.A., Bryan College; B.D., Th.M., Grace Theological Seminary; M.S., University of South Carolina, 1964.
- JAMES H. HUBER, *Assistant Professor of Sociology and of Urban Studies* (1970)
B.S., Bloomsburg State College; M.A., University of Delaware; Ph.D., Pennsylvania State University, 1970.

†Leave of Absence, 1971-72.

- JACK D. HUGGINS, *Assistant Professor in the Community and Technical College* (1971)
B.A., Saint Francis College; M.B.A., University of Colorado, 1970.
- JOHN HULL, *Assistant Professor of English* (1946) (1954)
B.A., The University of Akron; M.A., Western Reserve University, 1953.
- MRS. JULIA HULL, *Assistant Professor of English* (1946)
B.A., The University of Akron; M.A., Western Reserve University, 1950.
- J. MICHAEL HUNGERMAN, *Counselor, Testing and Counseling Bureau* (1970)
B.A., College of Steubenville; M.Ed., Ph.D., Kent State University, 1970.
- STEPHEN T. HURTT, *Adviser of Students* (1971)
B.A., Heidelberg College; M.A., Michigan State University, 1970.
- PAUL O. HUSS, *Professor of Electrical Engineering* (January 1941)
B.S.Ed., B.S.E., M.S.Ed., D.Sc., University of Michigan, 1935. P.E., Ohio.
- FARLEY K. HUTCHINS, *Professor of Music* (1967)
M.B., Lawrence Conservatory of Music; S.M.M., S.M.D., School of Sacred Music, Union Theological Seminary, 1951.
- JAMES E. INMAN, *Assistant Professor of Business Law* (1966)
B.A., Baldwin-Wallace College; M.B.A., The Ohio State University; J.D., The University of Akron, 1971.
- MRS. SYS S. INMAN, *Instructor in Modern Languages* (1968)
B.A., Baldwin-Wallace College; M.A., The University of Akron, 1968.
- RICHARD JACKOBOICE, *Assistant Professor of Music and Director of the University Band* (July 1967)
B.M., M.M., University of Michigan, 1965.
- DALE L. JACKSON, *Professor of Biology* (1961)
B.S., Ph.D., University of Durham (England), 1959.
- DONALD M. JACKSON, *Assistant Professor of Marketing* (1969)
B.A., M.B.A., Cornell University, 1951.
- JIM L. JACKSON, *Assistant Professor of Geology* (1967)
B.S., Kent State University; M.S., Western Reserve University; Ph.D., The Ohio State University, 1970.
- SHARON KATHLEEN JACOBS, *Associate Director of Residence Halls* (August 1968)
B.A., University of California at Santa Barbara; M.S., Indiana University, 1968.
- ALLVAR JACOBSON, *Professor of Sociology* (1970)
B.A., M.A., Miami University; Ph.D., The Ohio State University, 1950.
- DONALD M. JENKINS, *Associate Professor of Law* (1965)
B.A., J.D., The University of Akron, 1964.
- JAMES E. JENNINGS, *Instructor in Classics* (1970)
B.A., M.A., Wheaton College, 1963.
- TIMOTHY C. JOCHIM, *Instructor in the Community and Technical College* (1970)
B.A., M.A., University of North Dakota, 1970.
- DUDLEY C. JOHNSON, JR., *Director of Counseling and Advising* (July 1961)
B.S., University of Vermont; M.S.Ed., University of Southern California, 1961.
- MRS. GERTRUDE JOHNSON, *Associate Professor of Law and Law Librarian* (1964)
B.A., J.D., Case Western Reserve University; M.L.S., Kent State University, 1965.
- WENDELL A. JOHNSON, *Instructor in the Community and Technical College* (1969)
A.A., North Park Junior College; B.S., University of Minnesota; M.Ed., Kent State University, 1968.
- MARY JEAN JOHNSTON, *Assistant Professor in the Community and Technical College* (1965)
B.S., Carnegie Institute of Technology; M.Ed., University of Pittsburgh, 1960.
- MIRIAM ANN JOLIAT, *Head of Acquisitions and Instructor in Bibliography* (1970)
B.S.E., St. John College; M.S., Case Western Reserve University, 1969.
- DAVID L. JONES, *Associate Professor of English* (February 1961)
B.A., M.A., Ph.D., Harvard University, 1958.
- ROBERT H. JONES, *Professor of History* (1971)
B.A., M.A., Ph.D., University of Illinois, 1957.
- MRS. PHYLLIS HARPER JORDAN, *Adviser of Students* (1970)
B.S., M.Ed., Kent State University, 1970.
- MORRIS KALMON, *Adjunct Professor of Speech Pathology and Audiology* (1968)
B.S., The University of Akron; M.D., The Ohio State University, 1931.
- SEBASTIAN KANAKKANATT, *Assistant Professor in the Community and Technical College* (1965)
B.S., Madras University (India); M.S., Ph.D., The University of Akron, 1969.
- ARTHUR D. KARLIN, *Associate Professor of Accounting* (1971)
B.S., New York University; M.S., Ph.D., University of Illinois, 1964.
- CHAMAN N. KASHKARI, *Assistant Professor of Electrical Engineering* (1969)
B.A., Jammu Kashmir University; B.E., Rajasthan University; M.S.E., University of Detroit; Ph.D., University of Michigan, 1969.
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- COLITA E. KAVALIUNAS, *Instructor in Modern Languages* (1970)
B.A., M.A., Western Reserve University, 1966.
- AZMI KAYA, *Assistant Professor of Mechanical Engineering* (1970)
Diploma, Technical College for Men (Turkey); M.S.M.E., University of Wisconsin; M.S.E.E., Ph.D., University of Minnesota, 1970.
- ORVILLE R. KEISTER, JR., *Professor of Accounting* (1966)
B.S., M.B.A., The Ohio State University; Ph.D., University of Illinois, 1964.
- ROGER F. KELLER, JR., *Professor of Biology and Chairman of the Division of Natural Sciences* (1954)
B.S., University of New Hampshire; Ph.D., Michigan State University, 1953.
- FRANK V. KELLEY, *Assistant Dean of the Evening College* (July 1968)
B.S., Malone College; M.S., The University of Akron, 1968.
- BERNARD V. KELLY, *Instructor in English* (1970)
B.A., Cleveland State University; M.A., Case Western Reserve University, 1970.
- MRS. KATHLEEN KELLY, *Instructor in English* (1970)
B.A., Cleveland State University; M.A., Case Western Reserve University, 1970.
- FRANK J. KENDRICK, *Associate Professor of Urban Studies and Associate Professor of Political Science* (1971)
B.A., Grinnell College; M.A., Ph.D., University of Chicago, 1962.
- HERBERT S. KENNEDY, *Assistant Professor in the Community and Technical College* (1965)
B.S.A.E., University of Washington; Diploma in Aeronautics, College of Aeronautics (United Kingdom); M.S., United States Naval Postgraduate School, 1957.
- JOSEPH P. KENNEDY, *Professor of Polymer Science, Professor of Chemistry and Research Associate in the Institute of Polymer Science* (1970)
B.S., University of Budapest; M.B.A., Rutgers University; Ph.D., University of Vienna, 1954.
- WILLIAM H. KILLEN, *Instructor in Physical Education* (March 1970)
B.S., West Chester State College; M.A., University of North Carolina, 1964.
- JAMES C. KING, *Associate Professor of Education* (1969)
B.A., Mount Union College; M.Ed., Kent State University; Ed.D., Indiana University, 1969.
- MRS. LILLIAN KING, *Assistant Professor of Education* (1966)
B.S., The University of Akron; M.Ed., Kent State University, 1965.
- MRS. SUSAN WALLER KINNAMON, *Adviser of Students* (1969)
B.S., M.S., Indiana University, 1969.
- KEITH A. KLAFFEHN, *Assistant Professor of Management* (1970)
B.S., M.S., Clarkson College of Technology, 1968.
- MAXWELL I. KLAYMAN, *Professor of Marketing* (1970)
B.S., University of Massachusetts; M.S., Iowa State University; M.A., Ph.D., Harvard University, 1968.
- DENNIS A. KLEIDON, *Instructor in Art* (1969)
B.F.A., Illinois Wesleyan University; M.S., Illinois State University, 1967.
- MRS. ROSE A. KLEIDON, *Instructor in the Community and Technical College* (1970)
B.A., Illinois Wesleyan University; M.A., University of Illinois, 1968.
- MICHAEL KLEIN, *Computer Scientist in the Computer Center* (1964)
B.S., M.S., The University of Akron, 1968.
- GEORGE W. KNEPPER, *Professor of History* (August 1954)
B.A., The University of Akron; M.A., Ph.D., University of Michigan, 1954.
- NANCY A. KNIGHT, *Assistant Professor of Bibliography and Fine and Applied Arts Subject Librarian* (1967)
B.A., University of Idaho; M.S.L.S., Louisiana State University, 1966.
- MRS. KATHRYN GREEN KOCH, *Instructor in Home Economics* (1970)
B.S.Ed., M.S., Kent State University, 1970.
- WILLIAM G. KOFRON, *Associate Professor of Chemistry* (1965)
B.S. University of Notre Dame; Ph.D., University of Rochester, 1961.
- ALBERT KORSOK, *Associate Professor of Geography* (1968)
B.S., Case Western Reserve University; M.A., Northwestern University; Ph.D., University of Illinois, 1960.
- GERALD F. KOSER, *Assistant Professor of Chemistry* (1969)
B.S., The Ohio State University; M.S., Ph.D., University of Illinois, 1968.
- JANKO P. KOVACEVICH, *Assistant Professor of Education* (1969)
B.S., Baylor University; M.A., The University of Akron; Ph.D., Case Western Reserve University, 1970.
- †ROBERT KOVACH, *Professor of Law* (1963)
B.B.A., J.D., Case Western Reserve University; LL.M., New York University, 1957.
- MRS. KATHLEEN M. KRACOE, *University Artist* (1966)
B.F.A., Ohio University, 1962.
- KEVIN SCOTT KREJCI, *Instructor in Art* (1968)
B.A., Ohio Wesleyan University; M.F.A., The Ohio State University, 1968.

† Leave of absence, 1971-72.

- PETER R. KRESSLER, *Assistant Professor of International Business* (1969)
B.S.F.S., Georgetown University; M.A., Ph.D., University of Pennsylvania, 1968.
- ALAN F. KRIVIS, *Associate Professor of Chemistry* (1966)
B.A., Columbia College; M.A., Columbia University; M.S.Ch., Ph.D., University of Michigan, 1958.
- LAWRENCE C. KRUEGER, *Assistant Director of Residence Halls* (1971)
B.S., Wisconsin State University; M.S., Indiana University, 1971.
- WARREN F. KUEHL, *Professor of History and Director of the Center for Peace Studies* (1964)
B.A., Rollins College; M.A., Ph.D., Northwestern University, 1954.
- ERNEST A. KUEHLS, *Assistant Professor of Mathematics* (1965)
B.S.Ed., M.Ed., Miami University, 1955.
- MILTON L. KULT, *Associate Professor of Electrical Engineering* (June 1954)
B.S.E.E., M.S., University of Illinois, 1952; P.E. Illinois, Ohio.
- HENRY A. KUSKA, *Assistant Professor of Chemistry* (1965)
B.A., Cornell College (Iowa); Ph.D., Michigan State University, 1965.
- ROGER A. KVAM, *Assistant Professor of Political Science* (1964)
B.A., Wheaton College; B.D., Princeton Theological Seminary; M.A., Harvard University, 1964.
- DAVID E. KYVIG, *Assistant Professor of History* (1971)
B.A., Kalamazoo College; Ph.D., Northwestern University, 1971.
- JOHN A. LAHOSKI, *Instructor in Physical Education* (July 1966)
B.S.Ed., M.S.Ed., The University of Akron, 1969.
- JOHN A. LAGUARDIA, *Assistant Director of Alumni Relations* (1970)
B.S., The University of Akron, 1970.
- †WILLIAM LAMONT, *Assistant Director of Placement* (August 1968)
B.S., M.Ed., Kent State University, 1968.
- 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.
- ROBERT W. LARSON, *Director of Student Financial Aids* (August 1958)
B.S.B.A., The University of Akron, 1946.
- DOROTHY LAUBACHER, *Associate Professor of Home Economics* (1950)
B.S., M.A., The Ohio State University, 1941.
- NADA LEDINKO, *Professor of Biology* (1971)
B.S., The Ohio State University; M.S., Pennsylvania State University; Ph.D., Yale University, 1952.
- FRED R. LEFFLER, *Assistant Professor of Electrical Engineering* (1970)
B.S.E.E., University of Denver; M.S.E.E., Ph.D., Oregon State University, 1970.
- WALTER D. LEHRMAN, *Instructor in English* (1956)
B.S., M.A., Columbia University, 1953.
- JAMES V. LENA VITT, *Instructor in Art* (1969)
B.F.A., M.F.A., Ohio University, 1969.
- JOHN P. LENCZYK, *Assistant Professor of Chemical Engineering* (1970)
B.S., M.S., Ph.D., State University of New York at Buffalo, 1970.
- E. JAMES LENNON, *Associate Professor of Speech* (1969)
B.A., Anderson College; B.S., Ph.D., University of Wisconsin, 1952.
- JOSEPH R. LENTINI, *Assistant Professor in the Community and Technical College* (1969)
B.A., State College at Bridgewater (Massachusetts), 1966.
- ARNO K. LEPKE, *Professor of Modern Languages and Chairman of the Division of Humanities* (1961)
University of Greifswald (Germany); Ph.D., University of Marburg (Germany), 1947.
- JOSEPH F. LESTINGI, *Associate Professor of Civil Engineering* (1967)
B.C.E., Manhattan College; M.S., Virginia Polytechnic Institute; Ph.D., Yale University, 1966. P.E., Ohio, New Jersey.
- GERALD H. LEVIN, *Professor of English* (1960)
B.A., Vanderbilt University; M.A., University of Chicago; Ph.D., University of Michigan, 1956.
- JEFFREY E. LEWIS, *Assistant Professor of Law* (1970)
B.A., J.D., Duke University, 1969.
- RUTH B. LEWIS, *Associate Professor of Speech* (1966)
B.S., Wittenberg University; M.A., Ph.D., The Ohio State University, 1961.
- MARTHA CATHERINE LEYDEN, *Assistant Professor of Education* (1971)
B.S., St. John College; M.Ed., Kent State University; Ed.D., Columbia University, 1971.

† Leave of absence, 1971-72.

- ALVIN H. LIEBERMAN, *Instructor in Accounting* (1969)
B.S., J.D., M.B.A., The University of Akron, 1969.
- CARL LIEBERMAN, *Assistant Professor of Political Science* (1967)
B.A., Temple University; M.A., Ph.D., University of Pittsburgh, 1969.
- MRS. MARTHA LIERHAUS, *Assistant Professor of Mathematics* (January 1967)
B.A., B.S.Ed., M.A., Kent State University, 1963.
- HUGO LIJERON, *Associate Professor of Modern Languages* (1963)
B.A., LaSalle University (Bolivia); LL.D., Universidad San Francisco Xavier de Chuquisaca (Bolivia); M.A., Middlebury College; Ph.D., University of Madrid (Spain), 1965.
- MRS. JOY S. LINDBECK, *Associate Professor of Education* (1967)
B.S., Carnegie Institute of Technology; M.S.Ch. M.Ed., D.Ed., University of Pittsburgh, 1964.
- MARIANNE R. LIPPS, *Instructor in Adult Nursing* (1971)
B.S., The University of Akron, 1970.
- SHELDON B. LISS, *Professor of History* (1967)
B.A., American University; M.A., Duquesne University; Ph.D., American University, 1964.
- MICHAEL P. LITKA, *Associate Professor of Business Law* (1971)
B.A., Grinnell College; M.A., J.D., University of Iowa, 1958.
- EDWIN L. LIVELY, *Dean of Graduate Studies and Professor of Sociology* (1963)
B.A.Ed., Fairmont State College (W. Va.); M.A., Ph.D., The Ohio State University, 1959.
- MRS. HELEN P. LIVINGSTON, *Head of Serials and Instructor in Bibliography* (1970)
B.A., Bishop's University; M.S., Simmons College, 1954.
- MRS. KRIEMHILDE I. R. LIVINGSTON, *Instructor in Modern Languages* (1968)
Diploma, University of Munich; Diploma, Bavarian Interpreter School, 1947.
- MRS. MARIAN LOTT, *Assistant Professor of Music* (1967)
B.M., M.M., Chicago Musical College, 1951.
- DAVID J. LOUSCHER, *Instructor in Political Science* (1970)
B.A., Morningside College; M.A., American University; M.A., University of Wisconsin, 1968.
- RICHARD B. LOWRY, *Instructor in Physical Education* (1971)
B.S., Baldwin-Wallace College; M.Ed., Kent State University, 1960.
- LLOYD B. LUEPTOW, *Associate Professor of Sociology* (1967)
B.S., M.S., Ph.D., University of Wisconsin, 1964.
- JOSEPH E. LUKACIK, *Director of Staff Personnel*, (1969)
B.S., The University of Akron, 1949.
- WILLIAM D. LYON, *Assistant Professor of Chemistry* (1967)
B.S. Chem., University of Illinois; Ph.D., University of Wisconsin, 1967.
- LAURENCE J. C. MA, *Assistant Professor of Geography* (1971)
B.A., National Taiwan University; M.A.L.S., George Peabody College; M.A., Kent State University, 1968.
- MRS. MARY JO MACCRACKEN, *Instructor in Physical Education* (1968)
B.A., College of Wooster; M.A., The University of Akron, 1969.
- MRS. ALICE MACDONALD, *Instructor in English* (1969)
B.A., M.A., The University of Akron, 1969.
- JOHN A. MACDONALD, *Professor of Music* (1959)
B.M.Ed., Oberlin College; M.A., Musicology; Ph.D., University of Michigan, 1964.
- KENNETH E. MACDONALD, *Director of Sports Information (January 1965)*
B.S., The University of Akron, 1963.
- MRS. BARBARA J. MACGREGOR, *Instructor in Music* (1970)
B.M., The University of Akron; M.M., Cleveland Institute of Music, 1967.
- IAN R. MACGREGOR, *Vice President for Planning and Professor of Chemistry* (1961)
B.A., M.S., Ph.D., University of Cincinnati, 1945.
- LAZARUS W. MACIOR, *Associate Professor of Biology* (1967)
B.A., M.A., Columbia University; Ph.D., University of Wisconsin, 1959.
- THEODORE MACKIW, *Associate Professor of Modern Languages* (1962)
Ph.D., University of Frankfurt (Germany), 1951.
- MRS. JUDITH HELEN MAFFETT, *Instructor in Physical Education* (1968)
B.S., M.Ed., Kent State University, 1962.
- EUGENE MAIO, *Associate Professor of Modern Languages* (1970)
B.A., Ph.L., M.A., S.T.L., St. Louis University; Ph.D., University of California at Los Angeles, 1967.
- COLEMAN J. MAJOR, *Dean of the College of Engineering and Professor of Chemical Engineering* (1964)
B.S., University of Illinois; Ph.D., Cornell University, 1941. P.E., Ohio, California.
- YOGENDRA K. MALIK, *Associate Professor of Political Science* (1969)
B.A., M.A., Punjab University; M.A., Ph.D., University of Florida, 1966.

- TED A. MALLO, *Adviser of Students and Coordinator for Student Conduct Code* (1969)
B.S., M.S., The University of Akron, 1968.
- ANDREW MALUKE, *Associate Professor of Physical Education* (February 1946)
B.S.Ed., The University of Akron; M.A., Kent State University, 1949.
- EUGENE R. MANCINI, *Assistant Professor of Music* (1967)
B.M., M.M., Cleveland Institute of Music, 1953.
- GEORGE P. MANOS, *Associate Professor of Civil Engineering* (1957)
B.Ch.E., The Ohio State University; M.S.E., West Virginia University; Ph.D., University of Cincinnati, 1971. P.E., Ohio.
- PHILIP S. MANTHEY, *Section Leader, Management Science and Systems in Computer Center* (November 1965)
B.A., Kent State University; M.B.A., The University of Akron, 1960.
- JESSE F. MARQUETT, *Assistant Professor of Political Science* (1971)
B.A., M.A., Ph.D., University of Florida, 1971.
- THEODORE MARRA, *Instructor in Mathematics* (1969)
B.S., M.S., The University of Akron, 1970.
- RICHARD C. MARSHALL, *Associate Professor of Law* (1959)
LL.B., Akron Law School, 1954.
- MRS. ROBERTA B. MARTIN, *Adviser of Students* (July 1968)
B.S., M.A., The Ohio State University, 1968.
- MICHAEL D. MARTINOVICH, *Instructor in the Community and Technical College* (1970)
A.A., Long Beach City College; B.S., California State College at Long Beach; M.A., Northern Arizona University, 1970.
- JOHN P. MARWITT, *Assistant Professor of Anthropology* (1971)
B.S., Florida State University; Ph.D., University of Utah, 1971.
- KENNETH E. MAST, *Instructor in Marketing* (1970)
B.A., M.B.A., The Ohio State University, 1960.
- P. RAJ MATHUR, *Instructor in Economics* (1969)
B.S., Rajasthan University; I.C.R.A., New Delhi; M.Econ., North Carolina State University, 1967.
- WILLIAM MAVRIDES, *Assistant Professor of Education and Director of Instructional Media* (July 1960)
B.A., The University of Akron; M.A., Peabody College for Teachers, 1958.
- THOMAS H. MAXWELL, *Assistant Professor of Education* (1969)
B.A., College of the Holy Cross; M.Ed., Ed.D., University of Rochester, 1969.
- JOSEPH T. MAYHAN, *Associate Professor of Electrical Engineering* (1969)
B.S.E.E.; Purdue University; M.S.E.E., Ph.D., The Ohio State University, 1967.
- MRS. ALICE MAYOR, *Instructor in Chemistry* (1967)
B.S., Eastern Michigan University; M.S., Purdue University, 1947.
- MR. CHARLES McDONALD, *Assistant Professor of Music* (1971)
Julliard School of Music, Cleveland Institute of Music.
- WILLIAM MCGUCKEN, *Assistant Professor of History* (1968)
B.S., M.A., Queens University, Belfast (N. Ireland); Ph. D., The University of Pennsylvania, 1968.
- ALLAN J. McINTYRE, *Associate Professor of Modern Languages* (1967) (1969)
B.A., Williams College; M.A., Columbia University; Ph.D., University of Pennsylvania, 1967.
- DONALD McINTYRE, *Professor of Chemistry, Professor of Polymer Science and Research Associate in the Institute of Polymer Science* (1966)
B.A., Lafayette College; Ph.D., Cornell University, 1954.
- JAMES McLAIN, *Associate Professor of Economics* (1946)
B.A., The University of Akron; M.A., Western Reserve University; Ph.D., The Ohio State University, 1959.
- WILLIAM McMAHON, *Assistant 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, *Associate 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, *Assistant Professor of Management* (1971)
B.S., Cleveland State University; Ph.D., Case Western Reserve University, 1970.

- BERNHARD A. MEINECKE, *Associate Professor of Mechanical Engineering, Associate Professor of Polymer Science and Research Associate in the Institute of Polymer Science* (October 1963)
D.Eng., Braunschweig Institute of Technology (Germany), 1960.
- F. MERCER, *Assistant Professor in the Community and Technical College* (1965)
B.A., Ohio University; M.A., Western Reserve University, 1958.
- ROBERT P. MERRIX, *Assistant Professor of English* (1966)
B.A., M.A., Butler University; Ph.D., University of Cincinnati, 1966.
- MRS. RUTH MESSENGER, *Instructor in English* (1968)
B.A., Wellesley College; M.A., Western Reserve University; M.A., The University of Akron, 1968.
- DONALD J. METZGER, *Assistant Professor of Sociology* (1968)
B.A., Youngstown University; Ph.D., University of Pittsburgh, 1968.
- DENNIS MEYER, *Instructor in Art* (1969)
B.A., St. Norbert College; M.F.A., Ohio University, 1969.
- MRS. ANN LEE MILLER, *Adviser of Students* (April 1971)
B.A., Hanover College; M.A., The University of Akron, 1970.
- ARTHUR B. MILLER, *Associate Professor of Speech* (1970)
B.A., B.Ed., Whitworth College; M.A., Ph.D., University of Oregon, 1964.
- WILLIAM I. MILLER, *Assistant Professor of Modern Languages* (1970)
B.A., Wittenberg University; Ph.D., University of Florida, 1970.
- JAMES RICHARD MINGLE, *Assistant Director of Admissions*, (July 1971)
B.A., The University of Akron, 1967.
- RAJA MISHRA, *Visiting Professor of Biomedical-Engineering* (1971)
M.B.B.S., UNIVERSITY: D.Sc., Universite de Montreal, 1959.
- ALOYSIUS E. MEPROFESSOR of Secretarial Science and Chairman, Division of Business and Office Technology in the Community and Technical College (1962)
B.S., Central Michigan University; M.S., Ed.D., University of Michigan, 1962.
- JOHN B. MONROE, *Assistant Professor in the Community and Technical College* (1966)
B.A., College of Wooster; M.A., Rutgers University, 1963.
- MARVIN M. MOORE, *Professor of Law* (July 1960)
B.A., Wayne State University; LL.B., LL.M., J.S.D., Duke University, 1968.
- 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.
- †RICHARD MOSTARDI, *Assistant Professor of Biology* (1967)
B.S.Ed., M.Ed., Kent State University; Ph.D., The Ohio State University, 1968.
- EARL J. MOTZ, *Assistant Professor of History* (1971)
B.S.Ed., M.A., Ohio University; Ph.D., Michigan State University, 1971.
- JUDITH MOWERY, *Assistant Professor of Bibliography and Humanities Subject Librarian* (May 1967)
B.A., Ohio University; M.S.L.S., Western Reserve University, 1965.
- FREDERICK W. MOYER, *Professor of Finance* (March 1970)
B.S., M.A., Ph.D., The Ohio State University, 1949.
- ROBERT J. MRAVETZ, *Assistant Professor of Physical Education* (1970)
B.S.Ed., Miami University; M.Ed., Ohio University; Ph.D., The Ohio State University, 1970.
- BERNARD J. MUDROCK, *Graduate Records Coordinator* (1791)
B.A., B.S., M.S., The Ohio State University, 1957.
- JOHN MULHAUSER, *Assistant Professor of Geography* (1966)
B.A., M.A., Kent State University, 1961.
- FRED L. MULLEN, *Assistant Professor in the Community and Technical College* (1967)
B.S.E.E., Case Institute of Technology; M.S.E., The University of Akron, 1966. P.E., Ohio.
- JOSEPH C. MULLIN, *Instructor in the Community and Technical College* (1970)
B.S., Delta State College, 1951.
- MRS. RUTH C. MURRAY, *Rubber Division Literature Chemist* (July 1970)
B.S., Chatham College, 1944.
- JEROME MUSHKAT, *Associate Professor of History* (1962)
B.A., M.A., D.S.S., Syracuse University, 1964.
- MRS. LOIS MYERS, *Assistant Professor of Bibliography and Assistant Librarian for Public Services* (1946)
B.A., Wittenberg University; B.S.L.S., Carnegie Institute of Technology, 1939.
- ROBERT H. MYERS, *Associate Professor of Education* (1966)
B.S.Ed., M.A., Ph.D., The Ohio State University, 1964.

† Leave of absence, 1971-72.

- ESTELLE B. NAES, *Dean of the College of Nursing and Professor of Nursing* (June 1966)
B.S.N., M.S.N.E., Ph.D., Saint Louis University, 1962. R.N.
- ADNAN NAJJAR, *Assistant Professor of Management* (January 1969)
B.A., Damascus University (Syria); M.B.A., Ph.D., The Ohio State University, 1966.
- THOMAS NASH, *Assistant Professor of Geography* (1967)
B.A., M.A., Kent State University, 1963.
- RICHARD NEAL, *Deputy Equal Employment Opportunity Officer* (March 1970)
B.S., The University of Akron, 1961.
- DANIEL NELSON, *Associate Professor of History* (1970)
B.A., Ohio Wesleyan University; M.A., The Ohio State University; Ph.D., University of Wisconsin, 1967.
- 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.
- DANIEL M. NEWLAND, *Adviser of Students* (1971)
B.A., Coe College (Iowa); M.S., Indiana University, 1971.
- ISADORE NEWMAN, *Assistant Professor of Education* (1971)
B.A., University of Miami; M.A., New School for Social Research (New York); Ph.D., Southern Illinois University, 1971.
- SAMUEL C. NEWMAN, *Professor of Sociology* (1951)
B.A., University of Pittsburgh; M.A., Oberlin College; Ph.D., The Ohio State University, 1939.
- DAVID L. NICHOLS, *Assistant Professor of Accounting* (1971)
B.B.A., M.B.A., University of Houston, 1957.
- ALLEN G. NOBLE, *Professor of Geography and Director of International Studies* (1964)
B.A., Syracuse University; M.A., University of Maryland; Ph.D., University of Illinois, 1957.
- JUDITH A. NOBLE, *Assistant Professor of Education* (1970)
B.S., M.A., Central Michigan University; Ph.D., Michigan State University, 1971.
- SUE M. NOEL, *Instructor in the Community and Technical College* (1970)
B.A., Clarke College, 1968.
- RICHARD F. NOKES, *Associate Professor of Biology* (January 1962)
B.S., D.V.M., Michigan State University, 1958.
- WALLACE NOLIN, *Associate Professor of Music* (1969)
B.S., Muskingum College; M.M.Ed., Kent State University; Ph.D., The Ohio State University, 1969.
- DOROTHY M. NUNN, *Associate Professor of Biology* (1967)
B.S., Med. Tech., Ph.D., University of Cincinnati, 1962.
- OLIVER OCASEK, *Associate Professor of Education* (January 1961)
B.S.Ed., M.A., Kent State University, 1950.
- NORMAN W. ODELL, *Assistant Adviser to International Students* (1970)
B.A., Western Illinois University, 1967.
- ROBERT A. OETJEN, *Dean of the Buchtel College of Arts and Sciences and Professor of Physics* (1970)
B.A., Asbury College; M.S., Ph.D., University of Michigan, 1942.
- JOHN H. OLIVE, *Associate Professor of Biology* (1970)
B.S., The Ohio State University; M.A., Ph.D., Kent State University, 1964.
- MRS. MARY O'NEIL, *Director of University News Service* (February 1971)
B.A., University of Nebraska, 1942.
- MICHAEL T. ORAVECZ, *Instructor in the Community and Technical College* (1968)
B.A.Ed., M.A.Ed., The University of Akron, 1969.
- 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., Western Reserve University, 1963.
- R. THOMAS OST, *Assistant Registrar* (June 1967)
B.A., The University of Akron, 1960.
- JOHN W. OWEN, *Director of Admissions* (June 1965)
B.A., Johns Hopkins University, 1965.
- JOSEPH PADOVAN, *Assistant Professor of Mechanical Engineering* (1970)
B.S.M.E., M.S.M.E., Ph.D., Polytechnic Institute of Brooklyn, 1969.
- DAVID A. PAGNARD, *Publications Editor* (October 1970)
B.A., The University of Akron, 1968.
- R. DOUGLAS PAIGE, *Assistant Professor of Philosophy* (1970)
B.A., University of South Carolina; M.A., University of Texas; Ph.D., University of Nebraska; J.D., The University of Akron, 1967.
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- RICHARD P. PALMIERI, *Instructor in Geography* (1971)
B.S.Ed., State College at Boston; M.A., University of Texas, 1970.
- MICHAEL J. PANTALEANO, *Assistant to Director of Institutional Research* (1969)
B.B.A., M.B.A., Kent State University, 1969.
- MRS. PHYLLIS PAUL, *Instructor in English* (July 1955)
B.A., The University of Akron; M.A., Western Reserve University, 1937.
- MRS. D'ORSAY PEARSON, *Assistant Professor of English* (1966)
B.A., University of North Carolina; M.A., University of Florida; Ph.D., Kent State University, 1969.
- DOUGLAS G. PENNELL, *Assistant Professor of Civil Engineering* (1971)
B.S.C.E., M.S.C.E., Ph.D., University of Alberta (Canada), 1969.
- JON ROBERT PESKE, *Instructor in the Community and Technical College* (1969)
B.A., M.A., The University of Akron, 1969.
- W. M. PETRY, *Dean of the Community and Technical College and Professor of Mechanical Engineering* (1946)
B.S.M.E., University of Missouri; M.S.M.E., Case Institute of Technology, 1951. P.E., Ohio.
- MRS. ISOBEL L. PFEIFFER, *Associate Professor of Education* (1966)
B.A., Manchester College (Indiana); M.S., Indiana University; Ph.D., Kent State University, 1966.
- 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.
- MRS. IRJA PIIRMA, *Assistant Professor of Polymer Science and Research Associate in the Institute of Polymer Science* (1963)
Diploma in Chemistry, Technische Hochschule of Darmstadt (Germany); M.S., Ph.D., The University of Akron, 1960.
- HARRY T. PINNICK, *Associate Professor of Physics* (1964)
B.A., Southwestern College (Kansas); Ph.D., University of Buffalo, 1955.
- JOHN PIZOR, *Assistant Professor in the Community and Technical College* (1966)
B.S., Grove City College; M.Ed., University of Pittsburgh, 1946.
- ARTHUR R. POLLOCK, JR., *Assistant Professor in the Community and Technical College* (1967)
B.S.Ed., Indiana University of Pennsylvania; M.A., Case Western Reserve University, 1968.
- MARGARET POLOMA, *Assistant Professor of Sociology* (1970)
B.A., Notre Dame College of Ohio; M.A., Ph.D., Case Western Reserve University, 1970.
- LAWRENCE E. POPE, *Assistant Professor of Law* (1969)
B.A., J.D., Drake University; LL.M., New York University, (1969).
- JOHN A. POPPLESTONE, *Professor of Psychology and Director of the Archives of the History of American Psychology and Chairman of the Division of Social Sciences* (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* (1959)
B.A., Eastern Illinois State College; M.A., University of Illinois; Ph.D., University of North Carolina, 1959.
- JOHN S. POTTS, *Assistant Professor of Electrical Engineering* (1969)
B.S., Chico State College; M.S., San Jose State College; Ph.D., The University of New Mexico, 1969.
- EFTHIMIOS POURNARAKIS, *Associate Professor of Economics* (1967)
B.A., Athens Graduate School of Economics and Business Science (Greece); M.A., Ph.D., University of Kansas, 1967.
- GRACE L. POWELL, *Assistant Professor of Geography* (1966)
B.A., M.S., University of Alberta (Canada); Ph.D., Pennsylvania State University, 1968.
- MRS. MINNIE C. PRITCHARD, *Lecturer in the Community and Technical College* (1971)
B.S.C.E., The University of Akron, 1955.
- GEORGE E. PROUGH, *Instructor in Marketing* (1968)
B.A., The University of Akron; M.A., Michigan State University, 1968.
- GERALD F. PYLE, *Assistant Professor of Geography* (1970)
B.A., Kent State University; M.A., Ph.D., University of Chicago, 1970.
- MALCOLM R. RAILEY, *Associate Professor of Electrical Engineering* (1970)
B.S.E.E., M.S.E.E., Ph.D.E.E., University of Texas 1970. P.E., Texas.
- ALBERT RAKAS, *Associate Professor of Law and Director of Clinical Training, Coordinator of the Appellate Legal Aid Office* (July 1971)
B.A., University of Michigan; B.S.L., St. Paul's College; J.D., John Marshall Law School, 1960.
- JOHN H. RAMEY, *Associate Professor of Sociology* (1969)
B.A., M.A.S.A., The Ohio State University, 1950. A.C.S.W., C.S.W. (Illinois).
- GEORGE E. RAYMER, *Director of Radio and Television Information* (August 1961)
B.A., Kent State University; B.A.Ed., M.A.Ed., The University of Akron, 1968.
- MRS. DONNA J. RECTOR, *Accountant* (1969)
B.S.B.A., Kent State University, 1962.

- THOMAS D. REED, *Instructor in Physical Education* (March 1969)
B.S., Miami University, 1967.
- ELMER M. REIGHARD, *Production Manager of Instructional Television* (June 1967)
B.A., The University of Akron, 1948.
- HOWARD S. REINMUTH, JR., *Associate Professor of History* (1966)
B.A., M.A., Ph.D., University of Minnesota, 1958.
- JERRY L. RHODEBACK, *Assistant Registrar* (May 1970)
B.A., Kent State University, 1967.
- DICK I. RICH, *Associate Professor of Education and Director of Graduate Studies in Education* (1965)
B.A., Otterbein College; M.Ed., Kent State University; Ed.D., Columbia University, Teachers College, 1961.
- VINCENT A. RICH, *Assistant Director of the Gardner Student Center* (1969)
B.S., The University of Akron, 1968.
- ALVIN M. RICHARDS, JR., *Professor of Civil Engineering* (1949)
B.C.E., The University of Akron; M.S., Harvard University; Ph.D., University of Cincinnati, 1968. P.E., Ohio.
- JAMES F. RICHARDSON, *Associate Professor of History and Associate Professor of Urban Studies* (1967)
B.A., Iona College; Ph.D., New York University, 1961.
- EUGENE F. RIEBLING, *Associate Professor of Chemistry and of Polymer Science and Research Associate in the Institute of Polymer Science* (June 1969)
B.S., Rutgers University; M.S., University of New Hampshire; Ph.D., Rutgers University, 1961.
- DAVID C. RIEDE, *Professor of History* (1955)
B.A., M.A., Ph.D., State University of Iowa, 1957.
- MABEL RIEDINGER, *Distinguished Professor Emeritus of Education* (February 1947)
B.A., Mount Union College; M.A., University of Chicago; Ed.D., Columbia University, Teachers College, 1946; L.H.D., Mount Union College, 1965.
- EDWARD J. RIEGLER, *Assistant Director of the Student Center* (July 1968)
B.A., M.A.Ed., The University of Akron, 1969.
- 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, *Professor of Chemical Engineering and Research Associate in the Institute of Polymer Science* (1966)
B.S.Ch.E., Washington University; M.S., Ph.D., State University of Iowa, 1962.
- MRS. RUTH SEMELS ROBERTS, *Assistant Professor of Education* (1971)
B.A., Hunter College; M.Ed., Kent State University, 1961.
- DAVID J. ROBINSON, *Instructor in the Community and Technical College* (1970)
B.S.E.E., The University of Akron; M.S.E., Case Institute of Technology, 1967.
- JAMES W. ROBINSON, *Professor of Economics* (July 1971)
B.A., Johns Hopkins University; Ph.D., Duke University, 1967.
- LOUIS D. RODABAUGH, *Associate Professor of Mathematics* (1964)
B.A., Miami University; M.A., Ph.D., The Ohio State University, 1938.
- MRS. LINDA J. RODDA, *Assistant Professor in the Community and Technical College* (1967)
B.A., M.A., The University of Akron, 1969.
- LOUIS E. ROEMER, *Associate Professor of Electrical Engineering* (1968)
B.S., M.S.E.E., Ph.D., University of Delaware, 1967. P.E., Ohio.
- WILLIAM A. ROGERS, *Associate Professor of Education, and Dean of Summer Sessions and Off-Campus Academic Programs* (1957)
B.A., Ed.M., Ed.D., State University of New York at Buffalo, 1967.
- MRS. MARGARET F. ROGLER, *Assistant Professor of Marketing* (1948)
B.S., University of Nebraska; M.S., University of Denver, 1944.
- PAUL D. ROHRBAUGH, *Assistant Professor of Music* (1971)
B.M., Heidelberg College; M.M., New England Conservatory of Music (Boston); Ph.D., University of Michigan, 1971.
- WILLIAM ROOT, *Associate Professor of Education and Director of Teacher Placement* (1968)
B.S., M.A., Ph.D., The Ohio State University, 1958.
- CHARLES P. ROSE, JR., *Assistant Professor of Law* (January 1972)
A.B., College of William & Mary, J.D., Case Western Reserve University, 1967.
- HENRY ROSENQUIST, *Associate Professor of Psychology* (1965)
B.S., M.A., Columbia University; Ph.D., Tulane University, 1964.
- LOUIS ROSS, *Associate Professor of Mathematics* (February 1946)
B.S., B.A., M.A.Ed., The University of Akron; Ph.D., Western Reserve University, 1955.
- ROBERT C. ROSS, *Editor in the University News Service* (November 1970)
B.A., The Ohio State University, 1968.
- MRS. NANCY ROSSI, *Assistant Professor of Home Economics* (1968)
B.S., M.S., University of Tennessee, 1965.
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- BRUCE ROTHMANN, M.D., *Adjunct Professor of Anatomy* (January 1971)
- MARION ALBERT RUEBEL, *Assistant Professor of Education* (1970)
B.A., M.A., University of Northern Iowa; Ph.D., Iowa State University, 1969.
- MAX M. RULE, *Assistant Professor in the Community and Technical College* (1965)
B.A., M.B.A., University of Maryland, 1963.
- HELEN RYAN, *Instructor in Modern Languages* (1968)
B.A., Ohio Wesleyan University; M.A., Middlebury College, 1967.
- RICHARD W. RYMER, *Counselor, Testing and Counseling Bureau* (August 1970)
B.S., M.A., Kent State University, 1961.
- MICHAEL J. RZASA, *Dean of Research and Professor of Chemical Engineering* (February 1964)
B.E., Yale University; M.S., Ph.D., University of Michigan, 1947. P.E., Ohio, Oklahoma.
- DONALD E. SABATINO, *Director of the Gardner Student Center* (1963)
B.A., M.A.Ed., The University of Akron, 1968.
- ARJAN T. SADHWANI, *Assistant Professor of Accounting* (1970)
B.A., B.Com., M.Com., Bombay University; Ph.D., Michigan State University, 1971.
- CHARLES T. SALEM, *Assistant Professor in the Community and Technical College* (1965)
B.S. in S.S., M.A., John Carroll University, 1965.
- STANLEY A. SAMAD, *Dean of the School of Law and Professor of Law* (1959)
B.A., J.D., University of Cincinnati; LL.M., Case Western Reserve University, 1959; LL.M., J.S.D., New York University, 1968.
- RAY H. SANDEFUR, *Dean of the College of Fine and Applied Arts and Professor of Speech* (1950)
B.A., B.S.Ed., Emporia State Teachers College; M.A., University of Colorado; Ph.D., State University of Iowa, 1950.
- MRS. JO ANN SANDERS, *Assistant Professor of Psychology* (1969)
B.A., University of California; M.A., Ph.D., University of Arizona, 1969.
- RAYMOND E. SANDERS, *Assistant Professor of Psychology* (1969)
B.A., M.A., Ph.D., University of Arizona, 1969.
- EVERETT SANTEE, JR., *Scientific Instruments Technician* (1966)
B.S., West Virginia State College, 1962.
- SIMSEK SARIKELLE, *Assistant Professor of Civil Engineering* (1967)
B.S., Robert College; M.S., Ph.D., West Virginia University, 1966; P.E., Ohio, West Virginia.
- ROBERT S. SARTORIS, *Director of University Publications* (July 1963)
B.S., Purdue University, 1951.
- SUBHASH SAXENA, *Associate Professor of Mathematics* (1968)
B.A., Ramjas College; M.A., Ph.D., University of Delhi (India), 1958.
- BLIN B. SCATTERDAY, *Associate Professor in the Community and Technical College and Division Chairman of Associate Studies* (1964)
B.A., M.A.Ed., The University of Akron, 1963.
- MRS. BEVERLY L. SCHERBA, *Cataloger and Instructor in Bibliography* (August 1970)
B.A., M.A.L.S., University of Wisconsin, 1952.
- ROBERT G. SCHMIDT, *Associate Professor of Sociology* (1967)
B.A., Illinois College; M.A.T., Harvard University; Ph.D., Washington University, 1955.
- DONALD W. SCHMITS, *Assistant Professor of Education* (1970)
B.A., University of Evansville; M.A., Southern Illinois University; Ed.D., Rutgers State University, 1970.
- MRS. JO ANNE SCHMITS, *Counselor in the Testing and Counseling Bureau* (1971)
B.S., Washington University; M.S.Ed., Southern Illinois University; Ph.D., St. Louis University, 1968.
- 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 Institute of Technology, 1964.
- H. PAUL SCHRANK, JR., *Assistant Professor of Bibliography and University Librarian* (January 1965)
B.S., Ohio University; M.S., University of Illinois, 1963.
- FREDERICK M. SCHULTZ, *Assistant Professor of Education* (1969)
B.S., M.S., Ph.D., Indiana University, 1969.
- RONALD D. SCHWARTZ, *Assistant Professor of Management* (1970)
B.A., Case Western Reserve University; M.A., John Carroll University, 1962.
- MRS. JOAN G. SEIFERT, *Assistant Professor of Education* (1967)
B.S., M.Ed., Ph.D., Kent State University, 1967.
- LOUIS E. SEILER, *Assistant Director of Alumni Relations* (October 1970)
B.S.B.A., The University of Akron, 1968.
- MAILOO SELVARATNAM, *Visiting Professor of Chemistry* (1971)
Fulbright grant, September 1971 — June 1972.
- LAWRENCE SEXTON, *Instructor in Speech* (1969)
B.S., Central Michigan University; M.A., Michigan State University, 1963.

†Leave of absence, 1971-72.

- MRS. MARY K. SHAFFER, *Instructor in Nursing* (November 1969)
B.S., The University of Akron, 1951.
- JEFFREY M. SHAMAN, *Assistant Professor of Law* (1971)
B.A., Pennsylvania State University; J.D., University of Southern California, 1967; LL.M., Georgetown University, 1971.
- JAMES SHANAHAN, *Instructor in Economics and Instructor in Urban Studies* (1970)
B.B.S., M.A., West Virginia University, 1967.
- †THOMAS W. SHARKEY, *Professor of Management* (1954)
B.S.C., Ohio University; M.B.A., D.B.A., Indiana University, 1963.
- JAMES C. SHEEHAN, *Assistant Professor of English* (1971)
B.A., Tufts College; M.A., Ph.D., University of Michigan, 1971.
- WALTER ALVIN SHEPPE, *Associate Professor of Biology* (1968)
B.S., College of William and Mary; M.A., Ph.D., University of British Columbia, 1958.
- MRS. ANITA K. SHEW, *Assistant Law Librarian and Cataloger* (June 1967)
B.A., College of Wooster; M.S.L.S., Case Western Reserve University, 1967.
- KARL A. SHILLIFF, *Assistant Professor of Management* (1967)
B.S.Ch.E., Pennsylvania State University; M.B.A., The University of Akron, 1962.
- RICHARD SHIREY, *Assistant Professor of Music* (1967)
B.M., Oberlin College; M.M., University of Illinois, 1965.
- MRS. JUNE SHRIVER, *Instructor in Sociology* (1971)
B.A., M.A., The University of Akron, 1967.
- KENNETH F. SIBILA, *Professor of Electrical Engineering and Director of Electronic Systems Engineering* (February 1940)
B.S.E.E., M.S.E.E., Case Institute of Technology, 1937. P.E., Ohio.
- KENNETH T. SILOAC, *Assistant Professor of Speech* (1971)
B.S., M.Ed., Ph.D., Wayne State University, 1971.
- MRS. MARCIA SIMMONS, *Assistant Professor of Nursing* (1969)
R.N., Trumbull Memorial Hospital School of Nursing; B.S., Youngstown College, M.S., Western Reserve University, 1961.
- ANDREW L. SIMON, *Professor of Civil Engineering* (1965)
C.E. Diploma, Technical University of Budapest; Ph.D., Purdue University, 1962. P.E., Ohio, West Virginia, Indiana.
- DIANE L. SIMONETTI, *Adviser of Students* (July 1970)
B.A., M.A., The University of Akron, 1970.
- 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.
- RAYMOND SLATTERY, JR., *Physical Plant, Manager-Plant Engineer* (February 1971)
B.S., Case Institute of Technology, 1954.
- HOWARD K. SLAUGHTER, *Associate Professor of Speech* (1967)
B.A., University of California; M.A., University of Hawaii; Ph.D., University of Pittsburgh, 1966.
- MRS. SALLY KENNEDY SLOCUM, *Assistant Professor of English* (1966)
B.A., Columbia College; M.A., Ph.D., University of Tennessee, 1968.
- 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.
- EDWARD M. SOLINSKI, *Director of the Computer Center* (November 1969)
B.S., Cleveland State University; M.S., Case Institute of Technology, 1964.
- STEPHEN D. SPANGEHL, *Instructor in English* (1969)
B.A., M.A., New York University, 1966.
- MRS. NORMA L. SPENCER, *Instructor in Education* (1970)
B.S., M.S., The University of Akron, 1970.
- SAMUEL SPINAK, *Assistant Professor of Music* (1968)
Licentiate, King's College in Sussex (England) 1929; Fellowship, Trinity College in London.
- LEON STEIN, *Assistant Professor of Speech* (1971)
B.S., M.A., Wayne State University, 1967.
- RAMON F. STEINEN, *Associate Professor of Education* (1969)
B.A., M.A., Montclair State College; Ph.D., The Ohio State University, 1966.
- JANE M. STEINER, *Assistant Professor in the Community and Technical College* (1968)
B.A., The University of Akron; M.A., Western Reserve University, 1945.
- WILLIAM B. STEIS, *Associate Professor of Speech* (1971)
B.A., University of Notre Dame; M.A., University of Florida; Ph.D., The Ohio State University, 1969.
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- HOWARD L. STEPHENS, *Associate Professor of Chemistry, Associate 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.
- VALLACE STERLING, *Assistant Professor of Speech* (1966)
B.A., M.A., University of Florida; Ph.D., Southern Illinois University, 1966.
- HARVEY L. STERNS, *Assistant Professor of Psychology* (1971)
B.A., Bard College; M.A., State University of New York at Buffalo, 1968.
- WILLIAM J. STEVENS, *Associate Professor of English* (1950)
B.A., M.A., Dalhousie University (Halifax, N.S.); Ph.D., Western Reserve University, 1959.
- BARBARA D. STOODT, *Assistant Professor of Education* (1970)
B.S., Ohio University; M.A., Ph.D., The Ohio State University, 1970.
- WARREN P. STOUTAMIRE, *Associate Professor of Biology* (1966)
B.S., Roanoke College; M.S., University of Oregon; Ph.D., Indiana University, 1954.
- FREDERICK JOHN STURM, *Associate Director of Counseling and Advising Division* (August 1968)
B.A., M.A., The University of Akron, 1968.
- MRS. EILEEN K. STUTZ, *Instructor in Nursing* (1969)
R.N., Milwaukee Hospital School of Nursing; B.S., University of Wisconsin, 1955. R.N.
- PHILIP STUYVESANT, *Assistant Professor of Modern Languages* (1966)
B.A., Thiel College; M.A., Ph.D., Case Western Reserve University, 1970.
- MRS. 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, *Assistant Professor of Education* (1970)
B.S., M.Ed., University of Buffalo; Ed.D., State University of New York at Buffalo, 1966.
- RONALD C. SUICH, *Assistant Professor of Mathematics* (1970)
B.B.A., John Carroll University; M.S., Western Reserve University; Ph.D., Case Western Reserve University, 1968.
- MRS. JOYCE A. SULLIVAN, *Associate Professor of Home Economics* (January 1968)
B.S., M.A., Kent State University, 1963.
- THOMAS SUMNER, *Dean of the General College and Professor of Chemistry* (1950)
B.S., Ph.D., Yale University, 1951.
- LUKE J. SWABB, JR., *Assistant Professor of Speech* (1970)
B.A., Muskingum College; M.A., The Ohio State University, 1964.
- GERARD M. SWEENEY, *Assistant Professor of English* (1971)
B.S., Manhattan College; M.A., New York University, 1966.
- LEONARD SWEET, *Associate Professor of Mathematics* (1959)
B.A., Ed., The University of Akron; M.Ed., Kent State University; Ph.D., Case Western Reserve University, 1970.
- JAMES D. SWITZER, *Assistant Professor in the Community and Technical College* (1965)
B.A., College of Wooster; M.A., Kent State University, 1965.
- MRS. MARTHA SZEP, *Assistant Professor of English* (1970)
Ph.D., Pazmany University; M.L.S., University of Hawaii, 1969.
- GEORGE L. SZOKE, *Assistant Professor of Mathematics* (1963)
B.S.M.E., Polytechnical University of Budapest; M.S.E., The University of Akron, 1963.
- JAMES W. TAGGART, *Assistant Professor in the Community and Technical College* (1969)
B.S., Youngstown State University; M.B.A., Pennsylvania State University, 1968.
- MRS. CATHRYN TALIAFERRO, *Assistant Professor of English* (October 1961)
B.A., The University of Akron; M.A., Radcliffe College, 1940.
- MRS. VIRGINIA J. TAPPENDEN, *Assistant Professor of Home Economics* (1969)
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University, 1962.
- E. BARBARA TAUCCI, *Associate Professor of Mathematics* (1967)
R.N., City Hospital of Akron; B.A., The University of Akron; M.S., Iowa State University; Ph.D., Yale University, 1966.
- HOWARD L. TAYLOR, *Professor of Management* (1963)
B.S., The University of Akron; M.S., Ph.D., Iowa State College, 1958.
- MRS. PATRICIA TAYLOR, *Instructor in Physical Education* (1962)
B.S.Ed., The University of Akron, 1963.
- RONALD TAYLOR, *Associate Professor of Art* (1964)
B.F.A., M.A., The Ohio State University, 1963.
- JAMES W. TEETER, *Associate Professor of Geology* (1965)
B.S., M.S., McMaster University; Ph.D., Rice University, 1966.
- JOHN W. TELESKA, *Program Associate in the Institute for Civic Education* (1961) (1966)
B.A., Mount Union College, 1958.
- STUART M. TERRASS, *Assistant to the Director of Institutional Research* (December 1957)
B.A., B.S., M.A., The University of Akron, 1965.

- ROBERT M. TERRY, *Professor of Sociology* (1971)
B.A., M.A., Ph.D., University of Wisconsin, 1965.
- MRS. HELEN S. THACKABERRY, *Assistant Professor of English* (February 1940)
B.A., M.A., State University of Iowa, 1937.
- ROBERT E. THACKABERRY, *Professor of English* (1938)
B.A., M.A., Ph.D., State University of Iowa, 1937.
- ERNEST R. THACKERAY, *Distinguished Professor of Physics* (1949)
B.A., M.A., University of Saskatchewan (Canada); Ph.D., University of Wisconsin, 1948.
- LINDON C. THOMAS, *Associate Professor of Mechanical Engineering* (1967)
B.S.M.E., Tulsa University; Ph.D., Kansas State University, 1967.
- MRS. BONNIE J. THOMAS-MOORE, *Instructor in the Community and Technical College* (1969)
B.A., M.A., Kent State University; 1969.
- 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.
- RUDOLPH J. TICHY, *University Architect* (May 1967)
B.S., Architecture, Western Reserve University, 1943.
- EILEEN TIEDT, *Assistant Professor of Nursing* (1970)
B.S., Marquette University; M.S., Wayne State University, 1970. R.N.
- 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.
- MRS. ARLENE TOTH, *Instructor in English* (1969)
B.A., M.A., The University of Akron, 1969.
- EVELYN M. TOVEY, *Professor of Nursing* (1950)
B.S.N., M.S.N., Western Reserve University, 1950; R.N., City Hospital of Akron.
- BRUCE A. TRIER, JR., *Administrative Systems Programmer and Project Leader, Computer Center* (February 1971)
B.S., Kent State University, 1967.
- MARY ANN TRIPODI, *Instructor in Physical Education* (1971)
B.S., M.Ed., Kent State University, 1970.
- GEORGE WILLIAM TRIVOLI, *Associate Professor of Finance* (1970)
B.S., Grove City College; M.B.A., Duquesne University; Ph.D., University of Virginia, 1970.
- JAMES T. TURNER, *Instructor in Economics* (1971)
B.S., M.S., Virginia Polytechnic Institute, 1971.
- MICHAEL TYNER, *Instructor in Art* (1967)
B.S., University of Michigan; M.F.A., Cranbrook Academy of Art, 1966.
- PAUL UHLINGER, *Professor of Philosophy* (1968)
B.A., Youngstown University; B.D. Oberlin College; Ph.D., Boston University, 1953.
- JOSEPH UNGVARY, *Lecturer in Physical Education* (August 1970)
B.S., Bowling Green State University, 1959.
- DAVID D. VAN FLEET, *Assistant Professor of Management* (1970)
B.S., Ph.D., University of Tennessee, 1969.
- MRS. ELLAMAYE VAN FLEET, *Assistant Professor in the Community and Technical College* (1970)
B.S., Tennessee Technological University; M.S., Ed.D., University of Tennessee, 1969.
- DONALD S. VARIAN, *Associate Professor of Speech* (1934)
B.A., M.A., University of Wisconsin, 1934.
- MRS. KATHRYN VEGSO, *Adviser of Students and Director of Women's Activities* (February 1959)
B.S., University of Illinois; M.S.Ed., The University of Akron, 1964.
- WILBUR P. VIETH, *Assistant Professor of Mathematics* (1971)
B.S., Cleveland State University; M.S., The Ohio State University 1967.
- MRS. ANNA M. VOORHEES, *Acting Librarian for Technical Services and Assistant Professor of Bibliography* (1971)
B.S.Ed., B.Mus., The Ohio State University; M.A., Kent State University, 1964.
- DALE E. WAGNER, *Instructor in Political Science* (1969)
B.A., Drake University; M.A., American University, 1967.
- EDWIN E. WAGNER, *Professor of Psychology* (1959)
B.A., M.A., Ph.D., Temple University, 1959.
- MRS. JANET WAISBROT, *Assistant Professor of Modern Languages* (1965)
B.A., Western Reserve University; M.A., Kent State University, 1966.
- MILTON A. WALES, *Assistant Professor in the Community and Technical College* (1966)
B.S., Louisiana State University; M.Ed., Pennsylvania State University, 1966.
- JOSEPH M. WALTON, *Assistant Professor of Education* (1970)
B.S., University of Cincinnati; M.Ed., Xavier University; Ph.D., The Ohio State University, 1970.
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- MRS. VIRGINIA J. WATKINS, *Assistant Professor in the Community and Technical College* (1967)
B.A.Ed., M.A.Ed., Arizona State University, 1953.
- LOYD J. WATSON, *Assistant Professor of Biology* (1970)
B.S., Wheaton College; M.S., Northern Illinois University; M.A., Southern Illinois University; Ph.D., University of Arkansas, 1968.
- JOHN STEWART WATT, *Associate Dean of the College of Education and Professor of Education* (1956)
B.A., The University of Akron; M.A., Ph.D., University of Chicago, 1950.
- THOMAS DEWITT WEBB, *Instructor in Art* (1970)
B.F.A., M.F.A., University of Michigan, 1970.
- VILLIAM V. WEBB, *Instructor in the Community and Technical College* (1968)
B.A., University of Notre Dame; M.S., John Carroll University, 1960.
- VYATT M. WEBB, *Assistant Professor of Physical Education* (1967)
B.S., The University of Akron; M.S.Ed., University of Cincinnati; Ph.D., The Ohio State University, 1967.
- AUL A. WEIDNER, *Professor of Political Science* (1960)
B.A., M.A., University of Cincinnati; Ph.D., University of Michigan, 1959.
- RUSSELL WEINGARTNER, *Associate Professor of Modern Languages* (1970)
B.A., University of Cincinnati; M.A., Ph.D., Princeton University, 1968.
- MRS. EDITH K. WEINSTEIN, *Instructor in the Community and Technical College* (1969)
B.A., M.A.Ed., University of Akron, 1968.
- DAVID M. WEIS, *Associate Professor of Education* (1967)
B.A., Loras College; M.Ed., Ohio University; Ph.D., The Ohio State University, 1967.
- FRANCIS J. WERNER, *Instructor in Psychology and Counselor in Testing and Counseling Bureau* (August 1950)
B.A., M.A., The University of Akron, 1952.
- MRS. ANNE H. WEST, *Assistant Professor in the Community and Technical College* (1971)
B.S., Salem College; M.S.Ed., Madison College, 1965.
- MRS. CAROL A. WESTFALL, *Instructor/Coordinator of Diagnostic Services for the Deaf* (April 1971)
B.A., The University of Akron, 1963.
- KENNETH N. WEXLEY, *Assistant Professor of Psychology* (1969)
B.A., State University of New York at Buffalo; M.A., Temple University; Ph.D., University of Tennessee, 1969.
- ROBERT C. WEYRICK, *Assistant Dean and Associate Professor in the Community and Technical college* (1964)
B.E.E., The University of Akron; M.S., Case Institute of Technology, 1964. P.E., Ohio.
- MRS. DORLA WHIPPLE, *Instructor in Sociology* (1970)
B.A., Boston University; M.A., Kent State University, 1966.
- JOHN WIANDT, *Senior Accountant* (July 1967)
B.S.Bus.Ed., Kent State University, 1965.
- ROBERT J. WILLEY, *Associate Professor of Law* (1966)
B.A., LL.B., University of Nebraska; LL.M., New York University, 1966.
- JOHN D. WILLIAMS, *Assistant Professor of Finance* (1969)
B.S., Westminster College; M.B.A., D.B.A., Kent State University, 1971.
- MAURICE G. WILLIAMS, *Associate Professor of Education* (1966)
B.A., The University of Akron; M.E., Kent State University; Ed.D., Western Reserve University, 1962.
- RICHARD A. WILLIAMS, *Associate Professor of Electrical Engineering* (1968)
B.S., M.S., Ph.D., The Ohio State University, 1965. P.E., Ohio.
- MAX S. WILLIS, JR., *Associate Professor of Chemical Engineering* (1968)
B.S., Pennsylvania State University; M.S., Ph.D., Iowa State University of Science and Technology, 1962.
- CHARLES W. WILSON, III, *Professor of Physics, Professor of Polymer Science and Research Associate in the Institute of Polymer Science* (1965)
B.S.E., M.S., University of Michigan; Ph.D., Washington University, 1952.
- JOHN WESLEY WILSON, *Associate Director of Afro-American Studies and Lecturer in Education* (July 1970)
B.S., Albany State College; M.S.Ed., The University of Akron, 1970.
- MARY E. WILSON, *Instructor in English* (1969)
B.A., M.A., The University of Akron, 1969.
- MARY H. WILSON, *Assistant Professor of Home Economics* (April 1943)
B.S., Iowa State College, 1932.
- PAUL S. WINGARD, *Associate Dean of Buchtel College of Arts and Sciences and Professor of Geology* (February 1966)
A.B., M.S., Miami University; Ph.D., University of Illinois, 1960.
- DAVID WINKLER, *Research Chemist* (October 1969)
B.S., Ashland College, 1967.
- DARREL E. WITTERS, *Assistant Professor of Music* (1941)
B.S.Ed., Bowling Green State University; M.S.Ed., The University of Akron, 1958.

† Leave of absence, 1971-72.

- NEAL WOLFE, *Lecturer in the Community and Technical College* (July 1966)
B.S., The University of Akron, 1965.
- CHARLES L. WOOD, *Associate Professor of Education* (1966)
B.A., Simpson College; M.A., Ph.D., University of Iowa, 1966.
- PAUL W. WOOD, *Assistant Professor of Modern Languages* (1967)
B.A., Athenaeum of Ohio; M.A., University of Cincinnati; Ph.D., Northwestern University, 1970.
- W. RICHARD WRIGHT, *Special Assistant for Development* (June 1967)
B.A., The University of Akron, 1937.
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B.S., M.A., University of Wisconsin; Ph.D., Michigan State University, 1970.
- WALTER H. YODER, JR., *Assistant Professor of Education* (1971)
B.A., Tufts University; M.A., New York University, 1965.
- GARY YUKL, *Assistant Professor of Psychology* (1969)
B.A., Occidental College; Ph.D., University of California at Berkeley, 1967.
- ROBERT L. ZANGRANDO, *Associate Professor of History* (1971)
B.A., Union College; M.A., Ph.D., University of Pennsylvania, 1963.
- HANS ZBINDEN, *Instructor in Modern Languages* (1965)
B.A., Wittenberg University; M.A., University of Pennsylvania, 1955.
- GIORGIO ZECCHINI, *Assistant Professor of Modern Languages* (1969)
Ph.D., University of Bocconi, (Milan, Italy), 1968.

Part-Time Faculty

1970-71

(CREDIT COURSES)

- CAROL J. ADAMS, *Lecturer in Art*
B.F.A., Bowling Green State University; M.A., Case Western Reserve University, 1970.
- GEORGE H. ADAMS, *Lecturer in Engineering Technology*
B.S.M.E., Illinois Institute of Technology, 1948.
- SANDRA AMITAY, *Lecturer in Art*
B.F.A., M.A., Kent State University, 1963.
- FARAJ ARDALAN, *Lecturer in General Studies*
B.A., Howard University; M.A., The University of Akron, 1968.
- KAREN G. ARMS, *Lecturer in Home Economics*
B.S., Northwest Missouri State College, 1965.
- MYRON J. BARDEN, *Lecturer in Accounting*
B.S.B.A., M.B.A., The University of Akron, 1961.
- EDWARD T. BATMAN, *Lecturer in Physical Education*
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- RUTH P. BECKER, *Lecturer in Sociology*
B.A., Albion College; M.A., University of Illinois, 1930.
- MARTHA ANN BELL, *Lecturer in the Community and Technical College*
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- JAMES H. BEGLEY, *Lecturer in Accounting*
B.Sc., University of Notre Dame; M.B.A., The University of Akron, 1969.
- WILLIAM BELLER, *Lecturer in the Community and Technical College*
B.S., Kent State University, 1965.
- MRS. CAROLE BHATNAGAR, *Lecturer in Speech*
B.A., The University of Akron, 1965.
- WILLIAM W. BICKETT, *Lecturer in the Community and Technical College*
- MRS. RALPH BLACKWOOD, *Lecturer in the Community and Technical College*
B.A., Berea College; M.A., Columbia University; Ph.D., University of Maryland, 1958.
- MRS. J. JOANN BLAIR, *Lecturer in Speech*
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- BARRIE BODDEN, *Lecturer in General Studies*
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- PATRICIA A. BOERGER, *Lecturer in Modern Languages*
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- LESLIE J. BOWSER, *Lecturer in Finance*
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- OMINIC CARUSO, *Lecturer in Modern Languages*
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- MY P. CASSIDY, *Lecturer in English*
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B.S., Bluefield State College; M.S., The University of Akron, 1970.
- UZANNE CLARK, *Lecturer in General Studies*
B.A., The University of Akron, 1968.
- MANUEL M. COCKRELL, *Lecturer in the Community and Technical College*
B.S., Alabama A. & M. University, 1970.
- IERYL J. COE, *Lecturer in Music*
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- REAL J. COLLINS, *Lecturer in General Studies*
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- LFRED R. COWGER, *Lecturer in Elementary Education*
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- OGER A. CRAWFORD, *Lecturer in Chemistry*
B.S., University of Illinois; M.S., Ph.D., Oregon State University, 1959.
- ANIEL L. CROGHAN, *Lecturer in Associate Studies*
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- OHN CROWE, *Special Instructor in Voice*
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B.A., University of Missouri.
- DOUGLAS CRUSH, *Lecturer in Psychology*
B.A., Ohio University, 1969.
- JOHN T. CUNNINGHAM, *Lecturer in the Community and Technical College*
F.B.I. National Academy, 1970.
- WILLIAM G. CUNNINGHAM, *Lecturer in the Community and Technical College*
B.S., Miami University; M.B.A., Bowling Green State University, 1969.
- FERRIT DAAMS, *Lecturer in Philosophy*
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- UY A. DEANGELIS, *Lecturer in Education*
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- AUL S. DENIS, *Lecturer in Art*
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- ABRIEL DESANTIS, *Lecturer in Education*
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- GEORGE J. DOBRIN, *Lecturer in the Community and Technical College*
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- ROBERT M. ERWINE, *Lecturer in Education*
B.A., M.A., The University of Akron, 1943.
- DONALD D. EWING, *Lecturer in Engineering Technology*
B.M.E., The University of Akron, 1954.
- MRS. ANITA EXLINE, *Special Instructor in Flute*
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- RAYMOND L. FALCIONE, *Lecturer in Speech*
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- ROBERT FELDBUSH, *Lecturer in Music*
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- MRS. CAROL FLAUMENHAFT, *Lecturer in History*
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- MRS. DORIS FLEISCHER, *Lecturer in General Studies*
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- ROBERT N. GANDEE, *Lecturer in Physical Education*
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- PATRICIA M. GEIGER, *Lecturer in English*
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- CONSTANTINE (DEAN) N. GOUMAS, *Lecturer in the Community and Technical College*
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- ROBERT L. GULIAN, *Lecturer in Art*
B.A., M.A., The University of Akron, 1968.
- KANTA GUPTA, *Lecturer in History*
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- RONALD P. HALL, *Lecturer in Psychology*
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- MRS. ELSIE S. HAMPTON, *Lecturer in the Community and Technical College*
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- MRS. S. BONNIE HANKAMMER, *Lecturer in Speech*
B.S., M.A., Kent State University, 1954.
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- RUTH M. HAUDE, *Lecturer in Psychology*
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- BARBARA HEINZERLING, *Lecturer in Home Economics*
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- MRS. AGNES M. HELMS, *Lecturer in General Studies*
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- ROBERT M. HERCEG, *Lecturer in Speech and Theatre Arts*
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- JOHN B. HODGES, *Lecturer in Management*
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- MRS. KATHRYN HUNTER, *Lecturer in Home Economics*
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- MIRIAM T. HUTCHINS, *Lecturer in Music*
- MRS. ROSALIND IRISH, *Lecturer in English*
B.S., B.A., The University of Akron; M.A., Columbia University, 1924.
- RALPH F. IULA, *Lecturer in Journalism*
B.S., Butler College, 1947.
- MRS. HELEN JACQUEZ, *Lecturer in the Community and Technical College*
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- MARGARET M. JOSEPH, *Lecturer in Modern Languages*
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- MORRIS KALMAN, *Lecturer in Speech*
B.S., The University of Akron; M.A., The Ohio State University, 1931.
- WILLIAM KANNEL, *Lecturer in Sociology*
B.S., The University of Akron; LL.B., Akron Law School, 1952.
- MRS. MARY J. KAUFMAN, *Lecturer in General Studies*
B.A., The University of Akron, 1963.
- MOHAN KAUL, *Lecturer in the Community and Technical College*
B.S.C., University of Punjab (India); M.S., University of Pittsburgh, 1967.
- RHONDA C. KEITH, *Lecturer in English*
B.A., The University of Akron, 1968.
- LOIS KELLEY, *Lecturer in Business and Office Technology*
B.S., The University of Akron; M.S., Kent State University, 1962.
- CHARLES S. KIDDER, *Lecturer in Music*
B.A., Hiram College; M.A., The University of Akron, 1963.
- ROBERT W. KOGER, *Lecturer in Speech*
B.A., The University of Akron, 1965.
- JOHN B. KOVELAN, *Lecturer in Modern Languages*
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- SYBIL KRIGER, *Lecturer in General Studies*
B.A., The University of Akron, 1964.
- MRS. CORALIE LAUTENSCHLAGER, *Lecturer in Art*
B.A., Baldwin-Wallace University, 1954.
- MARILYN C. LEVENTHAL, *Lecturer in Art*
B.A., Northwestern University; M.A., University of Wisconsin, 1966.

- CLARENZ LIGHTFRITZ, *Special Instructor in Piano*
Bowling Green State University; private instruction with Ernest White and Miss Rena Wills.
- SISTER CAROL LIPPS, *Lecturer in General Studies*
B.S.F., Saint John College, 1957.
- WALTER C. LIPPS, *Lecturer in Physical Education*
B.E., The University of Akron, 1928.
- COLLEEN J. LUCAS, *Lecturer in English*
B.A., M.A., The University of Akron, 1970.
- LINDA MACDONALD, *Lecturer in Music*
B.S., B.S.Ed., The University of Akron, 1971.
- MICHAEL J. MAHANEY, *Lecturer in the Community and Technical College*
B.C.S., B.B.A., Southeastern University, 1960.
- EDWARD E. McDONALD, *Lecturer in the Community and Technical College*
B.S.M.E., The University of Akron, 1961.
- MRS. CLAIRE S. MERRIX, *Lecturer in English*
B.A., Wittenberg University, 1961.
- ELLIOT MIGDAL, *Lecturer in Speech*
The Ohio State University; M.D., Chicago Medical School, 1948.
- RALPH L. MILLER, *Lecturer in Physical Education*
American Red Cross Aquatic School.
- MRS. HOPE MONTONI, *Special Instructor in Voice*
B.M., Hartford College of Music; M.M., Kent State University, 1969.
- RUTH MORTON, *Lecturer in English*
B.A., George Washington University; M.A., University of Michigan, 1970.
- MRS. DOROTHY C. MOSES, *Lecturer in Biology*
B.S., Bates College; M.A., Mount Holyoke College, 1959.
- MARY MOSTENIC, *Lecturer in General Studies*
B.A., B.E., M.A., The University of Akron, 1951.
- PATRICIA J. MRAVETZ, *Lecturer in English*
B.A., DePauw University, 1965.
- JOHN N. MUELLER, *Lecturer in Business and Office Technology*
Akron Art Institute.
- MRS. BEVERLY J. MUGRAGE, *Lecturer in Associate Studies*
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- CHARLES N. MYERS, *Lecturer in Art*
M.S.Ed., M.A., Kent State University, 1970.
- GEORGE NAGY, *Lecturer in Management*
B.A., Fenn College; M.A., The Ohio State University, 1946.
- NANCY W. NOLTE, *Lecturer in History*
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- JULI NUNLIST, *Lecturer in Music*
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- MRS. BETTY J. OBLISK, *Lecturer in Business and Office Technology*
B.S.Ed., The University of Akron, 1947.
- VERNON L. ODOM, *Lecturer in General Studies*
B.A., Morehouse College; M.S.W., Atlanta University, 1950.
- RICHARD N. OSBORN, *Lecturer in Marketing*
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- JANET OSTROV, *Lecturer in Art*
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- JOSEPH E. PALMER, *Lecturer in Accounting*
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- MRS. MARY PAOLUCCI, *Lecturer in General Studies*
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- JAMES R. PASCOVER, *Lecturer in English*
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- SIDDHARTH M. PATEL, *Lecturer in Chemistry*
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- ROBERT PERRY, *Lecturer in Music*
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- ERROL S. PRINGLE, *Lecturer in Accounting*
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- MRS. MADELEINE PRINGLE, *Lecturer in Modern Languages*
- MRS. RUTH PUTMAN, *Assistant Professor Emeritus of English*
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- ROBERT M. QUADE, *Special Instructor in Organ*
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- CHARLES D. QUERRY, *Lecturer in Education*
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- BERNARD C. REIMANN, *Lecturer in Management*
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- JAMES A. RINIER, *Lecturer in Geography*
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- JOHN H. RODGERS, *Lecturer in Accounting*
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- JAMES G. ROSS, *Lecturer in Physical Education*
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- MRS. PAMELA RUPERT, *Lecturer in Education*
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- RICHARD L. SAPRONETTI, *Lecturer in Physical Education*
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- SUSAN SAWICKI, *Lecturer in Home Economics*
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- JOSEPH A. SCHIAVONNE, *Special Instructor in Woodwinds*
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B.A., College of St. Scholastice, 1961.
- DONNA J. SEXTON, *Lecturer in Speech and Theatre Arts*
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- EUGENE SHARICK, *Special Instructor in Saxophone*
M.M.E., Baldwin-Wallace College; M.M., University of Michigan, 1963.
- JAMES E. SHEARER, *Lecturer in Engineering Technology*
B.S., M.S., University of Tennessee, 1953.
- RONALD SHIMKO, *Lecturer in Business and Office Technology*
B.S.B.A., Youngstown University, 1960.
- RONALD D. SIMON, *Lecturer in Education*
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- RENEE SORDIAN, *Lecturer in Home Economics*
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- WILLIAM W. STANLEY, *Lecturer in Engineering Technology*
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- HELENA F. STURKEY, *Lecturer in Speech and Theatre Arts*
B.A., The University of Akron, 1964.
- CAROLEE K. TAIPALE, *Lecturer in Modern Languages*
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- JOSEPH A. TAKACS, *Lecturer in Engineering Technology*
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ROBERT S. WHITE, *Lecturer in Engineering Technology*

B.S.M.E., Tufts University; M.S.M.E., Northwestern University, 1955.

JEAN WILLIAMS, *Lecturer in Home Economics*

B.S., Iowa State University, 1945.

WILLIAM E. WILLIAMS, *Lecturer in Business and Office Technology*

Rate Analyst for Pyramid Rubber Co.

MRS. MARY O. WITWER, *Lecturer in the Community and Technical College*

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JAMES C. WORTHAM, *Lecturer in Mathematics*

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M.A., University of Rochester, 1965.

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B.S., Defiance College; M.B.A., The Wharton School, 1968.

Full-Time Teaching Faculty by College, School and Department

General College

GENERAL STUDIES

Head: Professor David C. Riede; *Course Directors:* John Bee, James F. Dunlap, Ernest Giglio, Scott D. Hagen, Bruce Holland, Robert C. McNeil, Robert J. Mravetz, Sarah Orlinoff.

Community and Technical College

DIVISION OF ASSOCIATE STUDIES

Chairman: Associate Professor Blin B. Scatterday; *Assistant Professors:* Charles V. Blair, Richard M. Fawcett, William S. Fleming, Richard Hoskin, Lowell Hoyt, Joseph Lentini, Jack Mercer, John B. Monroe, Arthur Pollock, Charles T. Salem, Jane M. Steiner, James D. Switzer; *Instructors:* Mrs. Anna P. Barnum, Eugene Benedict, Stanley R. Bruns, Stephen J. Chylinski, Richard V. Calkins, Mrs. Julia Cowan, Frank J. Gruccio, Jr., Timothy C. Jochim, Wendall Johnson, Mrs. Rose A. Kleidon, Joseph C. Mullin, Michael T. Oravec, Jon R. Peske, William V. Webb, Mrs. Edith K. Weinstein.

DIVISION OF BUSINESS AND OFFICE TECHNOLOGY

Chairman: Professor Aloysius Misko; *Assistant Professor:* Clare Bedillion, Gerald R. Camp, Robert E. Collins, Donald M. Davis, David T. Dolan, Lawrence Golden, Jack D. Huggins, Mary Jean Johnston, John C. Pizor, Mrs. Linda Rodda, Max M. Rule, James W. Taggart, Mrs. Virginia J. Watkins, Mrs. Anne H. West, Mrs. Ellamaye Van Fleet; *Instructors:* James D. Bell, Mary H. K. Dee, Robert L. Erickson, Jack D. Harpool, Michael D. Martinovich, Susan M. Noel, Mrs. Bonnie Thomas-Moore.

DIVISION OF ENGINEERING AND SCIENCE TECHNOLOGY

Chairman: Professor Michael Bezbatchenko; *Associate Professors:* Nathan Cardarelli, Robert C. Weyrick; *Assistant Professors:* Ronnie G. Adams, Marko Brdar, Milan Dubravcic, Harold Edwards, William Glazier, Richard L. Henry, Thomas Herbert, Sebastian Kanakkanatt, Herbert S. Kennedy, Panos Kokoropoulos, Fred Mullen, Milton W. Wales; *Instructors:* John Arendt, Mrs. Barbara Gsellman, Mrs. Minnie Pritchard, David Robinson, Neal E. Wolfe.

DEVELOPMENTAL PROGRAMS

Director: Associate Professor Peter J. Hampton; *Lecturers:* Mrs. Ralph Blackwood, James Dombo, Mrs. Elsie S. Hampton, Helen Rosenberg, Mrs. Linda W. Wims, Neal E. Wolfe.

Buchtel College of Arts and Sciences

BIOLOGY

Head: Professor Dale L. Jackson; *Professors:* Roger F. Keller, Nada Ledinko; *Associate Professors:* Eugene Flaumenhaft, Lazarus Macior, Dorothy Nunn, John H. Olive, Walter Sheppe, Warren P. Stoutamire, Richard F. Nokes; *Assistant Professors:* Helmar H. E. Dollwet, John L. Frola, Donald Goldstrohm, Scott Hagen, Richard Mostardi, G. Scott Orcutt, Jr., Lloyd J. Watson; *Adjunct Professors of Anatomy:* Robert M. Bartlett (M.D.), Douglas Evans (M.D.), Bruce Rothmann (M.D.); *Instructor:* John F. Gwinn.

CHEMISTRY

Head: Professor John Bachmann; *Professors:* Gerald Corsaro, Paul D. Garn, H. James Harwood, Joseph P. Kennedy, Ian R. MacGregor, Donald McIntyre, Maurice Morton, Mailoo Selvaratnam, Thomas Sumner; *Associate Professors:* Stephen Darling, Michael Faron, Lewis Fetters, William G. Kofron, Alan F. Krivis, Eugene Riebling, Howard Stephens; *Assistant Professors:* John E. Frederick, John J. Houser, Gerald F. Koser, Henry A. Kuska, William D. Lyon; *Instructor:* Mrs. Alice Mayor.

CLASSICS

Head: Distinguished Professor Theodore T. Duke; *Assistant Professors:* Robert E. Gaebel, Robert C. McNeil; *Instructors:* Mrs. Jacqueline Hegbar, James E. Jennings.

ECONOMICS

Head: Professor James W. Robinson; *Professors:* Emile Grunberg (Emeritus), William S. Hendon; *Associate Professors:* Robert R. Black, Ali Fatemi, James McLain, Efthimois Pournarakis; *Assistant Professors:* Lascelles F. Anderson, Kenneth Fraundorf; *Instructors:* Mrs. Elizabeth Erickson, P. R. Mathur, James Shanahan, James T. Turner.

ENGLISH

Head: Professor Frank T. Phipps; *Professors:* Gerald H. Levin, Robert E. Thackaberry; *Associate Professors:* Robert L. Dial, Dale Doepke, David L. Jones, John S. Phillipson, William J. Stevens; *Assistant Professors:* Harold C. Brown, James J. Egan, John Hull, Mrs. Julia Hull, Leonard Fleischer, R. Paul Merrix, Mrs. D'Orsay Pearson, James C. Sheehan, Mrs. Sally Slocum, Gerard M. Sweeney, Mrs. Martha Szep, Mrs. Cathryn Taliaferro, Mrs. Helen S. Thackaberry; *Instructors:* Mrs. Jutta T. Benderemer, Mrs. Mary DeHaven, Peter Desy, Helmut A. Fischer, William A. C. Francis, Mrs. Marlene Hathaway, Bruce Holland, Martha Hosfelt, Bernard V. Kelly, Mrs. Kathleen Kelly, Walter D. Lehrman, Mrs. Alice MacDonald, Mrs. Ruth Messenger, Mrs. Arlene Toth, Stephen Spangehl, Mary Wilson.

GEOGRAPHY

Head: Professor Allen G. Noble; *Professor:* Edward Hanten; *Associate Professors:* Ashok Dutt, Albert Korsok; *Assistant Professors:* Lathardus Goggins, Laurence J. C. Ma, John Mulhauser, Thomas Nash, Grace L. Powell, Gerald Pyle; *Instructor:* Richard P. Palmieri

GEOLOGY

Head: Professor Arthur Burford; *Professor:* Paul S. Wingard; *Associate Professors:* Robert Corbett, Paul C. Franks, James W. Teeter; *Assistant Professors:* Roger Bain, Jim L. Jackson; *Instructor:* Bruce E. Limberg.

HISTORY

Head: Professor Robert H. Jones; *Professors:* Vincent H. Cassidy, George W. Knepper, Warren F. Kuehl, Sheldon B. Lis David C. Reide; *Associate Professors:* Boris Blick, Don R. Gerlach, Jerome Mushkat, Daniel Nelson, Howard Reinmuth, Jr James Richardson, Robert L. Zangrando; *Assistant Professors:* J. Wayne Baker, Mrs. June Burton, Mrs. Barbara I Clements, H. Roger Grant, David E. Kyvig, William McGucken, Earl J. Motz.

MATHEMATICS

Head: Professor William H. Beyer; *Associate Professors:* Robert C. Carson, Peter J. Gingo, Louis D. Rodabaugh, Louis Ros Subhash Saxena, Leonard Sweet, E. Barbara Tauci; *Assistant Professors:* David Buchthal, Douglas E. Cameron, Jame Chew, William W. Hokman, Ernest A. Kuehls, Mrs. Martha Lierhaus, Ronald C. Sutch, George L. Szoke, Wilbur P. Viett *Instructors:* Mrs. Ruth Haddock, Theodore Marra.

MODERN LANGUAGES

Head: Professor Arno K. Lepke; *Professors:* Claude Y. Meade, Herbert W. Smith, Jr.; *Associate Professors:* Hugo Lijeror Theodore Mackiw, Eugene Maio, Allan McIntyre, Russell Weingartner; *Assistant Professors:* William Miller, Philli Stuyvesant, Mrs. Janet Waisbrot, Paul Wood, Giorgio Zecchini; *Instructors:* Joseph Donatelli, Mrs. Anne Frederick, Stephe Faria, Jr., Mrs. Janice Houser, Mrs. Sys S. Inman, Miss Jolita Kavaliunas, Mrs. Kriemhilde Livingston, Miss Helen Ryar Hans-Otto Zbinden.

PHILOSOPHY

Head: Professor Paul Uhlinger; *Associate Professor:* Alan Hart, David F. Cox; *Assistant Professors:* James Buchanar Douglas Paige, William McMahon.

PHYSICS

Head: Professor Charles W. Wilson, III; *Distinguished Professor:* Ernest R. Thackeray; *Professors:* Alan N. Gent, Robert A Oetjen; *Associate Professors:* C. Frank Griffin, Walter H. Heitz, Harry T. Pinnick, Ronald E. Schneider; *Assistan Professors:* Harry T. Chu, Roger B. Greer, Peter N. Henriksen, II.

POLITICAL SCIENCE

Head: Professor Paul A. Weidner; *Professor:* Norman P. Auburn (Emeritus); *Associate Professors:* Yong H. Cho, Ernest D Giglio, Frank J. Kendrick, Yogendra K. Malik; *Assistant Professors:* Vernon Cook, Roger Kvam, Carl Lieberman; Jesse F Marquette; *Instructors:* Richard Franklin, David Louscher, Dale Wagner.

POLYMER SCIENCE

Head: Professor Maurice Morton; *Professors:* Alan N. Gent, H. James Harwood, Joseph P. Kennedy, Donald McIntyre, Charles Wilson, III; *Associate Professors:* Lewis Fetters, Eberhard A. Meinecke, Eugene F. Riebling, Howard Stephens; *Assistant Professors:* J. E. Frederick, Mrs. Irja Piirma.

PSYCHOLOGY

Head: Professor John A. Popplestone; *Professors:* Alexis Anikeeff, Edwin E. Wagner; *Associate Professors:* Alex Darbes, Richard H. Haude, Marion W. McPherson, Henry Rosenquist; *Assistant Professors:* Robert Deitchman, Stephen Fugita, Mrs. Jo Ann R. Sanders, Raymond Sanders, Harvey L. Sterns, Kenneth N. Wexley, Gary Yukl; *Instructor:* Mrs. Faye Dambrot.

SOCIOLOGY

Head: Professor Robert M. Terry; *Professors:* Allvar Jacobson, Edwin L. Lively, Samuel C. Newman; *Associate Professors:* Charles M. Barresi, Carl A. Bersani, Lloyd B. Lueptow, John Ramey, Robert G. Schmidt; *Assistant Professors:* Melvin D. Brownstein, Bernard J. Clifford, T. Neal Garland, James H. Huber, John P. Marwitt, Donald J. Metzger, Margaret M. Polloma; *Instructors:* James R. Collins, Mrs. Gretchen Duffield, Mrs. June Shriver, Mrs. Dorla Whipple.

URBAN STUDIES

Head: Professor Edward W. Hanten; *Professor:* William S. Hendon; *Associate Professors:* Yong H. Cho, David F. Cox, Ashok Dutt, Frank J. Kendrick, James Richardson; *Assistant Professors:* James H. Huber, James L. Shanahan.

College of Engineering

CHEMICAL ENGINEERING

Head: Professor Robert W. Roberts; *Professors:* Coleman J. Major, Michael J. Rzasa; *Associate Professors:* Glenn A. Atwood, Howard L. Greene, Max S. Willis, Jr.; *Assistant Professors:* Lawrence G. Focht, T. Henry Forsyth, John P. Lenczyk.

CIVIL ENGINEERING

Head: Professor Andrew L. Simon; *Professors:* D. G. Fertis, Alvin M. Richards, Jr.; *Associate Professors:* Joseph F. Lestingi, George P. Manos, David H. Timmerman; *Assistant Professors:* Robert C. Brown, Jr., Douglas G. Pennell, Simsek Sarikelle.

ELECTRICAL ENGINEERING

Head: Professor Donald C. Thorn; *Professors:* Paul O. Huss, Kenneth F. Sibila; *Associate Professors:* Chiou-Shiun Chen, George S. Cohen, Joseph A. Edminister, Robert S. Grumbach, Milton L. Kult, Malcom R. Railey, Louis E. Roemer, Richard A. Williams; *Assistant Professors:* Chun-Fu Chen, Larry A. Crum, Fred R. Leffler, Chaman N. Kashkari, Joseph T. Mayhan, John S. Potts.

MECHANICAL ENGINEERING

Head: Professor Robert N. Collins; *Professors:* Michael Bezbatchenko, W. M. Petry; *Associate Professors:* Thomas H. Brittain, Donald R. Burrowbridge, Robert G. Dubensky, Richard J. Gross, Eberhard A. Meinecke, Lindon C. Thomas; *Assistant Professors:* Mamerto L. Chu, Jr., Benjamin T. F. Chung, Philip M. Gerhart, Azmi Kaya, Joseph Padovan.

College of Education

COUNSELING AND SPECIAL EDUCATION

Head: Professor James Doverspike; *Distinguished Professor:* Mabel Riedinger (Emeritus); *Professor:* Kenneth Hoedt; *Associate Professors:* William Arn, Robert Myers, Sarah Orlinoff, David Weis; *Assistant Professors:* Thomas O. Brown, John C. Cochran, William Farling, Janko Kovacevich, Mrs. Ruth Roberts, Donald Schmits, Joseph Walton; *Instructor:* Mrs. Carol A. Westfall.

EDUCATIONAL ADMINISTRATION

Head: Professor Paul Hayes; *Associate Professors:* James King, Dick I. Rich, William A. Rogers, William Root; *Assistant Professors:* Norman Griggs, Michael Wroblewski.

ELEMENTARY EDUCATION

Head: Professor Robert E. Ferguson; *Professor:* William H. Beisel, Jr.; *Associate Professor:* Caesar A. Carrino, LaVerne J. Meconi, Ramon Steinen, Maurice G. Williams; *Assistant Professors:* Walter Arms, Mrs. Gertrude Badger, David G. Barr, Angela Bruno, Hugh Christman, Bernard Esporite, Loren Hoch, Martha Leyden, Judith Noble, Mrs. Joan C. Seifert, Mrs. Barbara Stoodt; *Instructors:* Mrs. Mary Ellen Atwood, Paul E. Green, Kathleen Moore, Mrs. Norma Spencer; *Lecturer:* John Wilson.

PHYSICAL EDUCATION

Head: Associate Professor Gordon Larson; *Professor:* Kenneth Cochrane; *Associate Professor:* Andrew Maluke; *Assistant Professors:* J. Thomas Adolph, James L. Dennison, Thomas W. Evans, Robert Mravetz, Wyatt M. Webb; *Instructors:* Alexander L. Adams, T. Allen Campbell, William Killen, John Lahoski, Richard B. Lowry, Mrs. Judith Maffett, Mrs. Maryjo MacCracken, Thomas Reed, Mrs. Patricia Taylor, Mary Ann Tripodi.

SECONDARY EDUCATION

Head: Associate Professor Charles Wood; *Associate Professors:* Mrs. Joy S. Lindbeck, Oliver Ocasek, Mrs. Isobel L. Pfeiffer; *Assistant Professors:* Robert Andreyka, Vincent J. Biondo, Larry Bradley, Madeline Cook, Bill S. Frye, Cecil Hembree, John Hirschbuhl, Mrs. Lillian King, William Mavrides, Marion Albert Ruebel, Michael Sugarman, Walter H. Yoder.

EDUCATIONAL FOUNDATIONS

Head: Associate Professor Gerald Blumenfeld; *Professors:* H. Kenneth Barker, D. J. Guzzetta, John S. Watt; *Associate Professor:* Ralph Blackwood; *Assistant Professors:* Paul Black, Walden Crabtree, Ralph Darr, John Guzzetta, Thomas Maxwell, Isadore Newman, Fredrick Schultz.

College of Business Administration

ACCOUNTING

Head: Professor Dennis Gordon; *Professors:* Irving K. Christiansen, Orville R. Keister, Jr., Richard S. Roberts; *Associate Professors:* Hobert W. Adams, Mrs. Virginia H. Bakay, Arthur D. Karlin, Mary Vernon Slusher (Emeritus); *Assistant Professors:* Donald K. Berquist, Gyan Chandra, Frances E. Clark, David L. Nichols, Arjan T. Sadhwani, Mrs. Linda E. Sugarman; *Instructor:* Alvin H. Lieberman.

FINANCE

Head: Associate Professor A. Frederick Banda; *Professors:* Cleveland A. Christophe, James W. Dunlap, Frederick W. Moyer, Charles F. Poston; *Associate Professors:* Thomas J. Coyne, Louis F. Hampel, Donald M. Jenkins, George W. Trivoli; *Associate Professors:* David R. Durst, George J. Emershaw, James E. Inman, John D. Williams.

MANAGEMENT

Head: Professor Frank L. Simonetti; *Professors:* N. F. Davis, Bernard A. Deitzer, Thomas W. Sharkey, Howard L. Taylor; *Associate Professors:* Eugene Medvedeff; *Assistant Professors:* Robert D. Amspoker, Donald E. Becker, Keith A. Klafehn, Gary E. Meek, Adnan Najjar, Ronald D. Schwartz, Karl A. Shilliff, David D. Van Fleet.

MARKETING

Head: Stephen S. Castle; *Professors:* Maxwell I. Klayman; *Associate Professors:* Frank V. Baldo, Jack R. Dauner; *Assistant Professors:* Donald M. Jackson, Peter R. Kressler, Mrs. Margaret F. Rogler; *Instructors:* Kenneth E. Mast, George E. Prough.

College of Fine and Applied Arts

ART

Head: Professor Emily Davis; *Associate Professors:* Irving Achorn, Larry D. Calhoun, William Neumann, Ronald Taylor; *Associate Professors:* Earl Ertman, Neil Frankhauser, Mrs. Charlotte Hanten, Lorena Holshoy; *Instructors:* Dennis Kleidon, Kevin Krecji, James Lenavitt, Dennis Meyer, Michael Tyner, Thomas Webb.

HOME ECONOMICS

Head: Associate Professor Mrs. Joyce Sullivan; *Associate Professor:* Dorothy Laubacher; *Assistant Professors:* Tomasita M. Chandler, Mrs. Leona Farris, Mrs. Nancy Rossi, Mrs. Virginia Tappenden, Mary H. Wilson; *Instructors:* Mrs. Mary E. Atwood, Mrs. Kathryn Koch, Mrs. Carol J. Healer.

MUSIC

Head: Professor John MacDonald; *Adjunct Professor:* Louis Lane; *Professor:* Farley K. Hutchins; *Associate Professors:* Wallace Nolin, Henry Smith; *Assistant Professors:* Donald Allcorn, Paul Benningfield, Frank Bradshaw, John Coe, Mrs. Alice M. Flaksman, Vincent Frittelli, Richard Jackboice, Mrs. Marian Lott, Eugene Mancini, Charles McDonald, Paul D. Rohrbaugh, Richard Shirey, Samuel Spinak, Darrel E. Witters; *Instructor:* Mrs. Barbara MacGregor.

SPEECH PATHOLOGY AND AUDIOLOGY

Head: Professor Elizabeth Hittle; *Adjunct Professors:* Max Griffin, M.D., Morris Kalmon, M.D. *Associate Professors:* Evelyn Baer, James Lennon; *Assistant Professors:* Gerald Castor, Gerald Culton, Robert Decker, Mrs. Charlotte Essner, Kenneth T. Siloac; *Instructors:* Mrs. Anitra Barkley, Mary Capotosto, Karen B. Dixon, Mrs. Carol A. Westfall.

SPEECH AND THEATRE ARTS

Head: Professor James F. Dunlap; *Professor:* Ray H. Sandefur; *Associate Professors:* James Fee, Mrs. Phyllis Hardenstein, Ruth Lewis, Arthur Miller, Howard Slaughter, William B. Steis, Donald Varian; *Assistant Professors:* John Bee, Paul Daum, Wallace Sterling, Joel Swabb; *Instructors:* Valerie Grieg, Lawrence Sexton.

College of Nursing

NURSING

Dean: Professor Estelle B. Naes; *Professor:* Evelyn M. Tovey; *Associate Professors:* Mrs. Eveline M. Brotzman, Edna Grist, Kathryn Homeier; *Assistant Professors:* Mrs. Marian Bauer, Mrs. Frances Curtis, Dorothy Dobrindt, Clarence Gibney, Mrs. Patricia P. Godfrey, Mrs. Marcia Simmons, Eileen Tiedt; *Instructors:* Marianne Lipps, Mrs. Mary Shaffer, Mrs. Eileen Stutz.

School of Law

Dean: Professor Stanley A. Samad; *Professors:* John P. Finan; James G. France, Robert Kovach, Marvin M. Moore; *Associate Professors:* Merlin G. Briner, Earl M. Curry, Jr., Hamilton DeSaussure, Richard L. Grant, Donald M. Jenkins, Mrs. Gertrude Johnson, Richard C. Marshall, Albert S. Rakas, Robert J. Willey; *Assistant Professors:* Bertram C. Gire, Jeffrey E. Lewis, Lawrence E. Pope, Charles P. Rose, Jr., Jeffrey M. Shaman; *Instructor:* Mrs. Anita Shew.

Library Staff 1970-71

H. PAUL SCHRANK, JR., *University Librarian and Assistant Professor of Bibliography* (1965)

B.S., Ohio University; M.S., University of Illinois, 1963.

MRS. VIRGINIA ALLANSON, *Subject Librarian in Science-Technology and Instructor in Bibliography* (1968)

B.S., Purdue University; M.S.L.S., Kent State University, 1966.

- MRS. HELEN ARNETT, *Education Librarian and Associate Professor of Bibliography* (1953)
B.A., The University of Akron; B.S.L.S., Western Reserve University; M.A., San Jose State University; Ph.D., Western Reserve University, 1965.
- MRS. BARBARA CLARK, *Senior Cataloger* (1948)
B.S., The University of Akron, 1950.
- MRS. RUTH CLINEFELTER, *Social Sciences Librarian and Assistant Professor of Bibliography* (1952)
B.A., M.A., The University of Akron; M.A.L.S., Kent State University, 1956.
- WILLIAM S. CRAMER, *Documents Librarian and Instructor in Bibliography* (1970)
B.A., The Ohio State University; M.S., Case Western Reserve University, 1971.
- CONSTANTIN DIMITRUI, *Head of Searching and Instructor in Bibliography* (May 1970)
M.A., National University of Bucharest; M.S., (Library Science), Case Western Reserve University, 1969.
- JUDITH L. FITZGERALD, *Cataloger* (July, 1969)
B.A., West Virginia Wesleyan University, 1964.
- PAULINE FRANKS, *Associate University Librarian and Assistant Professor of Bibliography* (1950)
B.S.Ed., Kent State University; B.S.L.S., Western Reserve University, 1940.
- DOROTHY HAMLEN, *Director of University Archives, Rare Books Librarian and Professor of Bibliography* (1937)
B.A., The University of Akron; B.S.L.S., Western Reserve University, 1942.
- MARY GRACE HARRINGTON, *Business Administration Librarian and Assistant Professor of Bibliography* (1969)
B.A., The University of Akron; B.A.L.S., University of Michigan, 1939.
- MIRIAM A. JOLIAT, *Head of Acquisitions and Instructor in Bibliography* (April, 1970)
B.S.E., St. John College; M.S., (Library Science), Case Western Reserve University, 1969.
- NANCY A. KNIGHT, *Fine Arts Subject Librarian and Assistant Professor of Bibliography* (1967)
B.A., University of Idaho; M.S.L.S., Louisiana State University, 1960.
- MRS. HELEN P. LIVINGSTON, *Head of Serials and Instructor in Bibliography* (February, 1970)
B.A., Bishop's University; M.S., (Library Science), Simmons College, 1954.
- JUDITH MOWERY, *Humanities Subject Librarian and Assistant Professor of Bibliography* (1967)
B.A., Ohio University; M.S.L.S., Western Reserve University, 1965.
- MRS. LOIS MYERS, *Assistant Librarian for Public Services and Assistant Professor of Bibliography* (1946)
B.A., Wittenberg University; B.S.L.S., Carnegie Institute of Technology, 1939.
- MRS. BEVERLY L. SCHERBA, *Cataloger and Instructor in Bibliography* (August 1970)
B.A., M.A.L.S., University of Wisconsin, 1952.

Reserve Officers' Training Corps

Charles V. Blair, *Dean of Administration*
Civilian Coordinator
1971-72

ARMY

- WILLIAM F. LONG, JR., *Professor of Military Science* (June 1971)
B.S., Otterbein College; M.S., George Washington University, Graduate of U.S. Army Command and General Staff College, Naval War College, Colonel, Infantry.
- ELVIN G. BAKER, *Assistant Professor of Military Science* (August 1969)
B.G.S., University of Nebraska at Omaha, 1969; Lieutenant Colonel, Field Artillery.
- NORMAN M. DENT, *Assistant Professor of Military Science* (August 1970)
B.A., Kent State University, 1965; Captain, Infantry.
- WOLFGANG A. FLETTER, *Assistant Professor of Military Science* (March 1969)
B.S., United States Military Academy 1963; Major, Armor.
- ROBERT VAN STEENBURG, III, *Assistant Professor of Military Science* (March 1969)
B.S.B.A., University of Florida, 1963; Captain, Signal Corps.
- CARL J. THOMAS, *Administrative Sergeant Major* (August 1968)
Sergeant Major.
- JOE W. WOOD, *Supply Sergeant* (September 1969)
Staff Sergeant.
- THEODORE D. MAYS, *Administrative NCO* (October 1970)
Sergeant First Class
- ALFRED D. TAYLOR, *Operations NCO* (July 1971)
Sergeant First Class

AIR FORCE

- WILLIAM R. WRIGHT, *Professor of Aerospace Studies* (August 1971)
B.A., University of Texas, 1957. Colonel, USAF.
- LEO M. NEFF, *Assistant to the Commander* (August 1968)
B.A., McKendree College; B.A. Ed., The University of Akron, 1970. Colonel, USAF. (Retirement Date, 1 November 1971).
- RICHARD E. CUTFORTH, *Assistant Professor of Aerospace Studies* (September 1969)
B.S. C.E., Bradley University, 1960. Major, USAF.
- RICHARD D. CONN, *Assistant Professor of Aerospace Studies* (May 1970)
B.A., The Ohio State University; M.B.A. University of Utah, 1969. Captain, USAF.
- RONALD J. HALL, *Assistant Professor of Aerospace Studies* (March 1971)
B.S., The University of Akron; M.B.A., University of Missouri - Columbia, 1970. Captain, USAF.
- ARNOLD PAGE, *Detachment Sergeant Major* (May 1971)
Technical Sergeant, USAF.
- WALTER C. THORNTON, *Administrative Specialist* (February 1969)
Staff Sergeant, USAF.
- WILLIAM F. WATCHORN, *Administrative Specialist* (February 1969)
Staff Sergeant, USAF.

Institute Of Polymer Science

1970-71

- MAURICE MORTON, *Director of the Institute of Polymer Science and Professor of Polymer Chemistry* (October 1948)
B.S., Ph.D., McGill University, 1945.
- G. STAFFORD WHITBY, *Consultant on Rubber Research and Professor Emeritus of Rubber Chemistry* (1942)
A.R.C.Sc., B.S., University of London; M.S., Ph.D., D.Sc., McGill University; LL.D., Mount Allison University, New Brunswick; D.Sc., The University of Akron, 1958.
- 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, *Research Associate, Associate Professor of Polymer Science and Assistant Professor of Chemistry* (1971)
B.A., College of Wooster; Ph.D., The University of Akron, 1962.
- JOHN E. FREDERICK, *Research Associate, Assistant Professor of Polymer Science and Assistant Professor of Chemistry* (1966)
B.S., Glenville State College; Ph.D., University of Wisconsin, 1964.
- H. JAMES HARWOOD, *Research Associate, Professor of Polymer Science and Professor of Chemistry* (October 1959)
B.S., The University of Akron; Ph.D., Yale University, 1956.
- JOSEPH P. KENNEDY, *Research Associate, 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, *Research Associate, Professor of Polymer Science and Professor of Chemistry* (1966)
- EBERHARD A. MEINECKE, *Research Associate, Associate Professor of Polymer Science and Associate Professor of Mechanical Engineering* (October 1963)
D. Eng., Institute of Technology (Braunschweig, Germany), 1960.
- MRS. IRJA PIIRMA, *Research Associate and Assistant Professor of Polymer Science* (December 1952)
Diploma in Chemistry, Technische Hochschule of Darmstadt; M.S., Ph.D., The University of Akron, 1960.
- EUGENE F. RIEBLING, *Research Associate, Associate Professor of Polymer Science and Associate Professor of Chemistry* (1969)
B.Sc., Rutgers University; M.Sc., University of New Hampshire; Ph.D., Rutgers University, 1961.
- HOWARD L. STEPHENS, *Executive Officer, and Manager of Applied Research, Institute of Polymer Science, Associate Professor of Polymer Science and Associate 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 S. WINKLER, *Research Chemist* (1969)
B.S., Ashland College, 1967.
- SUBRAMANIAN KRISHNAMURTHY, *Postdoctoral Fellow* (1971)
B.Ch.E., University of Bombay; M.S.Ch.E., Johns Hopkins University; Ph.D., The University of Akron, 1971.
- THOMAS ABBOTT, *Research Assistant* (1969)
B.S., M.S. The University of Akron, 1968.
- ASAHIRO AHAGAN, *Research Assistant* (1971)
B.S.E., Tokyo Institute of Technology; M.S.Ch.E., University of New Mexico, 1971.
- GEORGE H. ARMSTRONG, *Research Assistant* (1969)
B.S., Knoxville College; M.S., Atlanta University, 1965.

- STEPHAN J. BLAZKA, *Research Assistant* (1971)
B.S., Manhattan College, 1969.
- ROBERT C. CHANG, *Research Assistant* (1969)
B.S., Tunghai University (Taiwan); M.S., Oklahoma State University, 1965.
- JOHN J. CHARLES, *Research Assistant* (1970)
B.S., Davis and Elkins College, 1970.
- PARIS CHEN, *Research Assistant* (1970)
B.S.E., National Taiwan University, 1963.
- TZE C. CHENG, *Research Assistant* (1968)
B.S., Taipei Institute of Technology (Taiwan); M.S., Virginia Polytechnic Institute, 1962.
- DAN-SAM CHIU, *Research Assistant* (1969)
B.S., New Asia College, 1969.
- TOM M. CHOU, *Research Assistant* (1969)
B.S., Tamkang College of Arts and Sciences (Taiwan); M.S., Fresno State College, 1969.
- RONALD CLARK, *Research Assistant* (1970)
B.S., Valparaiso University, 1970.
- STEPHEN CRUME, *Research Assistant* (1968)
B.S., University of Dayton; M.S., Miami University, 1966.
- DANIEL L. DAVIDSON, *NDEA Fellow* (1970)
B.A., Earlham College, 1968.
- NITIN DESAI, *Research Assistant* (1970)
B.S., St. Xavier's College (India), 1967.
- LIE K. DJIAUW, *Research Assistant* (1970)
B.S., Chinese University; M.S., The University of Akron, 1970.
- JIRI DROBNY, *Research Assistant* (1970)
M.S.Ch.E., Technical College of Chemistry (Prague), 1956.
- STEVEN W. EFFLER, *Research Assistant* (1971)
B.S.Ch.E., University of Notre Dame, 1968.
- LOUIS A. FALVO, *General Tire Fellow* (1967)
B.S., M.S.Ch.E., Massachusetts Institute of Technology, 1964.
- STEWART C. FEINBERG, *NDEA Fellow* (1971)
B.S., Brooklyn College, 1969.
- EDWARD M. FIRER, *Research Assistant* (1968)
B.A., University of Bridgeport; M.S., University of Maryland, 1969.
- KLAUS P. GOETZE, *Columbian Carbon Fellow* (1970)
B.S., The University of Akron; M.S., University of Massachusetts, 1970.
- SUAT H. GOH, *Research Assistant* (1968)
B.S., Nanyang University; M.S., The University of Akron, 1966.
- LARRY E. GWIN, *Research Assistant* (1971)
B.S., Geneva College, 1966.
- DWIGHT K. HOFFMAN, *Research Assistant* (1969)
B.S., Valparaiso University, 1969.
- LING-KUN HUANG, *Research Assistant* (1971)
B.S.Ch.E., National Taiwan University; M.S.Ch.E., University of Houston, 1969.
- WU-NAN HUANG, *Research Assistant* (1970)
B.S., National Taiwan University; M.S., The University of Akron, 1970.
- YALI KESTEN, *Research Assistant* (1971)
B.S., Hebrew University (Jerusalem), 1970.
- VIJAY R. KOTAK, *Research Assistant* (1970)
B.S., B.S. Tech., University of Bombay, 1970.
- VIJAYRAJ M. KOTIAN, *Research Assistant* (1970)
B.S., B.S. Tech., M.S. Tech., University of Bombay, 1970.
- JOHN E. JOHNSTON, *NSF Trainee* (1970)
B.S., University of Notre Dame, 1970.
- WILLIAM A. JUDY, *Research Assistant* (1968)
B.S., Case Western Reserve University, 1964.
- VASANTH R. KAMATH, *Research Assistant* (1966)
B.S., B.Sc. Tech., St. Xavier's (Bombay); M.S., The University of Akron, 1968.
- TIONG H. KUAN, *Research Assistant* (1968)
B.S.Ch. E., De La Salle College (Philippines); M.S., The University of Akron, 1970.
- CHENG-YIH KUO, *Research Assistant* (1969)
B.S.Ch.E., National Taiwan University; M.S., The University of Akron, 1969.

- LEO M. LANDOLL, *Research Assistant* (1971)
B.S., Kent State University, 1970.
- EUI KACK LEE, *Research Assistant* (1968)
B.S., Yonsei University (Korea), 1965.
- WAI LIU, *Research Assistant* (1970)
B.S., Chinese University of Hongkong, 1970.
- MICHAEL LINDVAY, *Phillips Fellow* (1969)
B.S., Seattle University, 1969.
- LYLE O. MALOTKY, *Research Fellow* (1968)
B.A., Augsburg College, 1968.
- PRANAB K. MOOKERJEE, *Research Assistant* (1968)
B.S.Ch.E., Jodavpur University (Calcutta); M.S.Ch.E., Wayne State University, 1966.
- RICHARD J. HY, *Research Assistant* (1969)
B.S., National College of Rubber Technology, 1966.
- MASANORI OSAWA, *Research Assistant* (1970)
B.S., Chuo University (Japan), 1964.
- MICHAEL H. QUINN, *Research Assistant* (1969)
B.S., Duquesne University; M.S., West Virginia University, 1967.
- SRINIVASAN RENGACHARY, *Research Assistant* (1969)
B.S., University of Madras; B.S. Tech., University of Bombay, 1969.
- DAVID B. RUSSELL, *Research Assistant* (1969)
B.S., University of Michigan, 1963.
- DIEGO RUBIO, *Research Assistant* (1971)
B.S.Ch.E., Adamson University; M.S., Case Institute of Technology 1965.
- ROBERT A. SCHWEIZER, *Research Assistant* (1971)
A.B., Wittenberg University, 1971.
- RICHARD R. SMITH, *Research Assistant* (1970)
B.S., Virginia Polytechnic Institute; M.S., The University of Akron, 1967.
- CHARLES E. SEENEY, *NSF Trainee* (1970)
B.S., Lincoln University, 1970.
- FLOYD SHEPHERD, *Research Assistant* (1969)
B.S., The University of Akron, 1964.
- LLOYD SHEPHERD, *Research Assistant* (1969)
B.S., The University of Akron, 1965.
- ANTHONY M. SHERMAN, *Research Assistant* (1970)
B.S., M.S., The University of Akron, 1968.
- EUGENE L. SLAGOWSKI, *Research Assistant* (1968)
B.S., University of Wisconsin, 1960.
- SUNG YONG TARK, *Research Assistant* (1969)
B.S., M.S., Fort Hays Kansas State College, 1969.
- TIMOTHY TAYLOR, *Research Assistant* (1968)
B.S., St. Thomas College; M.S., New Mexico Institute of Mining and Technology, 1969.
- EDWIN THALL, *Research Assistant* (1967)
B.S., Pratt Institute; M.S., New Mexico Institute of Mining and Technology, 1968.
- PRAKASH TRIVEDI, *Research Assistant* (1970)
B.S., M.S., University of Bombay, 1969.
- BOH CHANG TSAI, *Research Assistant* (1970)
B.S.Ch.E., National Taiwan University; M.S., The University of Akron, 1970.
- KISHORE UDIPI, *Research Assistant* (1968)
B.S., B.S. Tech., M.S. Tech., University of Bombay, 1963.
- DEEPAK VAIDYA, *IISRP Fellow* (1970)
B.S.Ch.E., Indian Institute of Technology (Bombay), 1970.
- ERIK VRANCKEN, *Research Assistant* (1971)
Licencie in Science (Physics), Katholieke Universiteit te Leuven (Belgium), 1969.
- ARLENE YAO-LEE WANG, *Research Assistant* (1970)
B.S., Chung Yuan Christian College of Science and Engineering, 1967.
- ALEX WANG, *Research Assistant* (1970)
B.S., National Taiwan University, 1969.
- JOSEPH ZYMONAS, *Research Assistant* (1967)
B.S., Loyola University; M.S., St. Joseph's College 1967.

Institute for Civic Education

- CHARLES V. BLAIR, *Director of the Institute for Civic Education, Dean of Administration and Assistant Professor in the Community and Technical College* (April 1959)
 B.A., M.A., The University of Akron, 1963.
- MRS. MARY ELIZABETH CHESROWN, *Assistant Director of the Institute for Civic Education* (May 1965)
 B.A., The University of Akron, 1949.
- JOHN W. TELESKA, *Program Associate, Institute for Civic Education* (1961) (1966)
 B.A., Mount Union College, 1958.

Center for Urban Studies

- EDWARD W. HANTEN, *Acting Director of the Center for Urban Studies, Professor of Urban Studies and Professor of Geography* (1963)
 B.A., Earlham College; M.A., Ph.D., University of Pittsburgh, 1962.
- HUGH F. COYLE, JR., *Acting Associate Director of the Center for Urban Studies* (1969)
 B.S., Swarthmore College; M.A., The University of Akron, 1970.
- YONG H. CHO, *Acting Associate Director of the Center for Urban Studies, Associate Professor of Urban Studies and Associate Professor of Political Science* (1967)
 B.A., Seoul National University (Korea); M.P.A., Ph.D., Syracuse University, 1965.
- MARTHA E. BOYLE, *Research Assistant in the Center for Urban Studies* (1971)
 B.A., St. Francis College, 1962.

Speech and Hearing Center

- ELIZABETH J. HITTLE, *Director of the Speech and Hearing Center and Professor of Speech* (1950)
 B.S.Ed., The University of Akron; M.A., Kent State University; Ed.D., Western Reserve University, 1963.
- EVELYN BAER, *Associate Professor of Speech and Associate Director of the Speech and Hearing Center* (1966)
 B.A., University of Chicago; M.A., The University of Akron, 1948.
- MRS. ANITRA BARKLEY, *Instructor in Speech* (1969)
 B.A., M.A., The University of Akron, 1969.
- MARY CAPOTOSTO, *Instructor in Speech* (1968)
 B.A., The University of Akron; M.A., DePaul University, 1967.
- GERALD CULTON, *Assistant Professor of Speech* (1969)
 B.A., University of Omaha; M.A., Kansas State University; Ph.D., University of Denver, 1968.
- GERALD CASTOR, *Instructor in Speech* (1970)
 B.A., M.A., M.A., The University of Akron, 1970.
- MRS. CHARLOTTE ESSNER, *Asistant Professor of Speech* (1965)
 B.A., Hunter College; M.A., The University of Akron, 1964.
- MAX E. GRIFFIN, M.D., *Adjunct Professor of Speech* (1970)
 B.A., M.D., University of Chicago, M.S., University of Pennsylvania, 1955.
- MRS. BONNIE HANKAMMER, *Lecturer in Speech* (1967)
 B.S., M.A., The University of Akron, 1968.
- MRS. JUDITH HUNTER, *Adjunct Faculty, Supervisor of Clinical Services, Children's Hospital* (1970)
 B.A., M.A., The University of Akron, 1968.
- MORRIS KALMON, M.D., *Adjunct Professor of Speech* (1967)
 B.S., The University of Akron; M.D., The Ohio State University, 1931.
- E. JAMES LENNON, *Associate Professor of Speech* (1969)
 B.A., Anderson College; M.S., Ph.D., University of Wisconsin, 1952.
- ELLIOTT MIGDAL, M.D., *Adjunct Professor of Speech* (1970)
 B.S., The Ohio State University; M.D., University of Chicago, 1948.
- KENNETH T. SILOAC, *Assistant Professor of Speech* (1971)
 B.S., M.Ed., Ph.D., Wayne State University, 1967.
- LEON STEIN, *Assistant Professor of Speech* (1971)
 B.S., M.Ed., Wayne State University, 1967.

Comprehensive Services for the Deaf

- EVELYN BAER, *Associate Professor of Speech, Associate Director of the Speech and Hearing Clinic and Director of Comprehensive Services for the Deaf* (1966)
 B.A., University of Chicago; M.A., The University of Akron, 1948.

- KAREN DIXON, *Instructor/Coordinator of Services for the Deaf* (1971)
 B.A., Kent State University, 1970.
 BOYD HUME, *Consultant for Comprehensive Services for the Deaf* (1971)
 MRS. CAROL WESTFALL, *Instructor/Coordinator of Diagnostic Services for the Deaf* (1971)
 B.A., The University of Akron, 1963.

University Health Service

- GENEVIEVE DREWS, M.D., *Senior University Physician* (1966)
 M.D., University of Colorado Medical School, 1961.
 RAYMOND S. FEDERMAN, M.D., *University Physician* (1963)
 B.S., The University of Akron; M.D., The Ohio State University, 1959.
 GEORGE MALLO, M.D. *University Physician* (1971)
 M.D., The Ohio State University Medical School, 1958.
 ESTANISLAO A. MATOS, M.D., *University Physician* (1967)
 M.D., University of Santo Domingo Medical School, Dominican Republic, 1961.
 MRS. MARY CORNELIUS, R.N., *University Nurse* (1968)
 R.N., Akron City Hospital, 1942.
 MRS. MARGUERITE MYERS, R.N. *University Nurse* (1966)
 R.N., Akron City Hospital, 1935.
 MRS. JANET ROSE, R.N., *University Nurse* (1968)
 R.N., St. Luke's Hospital, (Cleveland) 1956.
 MRS. MARIAN J. SCOVELL, R.N., *University Nurse* (1970)
 R.N. Akron City Hospital, 1946.

Presidents of Buchtel College

- | | |
|--|-----------|
| *S. H. McCollester, 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. | 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- |

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- |

*Deceased

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. (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. Brintnall, 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)	1968-

THE GENERAL COLLEGE

D. J. Guzzetta, Ed.D., LL.D., D.S.Sc.	1959-1962
Thomas Sumner, Ph.D.	1962-

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)	1953-1955
D. J. Guzzetta, Ed.D., LL.D., D.S.Sc. (Dean)	1959-1967
William A. Rodgers, Ed.D. (Dean)	1967-1970
Charles V. Blair, M.A. (Dean)	1970-
John G. Hedrick, M.A. (Dean)	

THE COMMUNITY AND TECHNICAL COLLEGE

W. M. Petry, M.S.M.E.	1964-
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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-
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* On Record, June 1, 1970

* Deceased

Current Members of College and School Advisory Committees

THE BUCHEL COLLEGE OF ARTS AND SCIENCES

Mrs. Russell De Young, Mrs. Sam DuPree, Dr. William H. Falor, Mr. Arden E. Firestone, Mrs. Lincoln Gries, Mrs. Curtis Harwick, Mr. Donald Kaufman, Mr. G. Paul Kempel, Mr. Perth Killinger, Mr. Sam McKeel, Mr. Clinton Miller, Mr. Vern Odom, Mr. Charles Pierson.

THE COLLEGE OF ENGINEERING

Mr. D. F. Behney, Mr. G. L. Bruggemeier, Mr. E. F. Dissmeyer, Mr. Morris Jobe, Dr. Charles E. Jones, Mr. Robert B. Knill, Mr. Thomas A. Knowles, Mr. Wendell R. LaDue, Mr. Vern Oldham, Mr. C. A. Palmer, Mr. Karl Rohrer, Mr. William R. Ruhlin, Mr. Ward Sigler, Mr. Ernest S. Theiss, Mr. Harry Warner.

THE COLLEGE OF EDUCATION

Mrs. Ray Bliss, Dr. Sarah Caldwell, Mr. T. D. Calvin, Mr. Donald R. Fair, Mr. Ralph Gillman, Mr. Charles Hazlett, Mr. Robert Hedrick, Mr. Allen E. Howland, Mrs. Donald Minnig, Mr. Howard Netzly, Mr. Conrad Ott, Mr. W. S. Parry, Mrs. George Seeley, Mr. R. E. Wilkins, Dr. Harold Wilson.

THE COLLEGE OF BUSINESS ADMINISTRATION

Mr. Weldon Case, Mr. David C. Corbin, Mr. George Daverio, Mr. John L. Feudner, Jr., Mr. Gordon Heffern, Mr. Peter K. Hoglund, Mr. John N. Hart, Mr. J. W. Keener, Jr., Mr. Clarence Kelley, Mr. H. L. Mollenkopf, Mr. James Parshall, Mr. William M. Williams, Jr., Mr. H. Vernon Wolfe, Dr. Robert Yohe.

THE COLLEGE OF FINE AND APPLIED ARTS

Mrs. Fred I. Albrecht, Dr. James L. Berk, Mr. Richard Buchholzer, Mrs. L. A. Graham, Mrs. E. V. K. Jaycox, Mrs. Walter Keith, Mr. Louis Lane, Mr. David K. Larrimer, Mr. R. A. Michelson, Dr. E. Gates Morgan, Mr. Irving J. Olson, Mrs. John Renner, Mrs. J. G. Robertson, Mrs. Sol Sacks, Mrs. Guido Stempel.

THE COLLEGE OF NURSING

Sister Mary Brigid, Dr. Douglas M. Evans, Mrs. William Falor, Mr. Harold Funk, Miss Mary Knapp, Mr. S. H. Mountcastle, Mr. Earl Raymer, Mr. James M. Reynolds, Mr. Roger Sherman, Miss Lillie Mae Steadman, Mr. Dave Towell, Judge William Victor, Dr. J. T. Villani, Mrs. Jason Wade, Dr. Evangeline Witzeman.

SCHOOL OF LAW

Mr. Clarence L. Becker, Judge Sam H. Bell, Mr. Richard Chenoweth, Mr. Ward W. Davis, Mr. John F. Floberg, Mr. Marion F. Graven III, Hon. David L. Headley, Mr. Oscar A. Hunsicker, Jr., Mr. Robert T. Jarmusch, Mr. Louis Manes, Mr. C. Blake McDowell, Judge Theodore Price, Mr. Norman Purnell, Mr. J. Kevin Ramsey, Mr. Charles Sacks.

THE GRADUATE SCHOOL

Dr. Glen Alliger, Dr. Karl Arnstein, Mr. E. A. Brittenham, Dr. Raymond Brown, Mr. Bill Giermann, Dr. James D'Ianni, Dr. John E. Hartzler, Mr. Burton D. Morgan, Dr. John Morley, Mr. H. H. Poor, Mr. William Scull, Mr. Frank Steere, Jr., Dr. H. Stempel, Dr. Franklin Strain, Dr. Rex H. Wilson.

THE EVENING COLLEGE

Mrs. Tom B. F. Hanna, Mrs. Sabcox, Mr. Stanton H. Brightman, Mr. Ray Campbell, Mr. Chester Conner, Mr. Robert Crane, Mr. Ralph L. Judge Thomas Charles Herberiche, Mr. Philip G. Karam, Mrs. George Leonard, Mr. Kenneth Nichols, Mrs. Z. C. Oseland, Jr., Thomas Powers, Mr. John Scherba, Mr. Philip Young.

THE COMMUNITY AND TECHNICAL COLLEGE

Mr. George W. Brittain, Mr. R. A. Brownsword, Mr. Robert C. DeShon, Mr. R. Victor Dix, Mr. M. A. Frendberg, Mr. Earl R. Hostetter, Mr. Howard S. Kane, Mr. Robert Kidney, Mr. G. J. Lambillotte, Mr. D. Bruce Mansfield, Mr. P. W. Perdriau, Mr. F. B. Pyle, Mr. Bruce M. Robertson, Mr. Clark Sutherland, Mr. H. H. Wiedenmann.

THE WAYNE GENERAL AND TECHNICAL COLLEGE

Academic Advisory Committee: Mrs. Samuel W. Anthony, Mr. William Baer, Mrs. Rollin T. Crawford, Mr. R. Victor Dix, Mr. J.W. Frye, Mr. David Goldsberry, Mr. Robert Hershey, Mr. John Johnson, Mr. Paul Ladd, Mr. Howard S. Netzley, Mrs. Don. L. Noah, Mr. J. David Rathbone, Mr. Gene Sklorman, Mr. Tony Yanto, Mr. Robert Zimpfer. *Building Committee:* Mr. Paul Smucker, Mr. Sam Bohlen, Dr. E.J. Feltes, Mr. Ralph Fisher, Mrs. Carl Goldring, Mr. Fred Griffin, Mr. Robert Gumz, Mr. Gordon Hostetler, Mr. Harold Kropf, Mr. Bruce Schantz, *Ex-officio:* Mr. R. Victor Dix, Mr. Robert Hershey.

Public School Faculties Cooperating with the College of Education

OFFICERS OF AKRON PUBLIC SCHOOLS

Conrad C. Ott, M.A.
D. Eugene Dominic, M.E.
Lloyd W. Dull, Ph.D
Harry Sabgir

Superintendent of Schools
Assistant Superintendent
Assistant Superintendent
Executive Director

OFFICERS OF OTHER COOPERATING SCHOOLS

Ralph Gillman, M.A.
Harold E. Wilson, Ph.D.
Clarence W. Cox, M.A.
Paul Padrutt
John Halchin, M.E.
John I. Nicholas
Robert Stabile
James T. Tays, M.A.
William Cunningham
Jack R. Cordier, M. Ed.
William J. Boliantz, M.E.
R. C. Schlott, M.A.
William S. Mercer, M.A.

Superintendent of Schools, Summit County
Superintendent of Schools, Cuyahoga Falls
Superintendent of Schools, Barberton
Local Superintendent, Boston-Northampton
Local Superintendent, Copley
Local Superintendent, Revere
Local Superintendent, East Franklin
Local Superintendent, Green
Local Superintendent, Hudson
Local Superintendent, Mogadore
Local Superintendent, Nordonnia Hills
Local Superintendent, Norton
Local Superintendent, Twinsburg

Supervising Teachers

Summer and Fall, 1970, and Winter and Spring, 1971

ELEMENTARY EDUCATION

Mary Adams, Marjorie Adkins, Winifred Adkins, Laura Allen, James Anderson, Bernadine Antonino, Helen Armitage, Pat Arnold, Bruce Averill, Violet Mae Barden, Dale Bass, Lois Bates, Marilyn Baughman, Creta Becker, Alberta Bell, Gloria Bell, Nellie Bertsch, Sara Biesterveld, Julia Biondo, Florence Bistline, Ralph Blachly, Jeannette Blake, Jacqueline Boesch, Patricia Boxler, Robert Boxler, Sandra Boykin, Iva Brannon, Rosemary Bray, Kathleen Brent, Venetta Brodbeck, Sara Brown, Viola Brown, Margaret Brownlee, Elise Bryenton, Lynne Buie, Helen Bunts, Charlotte Burks, Peggy Butler, Ellen Campbell, Mary Cardy, Ingrid Carper, Janice Carroll, Patricia Carson, Marylou Chine, Norma Cleave, Jolene Cochran, Mildred Collis, Maxine Combs, Dorothy Considine, Faye Cordier, William Cort, Frances Cox, Martha Crabbe, Pauline Crites, Leola Cabbage, Moyra Culberson, Vicki Davis, Jane Delcamp, Mary Dempsey, Jeanne Doshak, Jaye Douds, Ruth Eaken, Joanne Eckert, Adda Erwine, Elizabeth Evans, Joyce Evans, Margaret Ewing, Betty Farnsworth, Mildred Fellows, Catherine Ferguson, Warren Ferrell, Mary Finegan, Ola Fitzpatrick, Lynette Flick, Dorothy Fliieger, Naomi Foltz, Eunice Ford, Patricia Frank, Robert Freeze, Sandra Gallagher, Vennetta Gerspacher, Edna Golden, Margaret Goldwood, Lucia Gostlin, Wilma Gowens, Kathleen Gray, Paul Green, Mary Grenus, Lee Griffiths, Irma Lou Griggs, Maryan Guinter, June Gunn, Harriet Hagey, Romayne Hahn, Gerald Hanna, Sally Harding, Imogene Harland, Elizabeth Harvey, Dennis Haynes, Veronica Hegarty, Patricia Henry, Janet Hershman, Jean Hess, Marian Hicks, Susan Hixson, Betty Holgate, Irene Iswarienko, Virginia Jennings, Mary Jones, Virginia Jones, Mary Lou Jubin, Jacqueline Keller, Betty Kelley, Karol King, Dorothy Kirk, Evelyn Kirk, Janet Kirkhart, Patricia Kirn, Lillian Klassen, Carla Kodish, Rose Mary Kraus, Elsie Lazarus, Marjorie Lee, Denise Leidal, Norma Leidel, Janet Lewis, Alice Loutsenhizer, Juanita Luke, Margaret Lull, Phyllis Mahan, Vincent Malloy, Jr., Joan Malmin, Madge Mapp, Lillian Mardis, Barbara Martin, Barbara Matthews, Dorothy Maynard, Marian Mazaerlla, Susan McBride, Helen McCafferty, Edna McDonald, Nan McIntyre, Helen McMillan, Marianne Mellion, Kenneth Methven, Carolyn Mikel, Norma Miller, Donald Mitchell, Jack Morgenstern, Janet Morris, Irene Motter, Maxie Muckleroy, Susan Muir, Diane Mundy, Nancy Murray, Dorothy Myers, Evelyn Myers, Margaret Nardell, Carol Naylor, Doris Newhart, Harriet Nichols, Connie Nolte, Polly Obermiller, Mary Ann Ondack, Julie Osborne, Mitzi Pamer, Mary Parasilite, Marietta Paticca, Anne Perkins, Freda Perkins, Russell Pier, Molly Pope, Jean Prentice, Mary Purkey, Janet Purnell, Jeanne Randles, Mark Rasicci, Margaret Reichenback, Jean Reichman, Freda Reid, Diane Reis, Betty Rice, Kathryn Rice, Mabel Rice, Betty Richards, Kathryn Ritzman, James Rivers, Miriam Robbins, Eugene Rohrbaugh, June Root, Niki Rose, Irene Rowe, Thomas Royce, Kathleen Russell, Patricia Salem, John Saucier, Louise Savory, Ramona Schake, Carl Schiavone, Virginia Sica, Isabel Sieracki, Mildred Skeen, Lynn Smith, Elizabeth Soergel, Gail Solomon, Marietta Spriggel, Gerald Stokes, Patricia Stokes, Beverly Stroll, Louis Swartz, Sonja Thompson, Eloise Thorne, Roberta Timberlake, Allen Trier, Janet Tussing, Irene Ulrich, Jane VanPelt, Sue VanPelt, Lynn Vierheller, Pearl Wade, Lois Walker, Eilene Walters, James Wanless, Cindi Watson, Dorothy Welch, Ford Weyrick, Barbara White, Mary Whited, Carrell Whittaker, Judy Williamson, Alacia Wilmoth, Clifford Wilson, Evelyn Wilson, Rita Wilson, Betty Wisdom, Sara Wood, Margaret Woods, Joan Wyler, Cecelia Young.

SECONDARY EDUCATION

Frances Abbott, Robert Abraham, Judy Adamkiewicz, Andrew Aljancic, Ronald Allegree, Elinor Amshey, Barbara Anderson, John Anspach, James Armenti, Bernie Arnold, Bobby Austin, George Auten, Jon Bailey, Annette Baker, Lynn Baker, Virginia Barberi, Michael Barich, Bruce Barnes, Norma Barone, Rebecca Barrett, Elizabeth Barrow, Kathryn Barton, Betty Batdorf, Ralph Batton, Harry Bauschlinger, Judy Bealko, Mary Bechtold, Robert Beham, Shirley Bell, Judith Bender, Phillip Bennett, Julia Benson, Linda Bergquist, Veiva Best, Ruth Biondo, Edward Birdy, Beatrice Birmingham, Patricia Bishop, William Bishop, Bernice Blickle, Robert Blockinger, Ronald Bobner, Mary Bodner, Carl Bohn, Raoul Bolock, Doyle Bolyard, Jerome Boone, Richard Boron, True Bower, Florence Bowsher, Judith Boyer, Laura Boyer, James Braccio, Ann M. Bradfute, Ray Brannon, Dennis Brawley, Rose Mary Brett, Robert Bricker, Robert Brigeman, John Brownlee, David Brubaugh, Norman Burch, Walter Burke, Eloise Butcher, Walter Cahill, Robert Calder, Rudy Calet, Deanna Calich, Rosalyn Callahan, James Campbell, Ernest Carnes, Dominic Caruso, Frank Chaff, Robert Chalmers, Judy Chapman, Denis Chasek, Richard Christy, Bernard Clark, Eloise Clark, Juliet Cobb, Don Cole, Neal Collins, Janyth Cooley, Donna Cooman, Carolyn Cook, Ellen Cook, Lawrence Cook, David Cooper, Donna Cooper, C. Edward Cowger, Joyce Cox, Michael Cox, Kristan Crane, Rose Crano, Marian Crenshaw, Patricia Crooks, Helen Cullison, George Curtis, Joan Cutrone, Butch Daum, Doyle Davidson, Jennifer Davis, Olive Davis, Frank DeMarco, Robert DeMass, Orleta Demnth, Gary Deyling, Nan Dickinson, John Dolensky, Anthony Donatelli, K. Dave Douglas, Julia Droder, William Duckworth, John Durham, Hugh Durkin, Arlene Ealy, Gladys Eckenrode, Joann Embleton, Elizabeth Emery, Ira Eplin, John Eppers, Florence Ettlting, Robert Ewing, Bill Evans, Walter Evans, Linda Faith, Vicky Falb, Virginia Farkas, Joyce Fast, Bonnie Faurote, Ron Fenik, Junius Ferrall, Dorothea Fetherson, Margaret Fetherson, Bryson Fillmore, Joseph Finding, Kay Fisher, Charles Flaugh, Grade Flemming, James Fletcher, Earl Florea, II, George Floyd, John Floyd, Lillian Fortner, Angelo Fortunato, Erich Frank, Dorothy Franks, Shirley Froebe, Gerald Fry, Elaine Frye, Helen Gairing, Mary Gallagher, Cheryl Gaus, Sybil Gertz, Grattan Giesey, Mildred Glocar, Genevieve Goodwin, Dorothy Gordon, Thomas Grande, Garnold Green, Helen Green, Robert Grenus, Jack Greynolds, Mary Griffiths, Bradley Guy, Grace Guerra, Delbert Haefka, Charles Hale, Marie Halkovich, Thelma Hall, Ray Halliwill, Etna Hammel, Donald Hanlon, Harold Hanna, Gary Hansel, Marian Hanson, Ernest Roy Harris, Violet Hartney, Gordon Heaton, JoAnn Heck, Michael Hedrick, James Helmick, Agnes Helms, Mathilda Herman, Elizabeth Hershberger, Sharon Hershey, Jerry Hershman, Doris Hillier, Paul Hoffland, Eugene Hornig, Grace Houser, Ronald Howell, Jean Howes, Margaret Humbert, Ann Hrkman, Marianne Hrvol, James Isaac, Rosemarie James, Chrysa Jameson, Laura Jaroszewski, Albert Johnson, Ann Johnson, Nancy Johnson, Richard Johnson, Harold Jordon, Nancy Jordon, Kenneth Judge, William Just, Gust Kalapodis, John Kane, Edward Kapolka, Tariann Kapper, Gilbert Katz, Jane Kauffman, William Keating, III, David Keeling, Donald Keller, Lois Kelley, Michael Kermizis, Louise Khourey, Jayne Kidder, Betty Kiefer, Charles Kinney, Eleanor Kirchner, Louise Kittell, Muriel Klafehn, Ann Klosteiman, Eileen Knapp, Edgar Knotts, Joseph Kotys, Ernestine Kyle, Beverley Lackey, Chiquitha Lancaster, Don Lane, Andigoni Latrashe, Hugh Laughlin, Coralie Lautenschlager, Robert Leibold, Carl Lewis, James Long, Loretta Loomis, Donald Louthan, Robert Love, Peter Lukacik, George Lundstrom, Helen Lussen, Mildred Lutz, Scott Lyons, Dan MacLachlan, Rosco McBee, Robert McCafferty, Fred McClellan, William McGee, John McGowan, Jimmie McKain, James McMillen, Laura McNeill, Sally Macklin, William Madigan, Helen Maggio, Louise Mahoney, Joseph Maier, Richard Manfull, Patricia Marmaduke, Robert Martin, Eloise Mason, Dominic Mastropietro, Carol Masturzo, Shirley Mathewson, Gerald Matzek, Grace Mayes, Nancy Meloy, Gail Mercer, Diane Mergenov, Dan Milich, David Miller, Dorothy Miller, Richard Miller, Dora Mitish, Dean Mizer, Donald Moder, Evelyn Moinet, Mary Monachini, Edna Moomaw, Robert Moore, E. 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Sloan, Elizabeth Smith, Europe Smith, Harold Smith, Richard Smith, Thomas Smith, Ronald Snider, Irene Sonnanstein, Elaine Sopko, George Sosebee, James Spratt, Grace Stachel, Carl Stager, Vivian Starr, Karl Stechele, Jean Stem, Leona Sterley, Mary Jane Stone, Donald Stott, Judith Sturm, Richard Sunderland, Alice Sutcliffe, Bonnie Swan, Robert Swedenborg, K. 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THE ALUMNI ASSOCIATION 1970-71

An individual who has received a degree from this institution or has completed 48 credits is considered to be an Alumnus and is eligible for membership in The University of Akron Alumni Association. The Alumni Council, the members of which are elected by a national ballot mailed to more than 22,000 Alumni is the governing body of the Alumni Association. For the 1970-71 year, President Mark Figetakis '56 will preside over the Association with administrative matters handled by the Alumni Relations Office, which is located in the Gardner Student Center on the campus.

The purpose of the Alumni Association is to promote the interest of The University of Akron and further the mutually beneficial relationships between the University and its Alumni. Among the activities and responsibilities of the Alumni Association are:

1. Sponsorship of four major events during each academic year — the Acme Zip Game Party in September, Homecoming in October, Alumni Fun Night in February, and Alumni Day in June — attracts more than 3,000 Alumni and friends each year;
2. Promotion of the Akron U Fund which is used for scholarships, faculty salaries and special purposes at the discretion of The University of Akron Development Foundation (in 1970 \$101,000 was raised);
3. Maintenance of accurate records of Alumni;
4. Publication of *The University of Akron Alumnus*, the quarterly magazine with news of campus developments and Alumni;
5. Encouragement of Alumni — University participation through clubs which are now located in 32 geographic areas.

Locations and presidents of Alumni clubs currently operating are; Phoenix — P. C. Hansen; Tuscon — Robert E. Ashley; Los Angeles — E. B. Hollander; San Diego — John E. Lucas; San Francisco — Louis B. Haberman; Denver — Don Carney; Washington, D. C. — Palmer W. Wardman; Miami — W.P. Shaughnessy; St. Petersburg — Richard J. Cowling; Atlanta — Lawrence T. Earley; Chicago — Daniel J. Weinberger; Boston — Eugene J. O'Neil; Detroit — Ray K. Schieb; Grand Rapids — Henry Stoner; Minneapolis — William T. Farmer; St. Louis — William H. Ireland; New York — Jerry G. Meyers; Buffalo — Norman E. Weiler; Columbus — Al Isner; Toledo — William C. King; Cleveland — Robert E. Sipes; Akron — Mark Figetakis; Youngstown — Abe Cohen; Canton — Mervin L. Atwell; Cincinnati — J. D. Massoud; Dayton — Paul G. Trecaso; Pittsburgh — Charles W. Hamilton; Erie — H. A. Roseman; Philadelphia — Maurice E. Long; Dallas — Harvey L. Davis; Houston — Herman K. "Griss" Eckert; Kansas — J. Neal Burke.

Officers of the Alumni Council for 1970-71 are: President — Mark Figetakis '56 First Vice President — Norman Smith '28; Second Vice President — Donald R. Lindsay '35; Recording Secretary — Mrs. Joseph C. Herdina '50; Treasurer — Carl Hall; Executive Secretary and Director of the Akron U Fund — Allen M. Boyer '42.

Members of the Alumni Council are: (term expires June, 1971) Mrs. William P. Bray, Jr. '42; William C. Detwiler '47; John L. Feudner, Jr. '34; Mark Figetakis '56; Ronald A. Karg '62; Lawrence G. Knecht '34; William R. Ruhlin '48; (term expires June, 1972) Alex L. Adams '62; Mrs. William H. Boss '58; Mrs. Joseph C. Herdina '50; Barry Hofer '69; Michael M. Krino '38; Donald R. Lindsay '35; Ray K. Schieb, Jr. '46; Norman Smith '28; (term expires June, 1973) Robert M. Arnold '49; Mrs. Robert B. Brownfield '41; George P. Chima '48; Frank C. Comunale '70; Byron E. Houseworth '50; W. Stuver Parry '56; David J. Towell '59, Mrs. Hugh B. West '62.

Allen M. Boyer '42 is Director of Alumni Relations and Director of the Akron U Fund.

DIRECTORY OF STUDENT ORGANIZATIONS

GROUPS FOR THE PERFORMING ARTS

Dance Institute	University Orchestra
Forensic Union	University Singers
Radio and Television Workshop	University Theatre Guild
University Marching Band	

PERSONAL INTEREST

Amateur Radio Club	Chess Club
Arab Students Organization	Collegiate Forum
Black United Students	Ethnocentric Dancers
Campus Americans for Democratic Action	International Students Club

Interns for Civic Leadership
 Photography Club
 Pre-Law Club
 Ski Club
 Veterans Club
 World Federatists, U.S.A.

Young Americans for Freedom
 Young Democrats Club
 Young Republicans Club
 Young Women's Christian Association

COMMUNICATIONS AND PUBLICATIONS

Akron Law Review
Buchtelite
Tel-Buch
Nite Life

Radio and Television Workshop
 WAUP-FM
 WRHA
 YAWP

DEPARTMENTAL ORGANIZATIONS

Accounting Association
 Administrative Management Society (Collegiate Chapter)
 American Institute of Chemical Engineering
 American Society of Civil Engineering
 American Society of Mechanical Engineering
 Association of Childhood Education
 Biology Club
 Bracton's Inn
 Collegiate Nursing Students
 Economics Association
 Finance Club
 Future Secretaries of American
 Geology Club
 Home Economics Club

Institute of Electronic and Electrical Engineers
 Johnson Club
 Law Wives Club
 Philosophy Club
 Politics Club
 Polymer Graduate Student Association
 Psychology Club
 Slavic Studies Club
 Sociology Club
 Student Art League
 Student Bar Association
 Student National Education Association
 Student Nurses Association
 Women in Music

PROFESSIONAL FRATERNITIES

Alpha Chi Sigma — Chemistry
 Beta Alpha Psi — Accounting
 Delta Sigma Pi — Business Administration
 Phi Alpha Delta — Law

Phi Delta Delta — Law
 Phi Delta Kappa — Education
 Pi Lambda Theta — Education
 Sigma Alpha Eta — Speech Pathology and Audiology

ASSOCIATION OF COLLEGE HONOR SOCIETY MEMBERS

Alpha Kappa Delta — Sociology
 Alpha Lambda Delta — Freshman Scholarship
 Mortar Board — Student Leadership
 National Collegiate Players — Dramatics
 Omicron Delta Epsilon — Economics
 Omicron Delta Kappa — Leadership
 Phi Alpha Theta — History
 Phi Eta Sigma — Freshman Scholarship

Phi Sigma — Biological Sciences
 Pi Delta Phi — French
 Pi Omega Pi — Business Education
 Pi Sigma Alpha — Political Science
 Psi Chi — Psychology
 Sigma Delta Pi — Spanish
 Society of Physics Students — Physics (Sigma Pi Sigma)

OTHER HONOR SOCIETIES

Beta Gamma Sigma — Business Administration
 Kappa Delta Pi — Education
 Phi Sigma Alpha — Liberal Arts Scholastic-L
 Pi Mu Epsilon — Mathematics

Sigma Tau — Engineering
 Sigma Xi — Scientific Research
 Tau Kappa Phi — Home Economics-L

RECOGNITION SOCIETIES

Alpha Phi Gamma — Journalism
 Alpha Phi Omega — Men's Service

Gamma Theta Upsilon — Geography
 Pi Kappa Delta — Forensics

MILITARY RECOGNITION SOCIETIES

Angel Flight
 Army Sponsors-L
 Arnold Air Society
 Association of the United States Army

Counterguerrillas-L
 Pershing Rifles
 Scabbard and Blade
 Valkyrie Drill Team-L

RELIGIOUS ORGANIZATIONS

Campus Christian Fellowship	Kappa Phi Club
Christian Science	Lutheran Students Association
Eastern Orthodox Fellowship	Muslim Student Association
The Hillel (B'nai B'rith Foundation)	Newman Club
Intervarsity Christian Fellowship	

GOVERNING ORGANIZATIONS

Associated Women Students	Residence Hall Government Association
Graduate Student Council	Senior Class
Interfraternity Council	Student Center Program Board
Junior Class	Student Council
Panhellenic Council	

ATHLETIC ORGANIZATIONS AND INTRAMURAL ATHLETICS

Women's Recreation Association	Intramural Sports
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INDEPENDENT SOCIAL ORGANIZATION

Independent Students Association

SOCIAL FRATERNITIES

	<i>National Founding</i>	<i>Local Founding</i>
Alpha Epsilon Pi	1913	1941
Alpha Phi Alpha	1906	1957
Chi Sigma Nu (Evening Students)		1932
Lambda Chi Alpha	1909	1919
Phi Delta Delta Theta	1848	1875
Phi Kappa Tau	1906	1938
Phi Sigma Kappa	1873	1942
Pi Kappa Epsilon		1882
Sigma Pi	1897	1966
Tau Kappa Epsilon	1899	1948
Theta Chi	1856	1942
Phi Kappa Psi	1852	1970
Delta Tau Delta (colony)		1970

SOCIAL SORORITIES

	<i>National Founding</i>	<i>Local Founding</i>
Alpha Delta Pi	1851	1938
Alpha Gamma Delta	1904	1922
Alpha Kappa Alpha	1908	1961
Chi Omega	1895	1967
Delta Gamma	1873	1879
Delta Zeta	1902	1962
Gamma Beta (Evening Students)		1935
Kappa Kappa Gamma	1870	1877
Phi Mu	1852	1912
Sigma Delta Tau (inactive)	1917	1962
Theta Phi Alpha	1912	1931
Zeta Tau Alpha	1898	1929

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UNIVERSITY CALENDAR 1971-72**FALL QUARTER, 1971**

September 27, Monday	Day and Evening Classes Begin
November 24, Wednesday, 5 p.m.	Thanksgiving Day Holiday Begins
November 25, Thursday	Thanksgiving Day Holiday
November 29, Monday, 8 a.m.	Classes Resume
December 4, Saturday	Final Instructional Day
December 6-11, Monday-Saturday	Final Examination Period
December 8, Wednesday	Grades for December Degree
	Candidates Due
December 11, Saturday	End of Fall Quarter
December 12, Sunday	Commencement
December 23-24, Thursday- Friday	Christmas Day Holiday Begins
December 25, Saturday	Christmas Day Holiday
December 30-31, Thursday-Friday	New Year's Day Holiday Begins
January 1, Saturday	New Year's Day Holiday

WINTER QUARTER, 1972

January 3, Monday	Day and Evening Classes Begin
January 12, Wednesday	Founders Day Convocation
March 11, Saturday	Final Instructional Day
March 13-18, Monday-Saturday	Final Examination Period
March 15, Wednesday	Grades for Winter Degree
	Candidates Due
March 18, Saturday	End of Winter Quarter
March 19, Sunday	Commencement

SPRING QUARTER, 1972

March 27, Monday	Day and Evening Classes Begin
April	Honors Convocation
May	May Day
May 29, Monday	Memorial Day Holiday
May 30, Tuesday, 8 a.m.	Classes Resume
June 3, Saturday	Final Instructional Day
June 5-10, Monday-Saturday	Final Examination Period
June 7, Wednesday	Grades for June Degree
	Candidates Due
June 10, Saturday	End of Spring Quarter
June 11, Sunday	Commencement

SUMMER SESSION I, 1972

June 19, Monday	Day and Evening Classes Begin
July 3, Monday, 11 p.m.	Independence Day Holiday Begins
July 4, Tuesday	Independence Day Holiday
July 5, Wednesday, 7 a.m.	Classes Resume
July 20, Thursday	Final Instructional Day
July 21, Friday	Final Examination Day and
	End of First Session

SUMMER SESSION II, 1972

July 24, Monday	Day and Evening Classes Begin
August 24, Thursday	Final Instructional Day
August 25, Friday	Final Examination Day, End
	of Second Session

POST SESSION, 1972

August 29, Tuesday	Day and Evening Classes Begin
September 1, Friday, 11 p.m.	Labor Day Holiday Begins
September 4, Monday	Labor Day Holiday

September 5, Tuesday, 7 a.m.
September 19, Tuesday
September 20, Wednesday
September 25, Monday

Classes Resume
Final Instructional Day
Final Examination Day and End
of Post Session
Fall Quarter Day and Evening
Classes Begin

THE UNIVERSITY OF AKRON**Tentative Calendar 1972-1973****FALL QUARTER 1972**

September 25, Monday	Day and Evening Classes Begin
November 22, Wednesday, 4 p.m.	Thanksgiving Day Holiday Begins
November 23, Thursday	Thanksgiving Day Holiday
November 24, Friday, 8 a.m.	Classes Resume
December 2, Saturday*	Final Instructional Day
December 4-9, Monday-Saturday	Final Examination Period
December 6, Wednesday	Grades for December Degree
	Candidates Due
December 9, Saturday	End of Fall Quarter
December 10, Sunday	Commencement
December 12, Friday	Christmas Day Holiday Begins
December 25, Monday	Christmas Day Holiday
December 29, Friday	New Year's Day Holiday Begins
January 1, Monday	New Year's Day Holiday

WINTER QUARTER 1973

January 8, Monday	Day and Evening Classes Begin
January	Founder's Day Convocation
March 17, Saturday	Final Instructional Day
March 19-24, Monday-Saturday	Final Examination Period
March 24, Saturday	End of Winter Quarter

SPRING QUARTER 1973

April 2, Monday	Day and Evening Classes Begin
April	Honors' Convocation
May	May Day
May 29, Tuesday, 11 p.m.	Memorial Day Holiday Begins
May 30, Wednesday	Memorial Day Holiday
May 31, Thursday, 8 a.m.	Classes Resume
June 9, Saturday	Final Instructional Day
June 11-16, Monday-Saturday	Final Examination Period
June 13, Wednesday	Grades for June Degree
	Candidates Due
June 16, Saturday	End of Spring Quarter
June 17, Sunday	Commencement

SUMMER SESSION I 1973

June 25, Monday	Day and Evening Classes Begin
July 3, Tuesday, 11 p.m.	Independence Day Holiday Begins
July 4, Wednesday	Independence Day Holiday
July 5, Thursday, 7 a.m.	Classes Resume
July 26, Thursday	Final Instructional Day
July 27, Friday	Final Examination Day and End of First Session

SUMMER SESSION II 1973

July 30, Monday	Day and Evening Classes Begin
August 30, Thursday	Final Instructional Day
August 31, Friday	Final Examination Day and End of Second Session

POST SESSION 1973

September 3, Monday	Labor Day Holiday
September 5, Wednesday	Day and Evening Classes Begin
September 25, Tuesday	Final Instructional Day
September 26, Wednesday	Final Examination Day and End of Post Session